

Centrometal

HEATING TECHNIQUE

Centrometal d.o.o. - Glavna 12, 40306 Macinec, Croatia, tel: +385 40 372 600, fax: +385 40 372 611

ENG

Technical instructions

for installation, use and maintenance
of hot water boiler
and installation of additional equipment



THE FIRST START-UP MUST BE DONE BY AUTHORIZED PERSON,
OTHERWISE PRODUCT WARRANTY IS NOT VALID.

PelTec 12-48

PelTec-lambda 12-96

TECHNICAL INFORMATION

Model identifier (TYPE):		PelTec / PelTec-lambda 12	PelTec / PelTec-lambda 18	PelTec / PelTec-lambda 24	PelTec / PelTec-lambda 31	PelTec / PelTec-lambda 36	PelTec / PelTec-lambda 48	PelTec-lambda 69	PelTec-lambda 96
Useful heat output at rated heat output - P _N (kW)		12	18	24	31	36	48	69	96
Useful heat output at 30 % of rated heat output - P _p (kW)		3.6	5.4	7.2	9.4	10.8	14.4	20.7	28.8
Useful efficiency at rated heat output (Net calorific value "NCVar") (%)		90.4 / 93.8	90.3 / 93.9	90.3 / 94.1	90.5 / 93.3	90.8 / 92.8	91.2 / 91.5	92.0	92.7
Useful efficiency at 30 % of rated heat output (Net calorific value "NCVar") (%)		90.2 / 90.7	90.4 / 92.1	90.6 / 93.5	90.6 / 93.9	90.7 / 94.2	90.7 / 94.9	93.9	92.7
Useful efficiency at rated heat output (Gross calorific value "GCVar") - η _N (%)		82.6 / 86.4	82.6 / 86.5	82.5 / 86.7	82.7 / 85.9	83.0 / 85.5	83.4 / 84.3	84.7	85.4
Useful efficiency at 30 % of rated heat output (Gross calorific value "GCVar") - η _p (%)		82.4 / 83.4	82.6 / 84.9	82.8 / 86.1	82.8 / 86.5	82.9 / 86.8	82.9 / 87.4	86.5	85.4
Heat output range (kW)		3.6-12	5.4-18	7.2-24	9.4-31	10.8-36	14.4-48	20.7-69	28.8-96
Boiler class		5							
Required chimney underpressure (mbar)		0,02							
Water amount in boiler (l)		78	76	100	108	108	135	190	205
Exhaust gas temperature at nominal heat output (°C)		130							
Exhaust gas temperature at minimal heat output (°C)		100							
Exhaust mass flow at nominal heat output (g/s)		15.16	18.97	22.78	35.27	35.27	47.75	59.05	73.57
Exhaust mass flow at minimal heat output (g/s)		5.82	6.91	8.0	13.1	13.1	18.05	23.85	31.34
Operating (combustion) time (h)		-							
Min. inlet water tem. at the boiler supply water connection (°C)		-							
Setting range for temperature controller (°C)		65-90							
Minimum return flow temperature (°C)		> 0°C							
Heat loss when the boiler is OFF (W)		-							
Boiler resistance on water side at nominal output *** mbar		0.025	0.055	0.095	0.205	0.205	0.37	0.17	0.32
Fuel size (mm)		Ø6 x 50							
Fuel loading chamber capacity (l)		0.96	0.96	1.59	2.56	2.56	2.56	4	5.4
Fuel loading chamber dimensions (mm)		465x300x300	650x300x300	650x300x300	620x385x385	620x385x385	770x385x385	770x385x385	770x450x410
Combustion chamber volume (l)		41.85	58.5	58.5	91.90	91.90	114.13	129.26	145.33
Combustion chamber type		underpressure							
Pellet tank volume (l)		340	340	340	340	340	340	430	430
Ash box volume (left/right) (l)		9.9 / -	6.5 / 9.9	9.9 / 9.9	11.6 / 17.7	11.6 / 17.7	13 / 19.6	24.5 / 19.6	29 / 25
Auxiliary power requirements at Q _N (W)		1050	1050	1050	1100	1100	1100	1300	1300
Auxiliary power requirements at Q _{min} (W)		-							
Supply voltage (V~)		230							
Frequency (Hz)		50							
Boiler body dimensions	Length (A) (mm)	1105	1105	1080	1160	1160	1175	1240	1310
	Width (B) (mm)	1200	1420	1400	1485	1485	1485	1940	1965
	Height (C) (mm)	1560	1560	1560	1560	1560	1560	1560	1560
Total mass - (boiler with tank and screw feeder) (kg)		328	349	402	455	455	478	730	830
Max. operating overpressure (bar)		2.5							
Test pressure (bar)		5							
Max. operating temperature (°C)		90							
Flue gas tube - external diameter (mm)		130	130	130	150	150	150	200	200
Dimension D*/D** (mm)		1515 / 1230	1040 / 755	1140 / 850	1155 / 835	1155 / 835	1305 / 935	1375 / 1305	1375 / 1305
Dimension E (mm)		125	120	120	125	125	125	180	180
Dimension F (mm)		525	525	520	520	520	670	705	705
Boiler connections	Main/return flow (thread) (G)	5/4"	5/4"	5/4"	5/4"	5/4"	5/4"	6/4"	6/4"
	Filling/drainage (thread) (G)	1/2"							
Heating appliance working		with fan							
Heating appliance working		under non-condensing conditions							
Stoking mode		automatic							
It is recommended that the boiler be operated with a hot water storage tank of a volume of at least (l)		240	360	480	620	720	960	1380	1920
Condensing boiler		no							
Solid fuel cogeneration boiler		no							
Combination boiler		yes							
Preferred fuel		compressed wood in the form of pellets: C1 (EN 303-5:2012); A1 (EN ISO 17225-2)							
Seasonal space heating energy efficiency - η _s (%)		78 / 79	78 / 80	79 / 82	79 / 83	79 / 83	79 / 83	83	82
Seasonal space heating emissions for preferred fuel ****	PM mg/m ³ (10% O ₂)	22 / 19	24 / 21	25 / 23	25 / 22	26 / 22	26 / 21	20	18
	OGC mg/m ³ (10% O ₂)	3 / 5	2 / 3	1 / 2	1 / 2	1 / 2	0 / 2	2	1
	CO mg/m ³ (10% O ₂)	245 / 167	208 / 117	170 / 67	148 / 78	132 / 90	93 / 113	97	77
	NO _x mg/m ³ (10% O ₂)	167 / 138	180 / 138	192 / 138	185 / 139	180 / 139	167 / 141	139	136
Auxiliary electricity consumption	At rated heat output - el _{max} (kW)	0.040 / 0.055	0.043 / 0.066	0.045 / 0.076	0.047 / 0.082	0.048 / 0.086	0.050 / 0.096	0.098	0.100
	At 30 % of rated heat output - el _{min} (kW)	0.025 / 0.039	0.028 / 0.039	0.030 / 0.039	0.032 / 0.041	0.033 / 0.043	0.035 / 0.046	0.059	0.075
	Of incorporated secondary emission abatement equipment (kW)	Not applicable							
	In standby mode - P _{SB} (kW)	0.005 / 0.006						0.006	0.005

* possible way of installing the fan (output is directed up)

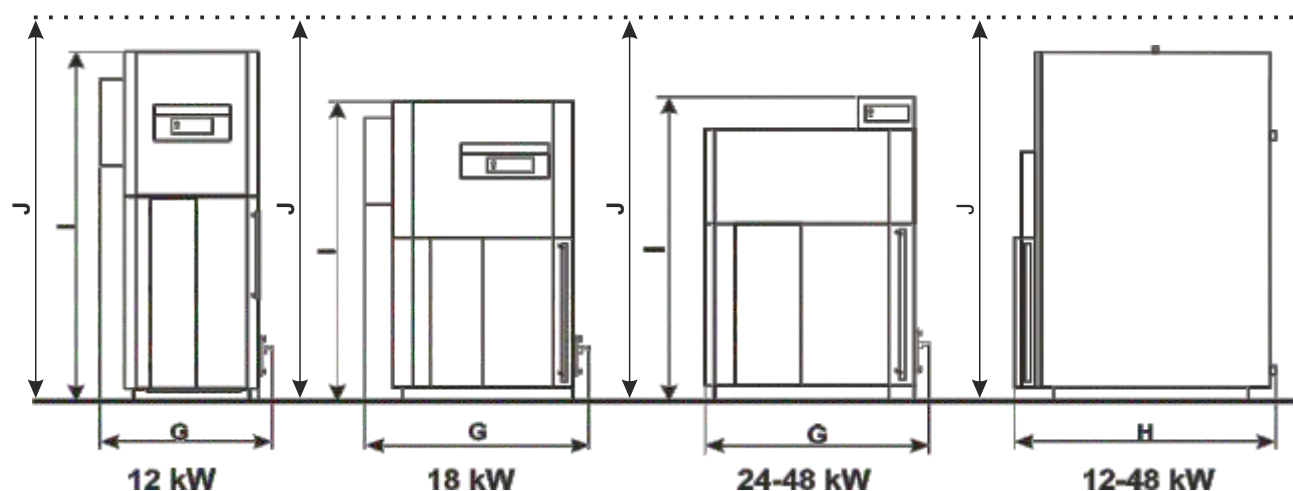
*** dT=20°C

** possible way of installing the fan (output is directed sideways)

**** PM = particulate matter, OGC = organic gaseous compounds, CO = carbon monoxide, NO_x = nitrogen oxides

Contact details: Centrometal d.o.o. - Glavna 12, 40306 Macinec, Croatia

Dimensions of the boiler to enter the room	12 kW	18 kW	24 kW	31/36 kW	48 kW
Width (G)	650	880	855	945	945
Depth (H)	760	760	760	840	840
Height (I)	1560	1275	1340	1340	1490
Min. room height for turbulators removing (J)	1900	1700	1700	1700	2000

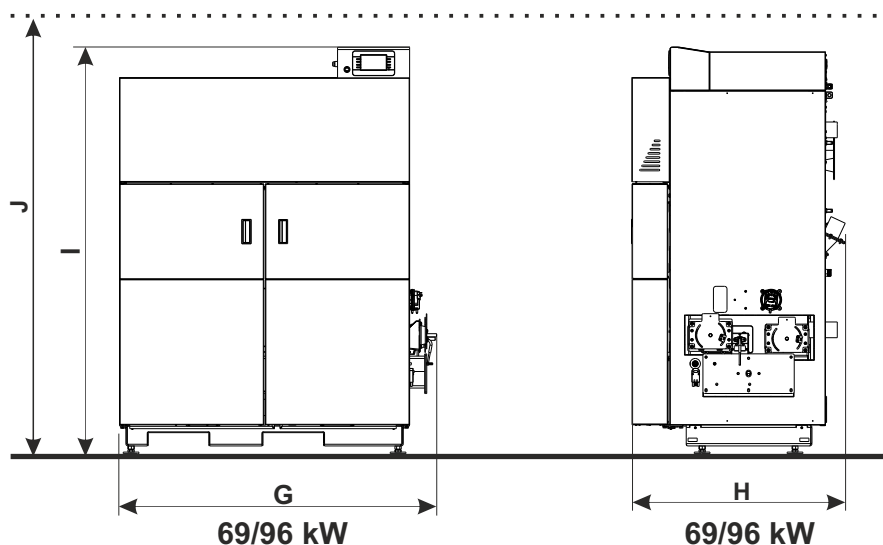


Technical data

Dimensions of the boiler to enter the room

	69 kW	96 kW
Width (G)	1220	1245
Depth (H)	815	885
Height (I)	1550 (+30 mm)*	1530 (+30 mm)*
Min. room height for turbulators removing (J)	2050 (+30 mm)*	2050 (+30 mm)*

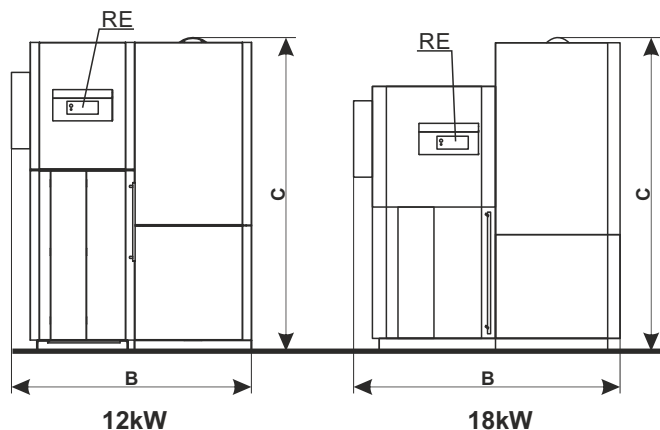
* height can be adjusted +30 mm from this dimension



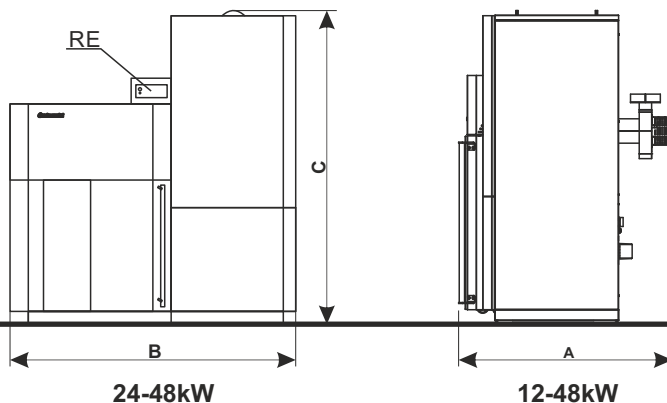
PLV - Boiler flow
 PVV - Boiler return
 PP - Charge / Discharge
 DP - Flue gas tube
 VE - Fan (fan output can be mounted in any directions)
 SP - Pellet tank
 PT - Pellet feeder

RP - Pellet level sensor
 SG¹ - Safety airvent group (not included in delivery)
 PG - Pump group
 PE - Connection for expansion vessel
 FC - Flexible PVC tube
 TP - Thermal protection exchanger (only 69/96)
 TU - Temp. sensor tube (probe)
 TPC - Cover lid - thermic valve sensor probe
 OP - Cover lid - boiler sensor
 RE - Regulation

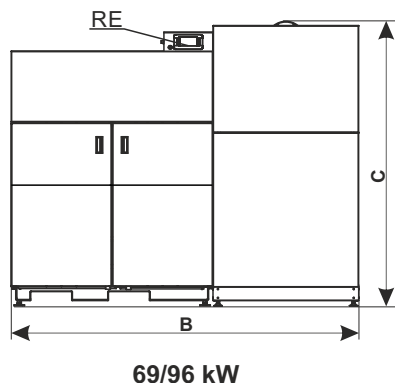
Front view



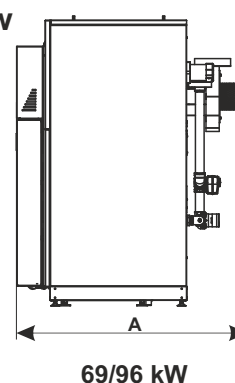
Side view



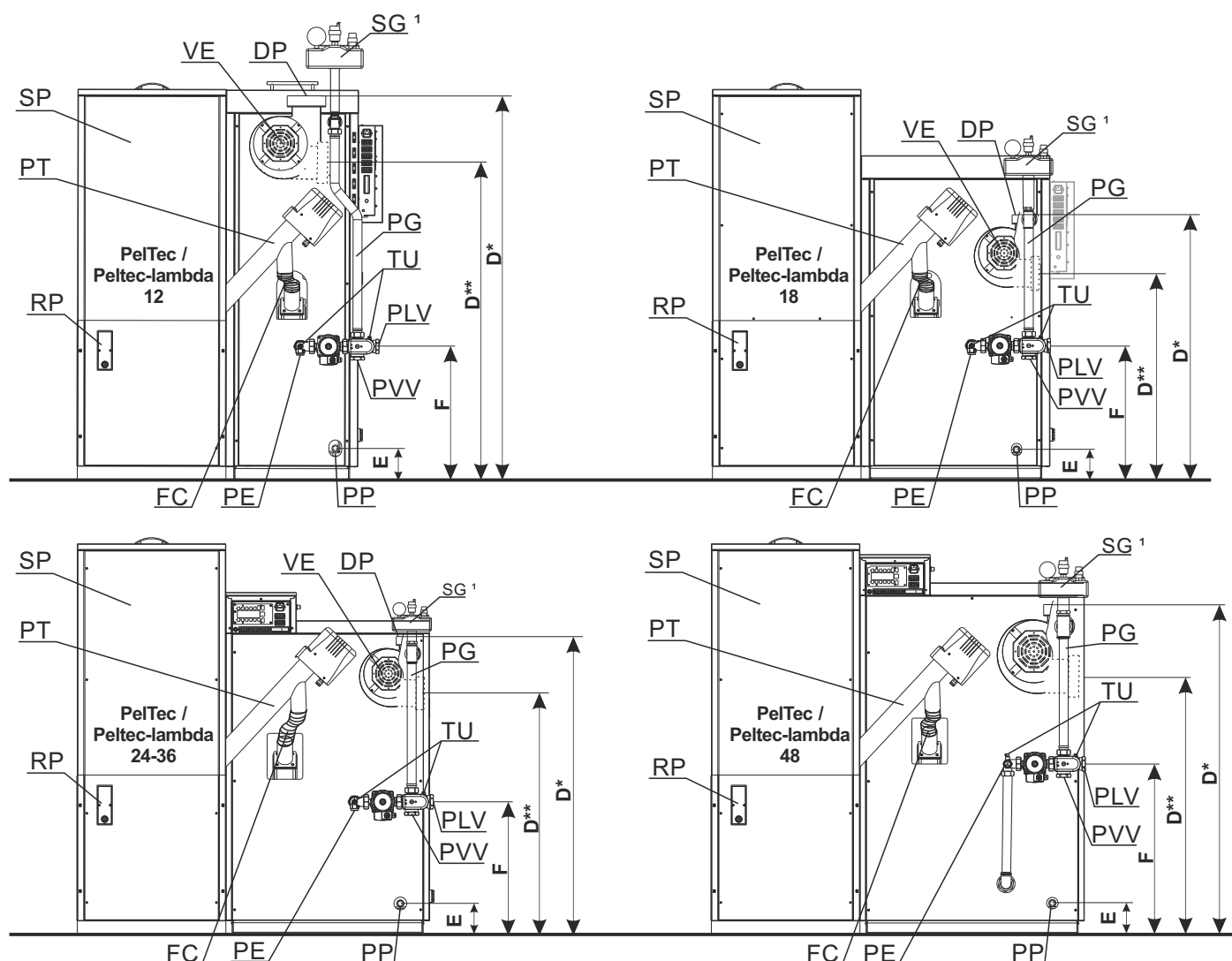
Front view



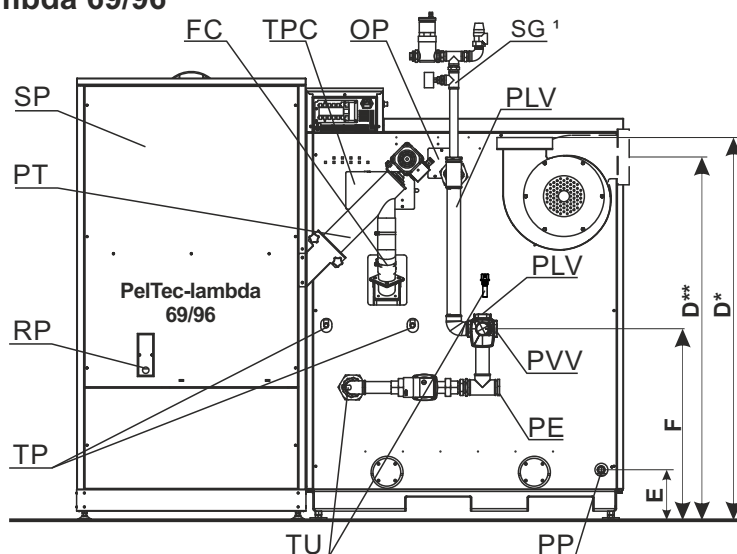
Side view



Back view - PelTec / PelTec-lambda 12-48



Back view - PelTec-lambda 69/96



NOTE:

