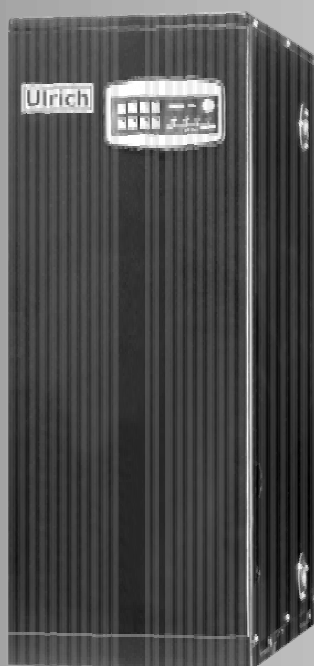


Ulrich®

ADVANCED HEATING SYSTEMS



Oil boiler 20 to 41 kW

Ederlich ED

USER'S MANUAL

- Technical data
- Installation
- Start up
- Use
- Conservation
- Warranty

ver. 10.2005 (GB)

© Ulrich®

Stainless steel!
Noble and durable

CE



ISO 9001
ISO 14001



Thankings

We thank and we congratulate buying of the kettle Ederlich ED brand **Ulrich** We are certain that you executed the just and knowing choice. All the more with pleasure to us that from among the pretty large quantity of products of competitive brands you chose just ours.

We are sure that in the course of time opinion about right decision will consolidate. All the more that we have very strong grounds to believe that our product is better from other, because:

- Under brand **Ulrich** . hides greatest, single, using Japanese technologies the producer boilers on the world (in respect of the quantity pieces a year produced).
- The production of all elements boilers Ederlich ED is automated.
- Elements using to production boilers Ederlich ED are subject the tight control and the computer regulation before relay to mounting.
- Every piece boiler Ederlich ED is compactly controlled in works.
- A confirmation high quality of the production is the admission of the certificate of the Quality ISO 9001, ISO 14001 and the European Certificate **CE** .

Once more we thank and we wish a lot of satisfactions of using our device.



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General Informations

The oil boiler is meant for serving the purpose of creating hot water as well as central heating, to simplify we will call it the "Ederlich ED" boiler.

Before setup and installation we ask that you familiarize yourself with this instruction which is part of the boiler set, and must be distributed with the appliance. The instruction along with the Warranty Card should be stored in a visible place and protect from damage.

Following the above mentioned directions is basis for long fault free use as well as being required for any warranty claims.

 **This symbol represents important information and tips about safety during use, installation and servicing of the appliance.**

The installation must be done accordingly with the current norms and regulations present in the country.

Installation, startup and conservation must be done by persons who are certified to do so, and must be done accordingly with local laws and the instruction. Not complying with the above can lead to a loss of warranty.

An improper installation can be the cause of system failure, damage and can be a threat to ones life, which is why it is so important to comply with the instructions, especially those pertaining to safety.

Servicing and repairs should always be done by the Dealer or an Authorized Ulrich Service, this will allow for repairs and other services to be done in a proper manner as well as allowing maintaining a warranty.

The boiler must be used accordingly to its means. Any other use might be dangerous and can bring on bodily harm or other damages. The manufacturer does not take any responsibility in the event of improper installation, use, servicing and whenever the instructions were not followed properly. Technical data in this manual may be changed due to development of the product without prior consent.

Manufacturer Declaration

The manufacturer declares that the appliance complies with European Union norms: 73/23/EC, 89/336/EEC, 92/42/EEC.

Delivery, packaging and transport

The Ederlich ED is available in the following sets:

Ederlich ED... set for central heating as well as the **Ederlich ED... W** set for central heating and hot water production.

Standard equipment		Ederlich set	
No.	Element	ED...	ED...W
1.	Ederlich ED boiler with oil burner, factory regulated and electronically tested	•	•
2.	Room regulator with weekly programmer (microprocessor)	•	•
3.	Central heating safety valve	•	•
4.	Thermostatic hot water mixing valve		•

The remaining elements, if need be, may be purchased from our offer, at one of the dealers or from a service. Schematics found in this instruction may be helpful in deciding what elements need to be purchased for expanding the set.

The boiler with burner is sold completely assembled and factory regulated, it is packed in a cardboard box. The box should be transported in a vertical position.

In places with difficult access you may use openings in the box as handles.

Accessories for the boiler may be packed within the box or as a separate package.

Use of Ederlich ED boilers

Ederlich ED boilers are compatible with pump heating installations and can cowork with:

- Open systems with a collecting tank, or,
- Closed pressurized systems with an expansion vessel (German norms DIN 4807 and 4751) along with a safety valve (a safety valve is included with the boiler).

Ederlich ED boilers can work:

- Alone, as a single heating device in closed or open systems,
- Along with a solid state fuel boiler (e.g. coal) in open systems,
- In concatenation, meaning up to 4 (8) Ederlich ED boilers working together (it's up to type of regulator),

Ederlich ED boilers can be installed in facilities such as:

- Flats of any size (even as small as 30m²),
- Single and multifamily houses,
- Warehouses and office buildings,
- Public utility buildings.

Ederlich ED boilers can be used for the following functions:

- Only heating – Ederlich ED... boiler sets,

- Heating and hot water – Ederlich ED...W boiler sets.

Ederlich ED boilers are adapted for chimney and venting installations:

- “traditional” known also as “standard” – classic chimney and venting installation (air intake).
- “turbo” – no traditional chimney, the ventilation is used to air the boiler room. Exhaust removal and air intake for the oil burning process is done by use of an inexpensive (included in Ulrich offer), specialistic, flue system “pipe in pipe”. Air needed for combustion is taken in by the outer pipe, while exhaust gas leaves through the inner pipe, directly through the wall. The advantages are obvious: cheaper installation (no need for a chimney or for safeguarding it from the exhaust gases), greater efficiency (the air taken in is warmed up by the exhaust gases leaving) as well as lower failure rate (independence from the cleanliness of the air within the room),
- “mixed” – other variations, being a combination of the two above.

Choosing an Ederlich ED boiler specific target

This documentation is not an instruction explaining which boiler to choose for specific needs. You should always consult with your dealer or installer before purchasing the appliance. Nonetheless, depending on the type of isolation, the height and type of chambers and the size of the Ederlich ED boiler, they can heat objects with a surface of 30 m² to 800 m². Make sure the boiler's output will suffice for preparing hot water.

Fuel

The Ederlich ED runs on light furnace oil, according to DIN norm, in no case should it run on petrol or kerosene. The basic properties are: viscosity 6 cSt (20°C), density 0,85 kg/dm³ (20°C), ignition temperature above 55° C, calorificity 42 MJ/kg. Please use only oil with low sulfur (below 0,3%), and make sure to have a regular supplier so the fuel characteristics do not change. Changes in oil characteristics may cause the need to regulate the burner (in order to achieve proper combustion) or may cause a system fault.

Elements of the boiler

The boiler is composed of the following elements:

- The body,
- The oil burner along with fuel filter and elastic oil connector with oil pump “booster pump”,
- Automatics along with electrical cabling,
- The casing.

Besides the casing the boiler comes with the following elements included in price

- Room regulator with DIGI midi weekly programmer (with microprocessor),
- Safety valve for central heating,
- Thermostatic mixing valve for hot water (only in ED...W model).

The body and safety valve for central heating

The body of the boiler (each part of the boiler, including the combustion chamber and combustion tube) are completely made from stainless steel with ASTM 444L symbol, according to American norm. It is a steel of 18% chrome and almost 2% molybdenum composition, guarantees the boiler to be completely rust free giving it long viability. All connections of the body were created by plasma welding with the use of modern welding robots.

The body is shaped like boiler drum. In the lower part of the body there is a cylindrical combustion chamber. The combustion chamber is creased, allowing dilatational movements. While the burner is working, the combustion chamber expands, upon completion it shrinks. This helps protect the combustion chamber from settling of scale deposit. Above the chamber is the convective section composed of a series of tubes (combustion tubes). The boiler has four pipes for hot water (central heating, central heating return, expansion vessel, and safety valve).

The combustion chamber is hermetic and water cooled. The bottom is fitted with a ceramic lining. The front section of the boiler has a round opening, where the burner is attached by screws and gasket. The opening also serves for cleaning the insides during conservation.

The smoke tubes possess stainless steel turbolizers which slow down exhaust exchange (limiting their temperature) and bring up boiler efficiency.

To minimize loss during stoppage, the boiler is heat insulated.

The whole body of the boiler undergoes a pressure test for 5 ATM. The boiler body is protected by a membrane safety valve. The valve must be connected to one of the central heating pipes during installation (look pic. 01 and 02).

The hot water heater and the thermostatic hot water mixing valve

When the boiler is used in an Ederlich ED...W (hot water and central heating) set, hot water production is based on flow-storage. The boiler body holds about 25 liters of water (depending on the boiler power), which makes up for an energy reserve for hot water needs. Additionally within the water jacket, submerged around the smoke tubes is the heating coil used for flow heating of water. The coil has a large diameter (~15mm) preventing it from getting congested by impurities, which in combination with its being rust-proof allows for a long period of problem free exploitation. Heat efficiency of the coil is adapted to the boiler power,

so that all of the boiler's power can be used for hot water production if need be.

The coil is always pressure tested by the manufacturer at 17 bars (17 ATM).

The construction of the hot water heater causes for a lack of need to use a second (besides the one used for central heating) for hot water production.

Each Ederlich ED...W boiler comes with an included hot water thermostatic mixing valve.

The valve strictly regulates the water at a stable, demanded temperature (at the user's choice) with an accuracy of 2°C, by mixing the hot water from the boiler with cold water. The valve comes with two built in net filters and two return valves for comfort and failure free work. The valve is installed on the hot water piping outside of the boiler body. More information can be found in the chapter "The thermostatic hot water mixing valve".

The Ederlich ED...W (hot water and central heating) also has a series of built in automatics functions supervising the hot water production. The boiler has an intelligent, controlled by the microprocessor automatics relative priority of hot water production. During hot water usage the boiler analyzes the flow of hot water as well as its temperature. The priority function is described in more detail in the "Hot water priority – description of work" chapter, found further in this documentation.

Due to the strong and durable built, the Ederlich ED...W (hot water and central heating) in its function of hot water production has many advantages to offer. More details can be found in the chapter "Work description and choosing the boiler for hot water needs", which can be found further in the documentation.

The oil burner

The boiler has a high class blow-injectable oil burner which is hidden within the boiler casing. The burner has two or three large fans (depending on the boiler's power), which are extra quiet (up to 48 dB – one of the quietest on the market) and allows for large air compression. The ventilation system works similar to a jet engine, where the air is compressed in multistage (distinguishably from fan systems of other manufacturers, where almost always only one fan is present). This allows the possibility of working with chimneys of a small diameter or even with the "turbo" system, meaning a flue system without a traditional chimney. The fan has adjustable air intake, for regulation when the fuel is changed or other parameters require it.

The part of the burner responsible for supplying oil is a modern electronic fuel injector. The pump has a manual deaerator making first startup much easier. The pump maintains an oil pressure of 8 bars supplied to the Danfoss nozzle. Due to sporadic bad quality oil appearing on the market, the burner has an additional (included in price) oil pump "booster pump". The pump improves the oil quality through physical refinement. It is especially useful with mechanical impurities found in old oil (oil that rested for a long time or was sold from reserves) and in cases of a large content of volatile hydrocarbons (especially propane and butane).

The burner is equipped with a high voltage ignition as well as an oil filter which needs to be placed on the oil intake line.

The burner is factory tested and adjusted for use with that boiler, therefore during startup there should be no need to make any adjustments (look in the chapter "Start up").

The burner is constantly monitored by the automatics supplying a constant power output. Each ignition cycle is started by ventilating the combustion chamber to clear out any leftovers from the previous cycle. The burner has many safety features such as automatic shutdown in case of lack of fuel, low water, etc.

The boiler automatics, room regulator with (microprocessor) weekly programmer and other automatics

The front of the casing holds a closed box containing the unified automatics of the boiler and burner. It is manufactured in digital technology and strictly cooperates, through a dual line data bus and the AW adaptor, with the microprocessor room regulator with DIGI midi weekly programmer.

The automatics perform a variety of functions and guard the user with its set of safety procedures such as: lack of power, oil, water, overheating, etc.

Includes a rich control panel, easily accessible to the user upon opening the clear door. The automatics informs the user through a readable display about four possible states of work (power, combustion, pump, hot water), as well as four possible faults (low water, overheating, faulty probe, burner fault). The automatics supervise the work of the boiler by collecting data from the safety thermostat, water level probe, flame detector.

The wiring in the boiler is straightforward (cables are color-coded) and makes startup and servicing extremely simple due to use of several unique connectors. The boiler has all wiring needed for hooking up other appliances such as a boiler regulator or for connecting to the power outlet.

The microprocessor room regulator with weekly programming allows for complete control over heating, while being outside the boiler room. Each of the many programs can easily be modified according to the users needs. The display informs amongst others about the room temperature, the time, current program and the current state of the system. A detailed explanation of the programs and use of the regulator can be found in the chapter "Room regulator with DIGI midi weekly programmer".

For the ED...W boiler (hot water and central heating) a thermostatic hot water valve along with a flow sensor is included. For more details look in the previous chapter "Hot water heater".

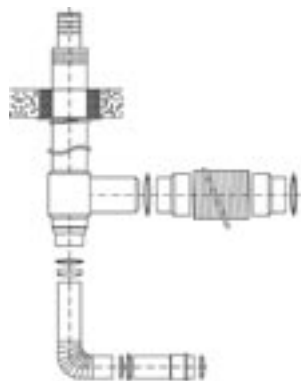
The Ederlich ED boilers can also cooperate with other additional regulators that are available in Ulrich's offer (e.g. multi-track, weather).

The casing

The boiler is encased in very esthetic removable metal casing. The casing undergoes a paint process very similar to that of automotive body (degreasing, coslettizing, lacquer finish), giving as a final effect a very durable metallic cherry-red coating.

The casing is fitted so that air can enter freely while creating a very stable whole.

The boiler – a visual presentment. Boiler equipment and accessories.



"Turbo" flue system



Central heating circuit pump



Hot water flow sensor



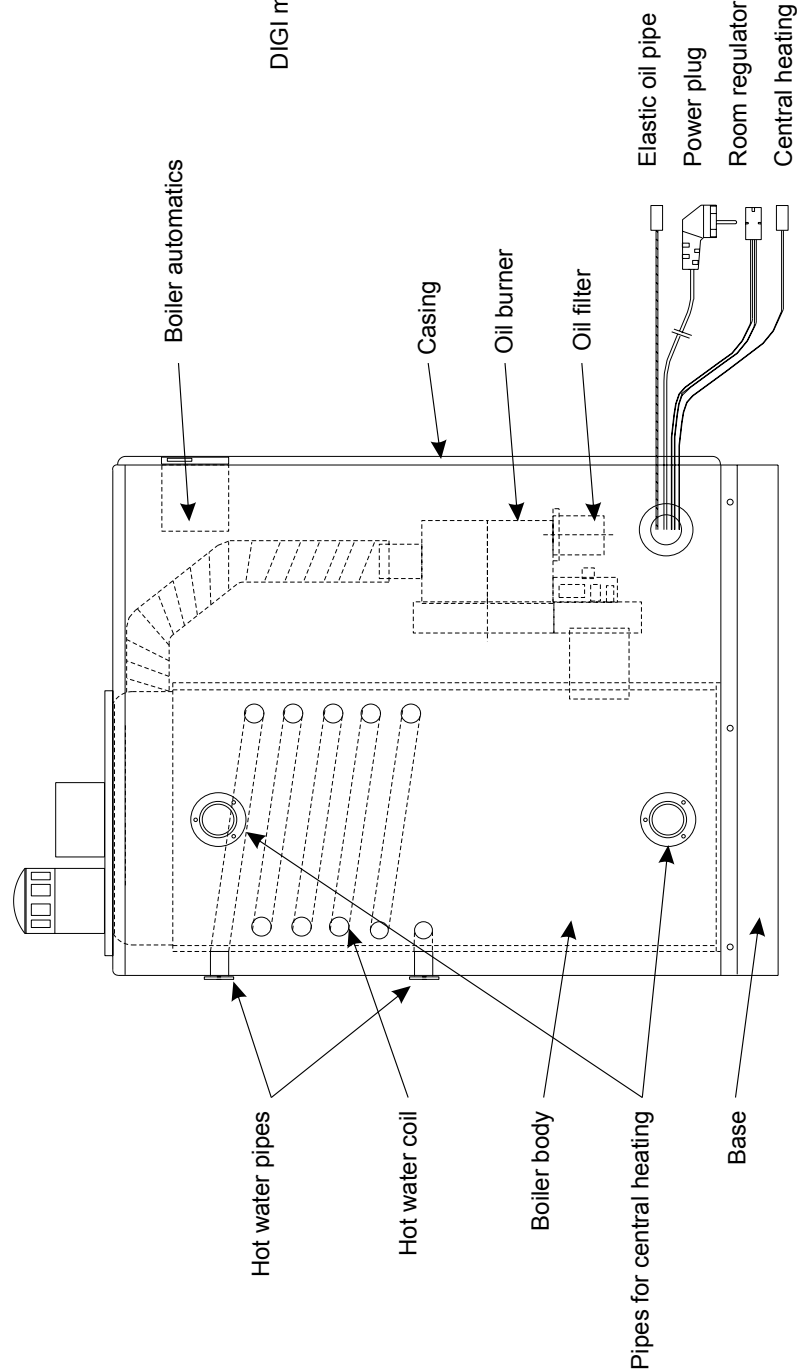
Central heating safety valve



Thermostatic hot water mixing valve



DIGI midi microprocessor room regulator
with weekly programmer



Description of work and choosing a boiler for hot water needs – Ederlich ED...W boiler set

When the boiler is used in an Ederlich ED...W (hot water and central heating) set, hot water production is based on flow-storage. The boiler body holds about 25 liters of water (depending on the boiler power), which makes up for an energy reserve for hot water needs. Additionally within the water jacket, submerged around the smoke tubes is the heating coil used for flow heating of water. The coil has a large diameter (~15 mm) preventing it from getting congested by impurities, which in combination with it's being rust-proof allows for a long period of problem free exploitation. Heat efficiency of the coil is adapted to the boiler power, so that all of the boiler's power can be used for hot water production if need be.