- main flow tube (probe) and sensor are used only in scheme 2 (DHC), 3 (DHCIIIDHW) and 12 (DHCIIIDHW(2))
- at boilers 69/96 for this schemes sensor tube (probe) is delivered and must be installed on the main flow, close after 4-way mixing valve (drill hole and make thread M10x1)
- sensor tube (probe) must be sealed

* possible way of installing the fan (output is directed up)

** possible way of installing the fan (output is directed sideways)

¹ not included in delivery

Basic parts and sensors

***1 - Boiler sensor (NTC 5k)

*2 - DHW sensor (NTC 5k)

3 - Pressure switch

4 - Photocell

5 - Electric heater

6 - Flue gas sensor (Pt 1000)

7 - Fan speed sensor

8 - PVC tube bimetal sensor

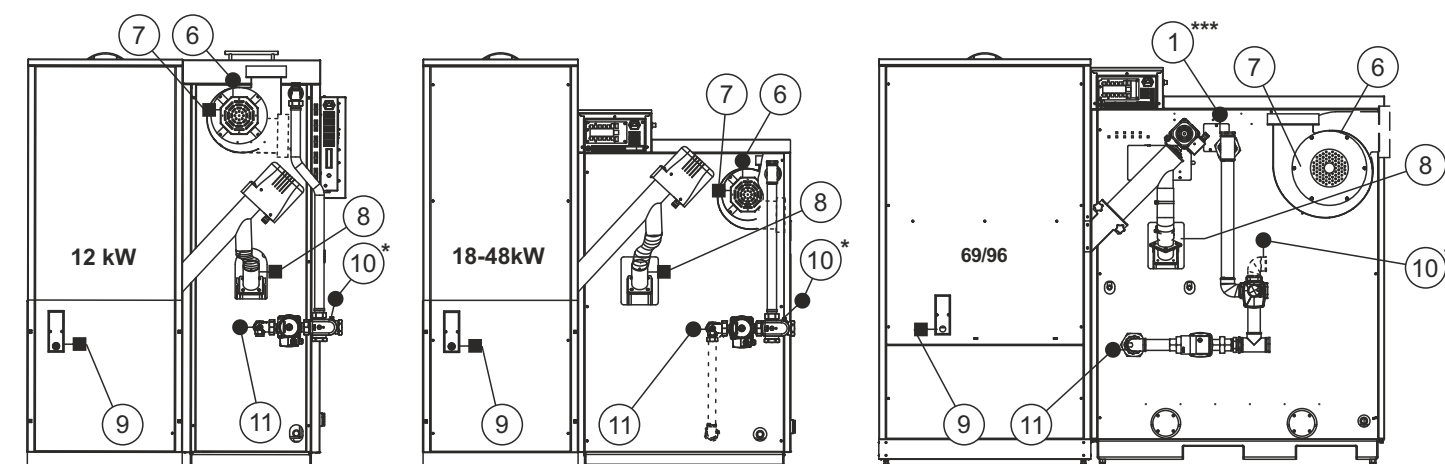
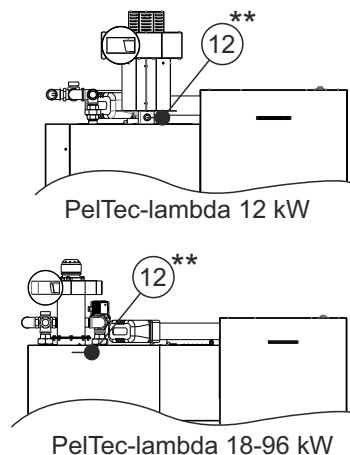
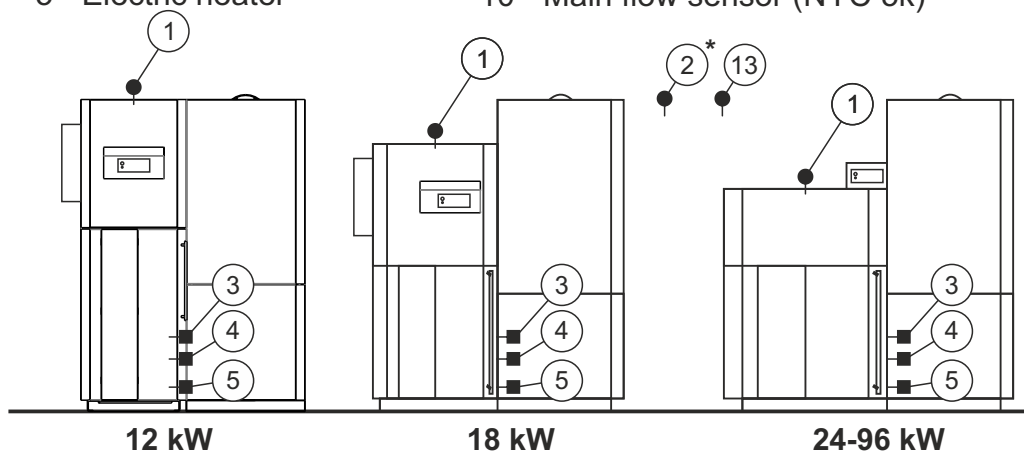
9 - Pellet level in the tank

*10 - Main flow sensor (NTC 5k)

11 - Return flow sensor (NTC 5k)

**12 - Lambda probe

13 - Outdoor sensor (NTC 5k)



*depending on the configuration can be used as: DHW sensor, flow temperature sensor, accumulation tank sensor (CAS), hydraulic crossover (CRO)

**only PelTec-lambda

***only PelTec-lambda 69/96 - boiler sensor is located in the sensor tube in the boiler main flow tube (below boiler casing cover)

ADDITIONAL EQUIPMENT

CAL - alarm box (speaker/LED)



Cm wifi-box (Internet supervision)



GSM Alarm module for mobile network



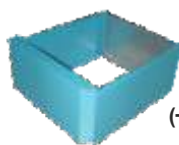
CM2K module for regulation 2+ heating circuits



CMNET module for boiler cascade



Pellet suction system



Increasing volume of pellet tank (+77kg, h=300mm) (12-48 kW)



Screw refill (CPSP-BP 800 - System for the pellet supply by the screw transporter from 800 lit. pellet tank)

Room corrector (CSK-Touch)



- Ash screw (only 69/96)
- Rotary valve

1.0. INTRODUCTION

The **PelTec / PelTec-lambda** has a modern construction and design and is made out of the controlled materials of high quality, welded with most modern technology and is approved and tested under EN 303 - 5 norm and fulfil all special request for the connection on the installation of a central heating system.

1.1. BOILER DESCRIPTION

Steel hot water boiler are engineered for wood pellet firing. In the boiler is installed the burner for wood pellet firing with the automatic firing and automatic self-cleaning function which enables the reliable operation also with the low quality wood pellets. The function of the automatic cleaning flue gas tubes provides the unifying exchange of the heat and high and unifying level of boiler efficiency. Digital boiler controller in a basic construction offers also the possibility of control with the additional equipment likes lambda probe or level control of the wood pellets in the pellet tank. The pellet tank is the integral part of the boiler. The boiler is delivered in pieces due to the easier transport into the boiler room.

1.2. SAFETY PRECAUTIONS

The boiler and related accessories are state of the art and meet all applicable safety regulations. The control unit, wiring chamber, el. heater, safety cut-out STB thermostat, fan, grid cleaning mechanism, flue gas tubes cleaning mechanism and pellet supply mechanism are integrated into the **PelTec / PelTec-lambda**. They are operate at a voltage of 230 V AC. Improper installation or repair can pose the danger of life-threatening electric shock. Installation may be performed only by appropriately qualified technicians.

Caution symbols:

Please take careful note of the following symbols in this Operating Manual.



This symbol indicates measures for protection against accidents and warning for the user and / or exposed persons.

1.3. IMPORTANT INFORMATIONS

All local regulations, including those referring to national and European standards need to be complied with when installing the appliance.

The boiler must not be modified unless using the tested original accessories we provide or if the work is undertaken by our Customer Service.

Only fit original spare parts. These can be obtained from your customer service partner or directly from ourselves. European standards need to be complied with when installing the appliance.

Regular care and cleaning of the appliance, flue gas outlets, connecting piece and flue.



CAUTION:

The flue may block if the boiler is heated again after a long period of it not being used. Before starting the boiler, have the flue checked by a specialist (chimney sweep).

Ensure sufficient supply of fresh air in the installation room when heating. The air must be replaced at least 0.8 times an hour through constant and reliable room venting. Fresh air may have to be provided from outside if the windows and doors in the room where the boiler is installed are well sealed or if this room contains other equipment, such as extractor hoods, clothes dryer, fan etc.

1.4. STATUS OF DELIVERY

Equipment is delivered separately:

1. Boiler with planking and thermal insulation

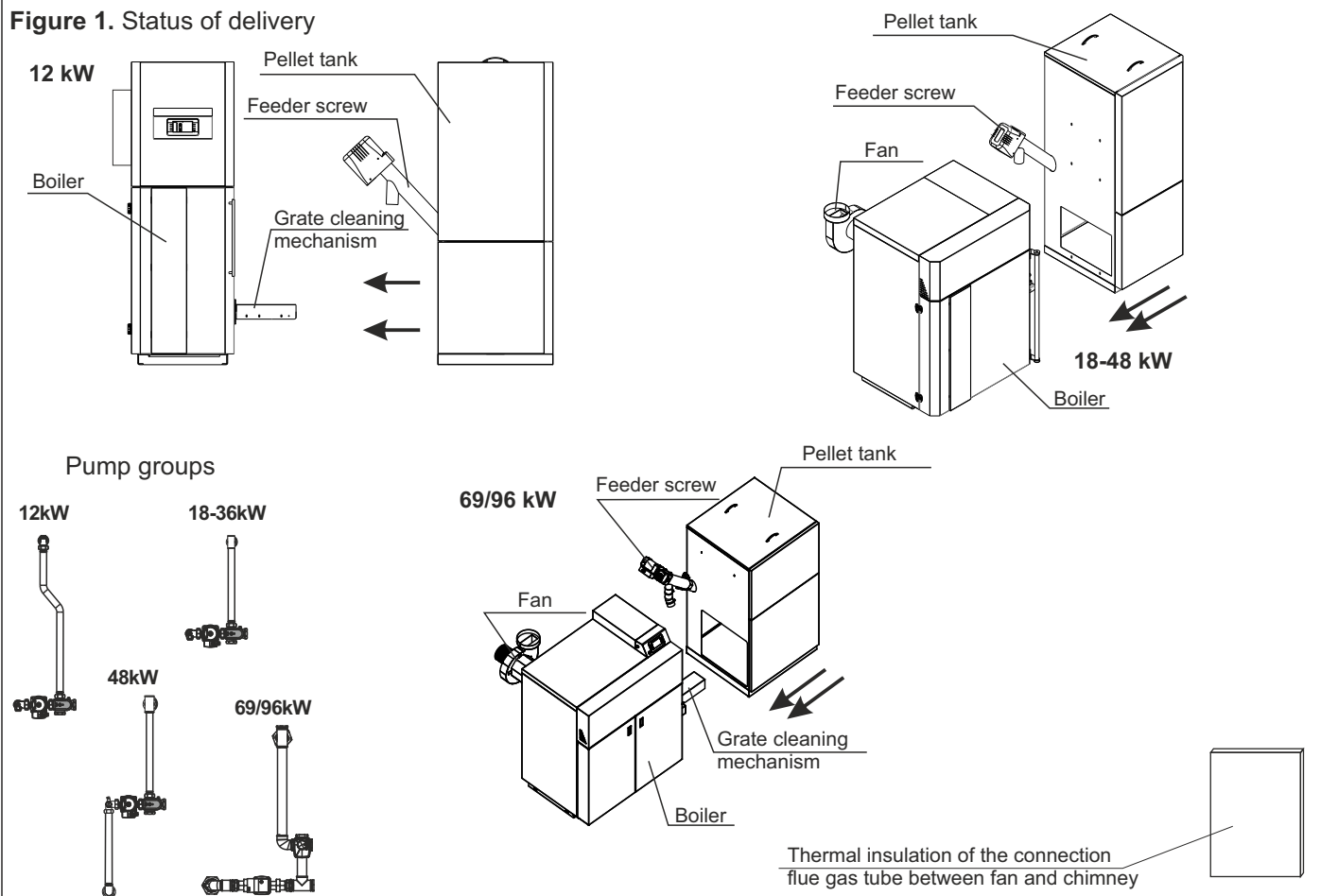
With inbuilt and pre-wired:

- color touch screen display control unit
- boiler temperature sensor - NTC 5K - PVC I=1000 (12041)
- flue gas temperature sensor - PT 1000 - Teflon I=1700 (62330)

Additional parts, sensors and connectors in basic delivery:

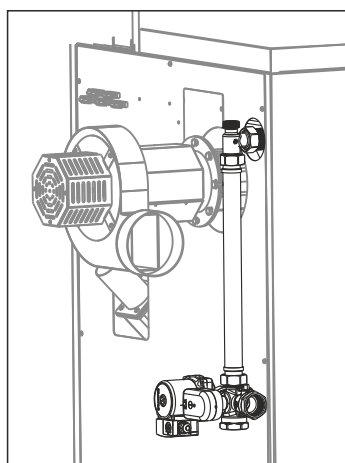
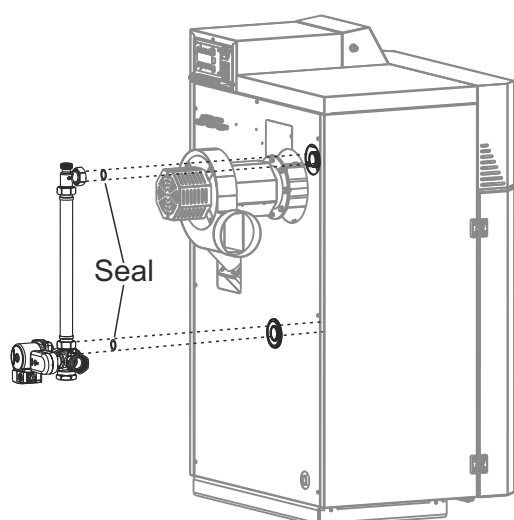
- lambda probe (only for PelTec-lambda 69/96)
 - 1 x return flow temperature sensor - NTC 5K - PVC I=2000 (26226)
 - 2 x (main flow temperature sensor / DHW temperature sensor / Acc. (buffer) tank temperature sensor / Hydraulic crossover temperature sensor) - NTC 5K - PVC I=2000 (26226)
 - 1 x outdoor temperature sensor - NTC 5K (31428)
 - connector 3 pin female - (blue) (62329)
 - connector 3 pin female - (brown) (26979)
 - connector 3 pin female - (green) (25850)
2. Grate cleaning mechanism (requires installation on the boiler)
 3. Fan (requires installation on the boiler)
 4. Pump group (Tubes with 4-way mixing valve with actuator and circulation pump (need to be mounted on boiler, **Obligatory:** set the 3-speed pump on the speed 3 or max power for HE pumps.)
 5. Thermic protection valve (Caleffi 543, 98°C) - **only PelTec-lambda 69/96**
 6. Pellet tank in a cardboard box (the parts need to be mounted, see instructions for mounting the pellet tank)
 7. Feeder screw with a flexible PVC tube (should be placed in the pellet tank)
 8. Thermal insulation of the connection flue gas tube between fan and chimney
 9. Cleaning tools: scraper, wooden cleaning brush, wire cleaning brush

Figure 1. Status of delivery

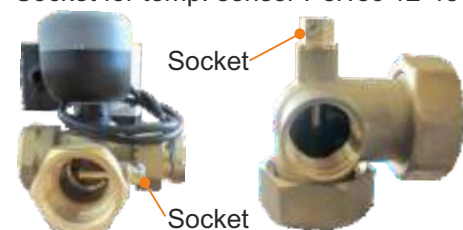


Pump group

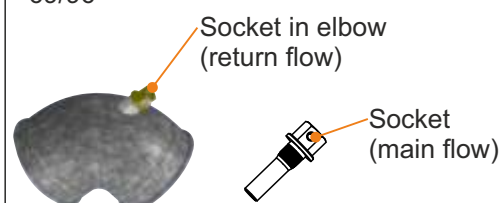
- mount pump group with 4-way mixing valve to the boiler so that the T-piece is in the upper side. On the upper connector of the T-piece incorporate safety ventilation group. On the back of boiler were prepared two holenders for mounting connection tubes (connection tubes with 4-way mixing valve). Be sure to use the seal for holenders. Set return temperature sensor in the socket for the sensor between the 4-way mixing valve and the boiler. It is obligatory using the included thermal paste. Plug-in return flow sensor on the back of the box control. Connect the pump cable with connector to the back of the control box. **Mandatory** set the 3-speed pump on the speed 3 or max. power for HE pumps.



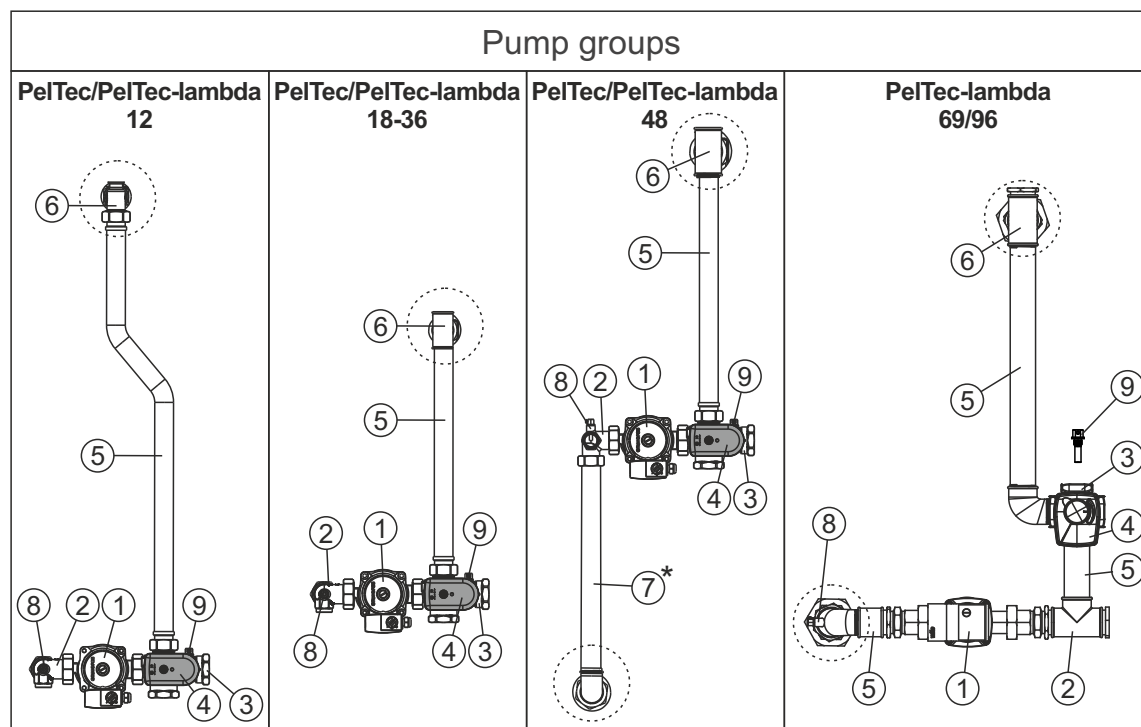
Socket for temp. sensor PelTec 12-48



Socket for temp. sensor PelTec-lambda 69/96



Example of installation pump group to the boiler
PelTec/PelTec-lambda 18-36



LEGEND:

- ① - Boiler pump P1
- ② - Angled T-piece - return flow
- ③ - 4-way mixing valve
- ④ - Motor actuator
- ⑤ - Connecting pipe
- ⑥ - T-piece -flow
- * ⑦ - Lower pipe
- ⑧ - Return flow sensor tube
- ⑨ - Main flow sensor tube

*Only PelTec / PelTec-lambda 48

NOTE: check the tightness of connection tubes. Fasten connections binding tubes if necessary, so that a good seal.