The Ederlich ED...W (hot water and central heating) also has a series of built in automatics functions supervising the hot water production. The boiler has an intelligent, controlled by the microprocessor automatics relative priority of hot water production. During hot water usage the boiler analyzes the flow of hot water as well as its temperature.

Each Ederlich ED...W (hot water and central heating) boiler comes with an included water flow meter and a hot water thermostatic mixing valve.

Due to the intelligent construction of the Ederlich ED boiler and its rich standard equipment there are possibilities:

- Absolutely hygienic and rust proof elements of the boiler that come in contact with water; due to their manufacture form stainless steel (surgical instruments and gastronomic equipment are made from similar steel),
- Due to special construction, there is no need for an additional hot water tank (details in chapter below),
- Installation of hot water circuit without the need to purchase any additional accessories (storage tank, etc.) due to a simple installation of a hot water circulation pump.
- During winter, when there is a small usage of hot water, the boiler is capable of producing hot water while heating the house at the same time.
- For water to be heated there is no minimal water flow requirement (meaning that, turning the faucet even a little will cause hot water to flow).
- For water to be heated there is no minimal water pressure requirement (the water just has to flow through the boiler).
- Because the Ederlich ED...W boiler set includes a thermostatic mixing valve, it is possible to stabilize the hot water temperature to a desired (set by the user) level with an accuracy of 2°C by mixing hot water from the boiler with cold water from the installation.
- The water is heated as needed, therefore there is no energy waste from storage.

Hot water preparation priority – description

The hot water priority (relative) described below, through association of water temperature and water flow, by use of digital technology, eliminates the basic flaws that occur in the competition's boilers. Regardless of winter or summer, heating being on or off or hot water consumption, the boiler will act according to the scheme below.

1. In winter (heating season)

No heating (the building is warmed up)

No hot water use

In winter time when the building is heated up and there is no current need for more heating, then in case of no hot water usage, the boiler will standby for hot water production. The water temperature in the boiler will be maintained at 80°C. The burner will generally be off (it will occasionally turn on for very short periods of time, when the water stored will loose temperature). Of course due to no need for heating the central heating pump will remain turned off.

2. In winter (heating season)

No heating (the building is warmed up)

Low or large hot water use

In winter time when the building is heated up and there is no current need for more heating, then in case of little or large hot water usage, the boiler will create hot water (turning on the burner, based on the water temperature in the boiler body) maintaining it at 80°C (allowing for maximum hot water production efficiency). Of course due to no need for heating the central heating pump will remain turned off.

3. In winter (heating season)

Building is being heated

No hot water use

In winter time when the building needs to be heated, then in case of no hot water usage, the boiler will continue work for central heating purposes (the central heating pump will remain turned on). The burner will turn on if need be to maintain water temperature within the boiler at a level selected on the boiler (the control panel of the boiler automatics).

4. In winter (heating season)

Building is being heated

Low hot water use

In case of low hot water usage in winter (below about 3 l/min – for comparison a faucet in a kitchen gives out about 2 l/min) the boiler will not shut off central heating. The burner will turn on if need be to maintain water temperature within the boiler at a level selected on the boiler (the control panel of the boiler automatics).

In case of a large summary heat reception (central heating as well as hot water, exceeding the burners power output), if regardless of constant work of the burner, the water temperature in the boiler falls below the set limit (set on the boiler thermostat) by more than about 15°C, which could impend hot water production, central heating will be turned off (the circulation pump will shut off), and the boiler will focus on hot water production only. Meaning, the “temperature hot water priority” will be in effect. After turning central heating off, as soon as the water within the boiler reaches a desired temperature (set on the boiler thermostat), the central heating circulation pump will resume.

5. In winter (heating season)

Building is being heated

Large hot water use

In case of large hot water usage in winter (above about 3 l/min) the boiler detects (through the water flow sensor) increased hot water consumption and immediately will shut off central heating (the central heating circulation pump will stop). Meaning, the “hot water priority” will be in effect. The burner will increase the water temperature within the boiler to 80°C (from the level previously selected on the boiler thermostat). This temperature allows for maximum efficiency in hot water production. The boiler gives hot water (turning on the burner in case water temperature within boiler falls) maintaining water temperature at 80°C. When hot water output falls (below about 2,4 l/min) the boiler returns to the previous state.

6. In summer (outside the heating season)

No hot water use

In summer time (or when heating is not needed) the boiler will standby for hot water production. The water temperature in the boiler will be maintained at 80°C. The burner will generally be off (it will occasionally turn on for very short periods of time, when the water stored will loose temperature).

7. In summer (outside the heating season)

Low or large hot water use

In case of low or large hot water usage during summer, the boiler gives hot water (turning on the burner in case water temperature within boiler falls) maintaining water temperature at 80°C (allowing for maximum hot water production efficiency).

Selecting the size of boiler and water tank for hot water and heating purposes

In case of an appropriate choice of Ederlich ED...W boiler power, usually there is no need at all for an additional water heater. This is possible due to the intelligent construction of the boiler, its large water capacity and rich standard equipment.

Ederlich ED boilers due to their small dimensions and being flow-through heaters are characterized by very small stoppage losses. You can almost always choose a boiler of a greater power output then the central heating would demand, so it can be used as a water heater. For instance a 41 kW boiler can produce as much as 1000 l/h of hot water, meaning 17 l/min. Such great hot water output efficiency will satisfy anyone, even the most demanding user.

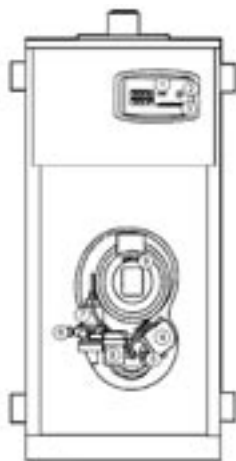
To distinctly explain why no additional water heater is needed with the Ederlich ED...W a specific example will be analyzed below. We have a well insulated home with a surface of “only” 150 m² (in short 15 kW for heating purposes) but equipped with two comfortable bathrooms. Typically a 15-20 kW single function boiler would be used, alongside a water heater (tank) of a 150 l capacity. We will however suggest an Ederlich ED 29 W set (29 kW of power), seemingly oversized and uneconomical. However such a choice in every aspect will surpass the solution with a boiler and additional water heater, because it will be:

- **More efficient** – Because the Ederlich ED 29 W boiler produces hot water from within its body, while a boiler that requires an additional heater loses heat energy while transferring it to the additional appliance.
- **More efficient in hot water output** – The Ederlich ED 29 W boiler set will within the first 10 minutes give out over 150 liters of hot water (of a 45°C temperature, heated up by 30°C). More so over the next 10 minutes it will produce 120 liters of hot water. Over a period of one hour it will create 700 liters of hot water. This will never be accomplished by a 20 kW boiler with a 150 l water heater.
- **Smaller in size** – Because the Ederlich ED...W does not need an additional water heater it will take up much less precious usable space (the dimensions of a complete Ederlich ED29W boiler are: height 86 cm, width 35 cm, depth only 55 cm!!!).
- **Simpler and cheaper in installation** – The Ederlich ED...W boiler does not need to be connected to an additional heater, therefore saves on time, labor and installation materials.
- **Cheaper to purchase** – Because the Ederlich ED...W boiler does not need an additional heater it obviously must be cheaper. Please acquaint yourself with our price catalog to find out for yourself.

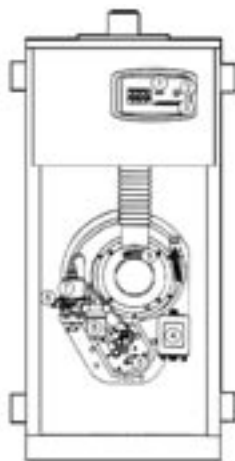
Additional water heaters for Ederlich ED...W sets are needed only under the two following conditions:

- The user requests a boiler with a separate water heater and does not agree to obtain the same effect by using a boiler of greater power output. Satisfying the user's wish in this case has a purpose of fulfilling that user particular desire.
- The efficiency of an already installed and used dual function boiler is too low (as a result of choosing a boiler of a low power output for hot water needs). The additional water heater will increase momentarily hot water output from that same boiler.

The construction of the Ederlich ED boilers



Ederlich ED20
Ederlich ED24



Ederlich ED29

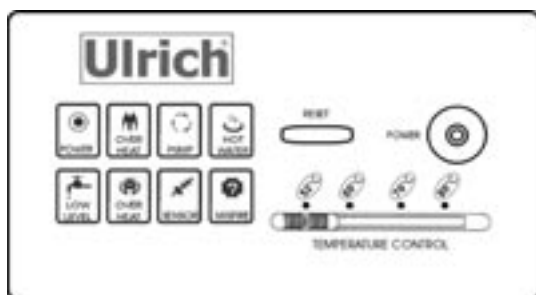


Ederlich ED41

1. **RESET** button
2. **POWER** button
3. Thermostat
4. Ignition transformer
5. Flame detector
6. Oil deaeration valve
7. Electronic oil pump
8. Oil filter
9. Air volume regulator

Control panel and display

Work indicator:



POWER: Shows power state (on/off)

COMBUSTION: Shows the state of the burner (combustion/at rest)

PUMP: Shows the state of the pump (work/at rest)

HOT WATER: Shows the state of the boiler as a water heater heating on)

Boiler thermostat

Control elements:

RESET: Quick restart of the boiler (e.g. when the boiler performed an emergency shutdown).

TEMPERATURE CONTROL: (boiler thermostat): Setting the water temperature in the boiler.

Failure indicator:

LOW LEVEL (no water in boiler): Informs of a critically low water level in the boiler or that the boiler is seriously aired.

OVERHEAT: Indicates the water in the boiler has overheated. Press the RESET button and adjust the thermostat to a lower temperature. If after that the same situation occurs we ask that you contact your dealer or service,

SENSOR: Informs that there is a damaged or non present water temperature probe in the boiler.

MISFIRE: During work of the burner unfavorable conditions have occurred (e.g. strong wind, lack of oil, etc.), which caused an emergency shutdown of the burner. Look in the chapter "Localizing faults and fixing them". Press the RESET button up to three times, waiting each time for the burner to start. If the burner does not start up again, contact your dealer or service.

Room regulator with DIGI midi weekly programmer

View of regulator



View of regulator function keys

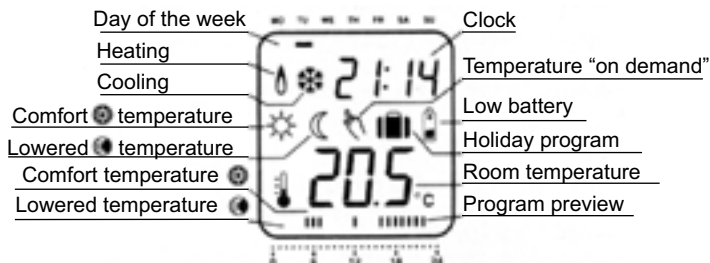
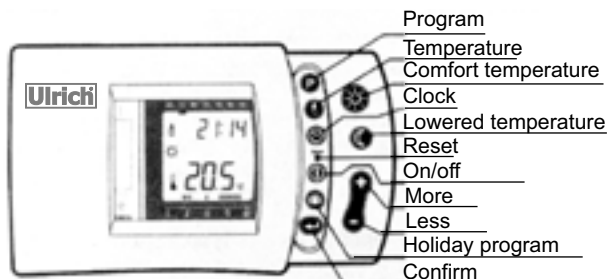


DIGI midi weekly programmer

PROGRAMMING

Regulator view

Upon sliding the cover all available buttons will become visible.



Setting the clock and calendar

Press ☉

Pressing ⊕ and ⊖ sets the current hour. Confirm with ⊖.

Pressing ⊕ and ⊖ sets the minutes. Confirm with ⊖.

Pressing ⊕ and ⊖ sets the day of the week. Confirm with ⊖.

The 24 hour clock and calendar are set.

Factory settings

After setting the clock, the programmer takes on factory settings:

Comfort temperature 20°C

Lowered temperature 17°C

Weekly program:

Comfort temperature upkeep:

Monday-Friday (MO-TU-WE-TH-FR) 6-8 and 16-23



Saturday-Sunday (SA-SU) 7-23



Lowered temperature upkeep:



Monday-Friday 0-6, 8-16 and 23-24



Saturday-Sunday 0-7 and 23-24


Choosing comfort temperature and lowered temperature

Press  - the  symbol lights up and temperature digits blink.

The  and  buttons set the lowered temperature.

Press  - the  symbol lights up and temperature digits blink.


The  and  buttons set the comfort temperature.

Confirm with .





The lowered and comfort temperatures are set.

Viewing and changing the weekly program



Under the display is a scale of 0-24 representing the hours in a day. If above a certain hour a dark field appears, it means that during that hour the regulator will maintain comfort temperature. Lack of the dark field means the lowered temperature will be maintained.


Press  to view the weekly program.


At the top of the display the first day of the week is displayed – Monday (MO). At the bottom there are dark fields marking the hours when comfort temperature will be maintained.

When you wish to change the program, use the  and  buttons to select the desired hour. During succeeding presses of the  and  buttons the blinking field will move, for simplification the hour will also be displayed in the clock field.


Pressing  or  you can change the heating mode for that hour.

The display will show  or  symbols.

To continue on to the next day of the week, press .

Pressing  on the last day of the week – Sunday (SU) will confirm the whole weekly program.

Turning the regulator off

To turn the regulator off (e.g. during summer) press .

The clock digits will disappear and “OFF” will appear.


The boiler will not heat the rooms, but will prepare the hot water.



To turn the regulator on press  again.


Warning: Do not turn the regulator off when the outside temperature falls below 5°C!

Holiday program


Allows for setting a steady temperature for the following days.


Press  - the day field will pulsate.

Using  and  buttons set the amount of days (1 to 99).




Confirm with .

With the  and  buttons set the temperature.


Confirm with .

The display will not show the calendar or the clock, the program symbol will be visible - , the amount of days for holiday programming.

Once the set number of days lapses (at 0:00 hour) the regulator will resume its weekly program.

The holiday program can be cancelled by pressing the comfort or lowered temperature buttons ( or ) or by turning the regulator off and then on again using the  button.


Information about the signal to the boiler

If the regulator requests the boiler to turn heating on, then on the display  “heating” will appear.

Resetting the regulator memory

In order to reset the regulator memory and bring back factory default press the “reset” button.

Low battery indicator – changing the batteries

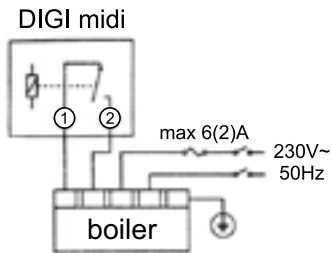
Upon depletion of the batteries the  “low battery” symbol will appear on the display and the batteries should be changed to new ones.

Changing the within a 30 second timeframe will not cause memory settings to be deleted.

Connecting the regulator with the boiler

Warning: Before connecting the regulator, be sure to disconnect power from the boiler. The DIGI midi regulator should be connected to the boiler with the dual line cable using clamps 1 and 2 on the regulator (look in the instruction included with regulator).

ELECTRICAL SCHEMATIC



More information about the **DIGI midi** regulator can be found in the instruction included with the regulator.

Installation

Choosing a place of installation

- The place of installation as well as the installation procedure itself should be compliant with applicable laws and regulations.
- Due to very quiet work (up to 48 dB) and high safety of use the boiler may be installed in a separate chamber (boiler room) or, if allowable by laws, in any other usable chambers, such as the kitchen, laundry room, etc.
- In the chamber where the boiler is installed, you may not store any flammable or explosive materials. The temperature in the room should never fall below +6°C, especially near the floor (suggested temperature above 10°C) and be greater than +40°C.
- In the event of installing the boiler with a traditional chimney and ventilation (pic. 14):
The boiler should be placed as close as possible to the chimney.
The chamber should be clean and the floor dust free e.g. painted or covered with terracotta. Cleanness of the air for intake has a great impact on fault free work of the boiler.
- In the event of using the boiler with a traditional chimney and with an air intake directly from outside or from a room adjacent to the boiler room (pic. 15):
The boiler should be placed as close as possible to the chimney.
The air suction opening should be directed so that it takes in clean air (this excludes a building ground, bulk material storage etc.). The cleanliness of the air has a direct impact on the fault free work of the boiler.
- In the event of using the boiler with a "turbo" flue system:
The boiler should be placed as close as possible to the wall facing outside.
Because the same duct will be used for air intake, the flue installation should be directed so that it takes in clean air.
The cleanliness of the air has a direct impact on the fault free work of the boiler.
- Minimal distance from walls and other barriers should be:

From the front	c.a. ~50 cm (for ease in servicing)
From the back	look size F* on pic. 14
Between ceiling and to of boiler	look size A* or B* on pic. 14
From sides	look size F* on pic. 14

*Warning: the dimensions presented in pic. 14 should be treated as minimal – there may be a necessity to increase them due to installation possibilities and availability of installation equipment (depending on the particular setting, installation, accessories, etc.).