Pellet level in the tank sensor

- mount this sensor on the back side inside of the pellet tank. First set the plastic glass distance for sensor. After that, put the sensor on this glass. Attach the sensor and the plastic distance with 4 screws supplied. Attach protective cover. Plug-in the cable with connector of the pellet level sensor on the back of the box control.



Pellet tank

- mount pellet tank according installation manual for mounting pellet tank. Set up pellet transporter in the pellet tank. Place the pellet tank to the boiler and set PVC tube to conveyor and tube supply on the boiler. Set up the PVC tube so as to allow the smooth falling pellet into the burner. If necessary, cut the PVC tube to the required length. Plug-in the power connector on the back of the control box.

1.5. MOUNTING COMPONENTS

For ease of handling, transport and import of boiler, PelTec / PelTec-lambda is delivered in parts that need be mounted on the boiler when the boiler is in the boiler room. These parts need to be installed on the boiler:

Fan

- mount on the back of boiler, is obligatory to use the flange gaskets fan, fastened using M8 bolts and nuts. Plug-connector for power supply fan and the fan rpm sensor in the back of the control box. Fan output can be mounted in any directions.



Fan

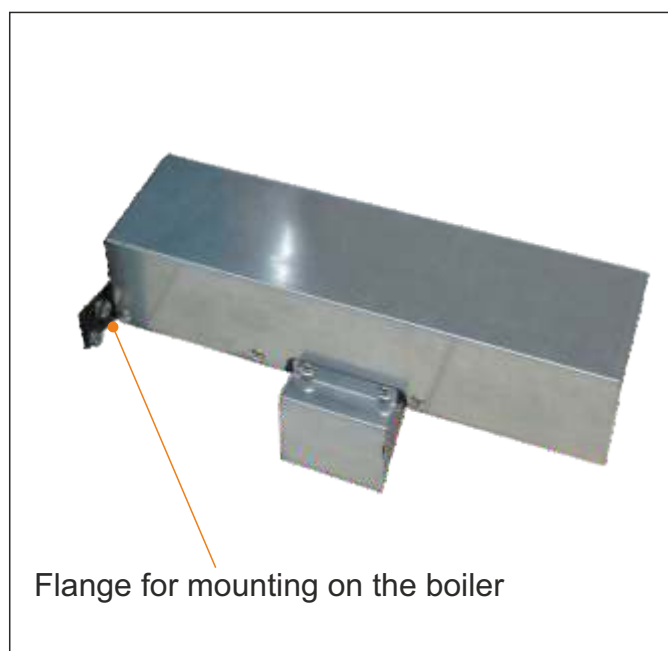
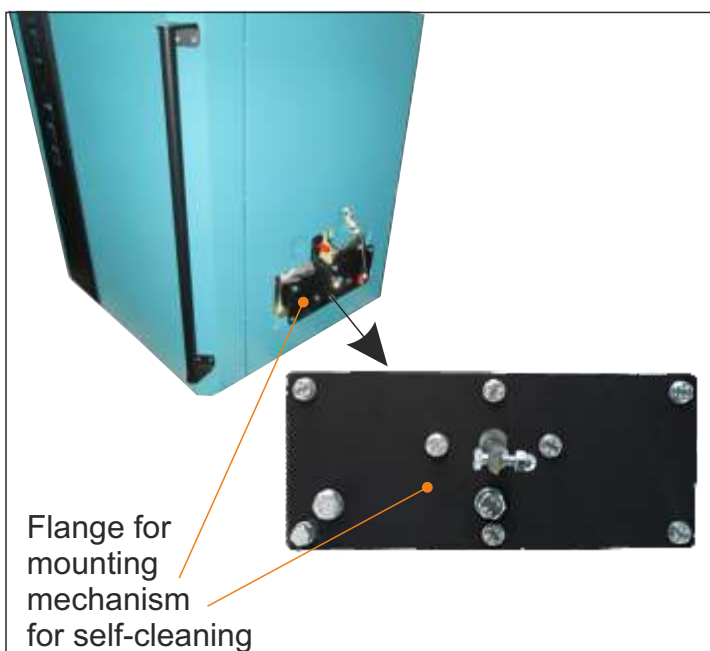
(Fan output can be mounted in any directions)



Flange for mounting fan

Mechanism for grating cleaning

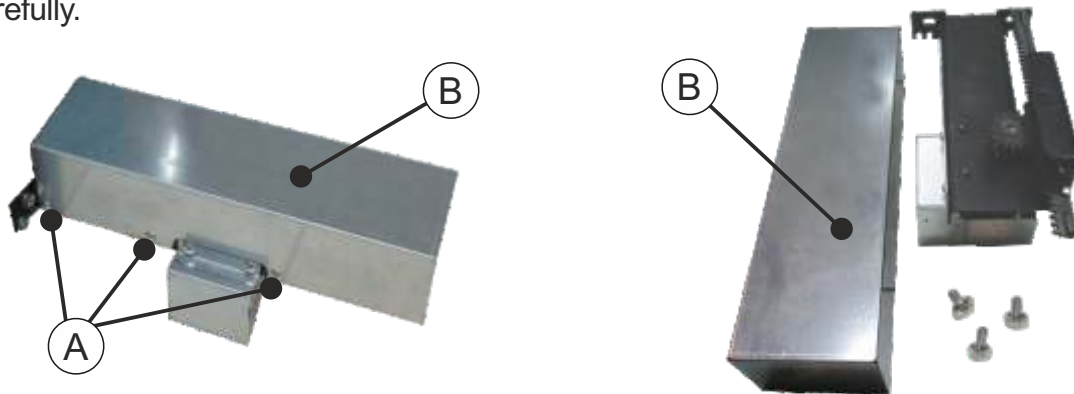
- mount on the right side of the boiler (in this side is pellet tank), must be fastened using M8 bolts and nuts. After assembly, it is necessary to attach the lever burner grid with gear motor trail. Plug-in two cables with connectors (motor and microswitches).



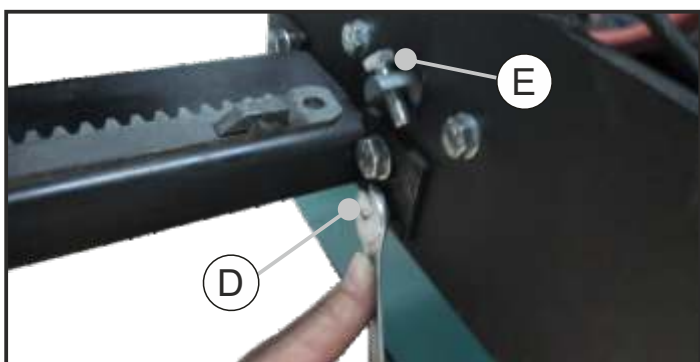
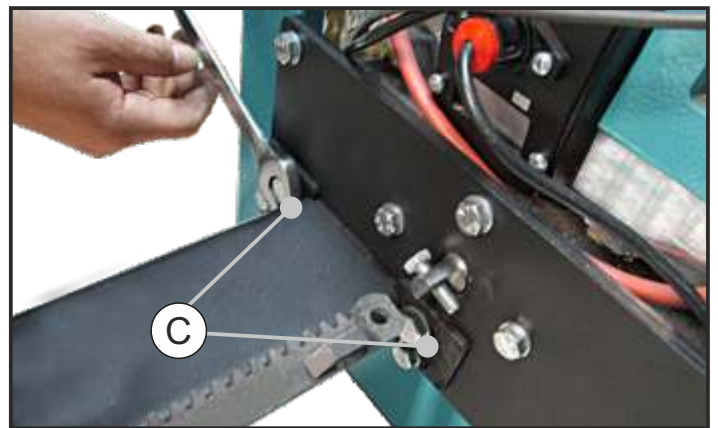
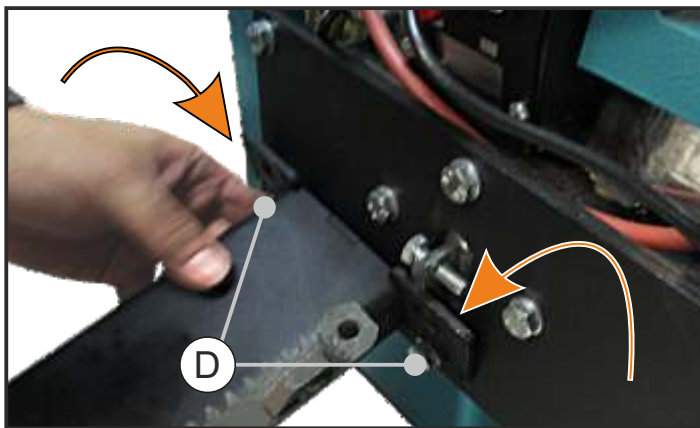
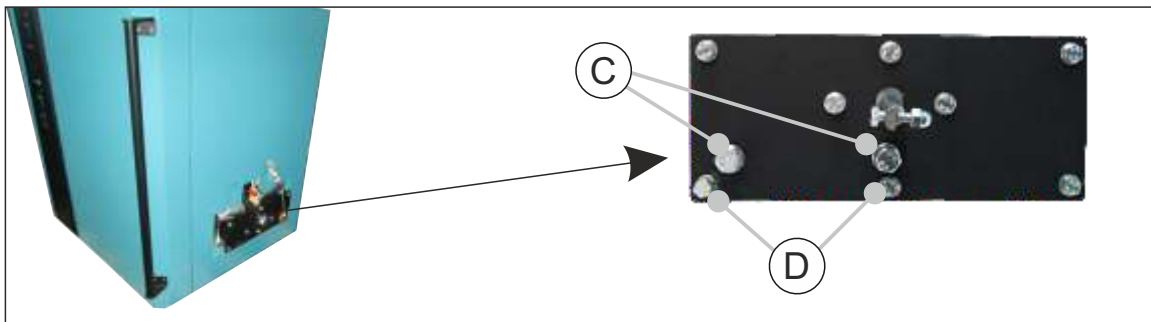
Flange for mounting on the boiler

1.5.1. MOUNTING MECHANISM FOR GRATE CLEANING

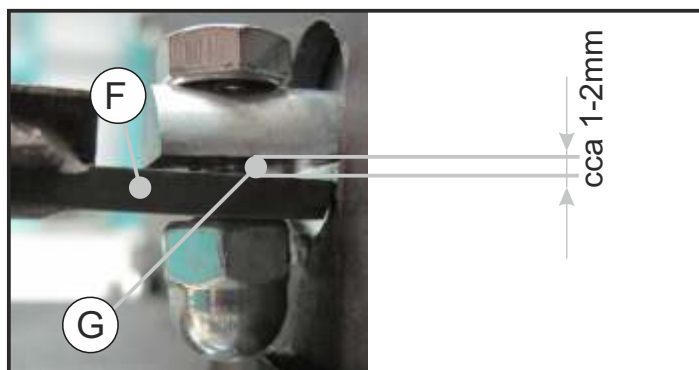
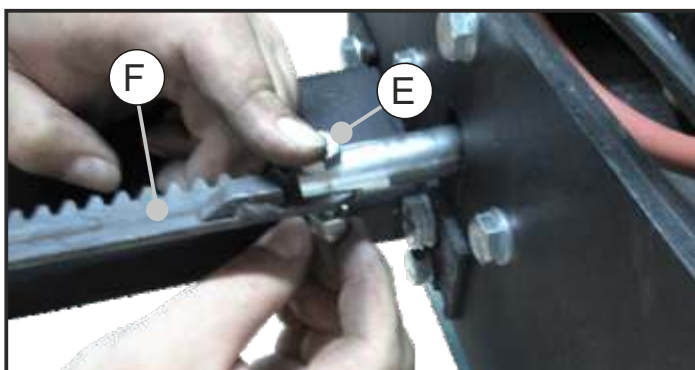
1. Remove the three screws (A), from cover (B) of the grate cleaning mechanism and remove cover carefully.



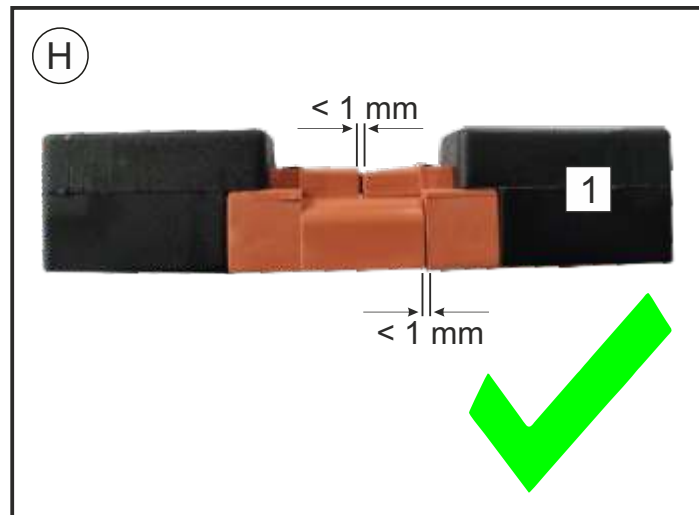
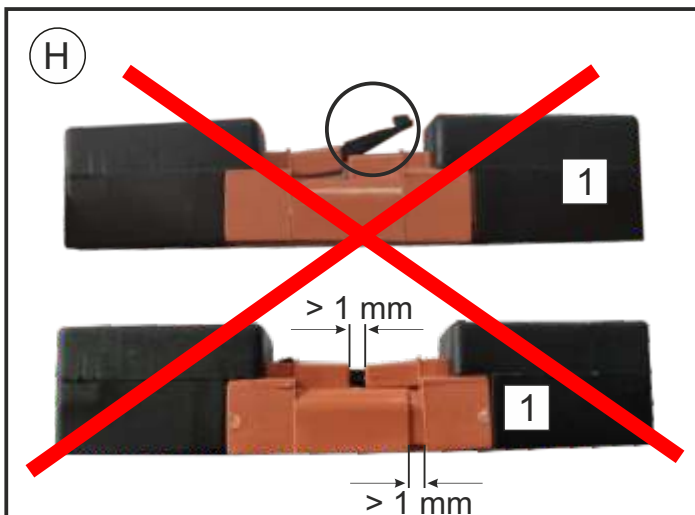
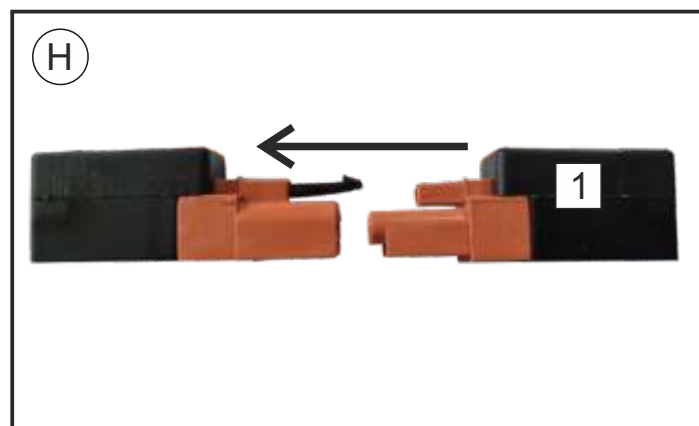
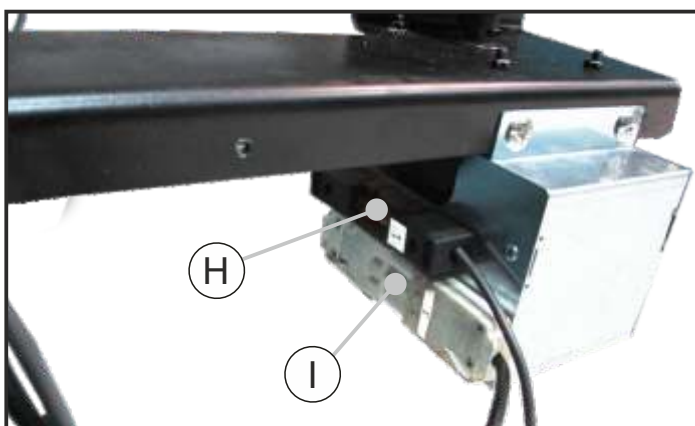
2. Remove the two screws (C) and just slightly loosen screws (D) as shown in picture below. Carefully attach grate cleaning mechanism to loose screws (D), then fasten with screws (C) and tighten the screws (D).



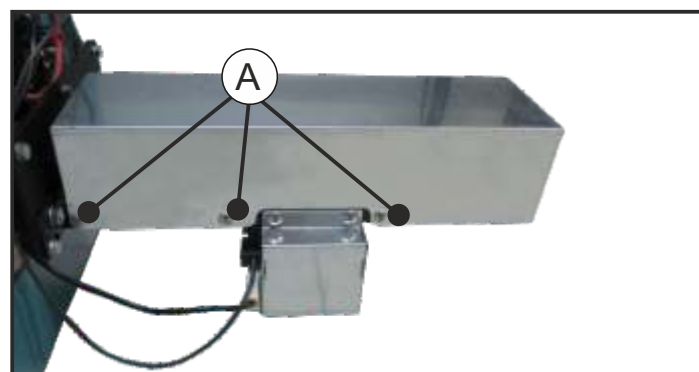
3. Set the screw (E) into the jagged track (F), set the nut on the screw and tighten. Free space (G) is required for the proper functioning of the mechanism.



4. Connect the connectors (H and I) so they have a good contact.



5. Carefully set the cover and tighten with the screws (A).



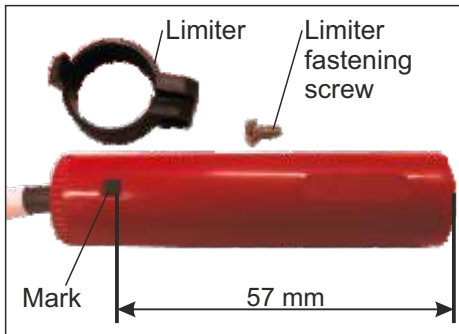
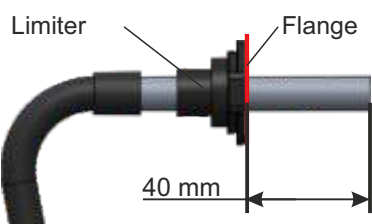
1.5.2. SETTING PHOTOCELL TO THE WORK POSITION



Before first startup, be sure to set the photocell to the position as on the figures below, otherwise the boiler will not work properly!

The photocell should not be set too deep or too shallow in the box. Because of this, there is an limiter by which correct photocell dept is set. Check if the limiter is adjusted aaccording the photos below. (factory deliver - black photocell; as a spare part - red photocell).

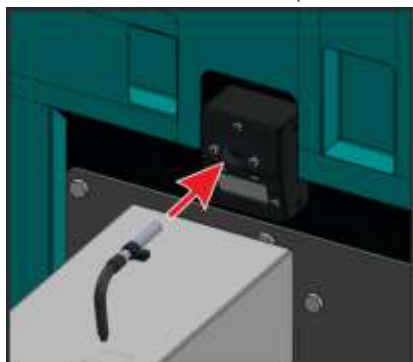
Factory installation position and distance photocell flange and limiter, ready for installtion



Limiter must be set so little black mark is visible according the picture (partially covered by limiter)



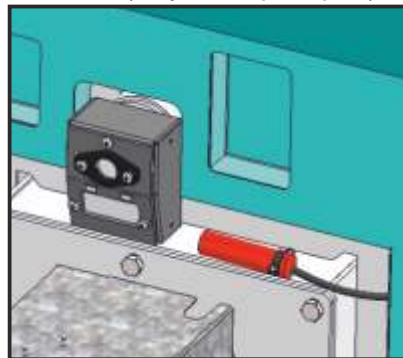
Carefully install photocell into flange on the box to the limiter (so it clicks)



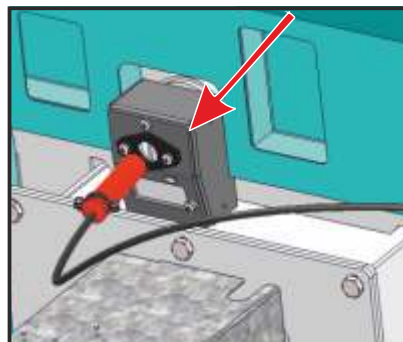
Correctly installed photocell
Boiler ready for operation



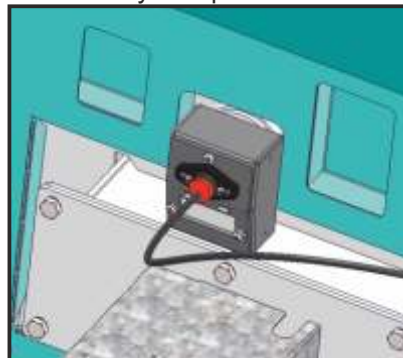
Photocell (only as a spare part)



Carefully install photocell into flange on the box to the limiter (so it clicks)



Correctly installed photocell
Boiler ready for operation

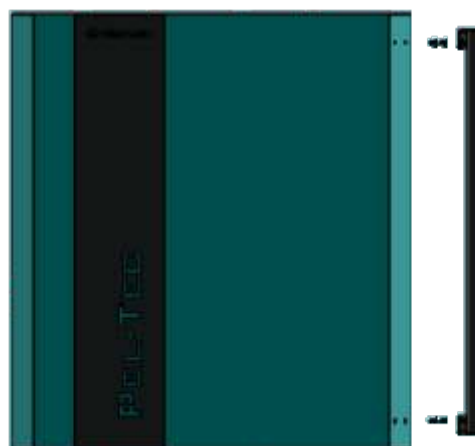


1.5.3. INSTALLATION OF THE HANDLE ON THE CASING COVER DOOR

1. Status of delivery (24-48kW)



- 2.



- 3.



1.6. SAFETY ELEMENTS

Boiler have a few safety elements:

- **Bimetal thermostat** - built on the burner pellet feeding tube. If the bimetal set temperature (80°C) is exceeded, pellet feeding is stopped, the boiler stops working and the E8, E8-1 or E8-2 and "Pellet supply tube temperature too high" are displayed on the controller screen.
- **Pressure switch** - if there is no underpressure in the boiler (eg. chimney is not passable, any boiler door or cleaning opening is open or the PVC pellet supply pipe is punctured), the controller displayed E12 and "Safety pressure switch", and the boiler stops working.
- **Photocell** - in case there is no flame (photocell does not see flame) in the ignition phase at the set time, the controller displays E18 and "No flame in ignition stage" and stops the boiler, if the flame disappears in the ignition phase, the control displays E23 and "Flame disappeared in ignition stage" and stops the operation of the boiler, if the flame disappears in the stabilization phases, the controller displays E24 and "Flame disappeared stabilization stage" and stops the boiler, and if the flame disappears in the phases of boiler operation, the controller displays E19 and "Flame disappeared working phase" and stops the boiler operation.
- **Controller** has a built in protective function which protects the boiler against overheating. If temperature in the boiler exceeds 93 °C, regardless heating or sanitary water is needed the boiler pump and/or the sanitary water turns on and works until temperature in the boiler falls below 93 °C.
- **The fan** has a built-in RPM counter and, if regulation is informed that the fan does not operate in accordance with the requirement interrupts the process display error E13 and "Fan error"
- **The grate cleaning mechanism** has two built-in microswitches that monitor the position of the grate. If the grate is not in the required position at a certain moment, the controller receives this information and interrupts the operation process, and E21 and "Error grate cleaner" will appear on the display.
- **Flue gas connection** have in-built sensor for flue gas temperature measuring. If flue gas tube temperature is over 300 °C, controller interrupt proces and display information E4 and "Flue gas sensor error»
- **STB thermostat** - When temperature in the boiler exceeds 110°C (+0°C / - 9°C), power supply is turned off by the safety thermostat (STB).
- **Thermal protection** (built in coils of the fan electric motor at the burner and the screw feeder motor, flue pipe cleaning, grate cleaning) protects them against overheating caused by failure or locking.
- **Flexible PVC tube** connecting the pellet burner and pellet tank is made of plastic material reinforced with metal wire which, in case of back flame from the burner to the tank, melts and prevents flame to penetrate to the pellet tank.
- **PelTec-lambda 69 and 96** have build in thermal protection exchanger. Thermal protection valve must be installed to it and connected to the water supply to provide boiler cooling in case of overheating (**thermal protection valve is in standard delivery, Caleffi 543, 98°C**).

1.7. FUEL

Only wood pellets are used as fuel in PelTec / PelTec-lambda. Wooden pellets are bio-fuel made of wooden wastes. Pellets can be packed in different packaging: in bags (15 kg or 1000 kg), or as bulk in large (underground) tanks (4 - 15 m³) or in basement spaces. Pellets used in pellet boiler must be in accordance with following norms: ENplusA1, DINplus, ONorm-M-7135 or DIN 51731.

Recommended properties of pellets are following:

- heating value $\geq$ **5 kWh/kg** (18 MJ/kg)
- diameter $\leq$ **6 mm**
- max. lenght = **50 mm**
- max. moisture content $\leq$ **12 %**
- max. dust content $\leq$ **1,5 %**.

2.0. BOILER POSITIONING AND ASSEMBLY

Boiler positioning, assembly and building in must be performed by a qualified person. We recommend that boiler is placed on a concrete base with height of 50 to 100 mm above the floor. Boiler room must be frost-proof and well ventilated. Boiler has to be positioned so that it can be properly connected to the chimney (see Figure 2a) and simultaneously, enabling tending of boiler and additional equipment, control during operation, cleaning and maintenance.

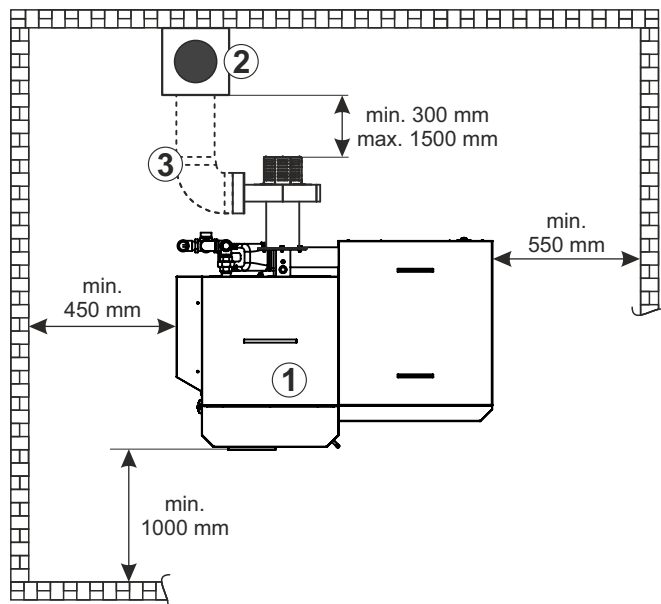
WARNING!

Flammable items must not be placed on the boiler and within the minimum distances shown in Figure 2a and 2b.

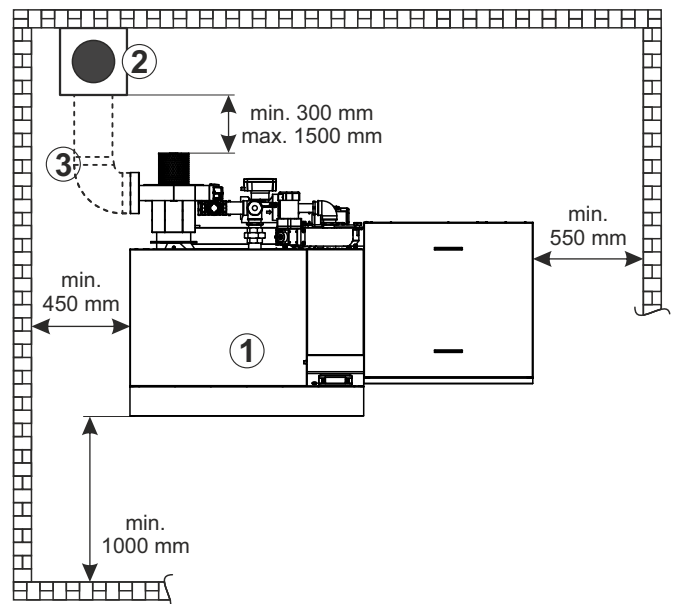
2.1. MINIMUM DISTANCE FROM THE ROOM WALLS

Figure 2a. Minimum distance from the room walls for PelTec / PelTec-lambda

PelTec/PelTec Lambda 12-48



PelTec-lambda 69/96

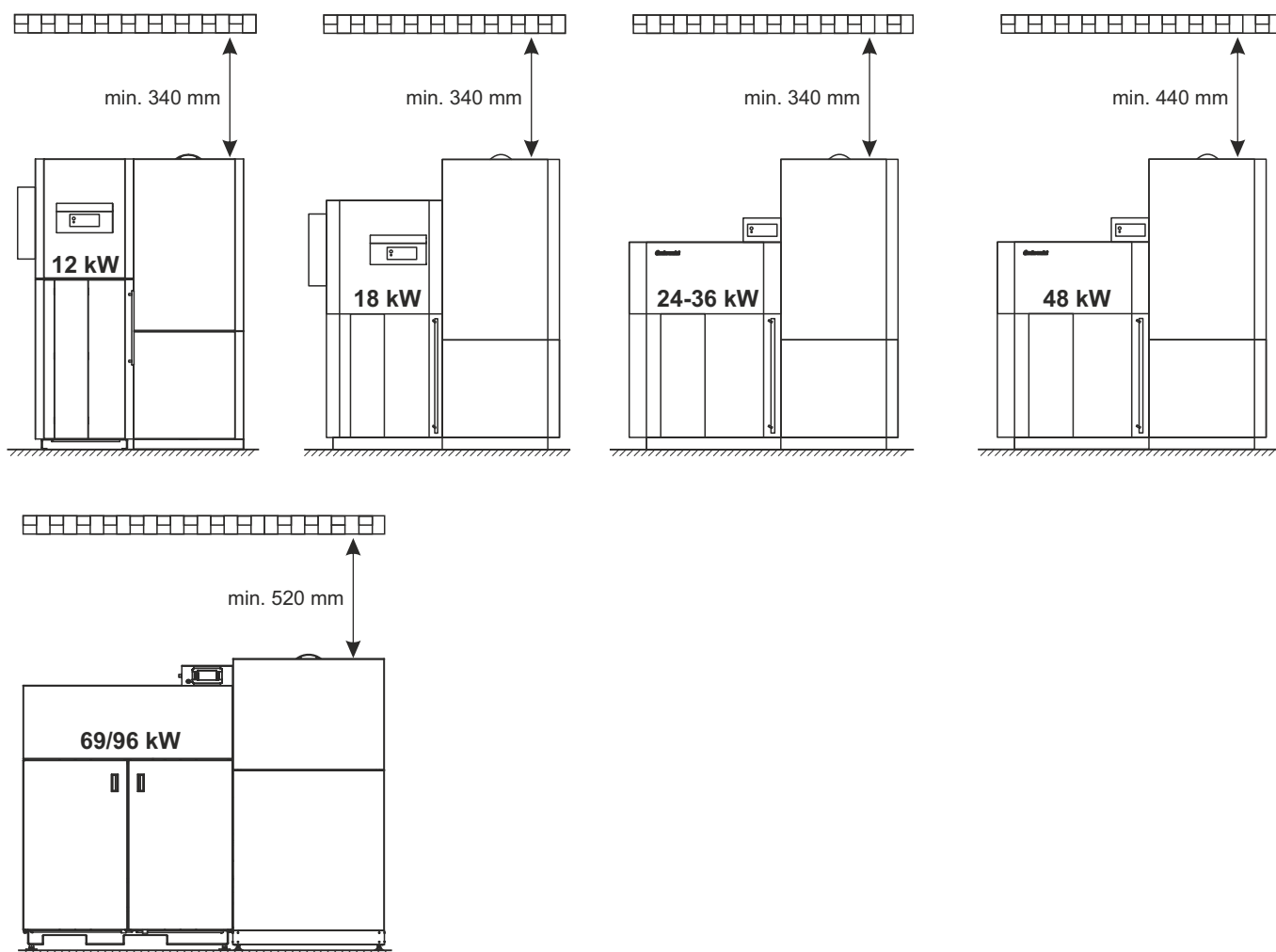


- ① - Boiler PelTec / PelTec-lambda
- ② - Chimney
- ③ - Flue gas tube (Chimney connection; must be insulated)



Provide minimum distance from the boiler room ceiling and walls for undisturbed cleaning.

Figure 2b. Minimum distance from the boiler room ceiling.



2.2. OPENING FOR FRESH AIR (FRESH AIR SUPPLY)

Each boiler room **must be equipped with an opening** for supply of fresh air which is dimensioned in accordance with boiler output (minimum opening area according to the below shown equation). Such opening must be protected with a net or grate. All installation works have to be performed in accordance with valid national and European standards. Boiler must not operate in flammable and explosive environment.

$$A = 6,02 \times Q$$

A - opening area in cm^2
Q - boiler output in kW

3.0. CONNECTION TO THE CHIMNEY

Properly dimensioned and built chimney is the main condition for safe and economical functioning of the boiler. The thermal insulation of the chimney has to be done properly, it has to be absolutely gas-proof and smooth. On its lower part there has to be built in the opening for cleaning with the door. An brick-layed chimney has to have three layers with an insulation of 30 mm in the middle, if the chimney is built inside the house (i.e. inside the heated area), or an insulation of 50 mm if it is built outside the house (i.e. outside the heated area). The flue gas temperature has to be at least 30°C higher then the temperature of their condensation point. The choice and the construction of the chimney has to be performed by the authorized person. Inner diameter of the chimney must be selected according the possible effective chimney height and boiler power and according diagram below.

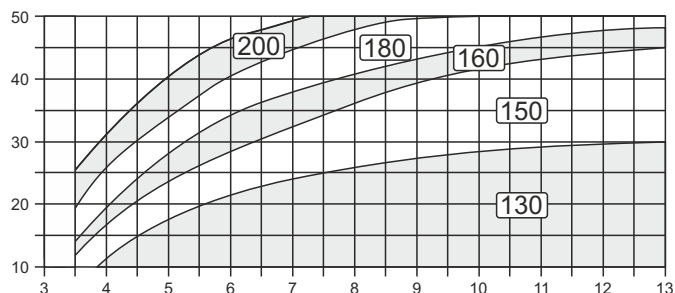
The chimney must be dimensioned according to the "chimney selection diagram" with a minimum inner clear cross-section of the chimney of Φ 130 mm for PelTec / PelTec-lambda 12/18/24, Φ 150 mm for PelTec / PelTec-lambda 31/36/48 and Φ 200 mm for PelTec-lambda 69/96. The diagram was made for a chimney length of 2 m with two 90° elbows (bends). If the chimney does not fit into the specified frame, the chimney must be raised according to the guidelines in the note below the diagram. Connection flue gas tube can be mounted horizontally or at any angle which allows to gas, on his way to chimney, a constant increase of height with considering of exit point from fan. Connection flue gas tube must have openings for cleaning through which is possible to clean entire length of flue gas tube or must ensure easy removal part of flue gas tube which allow complete cleaning of connection flue gas tube. To prevent entry of condensate form chimney into the boiler, flue gas tube must be mounted 10 mm deeper into the chimney. **Connection flue gas tube between fan and chimney must be insulated with 30-50 mm mineral wool.**



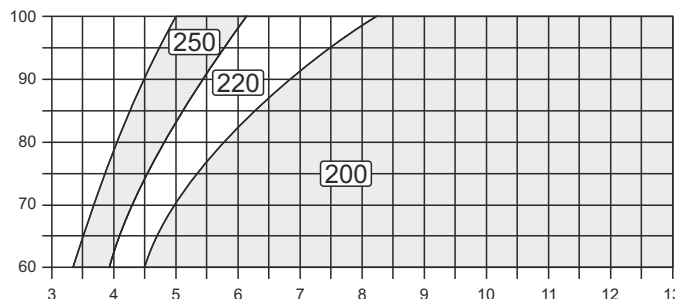
The chimney must be resistant against flue condensate!

Figure 3. Dimensioning of the chimney for PelTec / PelTec-lambda

10-50 kW



60-100 kW



NOTES:

For flue gas tubes up to 2 m and 2 flue gas elbows look at the diagram.

In case of longer flue gas tube and/or there is more than 2 flue gas elbows, effective height must be selected from the diagram and for every additional meter of the flue gas tube and/or every additional flue gas elbow, add following value to the effective height:

- PelTec / PelTec-lambda 12-18: +0,5 m
- PelTec / PelTec-lambda 24-48: +1,0 m
- PelTec-lambda 69/96: +0,5 m

In case of flue gas tubes longer than 5 meters, recommended is (or it's necessary) select flue gas tube for 10 mm bigger than boiler output because of ash deposits during the boiler working.

In any case, necessary is to predict correct amount cleaning openings for flue gas tube and elbows cleaning.