- The boiler is a standing device and can be placed directly on the floor (if equipped with a stand), however in the case where you might expect the floor to become wet (i.e. from drains) the boiler must be placed on a cement or a ready, available for purchase pedestal 5-10 cm in height, to ensure the bottom of the boiler is not submerged in water.
- The other requirements concerning installation pertain the ceiling construction, walls, door sizes, windows, ventilation, the boiler room etc. and can be found in applicable construction and building regulations.

Proper boiler installation



- **Safety valves included in set must absolutely be installed in the heating installation – in closed systems (pressurized) as well as open ones. In case a different safety valve is used, the maximal opening pressure must be no greater than the nominal work pressure of the boiler (look: Boiler Technical Data). Between the safety valve and the boiler, also on the outlet of the safety valve there should not be installed any other valve or armature limiting flow from the valve. Not complying with the above can lead to injury or death. Below the safety valve install a funnel to allow flow from the valve into the sewage.**

- Installation of the boiler should be preformed by a trained technician with proper qualifications.

! For the installation itself, we do not require our companies authorization, however startup must be done by an Ulrich certified service, which will confirm the installation, and in case of detecting any faults that can be a risk to life or to proper functioning of the boiler, will decline putting the appliance to service. In such a case we recommend to submit to the maintenance workers suggestions, as he is working in the user's interest.

! • The central heating installation should be filled with water of good quality. Proper work of the boiler requires the use of water no harder than 3°n (1mval/l) and replenishing of water should be as small as possible (suggested less than 5% water rotation yearly).

- During hydraulic installation you should take advantage of the installation schematics and pictures included in this documentation. There are many combinations for installation, however without prior consultation with us you should not use any schematics other than the ones we recommend, this will guarantee 100% proper work.

- The flow sensor is installed on a cold water pipe, directed from the cold water source going to the boiler on the section before the T-pipe directed to the thermostatic three path valve for hot water and before the return of the hot water circulation. The diagrams and schematics included in the documentation might be helpful in that.

- Because the flow sensor works gravitationally, it should always be installed horizontally (max +/- 5°) and in such a manner, so that the arrow showing direction of flow is visible from the top.

- The flow sensor should be installed according with the arrow showing direction.

- Due to the fact that the sensor is made from plastic, you need to exorcise caution in order not to cause damage during installation.

- The sensor analyzes flow rate (activation threshold) of hot water equal to or greater than 2.7l/min.

In certain cases there may be a need to change this setting to a greater value (i.e. 4l/min). There is such a possibility by installing the sensor parallel to the cold water pipe. In such a case two regulation valves must be installed (i.e. mushroom valves): on the cold water pipe and on the "branch line" where the sensor is located so that the flow of water can be regulated.

- **The hot water thermostatic mixing valve must absolutely be installed. Not installing the valve might cause burns from the hot water leaving the faucet.** During installation check if the installation of the valve to the hot and cold water pipes is proper.

- Boiler armature (valves, filters, etc.) should be easily accessible and all connections to the boiler easy to demount (e.g. by use of nuts).

- The net filters must be installed on the return of central heating to the boiler and on the cold water inlet.

- The installation should be done in such a manner that deaeration and dewatering is possible.

- During installation make sure no dust, sand, filings get into the piping system, also do not use an excess of sealant paste. After installation, especially if it is in a modernized boiler room, the central heating installation must be properly flushed (this will extend livability of the boiler and decrease faults that may appear). After that a hydraulic test must be completed "cold", while making sure not to exceed the maximal pressures of work for particular elements (look Technical Data for Ederlich ED table).

- There is however no need for a safety valve for hot water installation (with Ederlich ED...W boiler sets) because the boiler creates the hot water by flow through.

! • For installations in open systems you need to comply with norms for installation and hook up of open vessels. On the safety pipe between the open vessel and the boiler no valve may be installed, or any armature limiting flow. Not complying with the above can lead to serious injury or death.

! • In case of cooperation of a coal boiler along with the Ederlich ED that must absolutely be installed in an open heating system. Not complying with the above can lead to serious injury or death.

- The installation cannot be at any point exposed to freezing.

- In certain cases it might be beneficial to install the following additional elements (not complying with this does not lead to any dangers however may cause some inconveniences):

- A relief valve for thermostatic installations. Use of such a valve ensures a steady, controllable difference in pressures between the feed and the return, allowing proper work pf the thermostatic valves (high "authority" of the valves, precision of regulation, and lack of noise from the installation).

- Pressure reduction for cold water. Should be used when the cold water pressure is abnormally high (above 6 bar, while normally rarely should exceed 3 bar) and is burdensome to hissing of the faucets. The boiler itself does not need a reduction because it can work with a pressure of up to 11 bars. Nonetheless we recommend its use for the good of your installation.

Chimney installation and fan ventilation

In the case of any Ederlich ED boiler, the chimney and venting installation can be done in four ways:

"Traditionally" (otherwise called "standard")

- Traditional chimney and vent.

- This type is not recommended in the case of Ederlich ED boiler working along with a coal boiler in one chamber due to the dirt present in any coal boiler room.

- In the case where the two cooperate but are installed in separate rooms, traditional chimney and vent can be used, and each of the boilers (coal and oil) must absolutely have its own chimney.

- The chimney of the oil boiler should be protected against condensation of the exhaust fumes (due to the low temperatures of exhaust gas, an acidic condensate is created) by use of inserts: acid resistant sheet metal, acid resistant

stoneware or specialistic glass.

- Connecting the exhaust flue from the oil boiler with the chimney (known as the "flue fixing") should be connected by the shortest possible path, with as little as possible elbows, and with sheet metal materials that are stiff, hermetic and resistant to corrosiveness and high temperatures of exhaust gases.
- In the boiler room, regardless if one or two boilers (that is one oil or one oil and one coal boiler) are working, there must be a gravitational ventilation installation. Make sure to follow these guidelines:
- The ventilation opening in the room should be pointing directly at the oil boiler or oil installation, as during frost the oil reaching temperatures below +6°C can cause faults of the boiler.
- The room should have at least one vent opening, located no higher than 50 cm above the floor (center of the opening).
- The vent opening (without counting any gratings or blinds) should be no smaller than 300 cm² and resemble the shape of a square (recommended openings are 18 cm x 18 cm or 15 cm x 20 cm).
- The intake opening should be at least 20 cm above ground and at a distance of at least 50 cm from openings to chambers where people stay or ones that are a fire risk. If the boiler room is in the basement use the "z-type" connection.
- The vent can be a sheet metal duct and be shaped like the letter "z".
- An integral part of this description is picture 14, which presents a series of sizes and installation tips.

"Traditional chimney with air intake from outside or from an adjacent room"

- Traditional chimney
- Lack of typical air ventilation for combustion, the air in the room is only for ventilation. The Ederlich ED takes in air for combustion directly from the outside (only the 29kW model) or from an adjacent room (all models).
- This type of installation is recommended for all Ederlich ED installation variations where an oil boiler cooperates with a coal boiler.
- In case of a cooperation of a coal and oil boiler in one heating installation, each of the boilers absolutely must have its own chimney. In such a case, the oil boiler takes air in from the outside as described before, however there must be traditional ventilation for the coal boiler. The size and placement of the ventilation should be consulted with the installer, keeping in mind that it should be placed so the cold air is not blown directly at the oil boiler or oil installation.
- In case of an oil boiler with an air intake from an adjacent room, the air intake should be constructed as described above, "traditionally" that is.
- The chimney of the oil boiler should be protected against condensation of the exhaust fumes (due to the low temperatures of exhaust gas, an acidic condensate is created) by use of inserts: acid resistant sheet metal, acid resistant stoneware or specialistic glass.
- Connecting the exhaust flue from the oil boiler with the chimney (known as the "flue fixing") should be connected by the shortest possible path, with as little as possible elbows, and with sheet metal materials that are stiff, hermetic and resistant to corrosiveness and high temperatures of exhaust gases.
- An integral part of this description is picture 15, which presents a series of sizes and installation tips.

"Exhaust through the wall and a typical vent into the room"

- In this case the exhaust gases are expelled through the wall or roof. The flue ending must be secured against rain getting in e.g. by use of a 30° elbow at the end facing downwards.
- The exhaust duct should be inflexible and made of acid resistant sheet metal.
- The exhaust duct should in this case be sloped downward (2-3°) in the direction where the exhaust leaves, however it cannot be facing directly downward and cannot be longer than 5 meters (counting from the boiler body to the end of the duct) and should have no more than 3 elbows (elbows should have bends as gentle as possible).
- Ventilation into the boiler room should be typical in this case; it is described above in detail as "traditional-standard".
- An integral part of this description is picture 16, which presents a series of sizes and installation tips.

"Turbo"

- There is no traditional chimney or ventilation for the oil boiler, the air in the room is only for ventilation. It is replaced by a inexpensive (available in Ulrich's offer), specialistic, flue system "pipe in pipe" (described in this documentation), which takes in air for combustion through the outer pipe and at the same time expels exhaust through the inner pipe directly outside through the wall.
- This type of installation is recommended for all Ederlich ED installation variations where an oil boiler cooperates with a coal boiler in one room.
- In case of a cooperation of a coal and oil boiler in one heating installation, there must be traditional ventilation for the coal boiler. The size and placement of the ventilation should be consulted with the installer.
- An integral part of this description is picture 17, which presents a series of sizes and installation tips.

Gravitational ventilation

Used in all boiler rooms regardless of type. Follow these guidelines:

- The room must be equipped with at least one vent opening, gravitational and placed as close to the ceiling as possible – mechanical (fan) ventilation is unacceptable.
- The vent opening (without counting any gratings or blinds) should be no smaller than 200 cm² and resemble the shape

of a square (recommended openings are 15cm x 15cm).

Electrical installation

- The boiler works with a voltage of 230V~, 50Hz, and has two of its own (phase and zero) 3A fuses. Large voltage fluctuations above the range of 230V +/- 10% during work, may cause emergency shutdown of the boiler, make sure the power has a stable voltage.
- All work associated with changes to the electrical installation of your home or associated with interference with the boiler's electrical installation should be done by properly trained personnel.
- Electrical installation is as follows:
 - Make sure the boiler is located near a dual electrical socket (voltage 230V 50Hz) with ground. The socket should have a 6A fuse, and we recommend it separated from others in the fuse box (to avoid situations where i.e. a burned out light bulb causes a short-circuit and stops the boiler). The boiler is equipped with a power cord with plug.
Caution: The polarity of the installation (zero and phase) of the Ederlich ED, which distinguishes it from other products, makes no difference – it will always work properly!!! Besides, it is equipped with two fuses in the L and N lines (Caution: not all central heating pumps available work with alternating polarity – make sure to check).
 - Connecting the line to the central heating pump connection (voltage 230V~ 50Hz) found behind the front opening of the boiler and grounding it.
 - Connecting the room regulator (low voltage 10-24V) – for details look in the chapter “Installation of the room regulator”.
 - For the boiler in the Ederlich ED set (hot water and central heating) - the hook up of the included flow sensor (low voltage 10-24V), for details look at pic. “electrical installation of boiler”.
 - Connecting the ground between a special clamp found on the bottom of the side casing, it is a standard element that guarantees a proper ground connection.
 - Connecting of any additional components purchased separately, i.e. circulation pump for hot water etc. These elements should be connected along with the manufacturer's guidelines.

Oil installation

- The oil installation connecting the Ederlich ED boiler with the fuel tank should be:
- Absolutely hermetic (danger of air and leaks). If necessary threaded connections should be sealed with Teflon or sealant paste, in no case with stuffing.
- Single piped (only one oil pipe between the tank (tanks) and the burner).
- Made of copper.
- Include one ball cut-off valve located near the boiler.
- The temperature on the whole path of the oil installation should never fall below +6°C (the recommended temperature is +10°C) and be no greater than +40°C.
- Stably placed, allowing for easy access and can not be used as support for any other elements.
- If possible should be made of one piece of pipe (no connectors).
- Maximal horizontal and vertical length can be found in the picture “ED oil boiler illustration”.
- Do not use pipes of a greater diameter than recommended. A diameter too large can cause start up problems.
- Along with the boiler an additional oil filter is included which should be installed at the end of the feed line from the tank. The filter protects the installation from impurities.

Practical tips

Oil tanks are often sold with appliances for oil collection from the tank. Make sure such a device is compatible with single pipe installations. Choose elements that warrant the connections hermetic. For sealing use Teflon tape, never stuffing.

Often during installation the end of the copper pipe is deformed (it is not ideally circular). This can cause lack of tightness at clamped connections. We recommend use of connectors with gaskets.

If the oil line is directed to the boiler with a downward slope, it will be much easier to deaerate.

Make sure the tank is properly deaerated.

Do not allow for a complete depletion of oil in the tank, as it will cause a need for deaeration.

Fuel depot

Oil is distributed in cisterns with a capacity of between 10.000 and 40.000 liters. Each one is equipped with a distributor with an oil counter, an oil pump and 40 meters of a flexible oil line. For that reason fueling is not inconvenient, and placement of the oil storage is not dependent of the driveway.

Oil tanks up to 1000 liters can be placed inside, where the boiler is placed (however cannot be placed in a boiler room where a solid state fuel boiler is present, e.g. coal). Larger quantities of oil should be stored in a separate storage. The following guidelines must be followed:

- Always comply with current building and fire safety laws regarding oil storage.
- Use only storage tanks that guarantee tightness over a long period of time.

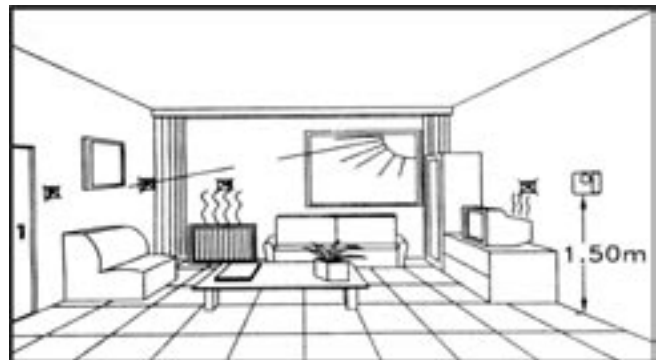
- The storage tank should be placed no nearer than 1 meter from the boiler, between the two a 12 cm wall should be placed, exceeding the tanks dimensions by at least 30 cm in height and 60 cm in width.
- A plastic tank should additionally be secured with a collecting tub or be constructed in two planes. It should also be set in a place safe from water, fire and direct sunlight
- **The temperature in the oil storage should never fall below +6°C (the recommended temperature is +10°C) and be no greater than +40°C.**
- In the oil storage chamber there mustn't be any open flame, and flammable items cannot be stored (therefore the oil cannot be stored in a garage). Plastic and metal storage tanks for internal use can be used, most often with an oil connection at the top. The tank should be placed in the boiler room or in a neighboring room. Because the market provides us with many different oil storage solutions, make sure to follow:
 - Fire safety and building laws.
 - Manufacturer's recommendations for fuel storage.
 - The dealer's and instalator's suggestions.
 - The German norm TRbF 210 (technical rules for liquid fuels) may be helpful.

Installation of the room regulator

Choosing a place of installation

During installation of the room regulator with weekly DIGI midi programmer included with the boiler, these guidelines should be followed:

- The regulator should be placed in a room where the inside temperature read out will correspond to the rest of the building.
- The regulator should be placed in a room where people reside most of the time, in an easily accessible place.
- The regulator should be placed at a distance of ~150cm from the floor.
- The picture included below might be helpful in installation.
- Avoid places where temperatures can vary from the rest of the house (protect from direct sunlight, and other sources of heat or coldness). Due to the above excluded are:
 - Kitchen (due to cooking)
 - Above heaters
 - Across from windows facing south
 - Near a fireplace
 - Bathroom, etc.



The choice of the place of the regulator installation

Proper installation of the room controller

- The line connecting the boiler and the regulator is connected to a low, safe voltage, and has the role of a data bus.
- In the boiler set a prepared cable is included (orange color) of a 15 m length. In case it is found to be:
 - Too long – wind up the excess and hide behind the boiler (don't shorten the lead).
 - Too short – can be extended up to 50 m with a copper lead with a diameter of 2 x 0.75 mm² with single isolation. In that case factory made cable should be cut and extended with the desired amount. Make sure to use the factory cable on both ends (insert your cable in the middle, the factory cable has properly prepared ends). In the places where it is connected to your cable use electrical connector cubes that guarantee a good connection without resistance (look pic. 3a).
- The regulator can be installed within any available boxes or directly on the wall.
- When connecting the regulator, first connect the base (included) to the wall and then the cables to the regulator. After wards insert the regulator onto the base.
- Warning:
 - If the room has thermostatic heater heads, they must be set to maximum; otherwise the regulator might read improper data about the building.
 - Water installation should be regulated hydraulically. Should be set so that heater produce equal amounts of heat.