Chimney dimensioning examples: for boiler PelTec / PelTec-lambda 24 and 69

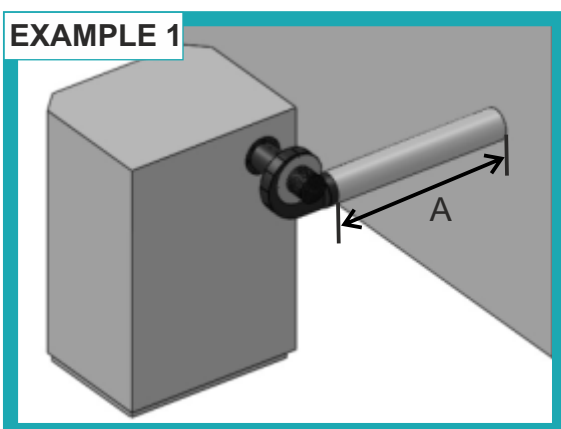
Boiler heat output: **24 kW / 69 kW**
 Required usable chimney height: **7,5 m / 5 m**
 Required inner chimney diameter: **130 mm / 200 mm**
 Inner diameter of the boiler-chimney connecting pipe: **130 mm / 200 mm**
 Fuel: **wood pellets**

Chimney dimensioning examples: (minimum inner clear cross-section of the connection between the boiler and the chimney)

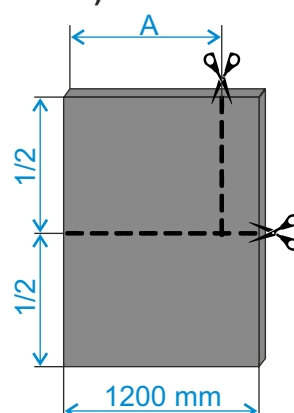
		boiler power (kW)						
		12	18	24	31/36	48	69	96
inner chimney diameter (mm)	130	4,5	5,5	7,5	-	-	-	-
	150	4	4,5	5,5	8	-	-	-
	160	3,5	4	5	6,5	-	-	-
	180	-	3,5	4	5,5	8,5	-	-
	200	-	-	-	4,5	7	5	8
	220	-	-	-	-	-	4,5	6
	250	-	-	-	-	-	4	5
min. chimney effective height (m)								

3.1. INSTALLATION OF THE CONNECTION FLUE GAS TUBE (BETWEEN FAN AND CHIMNEY) THERMAL INSULATION

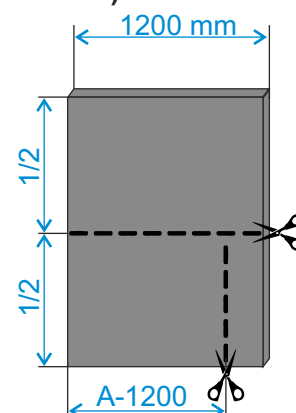
EXAMPLE 1



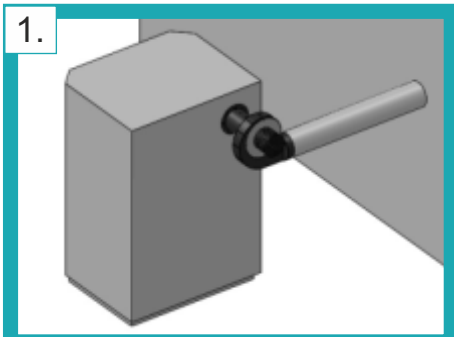
a) $A \leq 1200$



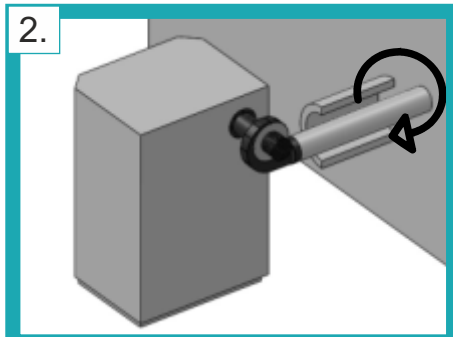
b) $A > 1200$



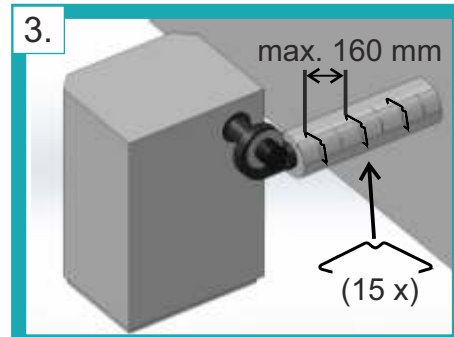
1.



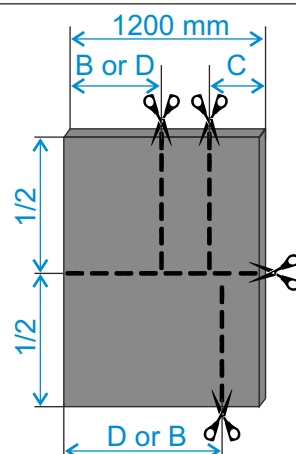
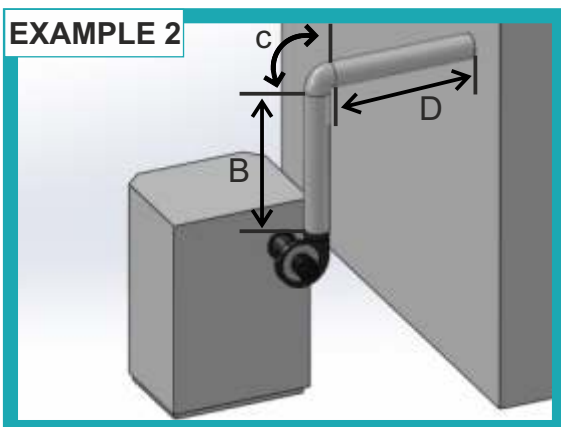
2.



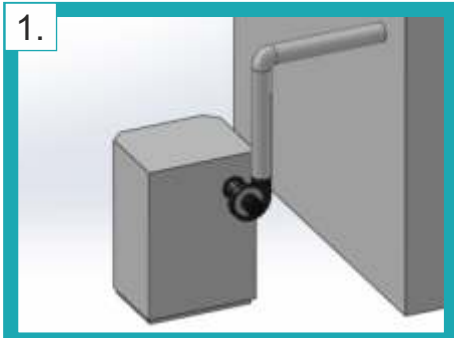
3.



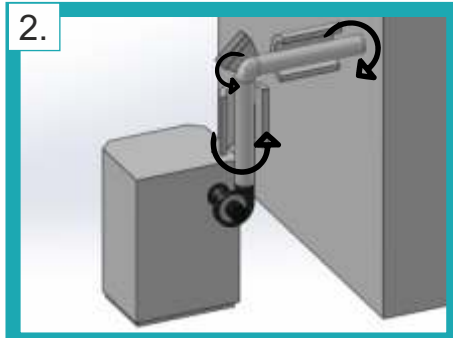
EXAMPLE 2



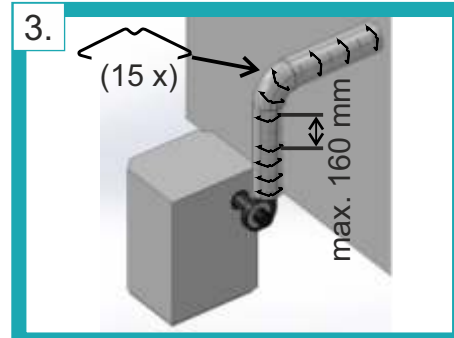
1.



2.



3.



4.0. INSTALLATION

All local regulations, including those referring to national and European standards need to be complied with when installing the appliance.

4.1. CONNECTION TO CENTRAL HEATING SYSTEM

All installation work must be made in accordance with valid national and European standards.

Boiler **PelTec / PelTec-lambda** can be built in closed and open central heating systems. In both cases boiler can be fired with wood pellets. Installation has to be made, in according to technical standards, by a professional who will be responsible for proper boiler operation. Before connecting boiler to central heating system, the system has to be flushed to remove impurities remaining after system installation. It prevents boiler overheating, noise within the system, disturbances at a pump and mixing valve. Boiler should always be connected to central heating system by connectors, never by welding. Figure 2. shows safe distances required for boiler cleaning and maintenance.

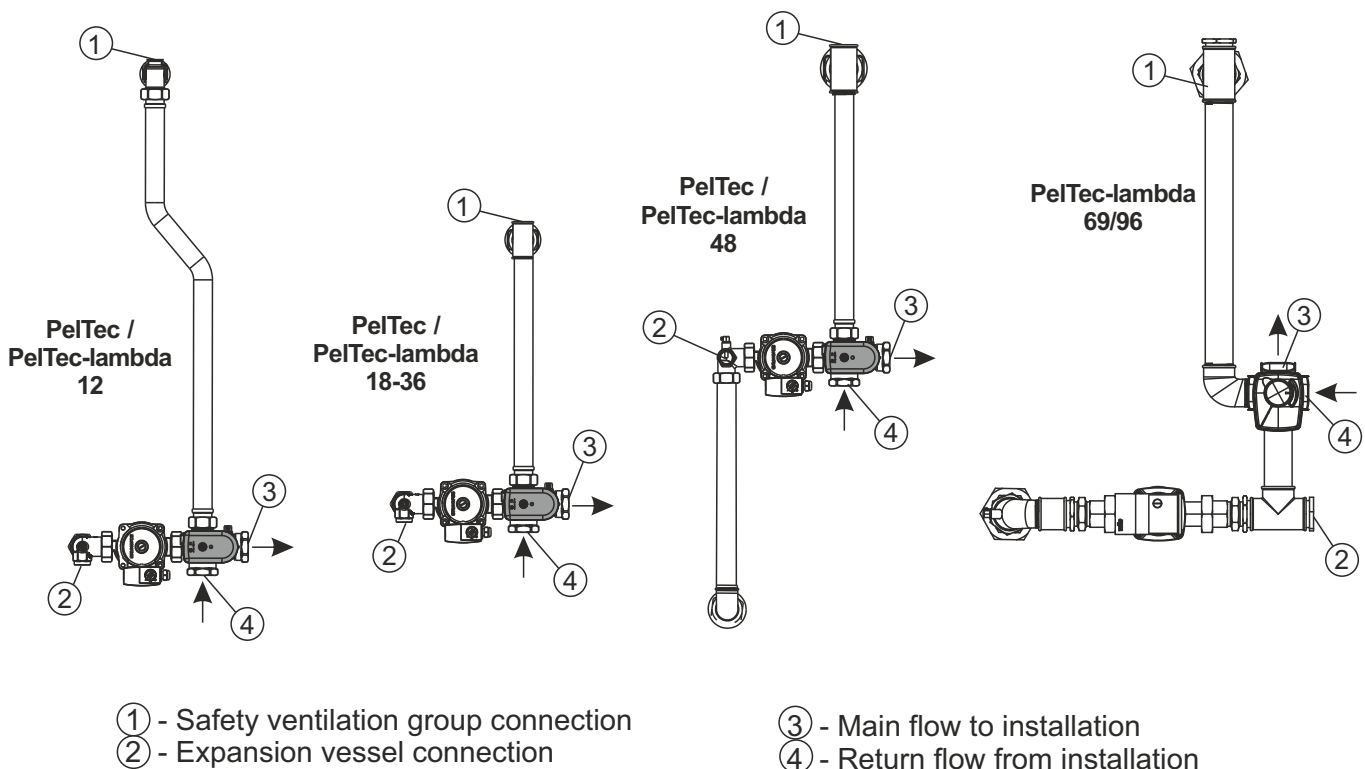
4.1.1. CONNECTION TO OPEN HEATING SYSTEM

In open system it is necessary to put an open expansion vessel min. 0,5 m above the height of the highest heating body. If expansion vessel is located in a room without heating, it should be insulated. The system pump could be connected on the inline or back line of the boiler.

4.1.2. CONNECTION TO CLOSED HEATING SYSTEM

In closed heating system it is **obligatory** to build in certified safety valve with opening pressure of 2,5 bar and a membrane expansion vessel. Safety valve and expansion vessel must be built in accordance with professional rules and between safety valve and expansion vessel and boiler must not be any valve. Schemes for possible configurations are on following pages.

Figure 4. Connections to connect the boiler to a closed heating system

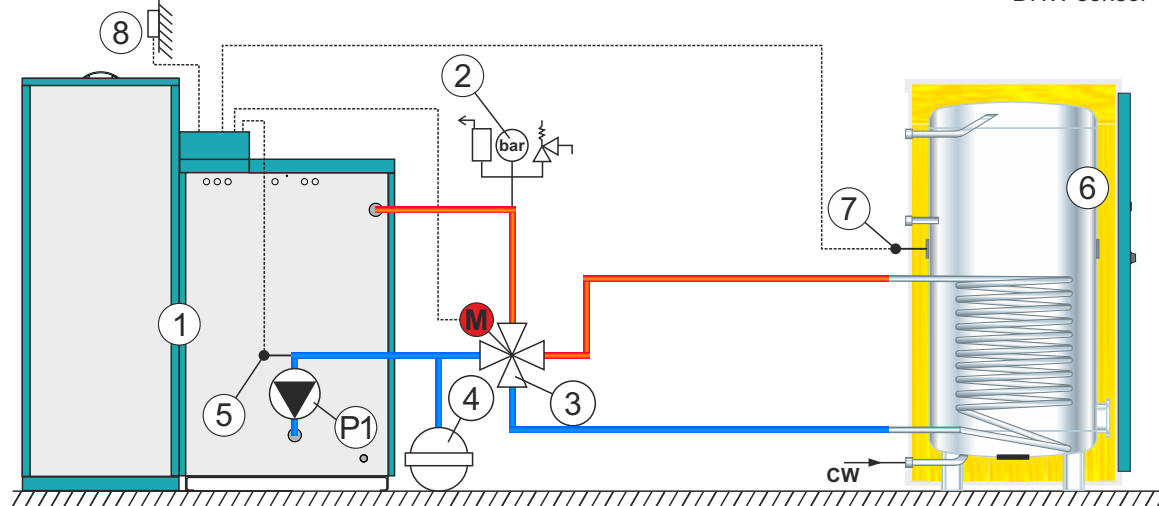


NOTE:

- at PelTec-lambda 69/96 boilers at schemes 10, 11 and 15 **CM2K obligatory** must be installed for boiler to work for heating (this boilers starts/stops according to the heating demand, they can't work according hydraulic crossover temp.)
- at scheme 15 without CM2K boiler can work only according DHW demand.

Scheme 1. Configuration DHW

Required sensors: - return flow temp. sensor
- DHW sensor



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel

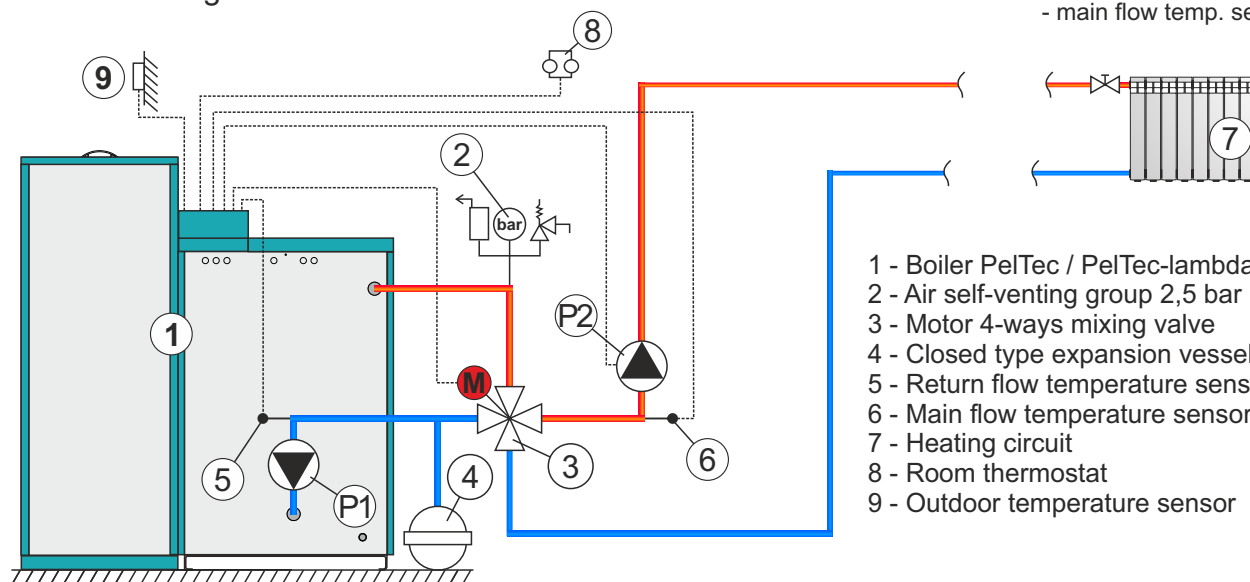
- 5 - Return flow temperature sensor
- 6 - DHW tank
- 7 - DHW sensor
- 8 - Outdoor temperature sensor

Note:

In this configuration, it is not possible to connect the "CM2K module for regulation 2 heating circuits" module.

Scheme 2. Configuration DHC

Required sensors: - return flow temp. sensor
- main flow temp. sensor



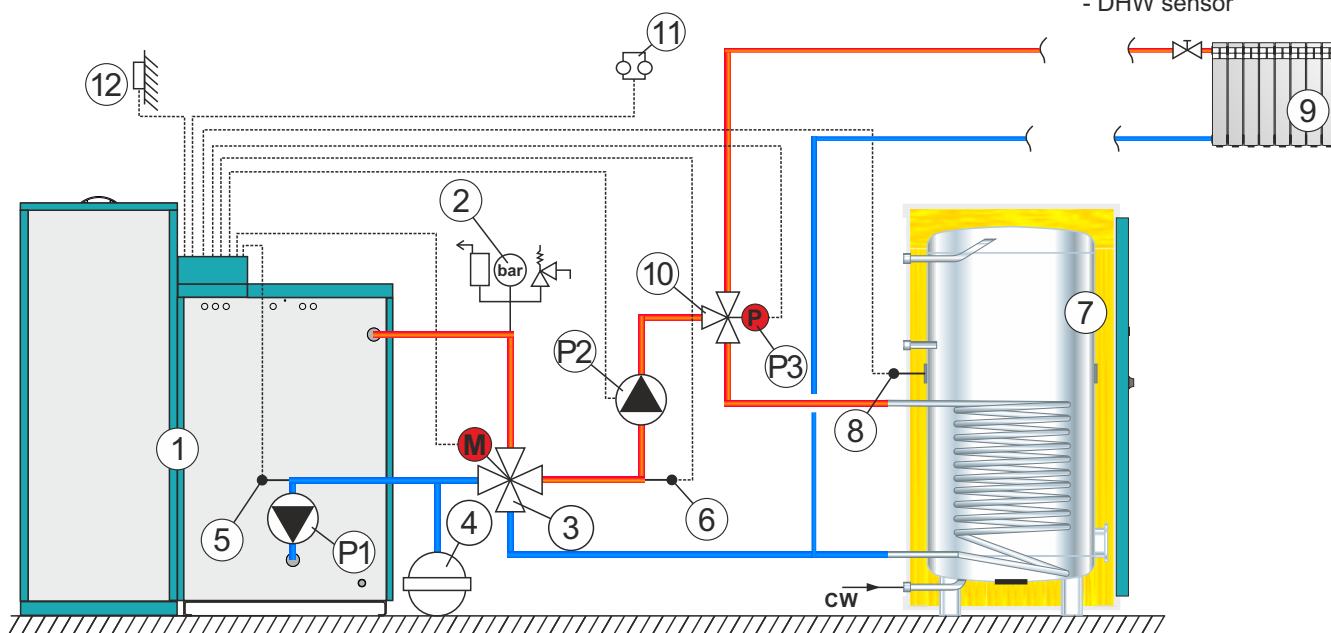
- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - Main flow temperature sensor
- 7 - Heating circuit
- 8 - Room thermostat
- 9 - Outdoor temperature sensor

Note:

In this configuration, it is not possible to connect the "CM2K module for regulation 2 heating circuits" module.

Scheme 3. Configuration DHC || DHW

Required sensors: - return flow temp. sensor
- main flow temp. sensor
- DHW sensor



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - Main flow temperature sensor

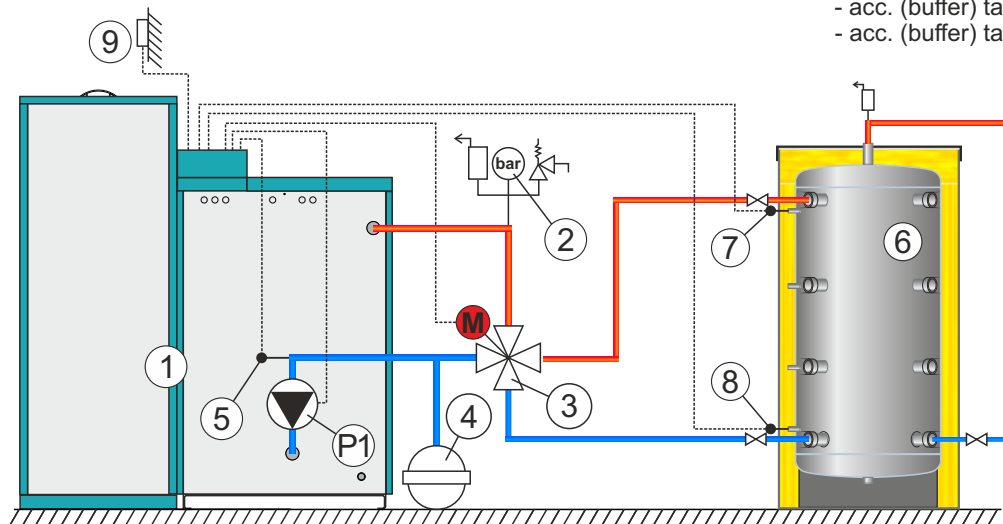
- 7 - DHW tank
- 8 - DHW tank sensor
- 9 - Heating circuit
- 10 - 3-way diverter valve
- 11 - Room thermostat
- 12 - Outdoor temperature sensor

Note:

In this configuration, it is not possible to connect the "CM2K module for regulation 2 heating circuits" module.

Scheme 4. Configuration BUF

Required sensors: - return flow temp. sensor
- acc. (buffer) tank sensor (upper)
- acc. (buffer) tank sensor (lower)



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor

- 6 - "CAS" accumulation (buffer) tank
- 7 - Accumulation (buffer) tank sensor (upper)
- 8 - Accumulation (buffer) tank sensor (lower)
- 9 - Outdoor temperature sensor

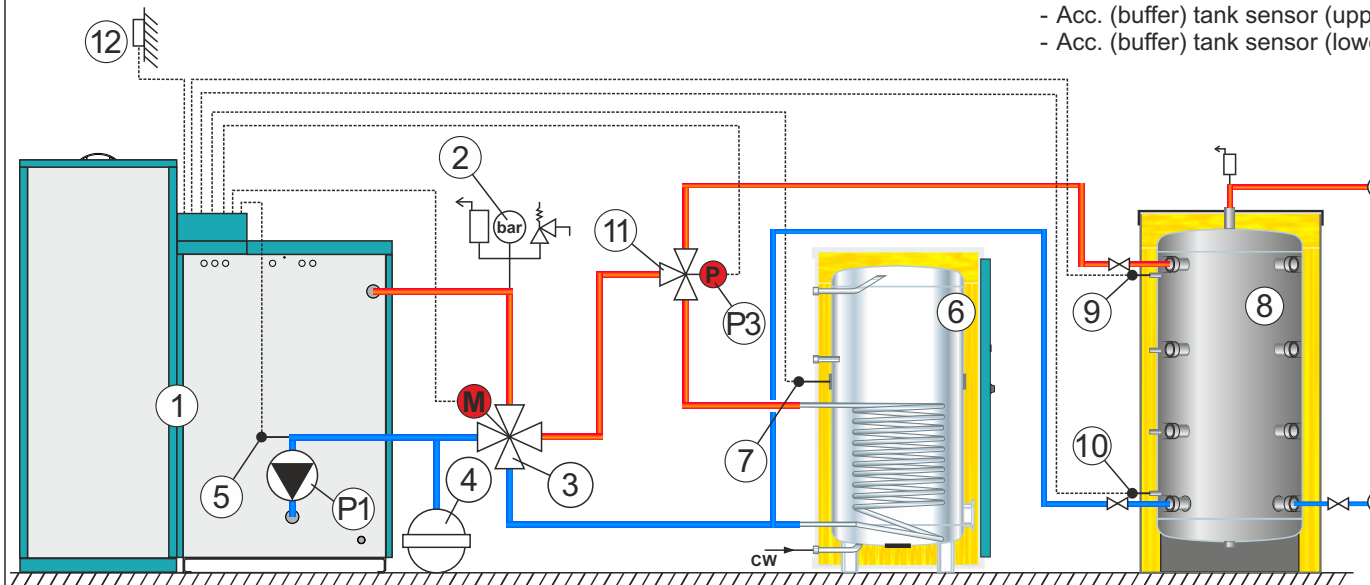
NOTES:

- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start).
- In this configuration, it is possible to connect 7 boilers in a cascade using the CMNET module (all boilers are connected at/to the same accumulation (buffer) tank).

Scheme 5. Configuration DHW || BUF

Required sensors:

- return flow temp. sensor
- DHW tank sensor
- Acc. (buffer) tank sensor (upper)
- Acc. (buffer) tank sensor (lower)



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - DHW tank

- 7 - DHW tank sensor
- 8 - "CAS" accumulation (buffer) tank
- 9 - Accumulation (buffer) tank sensor (upper)
- 10 - Accumulation (buffer) tank sensor (lower)
- 11 - 3-way diverter valve
- 12 - Outdoor temperature sensor

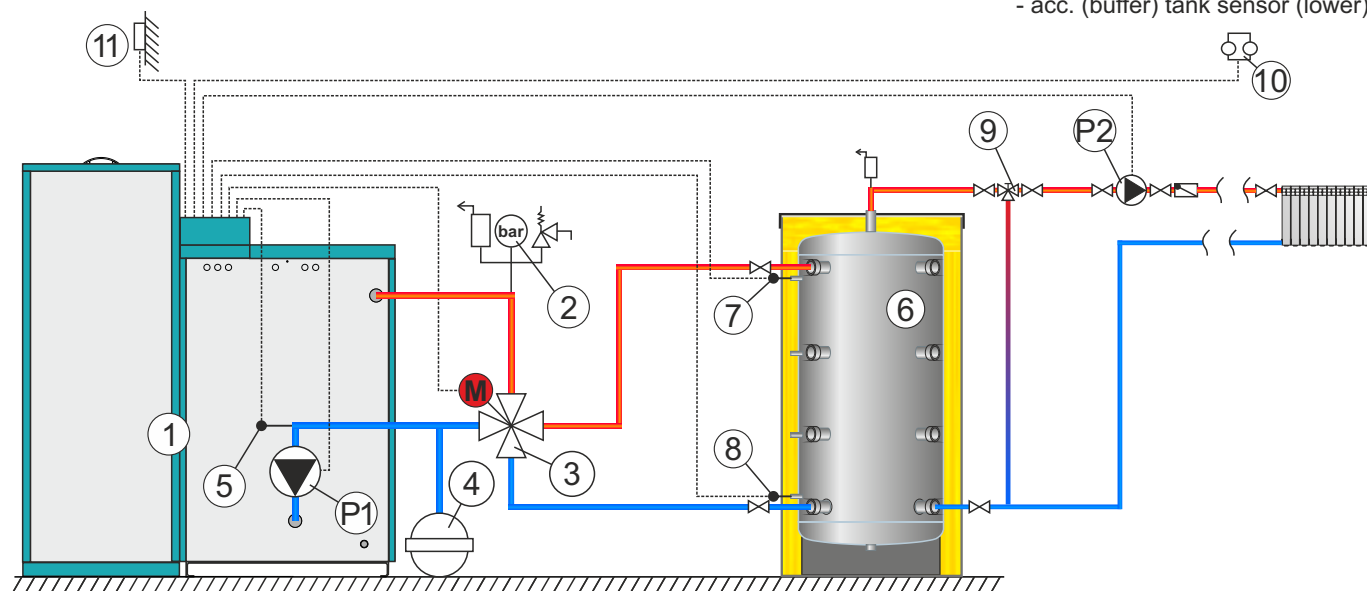
NOTE:

In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".

Scheme 6. Configuration BUF -- IHC

Required sensors:

- return flow temp. sensor
- acc. (buffer) tank sensor (upper)
- acc. (buffer) tank sensor (lower)



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - "CAS" accumulation (buffer) tank

- 7 - Accumulation (buffer) tank sensor (upper)
- 8 - Accumulation (buffer) tank sensor (lower)
- 9 - 3-way manual mixing valve
- 10 - Room thermostat
- 11 - Outdoor temperature sensor

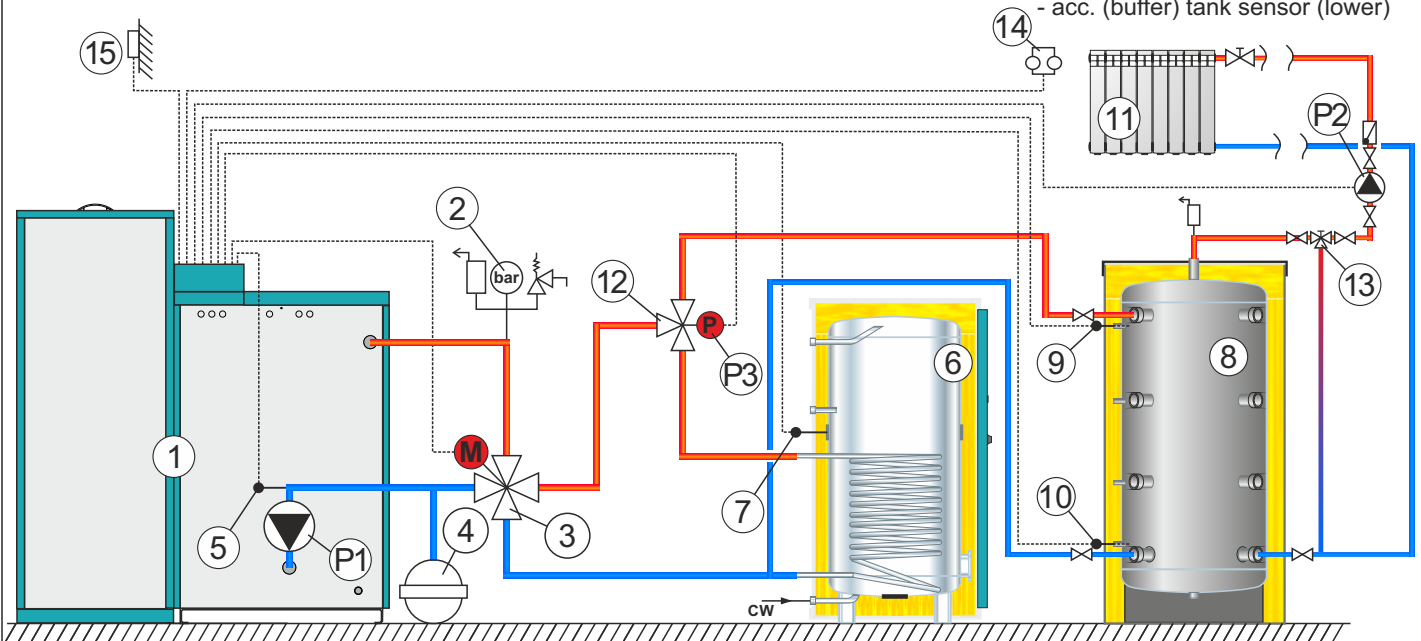
NOTES:

- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start)

Scheme 7. Configuration DHW || BUF -- IHC

Required sensors:

- return flow temp. sensor
- DHW tank sensor
- acc. (buffer) tank sensor (upper)
- acc. (buffer) tank sensor (lower)



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - DHW tank
- 7 - DHW tank sensor
- 8 - "CAS" accumulation (buffer) tank

- 9 - Accumulation (buffer) tank sensor (upper)
- 10 - Accumulation (buffer) tank sensor (lower)
- 11 - Heating circuit
- 12 - 3-way diverter valve
- 13 - 3-way manual mixing valve
- 14 - Room thermostat
- 15 - Outdoor temperature sensor

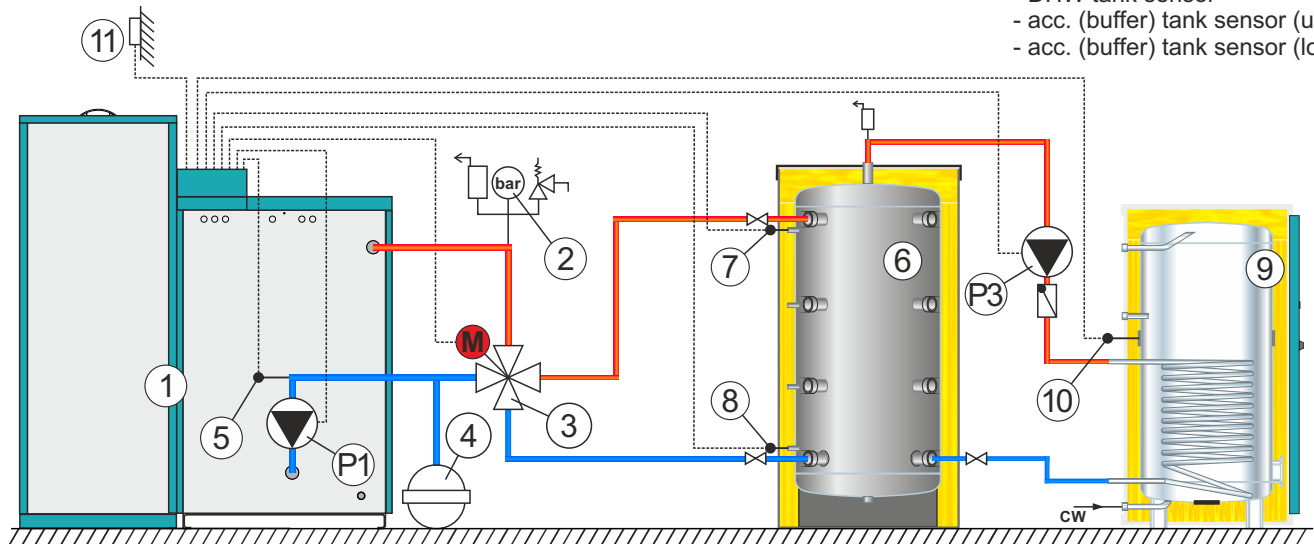
NOTE:

In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".

Scheme 8. Configuration BUF -- DHW

Required sensors:

- return flow temp. sensor
- DHW tank sensor
- acc. (buffer) tank sensor (upper)
- acc. (buffer) tank sensor (lower)



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - "CAS" accumulation (buffer) tank

- 7 - Accumulation (buffer) tank sensor (upper)
- 8 - Accumulation (buffer) tank sensor (lower)
- 9 - DHW tank
- 10 - DHW tank sensor
- 11 - Outdoor temperature sensor

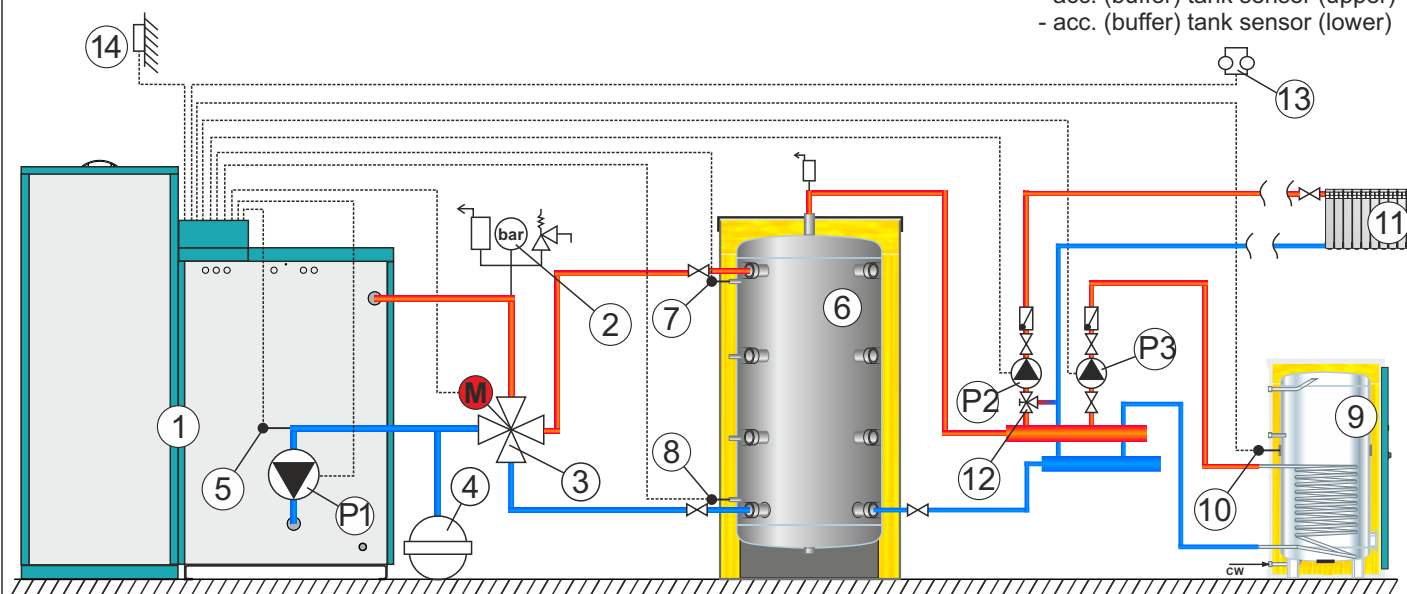
NOTES:

- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start)

Scheme 9. Configuration BUF -- IHC || DHW

Required sensors:

- return flow temp. sensor
- DHW tank sensor
- acc. (buffer) tank sensor (upper)
- acc. (buffer) tank sensor (lower)



- | | |
|---|---|
| 1 - Boiler PelTec / PelTec-lambda | 8 - Accumulation (buffer) tank sensor (lower) |
| 2 - Air self-venting group 2,5 bar | 9 - DHW tank |
| 3 - Motor 4-ways mixing valve | 10 - DHW tank sensor |
| 4 - Closed type expansion vessel | 11 - Heating circuit |
| 5 - Return flow temperature sensor | 12 - 3-way manual mixing valve |
| 6 - "CAS" accumulation (buffer) tank | 13 - Room thermostat |
| 7 - Accumulation (buffer) tank sensor (upper) | 14 - Outdoor temperature sensor |

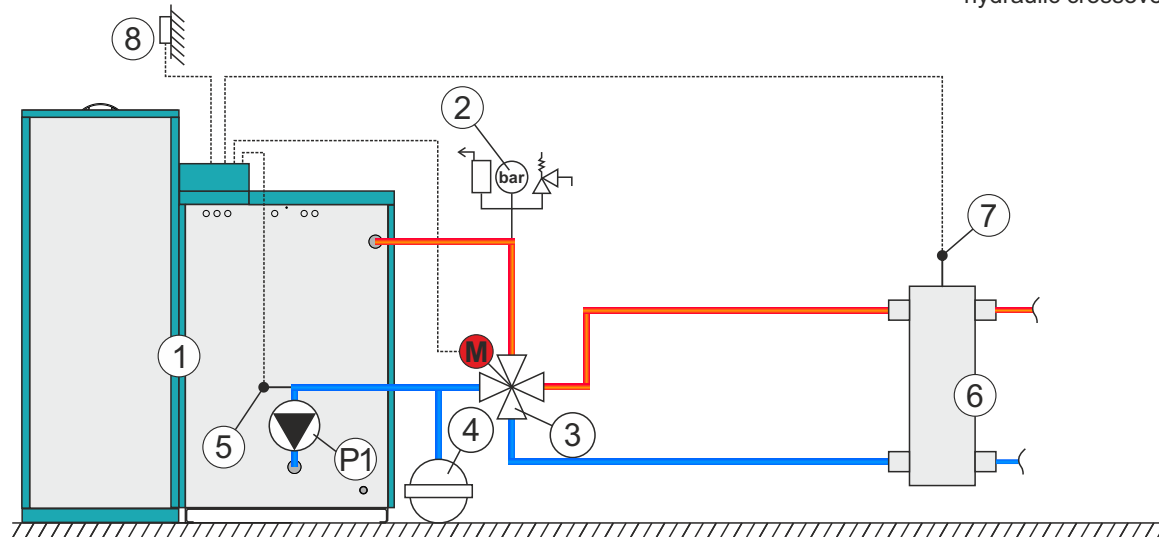
NOTES:

- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start)

Scheme 10. Configuration CRO

Required sensors:

- return flow temp. sensor
- hydraulic crossover sensor



- | | |
|------------------------------------|------------------------------------|
| 1 - Boiler PelTec / PelTec-lambda | 5 - Return flow temperature sensor |
| 2 - Air self-venting group 2,5 bar | 6 - Hydraulic crossover |
| 3 - Motor 4-ways mixing valve | 7 - Hydraulic crossover sensor |
| 4 - Closed type expansion vessel | 8 - Outdoor temperature sensor |

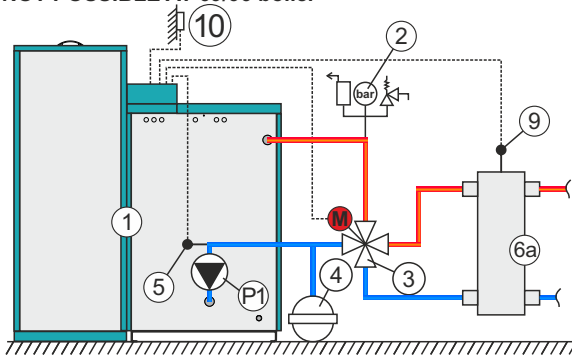
NOTES:

- in this configuration PelTec-lambda 69/96 boiler works only with CM2K module which must be installed and configured
- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start).
- In this configuration, it is possible to connect 7 PelTec/PelTec-lambda 12-48 boilers in a cascade using the CMNET module (all boilers are connected to the same Hydraulic crossover), (PelTec-lambda 69/96 cannot be connected in a cascade).