Installing additional automatics

The Ederlich ED boiler can be controlled by other additional regulators that are available in the Ulrich offer, as well as other regulators available on the market.

Startup

General notes for the person starting the system



- The first start up of the Ederlich ED boiler must be done by personnel authorized by Ulrich for first start ups.
- Because the boiler is factory regulated and computer tested, the first start up basically amounts to checking if the installation is proper and an evaluation of the work conditions, so that the boiler works in a satisfactory manner to the user.
- If the person starting up the system is not the installer, we suggest that both are present during start up in order to make it faster and help detect any faults in the installation.
- During start up the user should be present to get to know how the system works.
- **The person starting up the system has a right to refuse the use of a device when faults that may be a risk to life or the system itself are detected.** If anything wrong is found, take a note of the suggestions and instructions given for start up, as they are in the user's interest.
- Proper start up should be confirmed by an entry in the warranty card.



When startup should not be proceeded with

Do not proceed with startup when:

- The startup for any reason may be a risk to safety (installation not compliant with laws).
- Temperature inside building falls below +5°C.
- The boiler room has water on the floor.
- The boiler room is dirty (especially if air intake is from within the room).

What needs to be checked before start up

Before the boiler is first started be sure to check:

- The correctness of the installation accordingly to the detail in the instruction and according to applicable laws of all installations: hydraulic, sewage drain, exhaust, ventilation (air intake and output), electrical, oil and automatics with great emphasis on safety:
 - **Is air provided for burning and is the boiler room clean.**
 - Make sure the safety valve is not closed and that the expansion vessel connected in a correct manner.
 - Is the ground properly connected.
 - Tightness of the oil installation (no leaks can be present).
 - If the installation for central heating has been filled and properly deaerated.
 - Checking the connection between the boiler and the exhaust as well as sewage drain.
 - Make sure that water of a proper pressure is available, oil is present in the depot, and power is of a stable voltage.
 - Control the conditions in the boiler room to ensure they are proper and do not cause a threat, especially:
 - If any flammable or explosive materials are found near the boiler.
 - If the boiler room is dry and clean.
 - In case of a "turbo" flue system make sure rain water does not enter the chimney.
 - If between the purchase and startup of the boiler much time has passed (over 4 weeks) it might be helpful to dry out the boiler from the moisture found in a boiler room that has not been used yet. This can be done by setting a vent heater in the direction of the boiler after opening the front door of the boiler.

Proper startup

- **The oil installation must be completely deaerated during startup.** You cannot just pour in oil. Because most often top suction oil tanks are used, we often deal with a siphon for air (the installation is most often carried at the ceiling). In order to deaerate such installations, make sure to:
 - Use a manual deaerator pump for the oil installation. It is a fairly inexpensive service tool, readily available, visually resembling a pump for balls.
 - Disconnect the oil pipe from the boiler and the tank.
 - Place the rubber stopper from the pump into the oil pipe of the oil installation. Use the pump until there are no more sounds of air and so that the piston of the pump gives uniform resistance to your hand. At that point wait about 10 – 30 seconds (without removal of the pump!) and then pull up oil once more to make sure that the installation is completely deaerated.
 - Before removal of the rubber stopper close the ball valve of the oil installation near the boiler in order to be sure that the oil does not return into the tank, and the installation does not get aired again.
 - Connect the electrical plug into the socket.
 - Remove one silver screw from the lower part of the oil filter in the burner.
 - Turn on the power by pressing the "POWER" button behind the clear cover. The green light for "POWER" should go on.

- Set the boiler thermostat to the maximal setting (position 80).
 - Make sure to set a high temperature on the room regulator to be certain that it constantly requests heating of the house.
 - After a short time the boiler should activate the ventilator and attempt to start the burner. However it will not be able to. At this point begin to fill the burner's oil filter with oil. Follow these steps:
 - Open the oil shut off valve and press the "RESET" button on the control panel, to repeat the attempt to start the burner. If need be repeat in short time intervals up until the assist pump fills the oil filter cup with foamed up oil at first, followed by normal oil. The boiler will stop (this is normal regardless of the deaeration because the oil is not flowing into the burner yet but into the oil filter cup) and the red lamp "MISFIRE" will go on. Repeat until the boiler is fueled by oil.
 - Turn the silver screw back in and once again press "RESET".
 - After a short time the ventilator will activate and the burner will attempt to start. If:
 - It succeeds, the display should show a green lamp for "COMBUSTION".
 - It does not succeed, the display will show a red lamp for "MISFIRE" and you will hear a characteristic sound of an electronic oil pump running without oil (this is not dangerous).
 - In case that regardless of this procedure repeated about 5 times, the start up does not succeed, the installation should be checked (especially if the oil pipe is not stuffed and if its diameter is proper, if the oil filter is not clogged, if the oil ducts are not longer than recommended and if **the installation is not taking in any air**, etc.). If the boiler still cannot be started, contact service.
 - **Check if the burn process carries out properly.** Because the boiler is factory regulated and computer tested, there may be no need to adjust the burner for a particular oil or situation. Nonetheless, due to the fact that the boiler can work with different sized chimneys and different flue channels, which will cause different air and exhaust resistances, burner regulation may be necessary. In such a case use the air regulation shutter in the burner (or use the oil pressure screw within the pump).
- Air regulation is conducted by loosening the screw, and by moving the shutter left or right according to needs. To verify the burner regulation a exhaust gas analysis must be conducted. Proper burning is characterized by uniform CO₂ levels in the exhaust gas. More so, proper burning characterizes by a lack of any smoke in the entrance to the exhaust duct (during freezing temperatures might appear, a few centimeters from the exhaust outlet, a white cloud, being condensed water vapor which can be check by the user without the need of any tools).
- In case of the Ederlich ED set (hot water and central heating), turn on the faucet with hot water and make sure hot water flows out (of course allow the boiler to heat up first). Warning: because the hot water circuit is equipped with a thermostatic mixing valve (included with the Ederlich ED...W set) the temperature of the hot water should oscillate around the standard setting of 43°C. Make sure that the water is not too hot, and need be adjust it to your liking.
 - Test any additional equipment purchased separately.
 - Ones the above proceedings have been completed, the person starting along with the user should choose a mode of heating and hot water production, in the case of a Ederlich ED...W boiler.

Use of the boiler

Choosing modes and regulating the heating temperature

- Depending on the heating needs (weather and demanded temperatures) the user should select an internal temperature of the boiler by using the THERMOSTAT slider on the Control Panel. In case of any doubts, set the temperature to "80°C".
- Depending on the heating needs, the user should select a heating program on the DIGI midi room regulator. For that consult the section describing the use of the room regulator.
- In order to deactivate heating for the summer season follow these directions:
- In the event the boiler only heats the building (does not prepare hot water) turn off the power (pressing the "POWER" button on the control panel) and close the valves on the oil installation.
- In the event the boiler heats the building and prepares hot water, set a low temperature on the regulator to make sure it reports no need for heating.

Choosing the mode and regulating the hot water – only for Ederlich ED boiler sets (hot water and central heating)

- The thermostatic mixing valve is responsible for maintaining and controlling temperature, it is located behind the boiler casing (it is included with the boiler). The hot water is factory set to 43°C. It can be changed in the range of 38-65°C. In order to do so consult the description of the thermostatic mixing valve found in this documentation. Note that the hotter the water the less of it the boiler will be able to produce.
- In case of demanding high temperatures of hot water (above 45°C) set the thermostat on the control panel to at least "60".
- The Ederlich ED boiler (hot water and central heating) has a hot water priority dependent on the water temperature within the boiler (for small demands), as well as from the water flow rate (for larger demands). This function is described in detail in the section "Hot water priority – description", found in this documentation.

- In the event more hot water is demanded (above 3l/min), the boiler automatically detects it and goes into “HOT WATER” mode. This mode is signalized by the green “HOT WATER” lamp on the control panel. Reduction of the flow to below 2,5l/min will revert the boiler to its previous state.



Safety notes

- All regulation elements of the boiler are available without removal of the casing. The user must not conduct any repairs other than normal maintenance of the boiler. Repairs must be conducted by an Ulrich authorized service.
- For safety reasons persons not trained for maintenance should not have access to the boiler (training of the user is part of the standard startup procedure and should be conducted by authorized service).
- Do not use the boiler for hot water production if the thermostatic mixing valve is not present.
- Do not use the hot water for culinary purposes, i.e. for drinking or food preparation.
- Use caution not to get burned by touching the flue fixing at the exhaust.
- In case of danger turn off the boiler and contact the proper authorities.
- At least every 3 months control the hot water safety valve by turning it until a strong current of water pours out. If water does not flow, immediately change the valve for a new one. During the control be careful not to get burned (the water might be very hot).

Practical tips

- When the power is on the green “POWER” lamp will be lit on the control panel.
- When the burner is working the green lamp “COMBUSTION” will be on.
- When there is a fault, the control panel will display one of the four red lamps. The user should then check the type of fault on the control panel and react properly after consulting the chapter “Locating faults and repairing”.
- Do not empty the hot water installation without reason. It should be refilled in the summer season. Proper work of the boiler requires the use of water no harder than 3°n (1mval/l) and replenishing of water should be as small as possible.
- During the summer season start up the boiler once every 1-2 weeks to keep elements of the boiler from settling (this especially concerns the hot water pump).
- In the room where the boiler is installed, you may not store any flammable or explosive materials.
- Do not allow for a complete depletion of oil in the tank. Over time dirt and impurities will have collected at the bottom of the tank. Sucking up the dirt for burning might cause a fault of the burner. Using up all the oil can also cause the installation to become aerated, and even after refilling the tank might cause problems with start up.
- During each filling of oil, follow these guidelines:
 - During filling turn the boiler off and close the oil valve on the tank.
 - Always observe the filling process and do not allow for water or dirt to enter the tank, they may cause faults of the boiler.
 - Keep a record of amounts and sources of oil purchased, this will help with a warranty claim of the oil if it turns out to be of sub par quality.
 - After filling clean up all spilled oil.
 - After filling wait about 1.5 hours and only then start the boiler (so that the oil sets and any impurities fall to the bottom).
 - Try not to purchase cheap oil. Oil is a mass good, low prices often are a result of a bad quality product and can lead to damage of the equipment.
- When the boiler is not to be used for longer periods of time disconnect the power.
 - In case of expected freezing temperatures do not remove the electrical plug from the socket or turn the power off. In such a case set the regulator to a low temperature (e.g. 5°C), to ensure that heating is turned on, and that the regulator will protect the boiler and installation from freezing.
- The boiler is overall guarded so that:
 - In case of lack of power, the boiler will shut down. When power resumes, it will restart accordingly to needs.
 - In case of lack of water in the boiler, it will automatically shut down – once replenished it will restart.
 - In case of lack of heat in the central heating installation (problems with the installation, Central heating pump failure) the boiler will shut down, and the status of the error will be displayed on the control panel.
 - In the case of a lack of oil, the boiler will automatically shut down – you must then repeat the startup procedure.

Boiler conservation

- The boiler room must be kept clean (no dust should be allowed to gather).
- The oil tanks, installation and boiler should be controlled for any leaks.
- The boiler and installation should be checked for any water leaks.
- Check the water level in the installation and if need be replenish.
- Every once in a while check if the chimney does not emit any smoke (only during frost a white cloud may appear, being only condensed water vapor). This can be a signal of improper burning. In such a case contact service or the dealer.
- The chimney and ventilation must be controlled for patency, every once in a while, according to the laws in force.

Proper conservation

- At least once a year the boiler should be thoroughly conserved by a specialized, authorized service. Proper and periodical conservation will decrease fuel usage and potential faults of the boiler. They will also prolong the life of the boiler.
- It is recommended to contract the service for a constant periodical conservation of the boiler.
- **All conservation operations must be done with a disconnected power cord from the outlet.**



During conservation, among others, the following operations must be completed:

- Cleaning the boiler on the exhaust end, meaning:
 - Unscrew the burner (large screws on top of the burner deep in the boiler) and through the opening clean the insides of the combustion chamber.
 - Remove the top cover, remove the exhaust cover, and remove the turbolizer. Clean everything thoroughly.
- Clean or exchange the oil filter in the boiler in the following manner:
 - Close the oil valve at the boiler and remove the chrome nickel net from the filter.
 - Drain the dirtied oil from the clear oil cup.
 - Clean the filter insert using oil and a brush.
 - Do all the above in reverse order.
- In the oil burner:
 - Clean the burner tube.
 - Clean, or if need be exchange the ignition electrode.
 - Clean the flame detector with a clean cloth, removing it from the chassis by pulling the frame (not by the cord!). The dirtied detector might "not see" the flame and cause emergency shutdown of the boiler.
 - Change the nozzle to a new one (once per year, even if it works – a used nozzle sprays oil worse and might lower the efficiency of the boiler). Warning: after removal of the burner and changing the nozzle you must properly fasten the box with the backwater plate – until you hear the clasps lock.
- Check the cleanliness of the suction jack in the oil tank and if need be change the oil filter.
- If need be clean the net water filters.
- Check the cleanliness of all filters in the installation, the pressure and if need be deaerate the installation.
- Check the tightness and general state of air and exhaust ducts.
- Check the burning quality by using a exhaust gas analyzer, if need be regulate the burner.

Parts exchange

• The boiler has no parts that need to be exchanged over a short period of time. Nonetheless if such a necessity occurs contact the dealer or authorized service.

Repairs of the boiler can only be completed by a trained authorized service. Attempts to repair by unauthorized persons can cause a threat to ones health or life and may cause great problems, danger and a loss of warranty.

Technical Data of the boiler Ederlich ED

			Ederlich Boiler			
PARAMETER		UNIT.	ED20	ED24	ED29	ED41
Functions. ¹⁾		——	Central heating and domestic hot water			
Heating power for central heating		kW	20,3	23,2	29,0	40,7
Heating power for hot water		kW	20,3	23,2	29,0	40,7
Hot water output. ²⁾	Temperature 35°C	l/min	11,6	13,3	16,6	23,3
	Temperature 35°C	l/h	696	795	994	1395
	Temperature 40°C	l/min	9,7	11,0	13,8	19,4
	Temperature 40°C	l/h	580	663	829	1163
Fuel.		——	Light furnace oil type EL according DIN norm			
Exhaust temperature. ³⁾		°C	During work ~ 150 (no more than 250)			
Exhaust volume.		Nm³/h	36,6	45,6	51,3	65,7
CO ₂ content in exhaust.		%	12,5			
Maximal central heating overpressure		bar	3,0			
Maximal domestic hot water overpressure		bar	11,0			
Type of burner.		——	SF-5S	SF-5H	OF-61S	OF-71S
Maximal oil use.		kg/h	1,93	2,68	3,02	3,86
Oil pressure on nozzle.		bar	8 (Constant)			
Type of nozzle Danfoss.		G/h	0,55*80H	0,60*80H	0,85*60H	1,10*60H
Central heating efficiency.	“turbo”	%	do 92,5	do 94,4	do 94,4	do 94,4
	standard	%	do 91,0	do 93,5	do 93,5	do 93,5
Central heating water pressure losses Δt = 20°C.		mbar	8	15		20
Domestic hot water pressure losses Δt = 35°C.		mbar	38	42	45	78,5
Relative resting losses.		%	1,72	1,80	0,98	0,78
Temperature range for central heating		°C	52 ÷ 84			
Temperature range for hot water. ¹⁾		°C	35÷ 60			
Safety thermostat.		°C	95			
Electric feed.		V, Hz	230~, 50			
Electric power.		W	63	65		110
Electric safety level.		——	IPX4			
Water capacity.		l	18	20	25	31,6
Dimensions		SxGxW mm	322 x 520 x 800	322 x 520 x 860	350 x 550 x 855	402 x 691 x 910
Weight.		kg	60	64	73	100
Piping	Central heating installation	Ø mm	Inner thread 25			Inner thread 32
	Hot water installation	Ø mm	Inner thread 15			
Air-flue pipe section.		Ø mm	Air: 60, Exhaust: 75		Air: 70, Exhaust: 75	Air: 60, Exhaust: 75

1) In case the boiler is to work with hot water production, choose the Ederlich ED...W boiler set with flow sensor and thermostatic mixing valve.

2) For cold water $t=10^\circ\text{C}$

3) For a clean boiler working with "turbo" flue system

Date for choosing chimney and flue system shown on pictures 14-16.

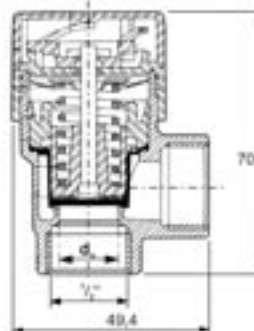
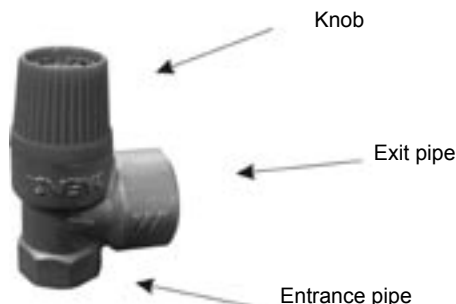
Data in this documentation may change without prior notice due to constant development of the product.

Technical information – additional elements

Central heating safety valve

Each Ederlich ED boiler comes with an included central heating safety valve. The valve must absolutely be installed with the boiler.

Valve view:



Dimensions

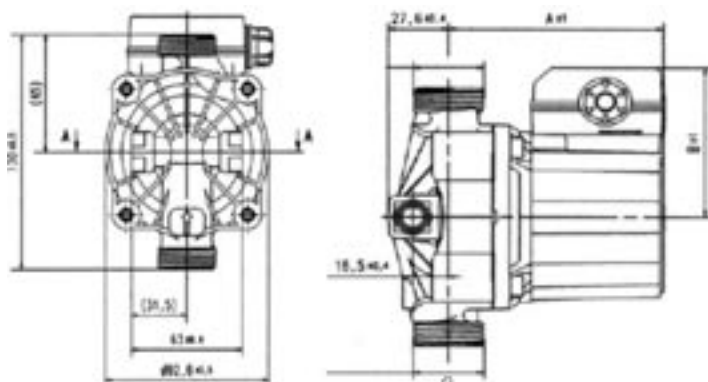
Safety valve data

Opening pressure: 3,0 bar

Smallest opening: 13,5 mm

Central heating circulation pump

In Ulrich's offer there is a circulation pump for central heating made by WILO. It is specially prepared for Ulrich based on the RS 25/6 pump. The engine is fully safeguarded against blocking; it is powered by 230V ~50Hz. Of course a different pump adequate for a particular installation can also be used.



Dimensions

Pump view:

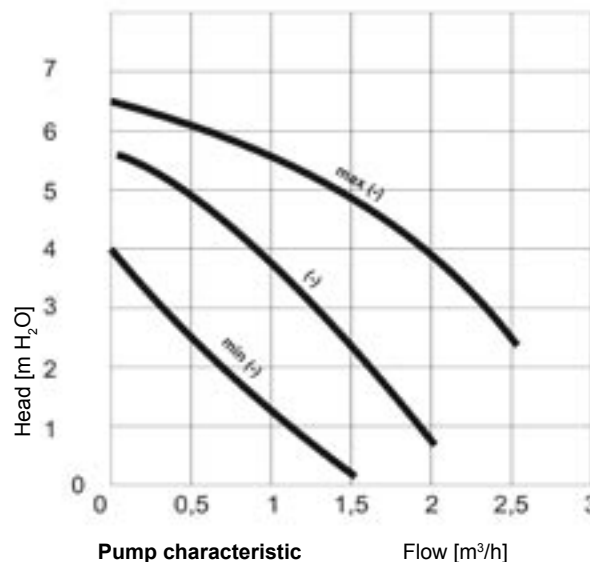


Electrical clamps

L- life

N - neutral

⊥ - ground



Pump characteristic

Flow [m³/h]

Dimension - Weight - Motor								
DN	G	I ₀	I ₁	a	b	Weight	Max input power	Max current input
mm						kg	W	A
R1	R1"	130	97	33	100	2,3	93	0,40

Thermostatic mixing valve for hot water

Each Ederlich ED...W boiler comes with an included hot water thermostatic mixing valve.

The valve does the following:

- Controls and delivers water at a stable temperature (accuracy of 2°C, the user can adjust water temperature use the mixing valve).
- Guarantees safety by automatically stabilizing the hot water temperature. Prevents sudden temperature jumps.



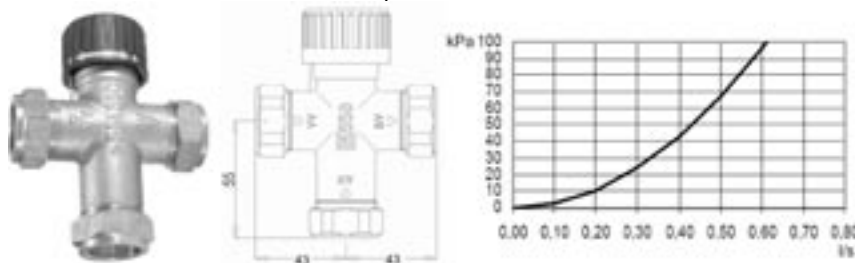
Not installing the valve can be a cause of burns.

- Limits lime scale deposits in the installation.
- Has built in filters for a prolonged and fault free service. Included in the price are two return valves.

Temperature regulation range
Maximal hot water temperature
Maximal pressure

Copper pipe clamp

Installation



The thermostatic valve is sensitive to temperatures. During install make sure not to expose the valve to extreme temperatures as they might damage it. The valve should be installed at the end of the installation (first check the installation for tightness and flush the valve). During installation and checking it might be a good idea to install a temporary replacement valve of similar dimensions.



Be careful when the boiler is working without the valve present. There is a risk of getting burned by hot water.

The mixing valve comes equipped with a return valve and filter. Be sure to remove them prior to installation. After installation and upon checking of the system replace the valve and filter. Thermostatic mixing valves can be installed in various positions allowing for easy access. Removal is made simple by the included pipe unions.

Usage

In order to adjust the output temperature:

- With the hot and cold water valve opened all the way and with the most probable temperature difference set the desired output temperature.
- Turning counterclockwise – higher temperature, clockwise – lower temperature (a quarter turn equals about 7°C).
- Make sure that during installation the water flow is at least 2 l/min. The temperature should be tested for 2-3 minutes without changing the water flow.

A properly installed valve does not require maintenance, however it should be checked every 6 months (if need be clean the filters).

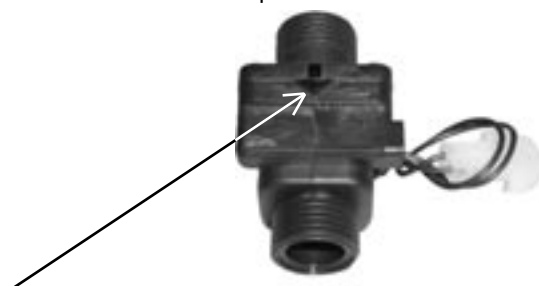
Hot water flow sensor

Ederlich ED...W sets come with a water flow sensor.

It's functions are described in the chapters "Boiler construction – hot water heater" and "Description and choice of boiler for hot water preparation".

Warning: Install on the cold water pipe before the return valve.

Range of work	2,7 +/- 0,3 l/min
Dimensions	65x36x37 mm
Power	0,2 A
Conect resistance	max 100 mW
Maximal work pressure	15 bar
Maximal work temperature	50°C



Install on a horizontal pipe, so that the arrow points in the flow direction of the water towards the boiler. The arrow must be visible from the "top". Look at hydraulic schematics.

“TURBO” FLUE SYSTEM

Every Ederlich ED boiler can be equipped (included in Ulrich offer), at an additional cost, with a special “turbo” flue system. This flue system allows for a lack of a traditional chimney and the air taken into the room is used only for ventilation. It is substituted by an inexpensive flue system “pipe in pipe”, which takes in air for combustion using the outer pipe and at the same time lets out exhaust through the inner pipe right through the boiler room wall. The advantages are obvious: great safety (due to the exhaust pipe surroundings being ventilated by the air taken in for combustion), cheaper installation (no need for a chimney and for protecting it against exhaust), greater efficiency (air taken in for combustion gets heated up by the leaving exhaust) and a lower failure rate (no dependence on the cleanliness of the air within the room).

This type of installation is recommended for all variations of the Ederlich ED installation, including those where the oil boiler cooperates with a solid state fuel boiler, where it is difficult to keep cleanliness.

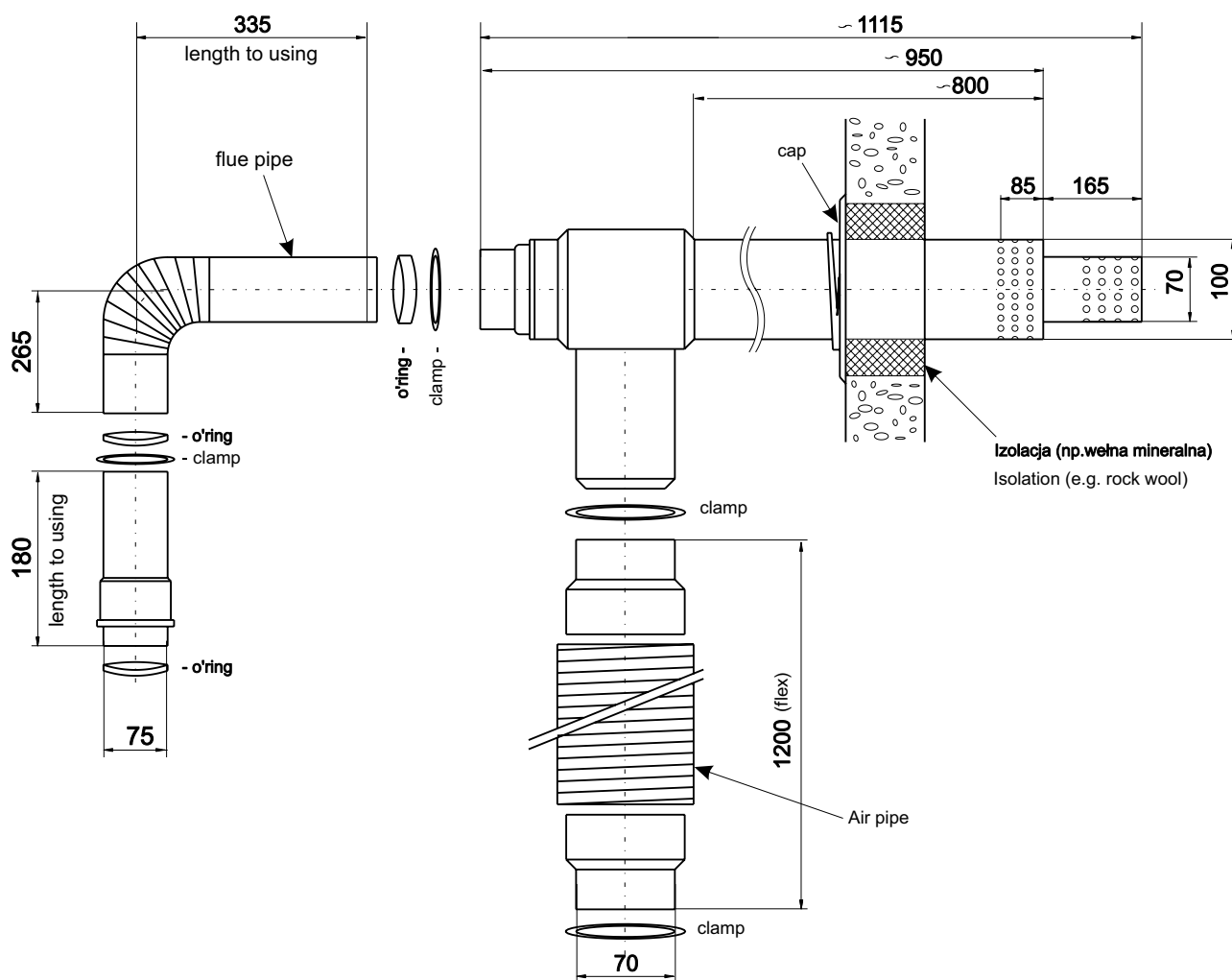
Information on installation recommendations can be found in the chapter “installation”.

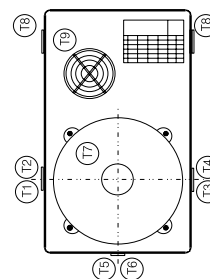
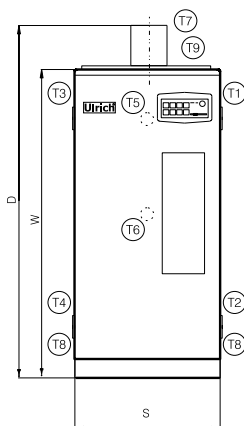
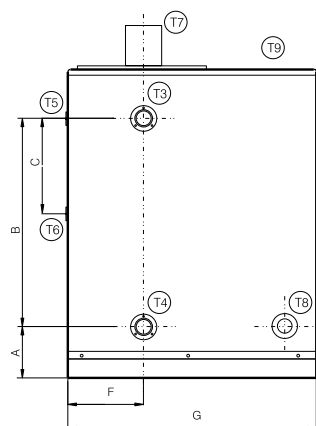
Information on sizes and elements of the “turbo” flue system can be found in the picture below.

Installation

During the installation of the “turbo” flue system, be sure to pay attention to the following:

- The “turbo” pipe should not be cemented in “stiff” into the wall, it should go through isolation (even a thin mineral wool) so that it can “work”. In case of a wall made from flammable materials the isolation should be made from flame proof materials and at least 5 cm thick.
- The “turbo” pipe should be slightly slanted down (not strictly horizontal) with an angle of 2-3°. It is prohibited to install the pipe at an upwards angle or in a vertical fashion (possibility of water infiltration).
- With boilers of 20, 24 and 41 kW, the flexible air intake (vacuum tube type pipe) should be connected into the boiler through the closed air intake opening found in the front upper part of the boiler, and should be connected directly into the burner. Be careful not to disconnect any of the electrical cables during hook up.





Size [mm]	ED20	ED24	ED41
A	90	90	94
B	590	651	692
C	256	306	360
D	840	900	956
F	164	164	193
W	800	860	910
G	520	520	691
S	322	322	402

Pipe	Description	Size		
		ED20	ED24	ED41
T1	Central heating feed (inner thread)	1"	1"	1 1/4"
T2	Central heating return (inner thread)	1"	1"	1 1/4"
T3	Central heating safety valve pipe (inner thread)	1"	1"	1 1/4"
T4	Expansion vessel connection, water drain from boiler (inner thread)	1"	1"	1 1/4"
T5	Hot water output (inner thread)	1/2"	1/2"	1/2"
T6	Cold water intake (inner thread)	1/2"	1/2"	1/2"
T7	Exhaust gas output	Ø75mm	Ø75mm	Ø75mm
T8	Cable pass-through (both sides of boiler)	-	-	-
T9	Combustion air intake	Ø60mm	Ø60mm	Ø60mm

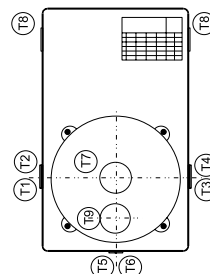
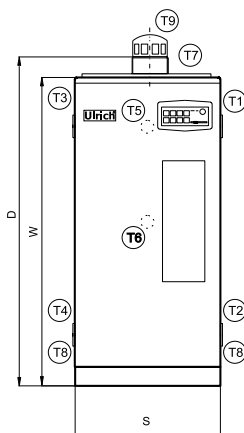
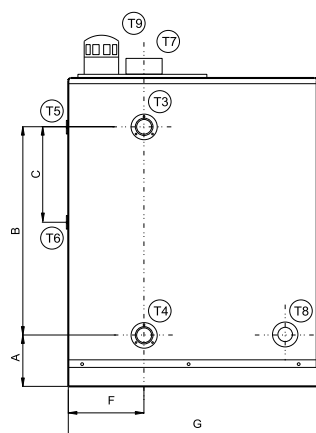
Notice: pipes T1 and T3 as well as T2 and T4 can be used interchangeably

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Pic. 01

Dimensions of Ederlich ED20, ED24, ED41 boilers

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wymiar [mm]	ED29
A	90
B	651
C	306
D	900
F	171
W	855
G	550
S	350

Pipe	Description	Size
T1	Central heating feed (inner thread)	1"
T2	Central heating return (inner thread)	1"
T3	Central heating safety valve pipe (inner thread)	1"
T4	Expansion vessel connection, water drain from boiler (inner thread)	1"
T5	Hot water output (inner thread)	1/2"
T6	Cold water intake (inner thread)	1/2"
T7	Exhaust gas output	Ø75mm
T8	Cable pass-through (both sides of boiler)	-
T9	Combustion air intake	Ø70mm