NOTE: USED ONLY IN CASCADES AND EXTERNAL CONTROL

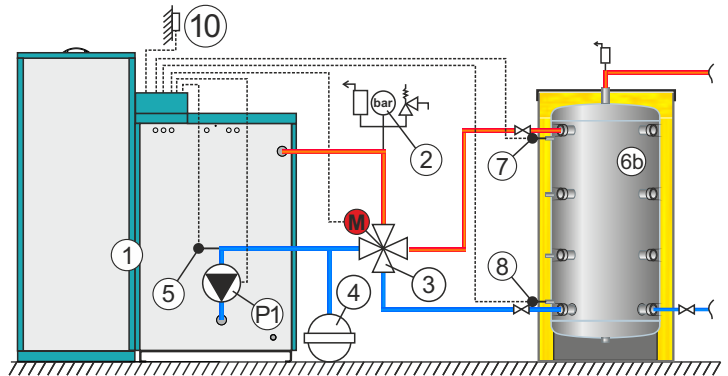
Scheme 11. Configuration CRO / BUF

Version 1: (display shows 1 temperature, eg hydraulic crossover)
NOT POSSIBLE AT 69/96 boiler



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor

Version 2: (Display shows 2 temperatures (eg. accumulation tank)
AT 69/96 BOILER ONLY OPTION



- 6a - Hydraulic crossover / 6b - Accumulation tank
- 7 - Accumulation (buffer) tank sensor (upper)*
- 8 - Accumulation (buffer) tank sensor (lower)*
- 9 - Hydraulic crossover sensor*
- 10 - Outdoor temperature sensor

Possible control:

- manually (ON/OFF)
- by scheduled starting times
- by external controller (START/STOP)**
- by cascade manager **
- by external controller (start/stop) + cascade manager**

Required sensors:

- return flow temp. sensor
- hydraulic crossover sensor (only in version 1)
- accumulation (buffer) tank sensor (upper)(only in version 2)
- accumulation (buffer) tank sensor (lower)

Impossible control:

- by room thermostat

****Additional equipment**

* Note: Connecting the sensor 9 (version 1) and 7,8 (version 2) is not required because these temperatures are only informative, if sensors are not connected, regulation will show temperature " - °C". The boiler regulation will not report any error even if the sensors are defective.

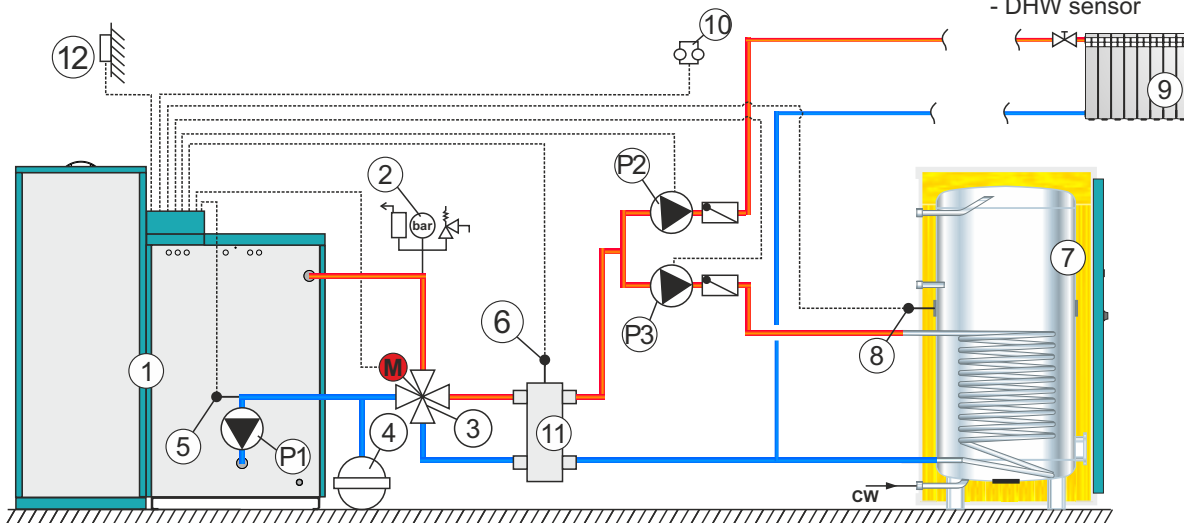
NOTES:

- in this configuration PelTec-lambda 69/96 boiler works only with CM2K module which must be installed and configured
- in this configuration at PelTec-lambda 69/96 boiler shown is only Accumulation tank i.e. 2 sensors (at selection -BUF)
- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start)

Scheme 12. Configuration DHC || DHW(2)

Required sensors:

- return flow temp. sensor
- main flow temperature sensor
- DHW sensor

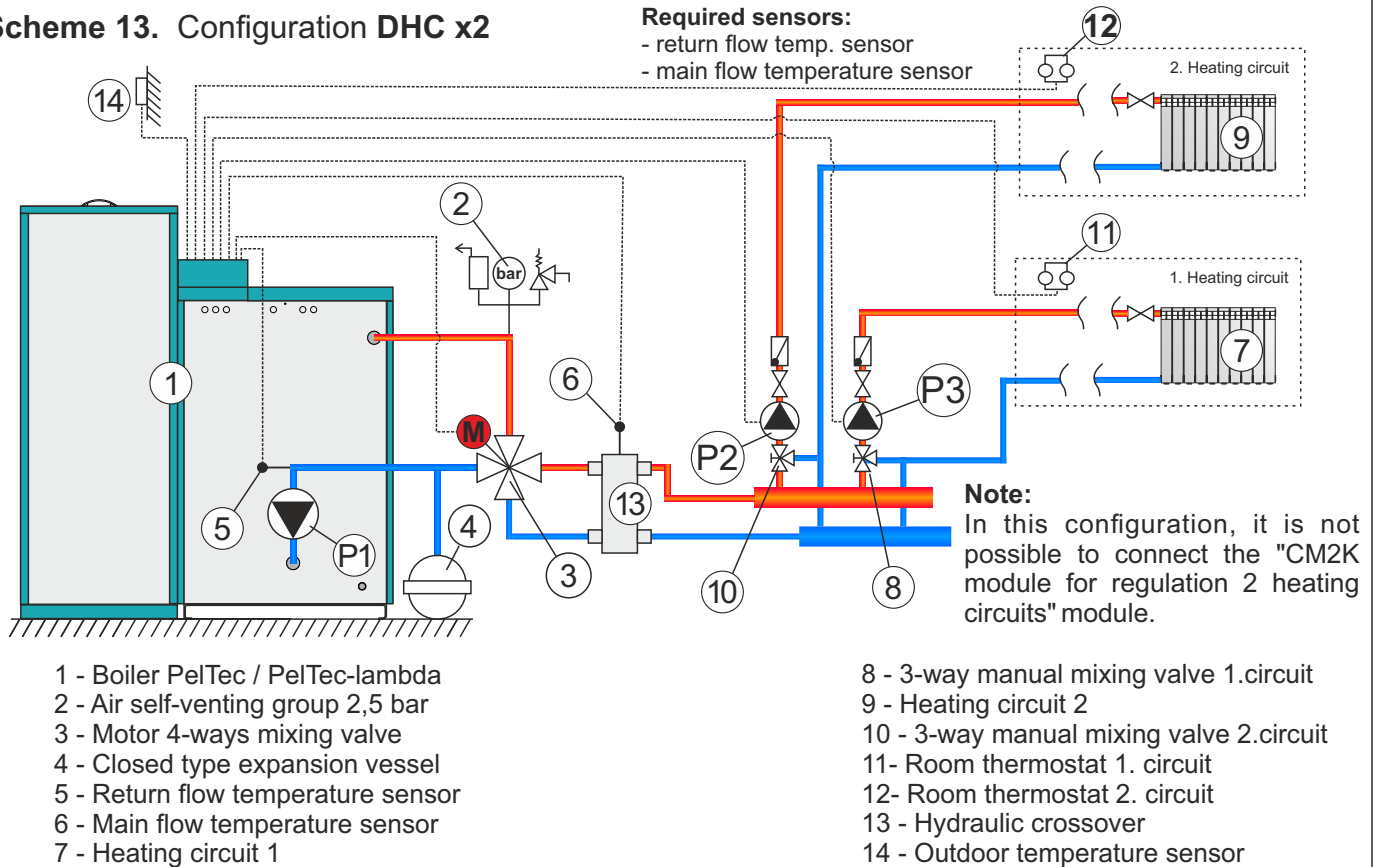


- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor
- 6 - Main flow temperature sensor
- 7 - DHW tank
- 8 - DHW tank sensor
- 9 - Heating circuit
- 10 - Room thermostat
- 11 - Hydraulic crossover
- 12 - Outdoor temperature sensor

Note:

In this configuration, it is not possible to connect the "CM2K module for regulation 2 heating circuits" module.

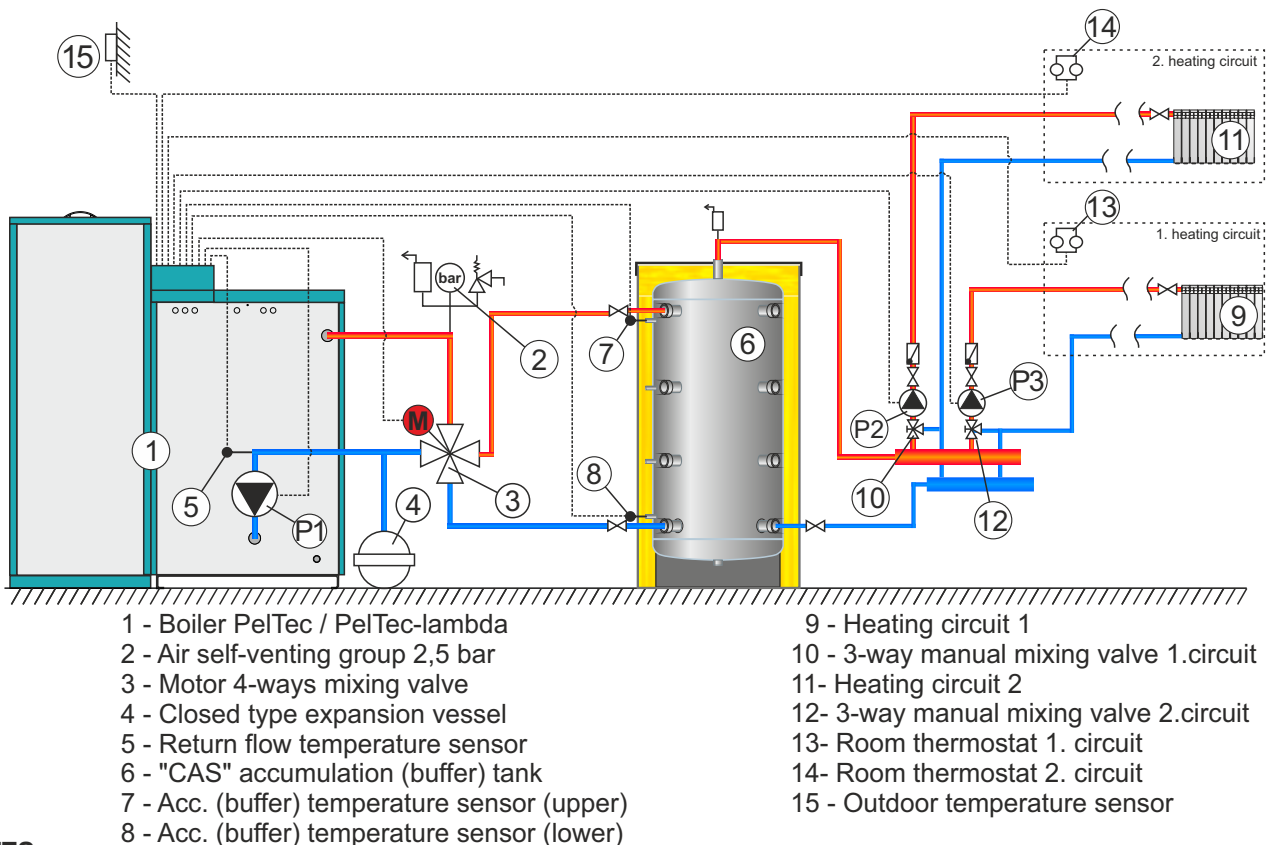
Scheme 13. Configuration DHC x2



Shema 14. Configuration BUF--IHCx2

Required sensors:

- return flow temp. sensor
- acc. (buffer) tank sensor (upper)
- acc. (buffer) tank sensor (lower)

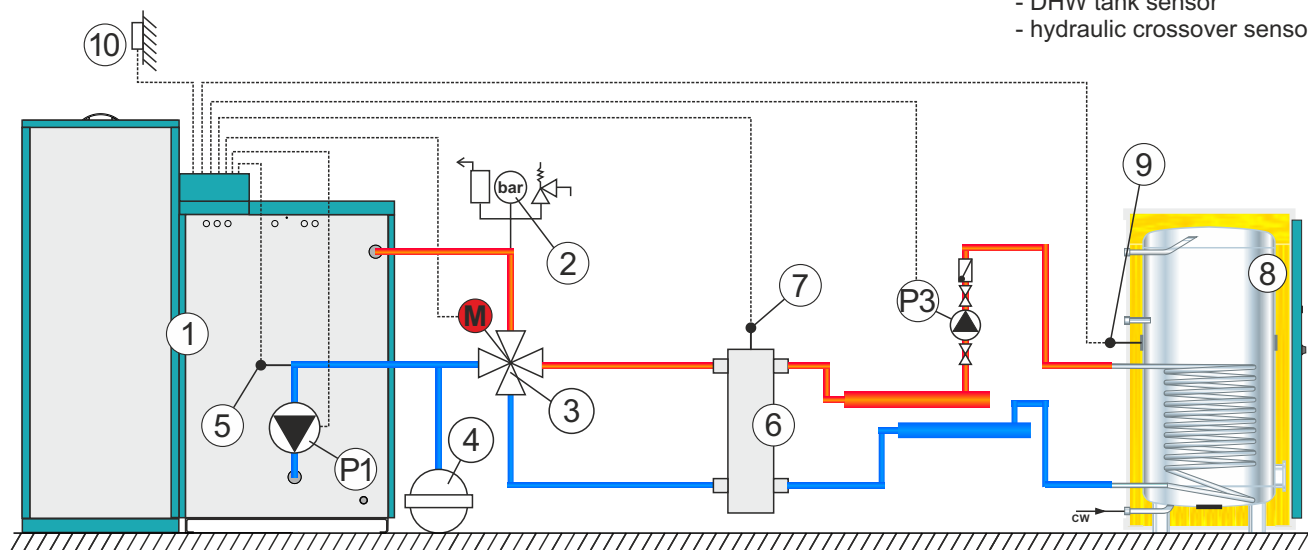


NOTES:

- In this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits".
- In this configuration is possible to connect external control (external start)

Scheme 15. Configuration CRO -- DHW

Required sensors: - return flow temp. sensor
- DHW tank sensor
- hydraulic crossover sensor



- 1 - Boiler PelTec / PelTec-lambda
- 2 - Air self-venting group 2,5 bar
- 3 - Motor 4-ways mixing valve
- 4 - Closed type expansion vessel
- 5 - Return flow temperature sensor

- 6 - Hydraulic crossover
- 7 - Hydraulic crossover sensor
- 8 - DHW tank
- 9 - DHW tank sensor
- 10 - Outdoor temperature sensor

NOTE:

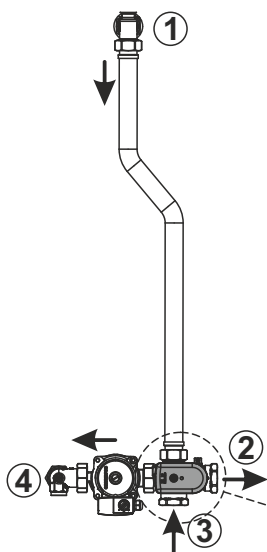
- in this configuration boiler PelTec-lambda 69/96 can work only by DHW demand (except if CM2K is installed)
- in this configuration module CM2K must be installed and configured to be able to heat heating system
- in this configuration is possible to upgrade up to 4 unit "CM2K module for regulation 2 heating circuits

4-WAY MIXING VALVE CONNECTIONS:

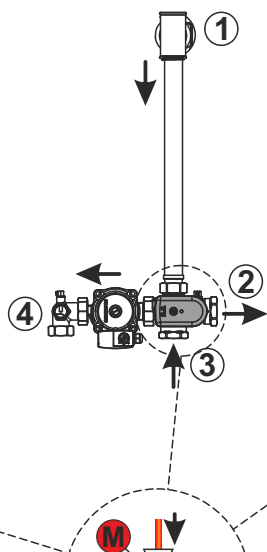
LEGEND:

- 1 - boiler main flow
- 2 - main flow to the installation
- 3 - return flow from the installation
- 4 - boiler return flow