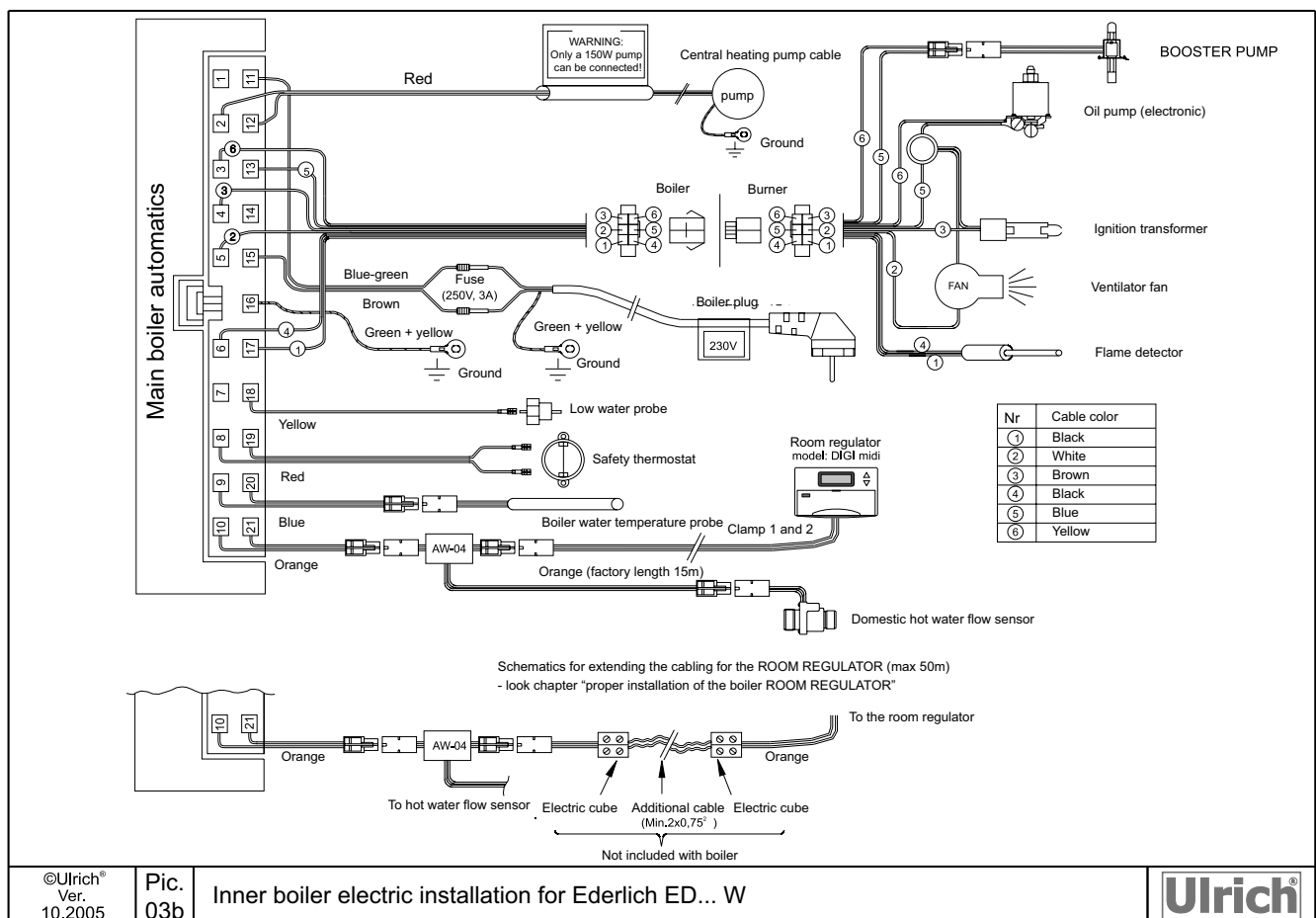
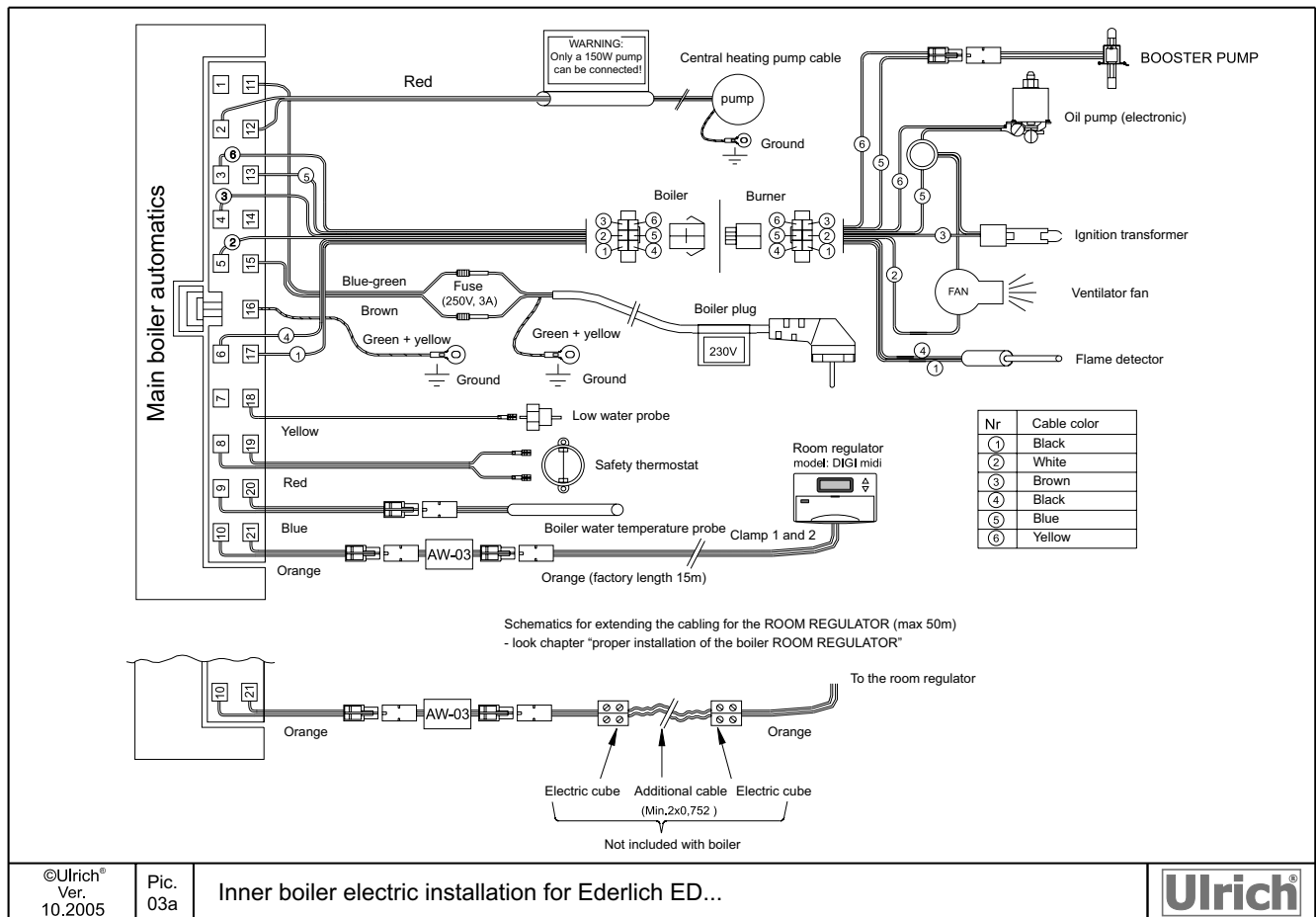
Notice: pipes T1 and T3 as well as T2 and T4 can be used interchangeably

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
















Pic. 02

Dimensions of Ederlich ED29 boiler

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Main installation elements:

	Heat receptor
	Hot water symbol
	DIGI midi room regulator with weekly programmer (with icroprocessor)
	Central heating pump
	Hot water circulation pump
	Thermostatic hot water mixing valve
	Hot water flow sensor
	Safety valve
	Ball valve
	Return valve
	Net filter
	Expansion vessel
	Open vessel
	Sewage drain
	Sink
	Pump power switch
	Thermometer
	Manometer
RB	Safety pipe in open system
RW	collection pipe in open system
RP	flow pipe in open system
RS	signalization pipe in open system
RO	deaeration pipe in open system

Warning

The following schematics do not limit the possibilities of hooking up the ED boiler

Warning for the schematics:

Before purchasing and installing elements, the installer should select the proper sizes etc. The pictures given are not complete schematics for a boiler room. They only present proper connection of heating, hot water and exhaust installations.

The schematics do not present all the armature, which is dependent of a particular installation. Installation should be conducted in accordance with laws and regulations.

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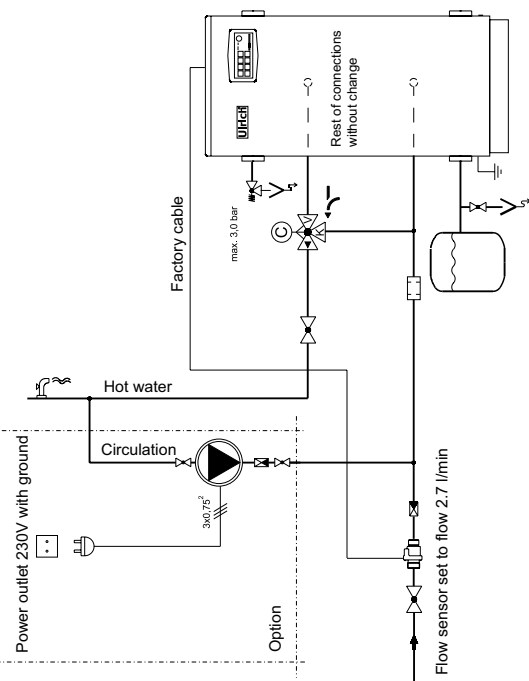
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The legend to schemes Ederlich ED Boiler.

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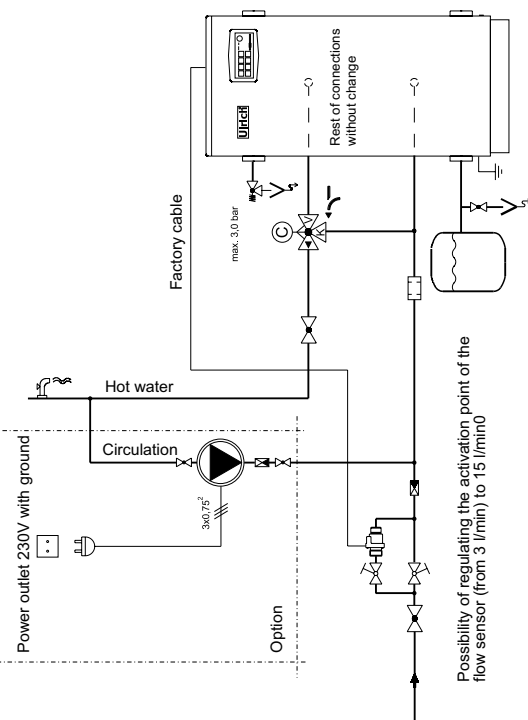
Standard placement and installation of the hot water flow sensor.

Set point of activation 2.7 l/min



Multiple placement and installation of the hot water flow sensor.

Set point of activation 2.7 l/min

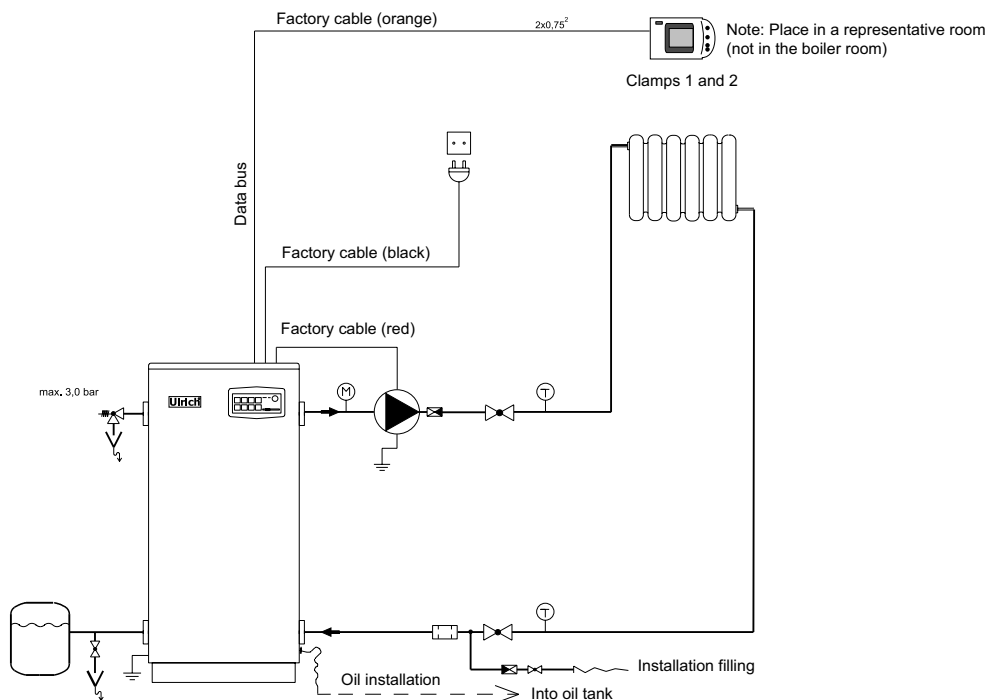


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Placement and installation of the hot water flow sensor for the Ederlich ED...W boiler

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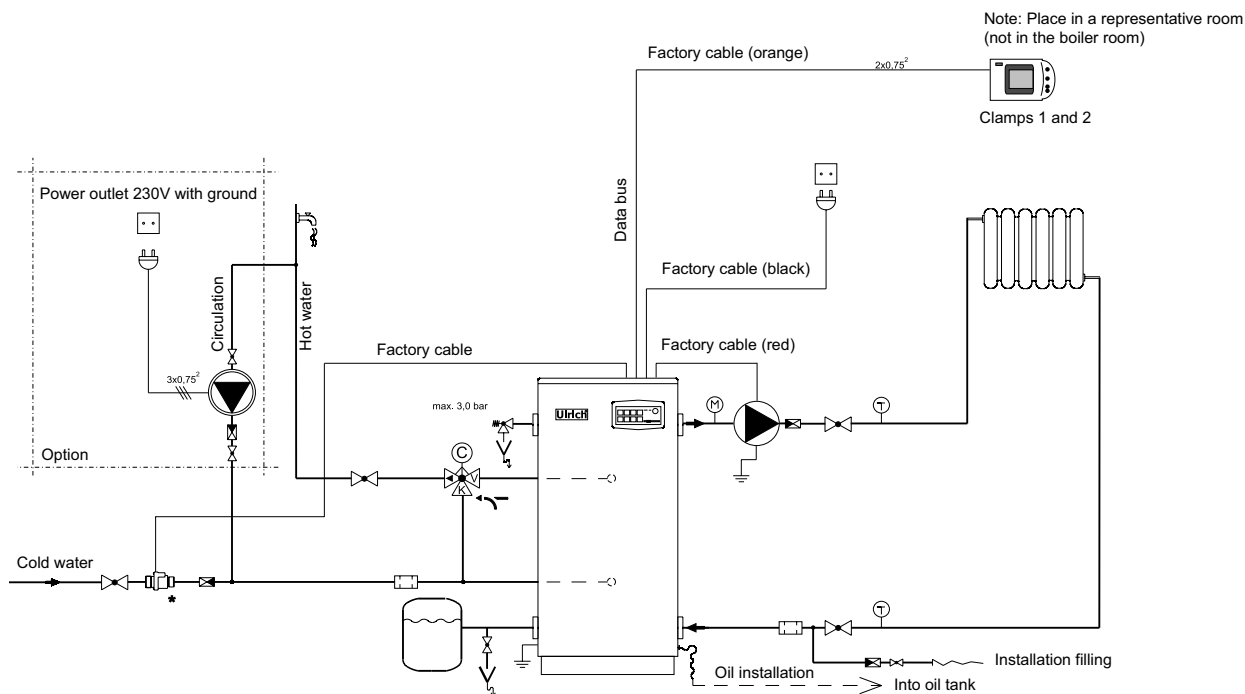
see: remarks on Legend picture

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Ederlich ED boiler – basic schematics – pressure installation

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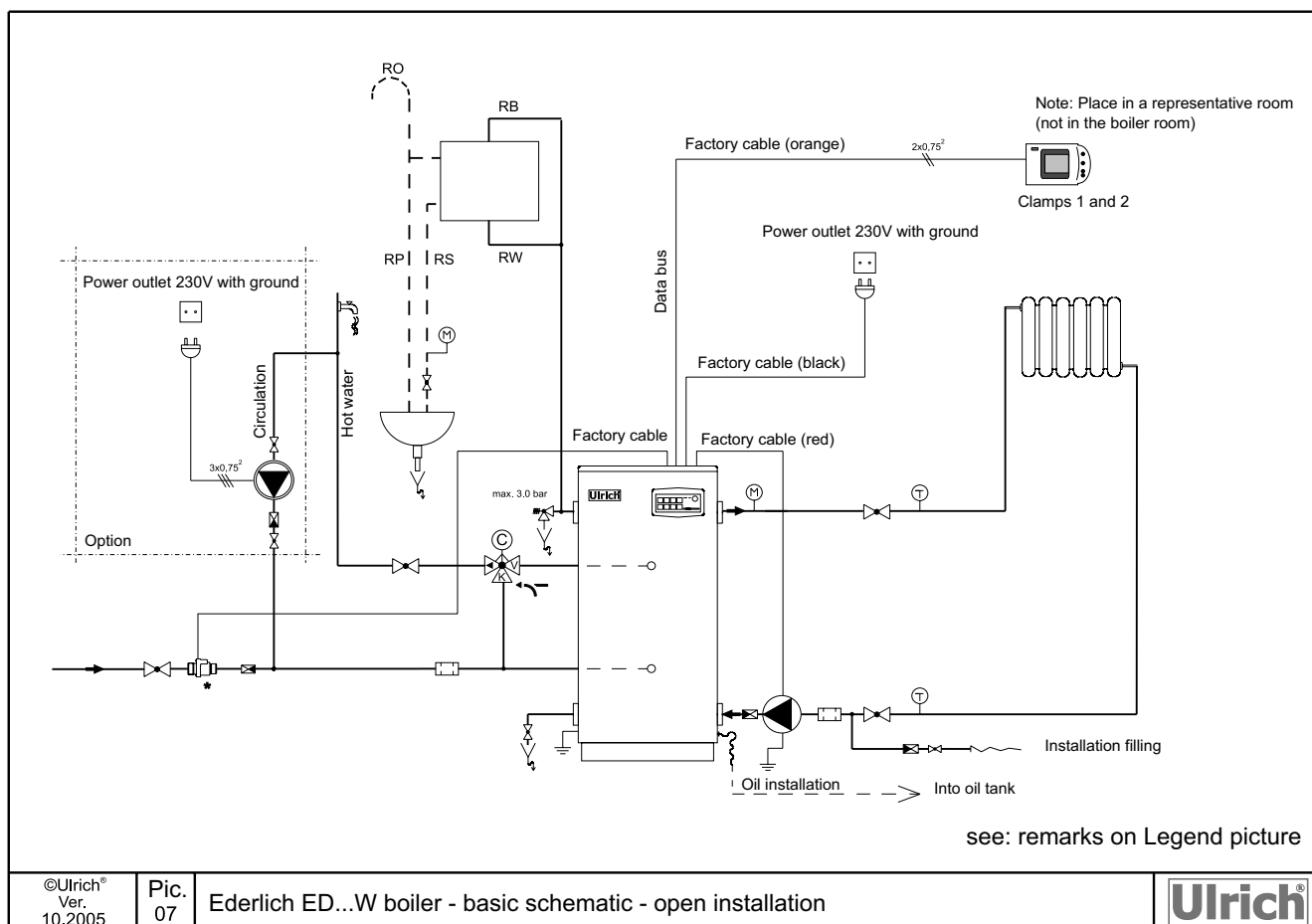
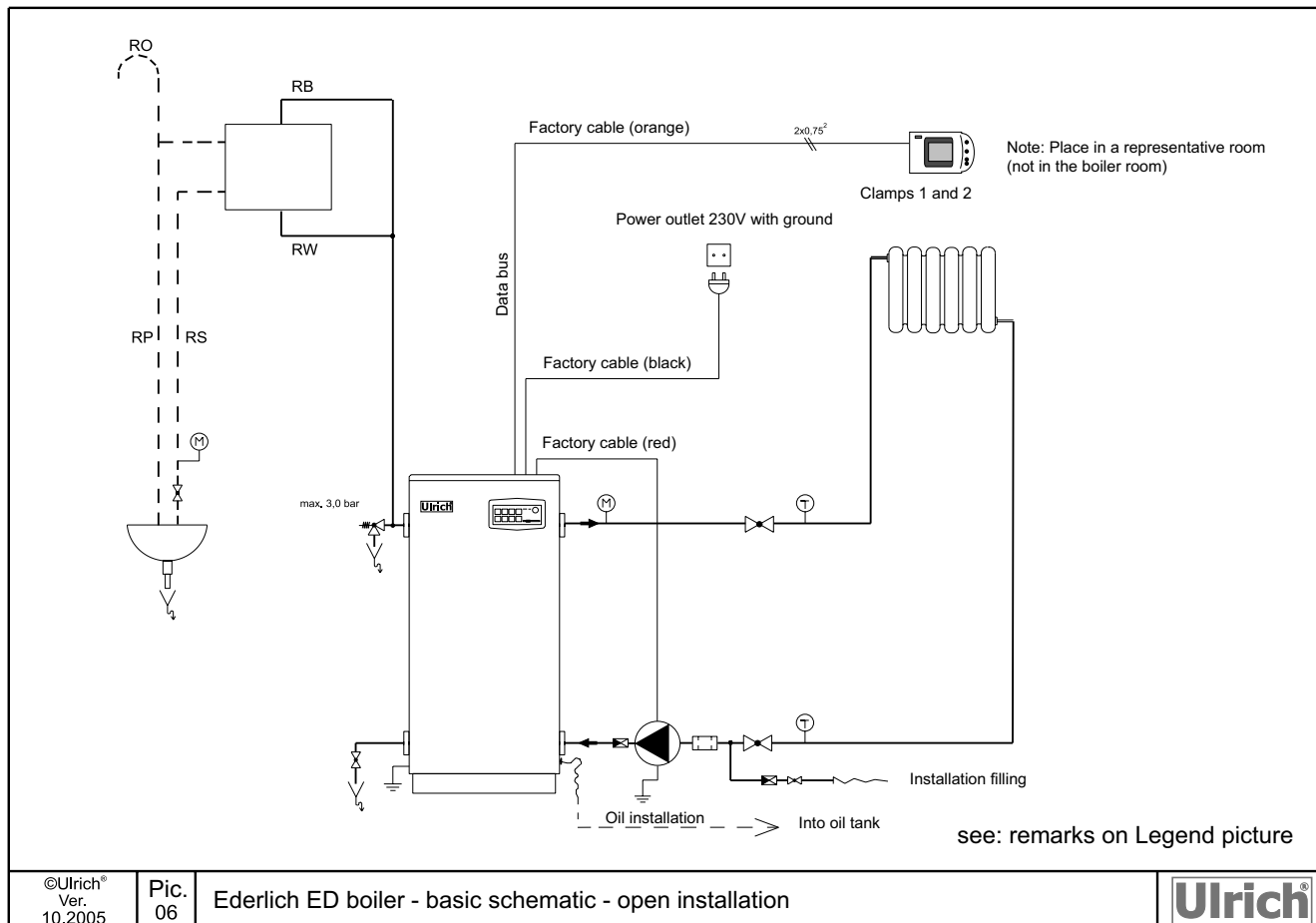
see: remarks on Legend picture

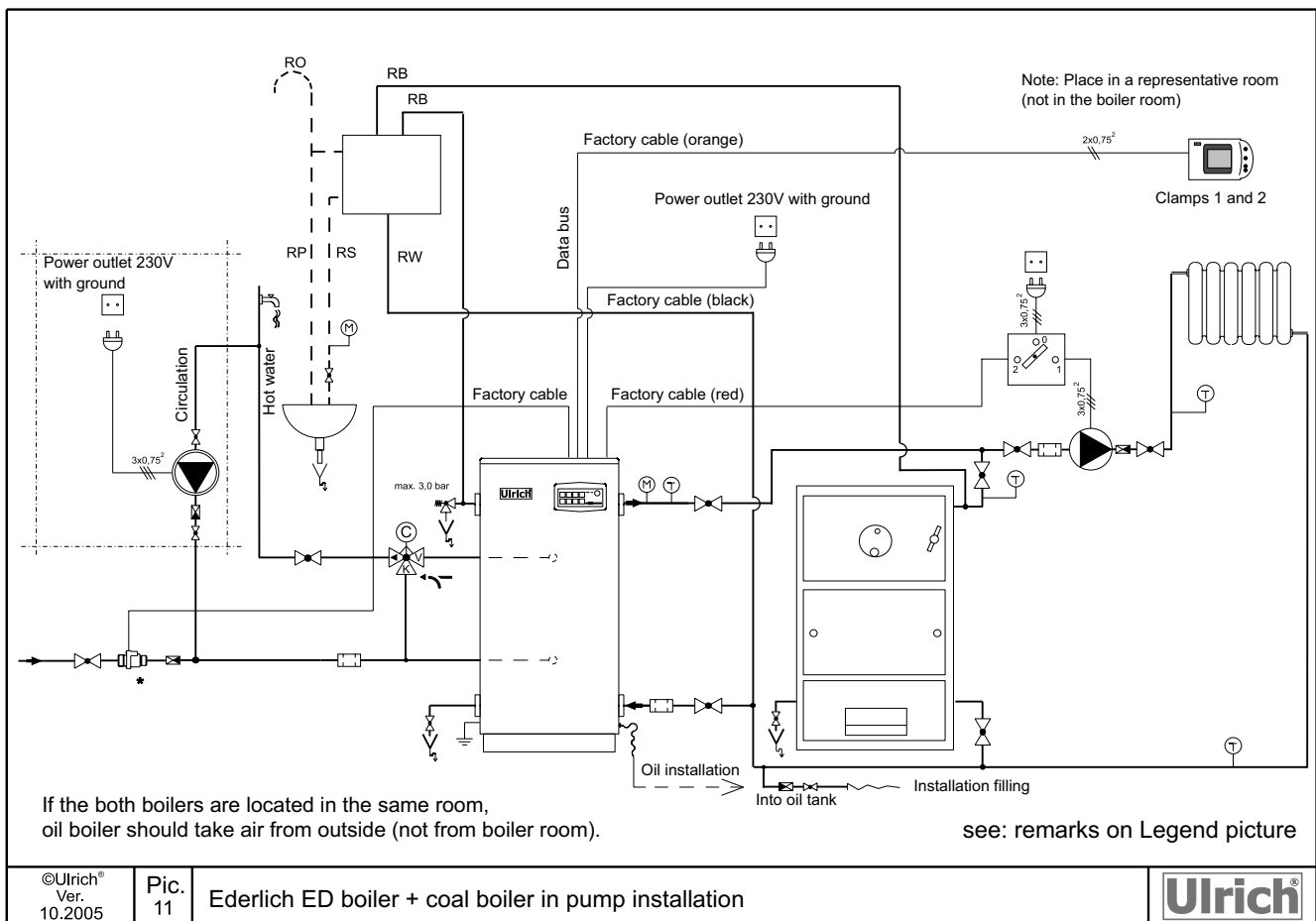
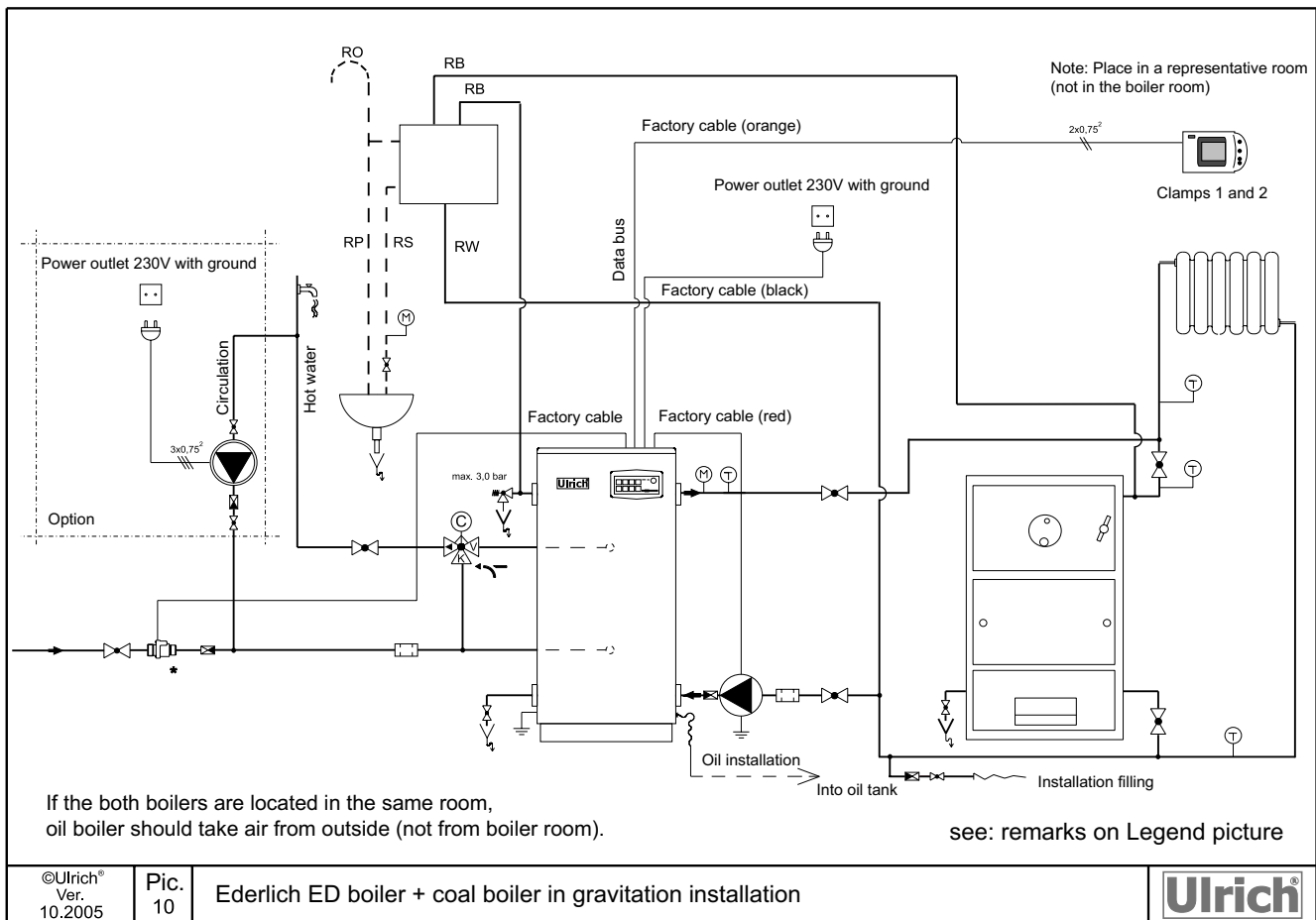
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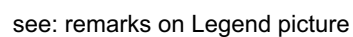
Ederlich ED...W boiler – basic schematics – pressure installation

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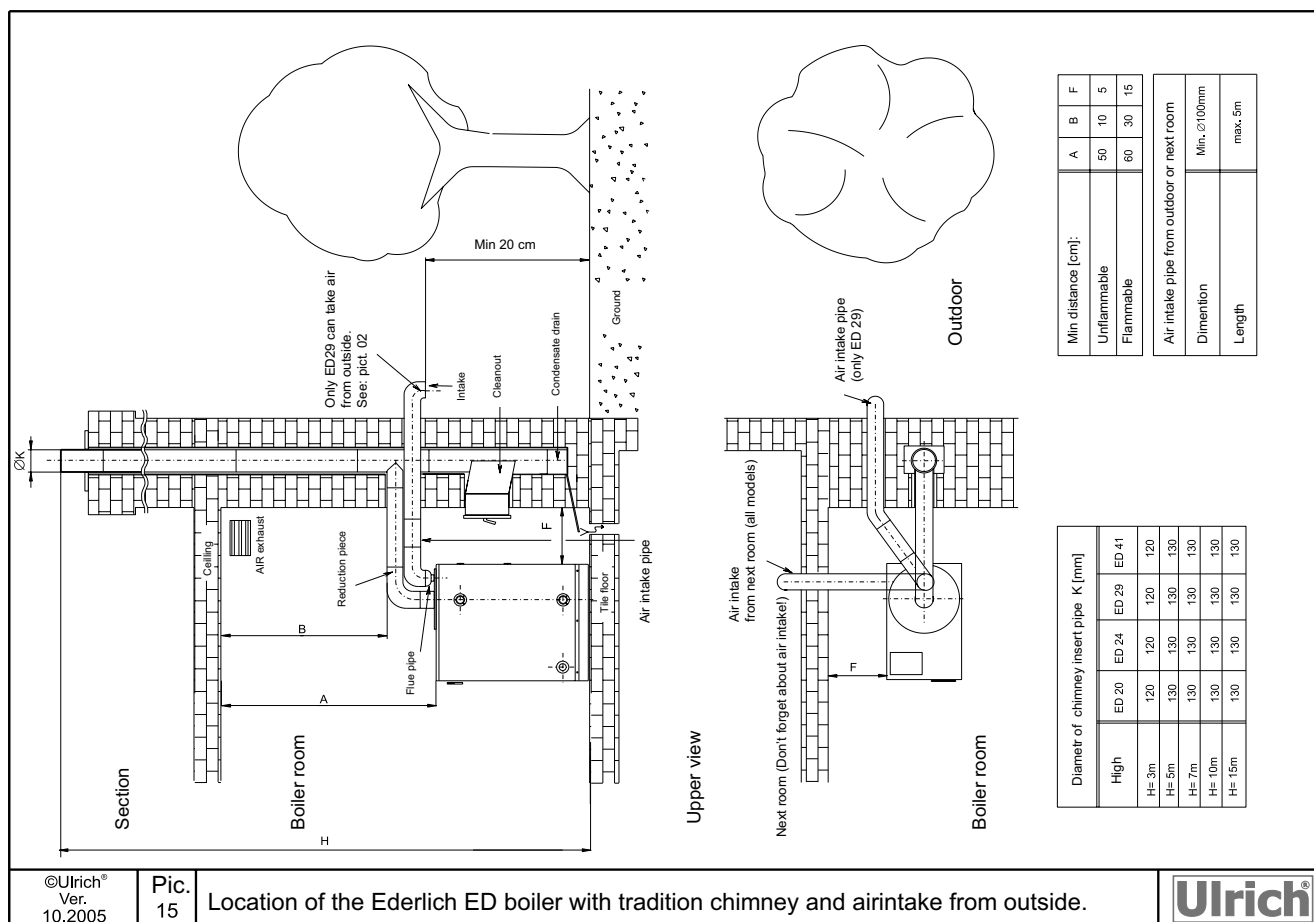
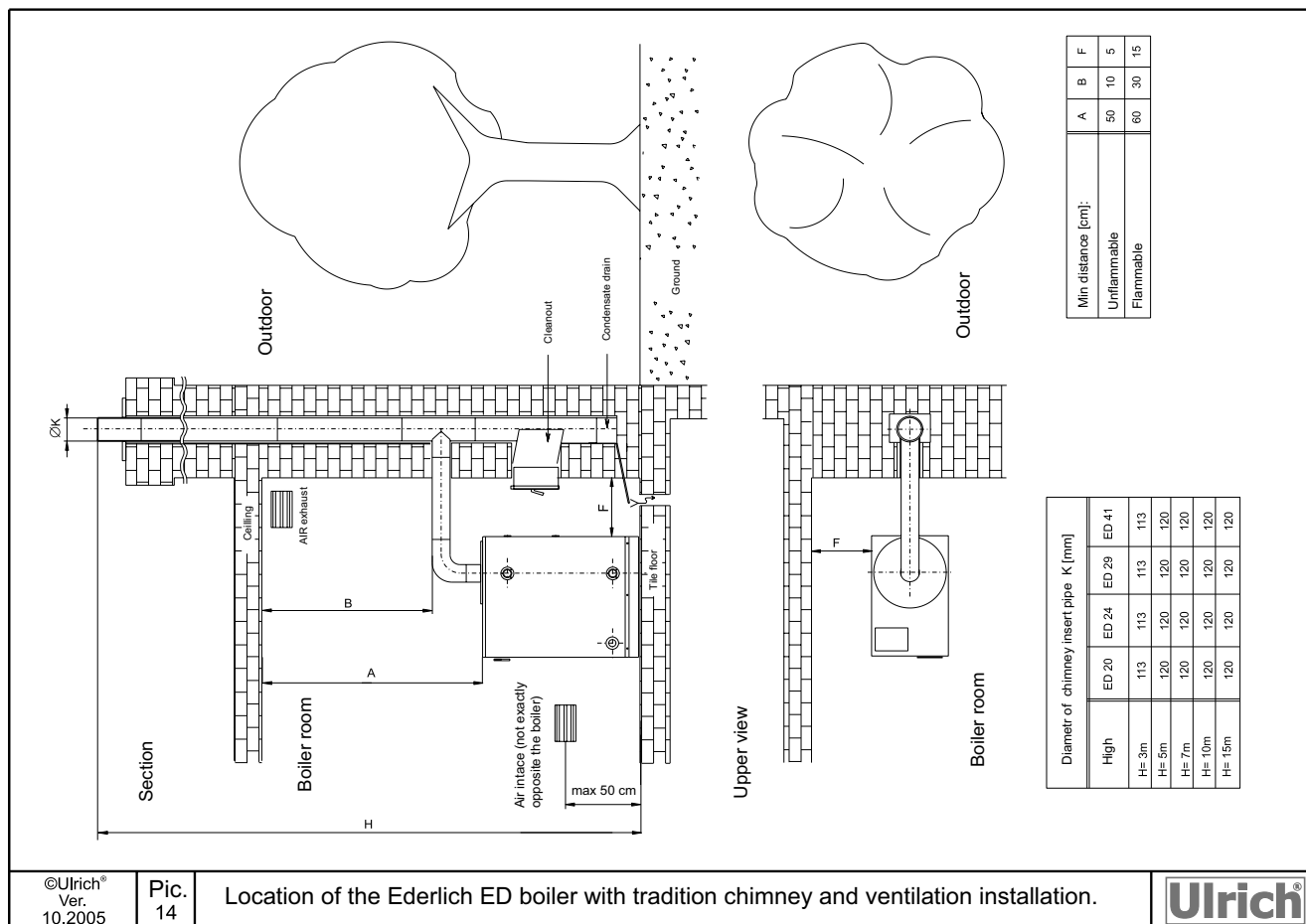


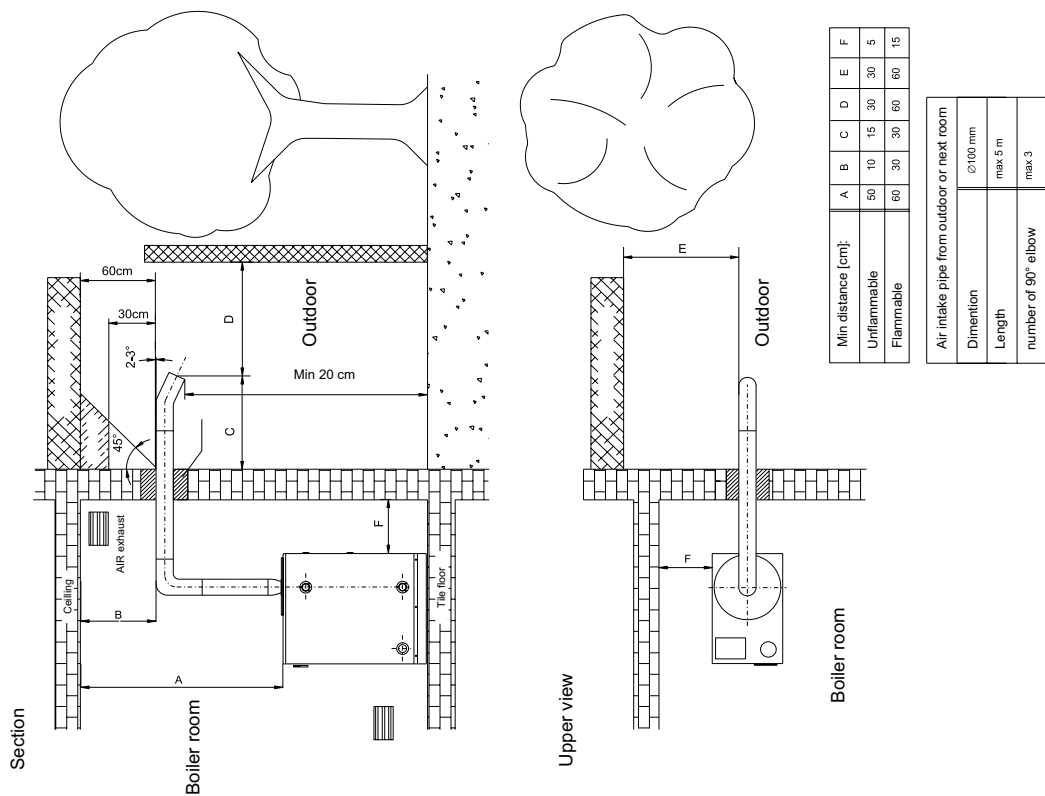
if water storage Sparlux SL is installed the circulation pump is necessary.

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see: remarks on Legend picture

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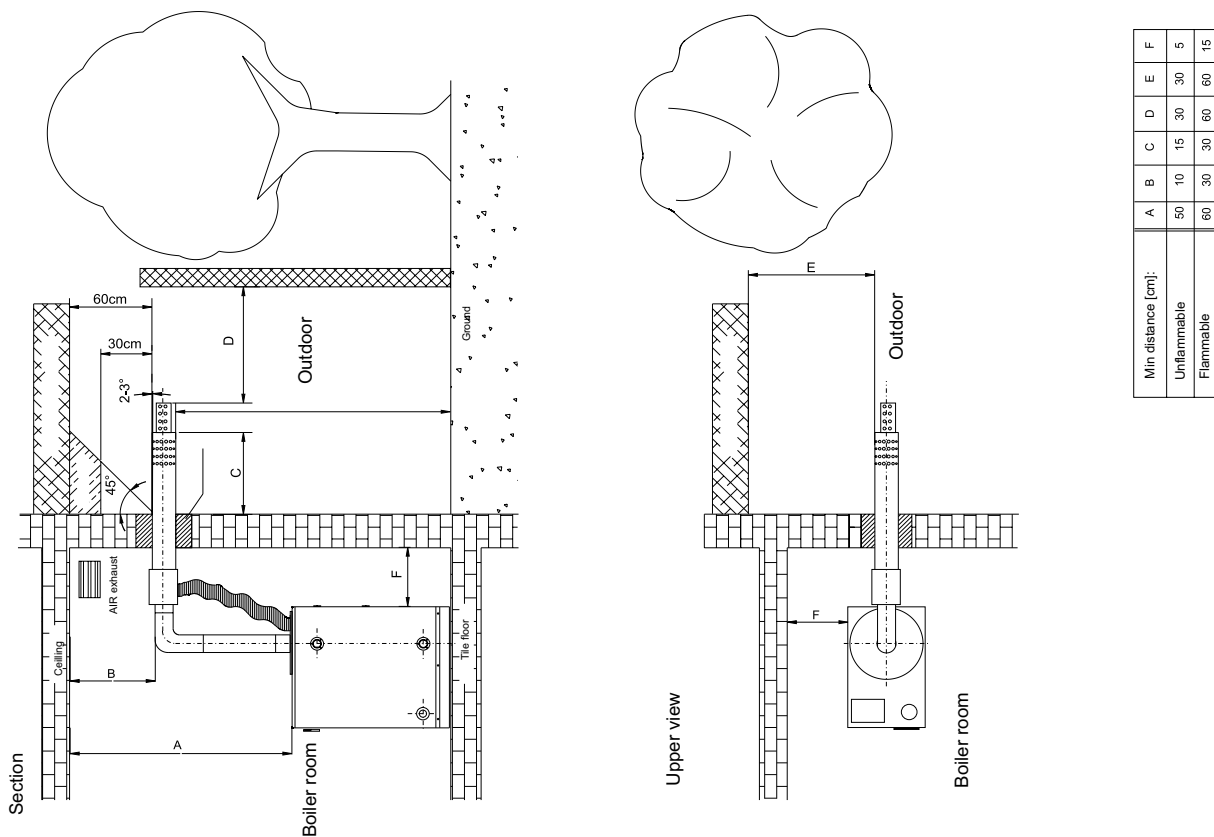


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Location of the Ederlich ED boiler with flue pipe directly trough the wall and tradition ventilation installation.

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Location of the Ederlich ED boiler with air-flue „turbo” system.

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How to localize faults and how to remove them?

Problem	Cause	Proceedings
1. Upon pressing Power button the burner ventilator is not working	<ol style="list-style-type: none"> 1. Power failure in home 2. Plug not in socket 3. Temperature in boiler is greater than the set temperature 4. Room regulator is off 5. Burned fuse in boiler 6. Other 	<ol style="list-style-type: none"> 1. Reconnect the system when power returns 2. Try a different socket 3. It is not a fault. When the boiler temperature is lower it will begin working. 4. Set room regulator for work 5. Change fuse 6. Contact service
2.The ventilator turns but the burner does not start	<ol style="list-style-type: none"> 1. Oil valve is closed 2. No oil in tank 3. Air in oil pipes 4. Oil filter is clogged 5. Other 	<ol style="list-style-type: none"> 1. Open valve 2. Replenish oil 3. Deaerate pipes 4. Clean the oil filter 5. Contact service
3.The burner starts but immediately shuts down	<ol style="list-style-type: none"> 1. Low oil in tank 2. Flame detector does not detect flame 3. Oil filter is clogged 4. oil has impurities in it 5. other 	<ol style="list-style-type: none"> 1. Replenish oil 2. Clean the flame detector 3. Clean the oil filter 4. Change oil with new one 5. Contact service
4.The electronic oil pump is making noise	<ol style="list-style-type: none"> 1. oil filter is clogged 2. There is air in oil pipes 3. other 	<ol style="list-style-type: none"> 1. Clean oil filter 2. Deaerate oil pipes 3. Contact service
5.During start up the flame retracts and goes out	<ol style="list-style-type: none"> 1. Wind in the air pipe 2. Ignition device is damaged 3. Other 	<ol style="list-style-type: none"> 1. Contact service 2. Contact service 3. Contact service
6.There is an abnormal sound during combustion	<ol style="list-style-type: none"> 1. Too much air for combustion 2. Too much oil for combustion 3. other 	<ol style="list-style-type: none"> 1. Contact service 2. Contact service 3. Contact service
7.There is smoke and soot present	<ol style="list-style-type: none"> 1. Bad or dirtied oil 2. Too little air for combustion 3. Other 	<ol style="list-style-type: none"> 1. Change oil 2. Contact service 3. Contact service
8.The boiler turns off "misfire", the oil filter has oil at the bottom	<ol style="list-style-type: none"> 1. No oil in tank 2. The oil installation is not properly deaerated 3. The oil installation is taking in air 	<ol style="list-style-type: none"> 1. Add oil and deaerate the installation 2. Deaerate the oil installation. Contact service 3. Make sure the installation is sealed and deaerated. Contact service
9.Other	<ol style="list-style-type: none"> 1. Fuel ducts are leaking 2. Water ducts are leaking 	<ol style="list-style-type: none"> 1. Contact service 2. Contact service
10.The boiler shuts down "low level"	<ol style="list-style-type: none"> 1. low water in boiler 2. The electrical cord fell or became damaged 3. The water level probe is covered with scale 	<ol style="list-style-type: none"> 1. Add water and find the reason for loss 2. Reconnect electric supply. Contact service 3. Clean probe from scale. This suggests that the boiler is used with low quality water. Repetition of this error will damage the boiler. Contact service
11.Low hot water pressure	<ol style="list-style-type: none"> 1. Low cold water pressure 2. Net filter is clogged on cold water entry 3. Net filter is clogged on the thermostatic mixing valve 	<ol style="list-style-type: none"> 1. Raise water pressure on feed 2. Clean filter 3. Clean filter
12.Hot water temperature constantly too low or too high	<ol style="list-style-type: none"> 1. The thermostatic mixing valve is not adjusted properly 	<ol style="list-style-type: none"> 1. Regulate according with the instructions.
13.Hot water temperature oscillates	<ol style="list-style-type: none"> 1. Main thermostat set too low 2. Hot water temperature set too high on the thermostatic mixing valve 3. Too high of a water usage for a boiler of this size 	<ol style="list-style-type: none"> 1.Raise water temperature in boiler on main thermostat 2.Lower the temperature set on the thermostatic mixing valve 3.Reduce hot water usage or reduce pressure on cold water entry.

For safeguard of the flow capacity of pipe: collectioning, safeties, flow and deaerating one cannot be placed the fittings making possible entire or partial lock of the flow.

For protection before frozenness securer devices extension vessel, tubing should be situated in the space in which the temperature of air is higher than 0 for the centigrade, or to use the suitable circulation

Min inner dimensione [mm]					
Pipe	Signature	Ederlich ED boilers			
		ED 20	ED 24	ED 29	ED 41
Collection pipe	d_{RW}	25 mm	25 mm	25 mm	25 mm
Safety pipe	d_{RB}	25 mm	25 mm	25 mm	32 mm
Flow pipe	d_{RP}	25 mm	25 mm	25 mm	32 mm
Signalization pipe	d_{RS}	15 mm*	15 mm*	15 mm	15 mm
Deaeration pipe	d_{RO}	15 mm	15 mm	15 mm	15 mm

*Not necessary

USER WARRANTY CARD

User data:

Name or company:☐

Address:☐

ID number or PIT/CIT:☐

Date of sale:☐

Boiler data:

Ederlich ED

Serial number:

Start up procedure:

Notes and suggestions pertaining installation and placement of boiler.

Date, signature and stamp of authorized service (personnal).

1. Thank you for purchasing the above mentioned appliance. It has gone through strict quality control. However if anything does go wrong, we will repair the device under the following conditions:
2. The seller guarantees the device to be free of defects:
 - central heat exchanger of boiler- for the time of 66 months,
 - other equipment (electric elements, burner etc.) - for the time of 30 months,In both cases counting from the date of sale, however not longer than:
 - 60 months for the central heat exchanger of boiler,
 - 24 months for other equipment,In both cases counting from the date of start up.
3. during the warranty period, while complying with its terms and conditions, the purchaser has a right to a free repair removing defects and repairing the appliance, including exchanging elements covered by warranty, within a period of 14 days counting from the date when the problem was reported, while the costs of transport are covered by the purchaser.
4. Past the warranty period the purchaser has a right to a complete technical service from the Seller. Costs of such servicing are fully covered by the purchaser.
5. A condition for a warranty claim is:
 - Repairs and start up have to be done only by personnel qualified by Ulrich,
 - Installation and exploitation have to be done in accordance with the instructions,
 - A payable yearly inspection must be done by authorized Ulrich service personnel.
6. The warranty does not limit the purchasers rights due to disaccord of the purchased goods with the agreement.

WARNING:

The only basis for a warranty claim is a properly filled out warranty card along with a purchase receipt.

THE SELLER:

Date, signature and stamp



REGISTER OF REPAIRS AND INSPECTIONS

INSPECTION/REPAIR* of **Ederlich ED** boiler
DATE OF OPERATION:
SHORT DESCRIPTION OF WORK DONE:

Serial number.....

SERVICER'S SUGGESTIONS:

User's signature

Service stamp and signature

INSPECTION/REPAIR* of **Ederlich ED** boiler
DATE OF OPERATION:
SHORT DESCRIPTION OF WORK DONE:

Serial number.....

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Ederlich ED 10.2005



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