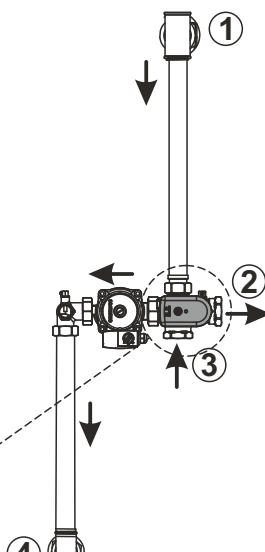
PelTec 12 PelTec-lambda 12



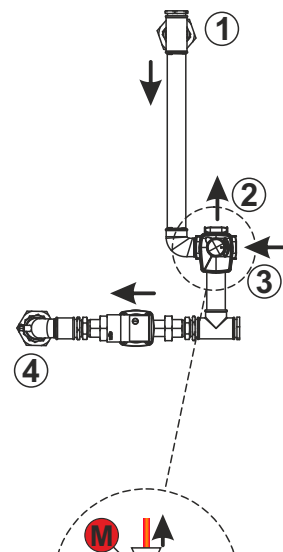
PelTec 18-36 PelTec-lambda 18-36



PelTec 48 PelTec-lambda 48



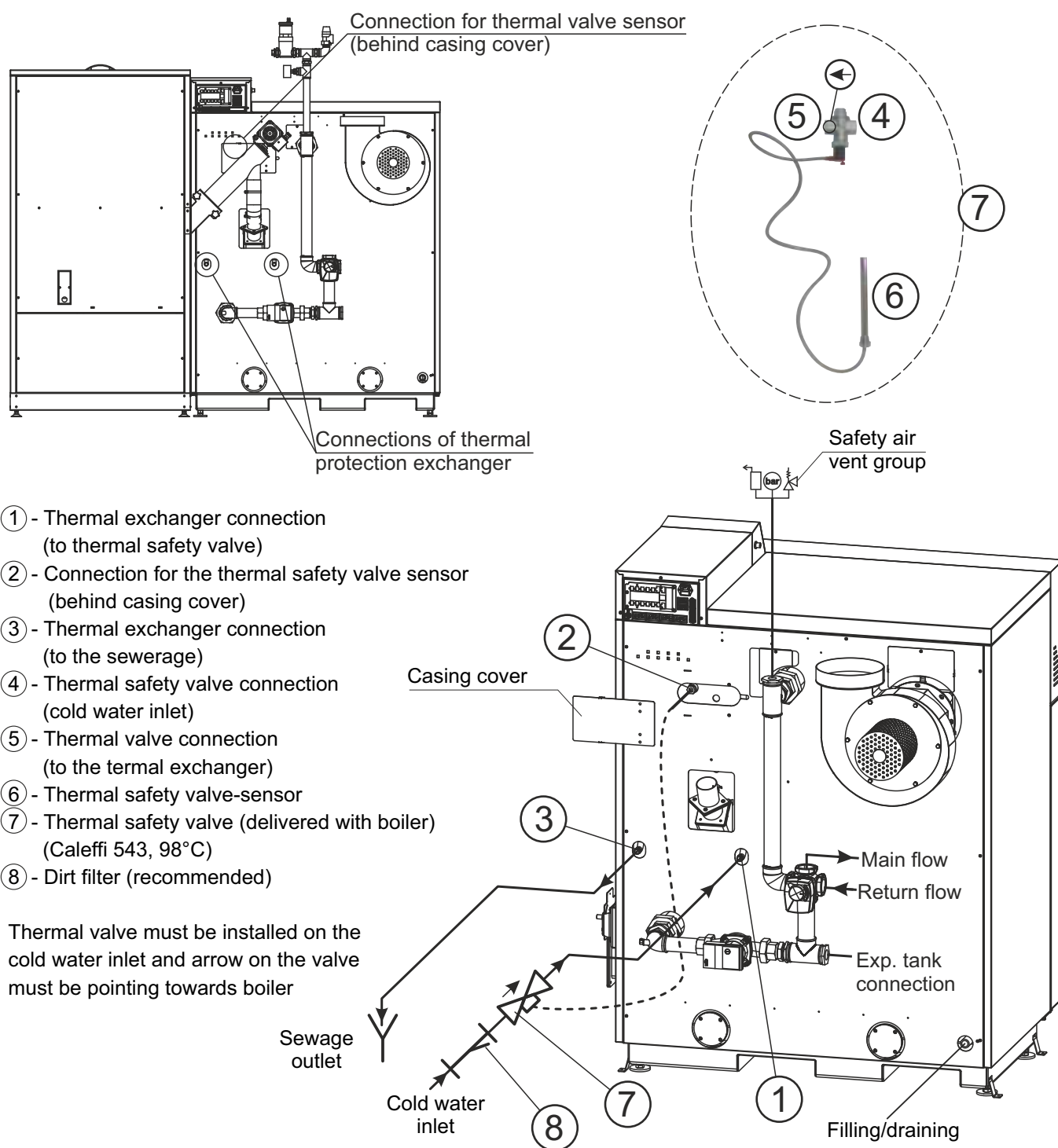
PelTec-lambda 69/96



4.2. THERMAL SAFETY PROTECTION INSTALLATION (only 69 and 96 kW)

Boilers PelTec-lambda 69 and 96 obligatory must have thermal protection installed. They have factory installed thermal protection exchanger which must be connected to the water supply through the thermal protection valve (delivered with the boiler, must be installed by installer). Connections of the thermal protection exchanger are on the boiler back side. Example of connection is shown in picture below.

Thermal protection installation (only PelTec-lambda 69/96)

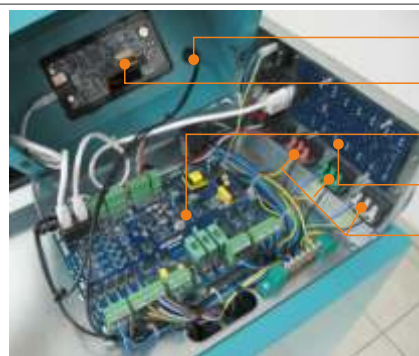


NOTE: thermal protection exchanger is build inside boiler body

5.0. ELECTRICAL CONNECTIONS

All electrical works must be performed by a certified professional in accordance with valid national and European standards. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. A device for switching of all power supply poles must be installed in electrical installation in accordance with the national regulations on electrical installations. Pump of heating system should be connected to boiler control unit PelTec/PelTec-lambda.

CAUTION: When connecting any electrical part be sure to unplug the boiler at the main switch and disconnect the power supply.

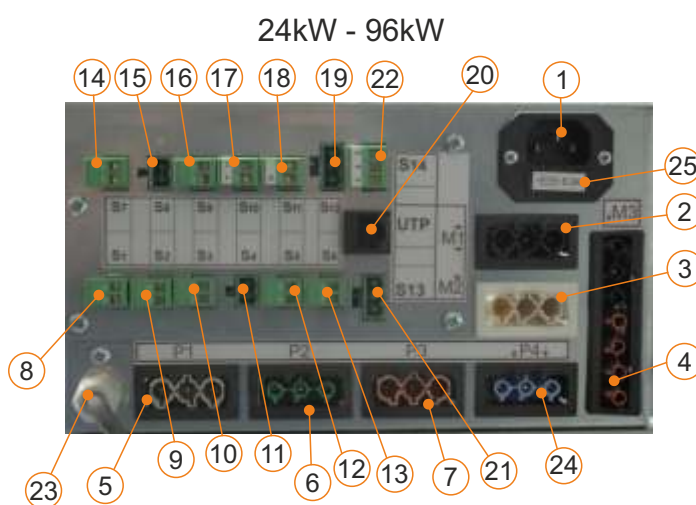
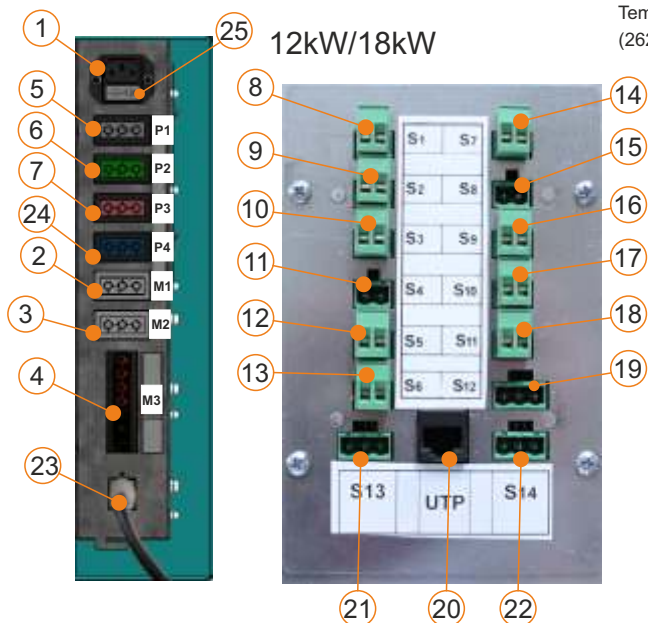


The main switch
Display
PCB (Printed circuit board)
PCB inputs (electronic board inputs)
Connectors for pump / zone valve

Figure 5. Connectors for power supply, el. components and sensors

- ① POWER SUPPLY
- ② M1 – Pellet screw feeder
- ③ M2 – Actuator for 4-way mixing valve
- ④ M3 – Fan
- ⑤ P1 - Pump 1
- ⑥ P2 - Pump 2
- ⑦ P3 - Pump 3

- *⑧ S1 - DHW sensor / Room thermostat
2.circuit - Temperature sensor
NTC 5K - PVC I=2000 (26226)
- ⑨ S2 - Acc. (buffer) tank 1 sensor (upper) /
Hydraulic crossover sensor - Temperature
sensor NTC 5K - PVC I=2000 (26226)
- ⑩ S3 - Acc. (buffer) tank 2 sensor (down) -
Temperature sensor NTC 5K - PVC I=2000 (26226)
- ⑪ S4 - Flue gas temperature sensor - Temperature
sensor PT 1000 - Teflon I=1700 (62330)
- ⑫ S5 - Outdoor temperature sensor - Outdoor
temperature sensor NTC 5K (31428)
- *⑬ S6 - Main flow temperature sensor / External control -
Temperature sensor NTC 5K - PVC I=2000
(26226)
- ⑭ S7 - Return flow temperature
sensor - Temperature sensor
NTC 5K - PVC I=2000
(26226)
- ⑮ S8 - PVC tube bimetal sensor
- *⑯ S9 - Room thermostat (voltage-
free contact)/External control
- ⑰ S10 - Alarm output 1
- ⑱ S11 - Alarm output 2 (reserve)
- ⑲ S12 - Fuel level sensor - Fuel level
sensor CMSR 100 (26199)
- ⑳ - Connector UTP
- ㉑ - Reserve
- ㉒ - Reserve
- ** ㉓ - Lambda probe cable
- ㉔ - P4
- ㉕ - F4 (main fuse)



If heating system contains DHW, on the connector S1 is connected hot water sensor, and if the heating system contains 2 heating circuit, on the connector S1 is connected the room thermostat.

*External control can be connected only in configurations: 4: BUF, 6: BUF--IHC, 8: BUF--DHW, 9: BUF-IHC||DHW, 10: CRO, 14: BUF--IHCx2 into the connector S6 and configuration 11: CRO/BUF into connector S9.

**Only PelTec-lambda

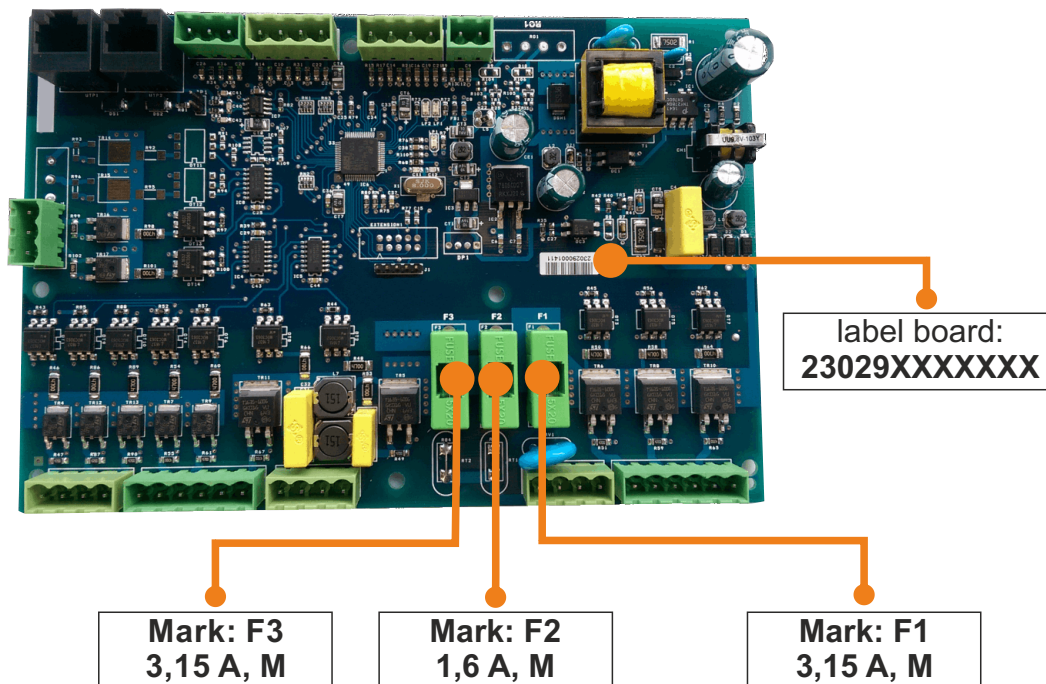
Note: It is obligatory mount the sensor in the socket for sensors using thermal paste

5.1. FUSES

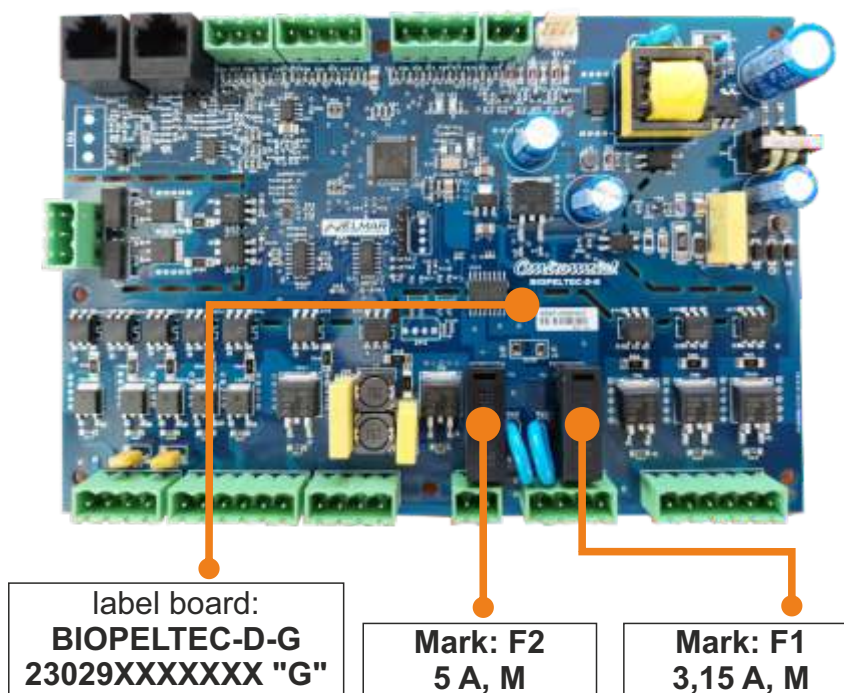


The **23029XXXXXXX** main PCB or the **BIOPELTEC-D-G (23029XXXXXXX "G")** main PCB can be installed.

Main PCB: **23029XXXXXXX**



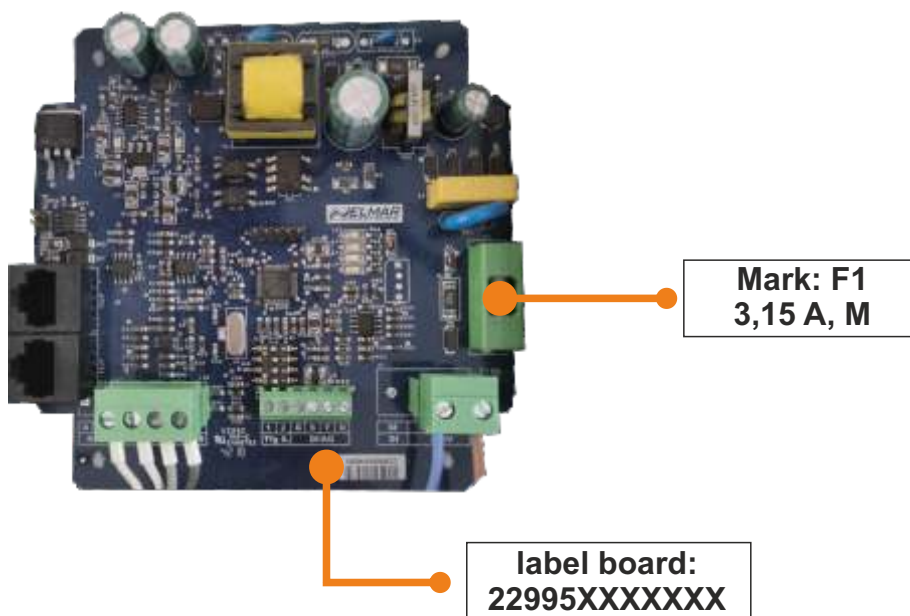
Main PCB: **BIOPELTEC-D-G (23029XXXXXXX "G")**



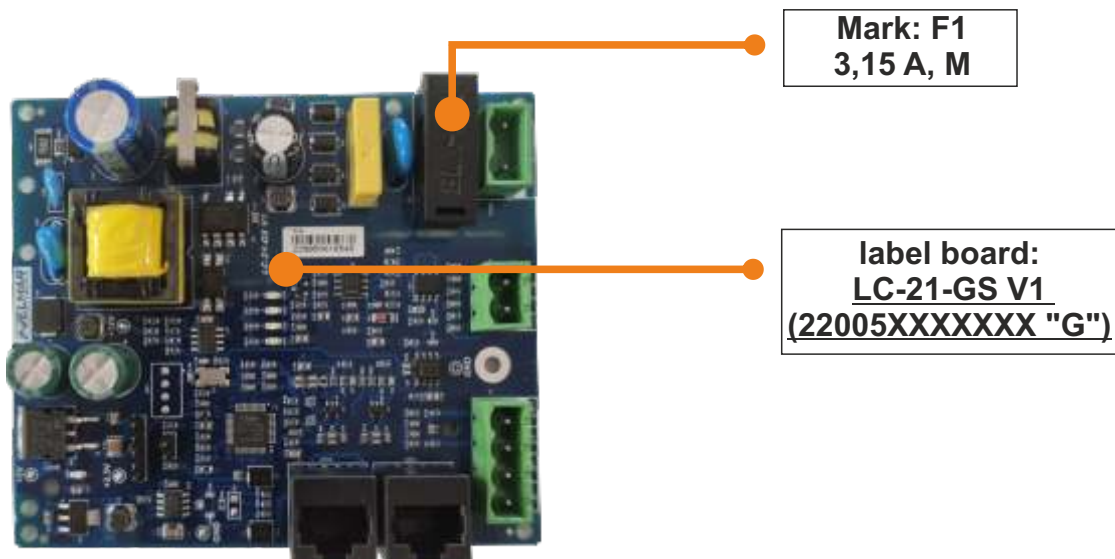


The **22995XXXXXXX** lambda board or **LC-21-GS V1 (22005XXXXXXX "G")** lambda board can be installed - **only PelTec-lambda***.

Lambda board: 22995XXXXXXX (only PelTec-lambda)



Lambda board: LC-21-GS V1 (22005XXXXXXX "G") (only PelTec-lambda)



Fuses

Main PCB: **23029XXXXXXX**

MARK	FUSE	DEVICES
F1	3,15 A, M	- outputs P1, P2, P3 - regulation (power supply)
F2	1,6 A, M	- all other devices who are not on the F1 and F3 (output P4, motor mechanism for the grating self-cleaning, pellet conveyor motor, flue gas tube cleaning motor, mixing valve motor...)
F3	3,15 A, M	- heater - fan

Main PCB: **BIOPELTEC-D-G (23029XXXXXXX "G")**

MARK	FUSE	DEVICES
F1	3,15 A, M	- outputs P1, P2, P3 - regulation (power supply)
F2	5 A, M	- all other devices who are not on the F1 (output P4, motor mechanism for the grating self-cleaning, pellet conveyor motor, flue gas tube cleaning motor, mixing valve motor, heater, fan...)

On the regulation casing

MARK	FUSE	DEVICES
F4	6,3 A, M	- main fuse (on the regulation casing)

* LAMBDA board: **22995XXXXXXX** (only PelTec-lambda)

MARK	FUSE	DEVICES
F1	3,15 A, M	- lambda probe power supply

* LAMBDA board: **LC-21-GS V1 (22005XXXXXXX "G")** (only PelTec-lambda)

MARK	FUSE	DEVICES
F1	3,15 A, M	- lambda probe power supply

Note:

Be sure to use proper acting fuses M (M = Medium)!

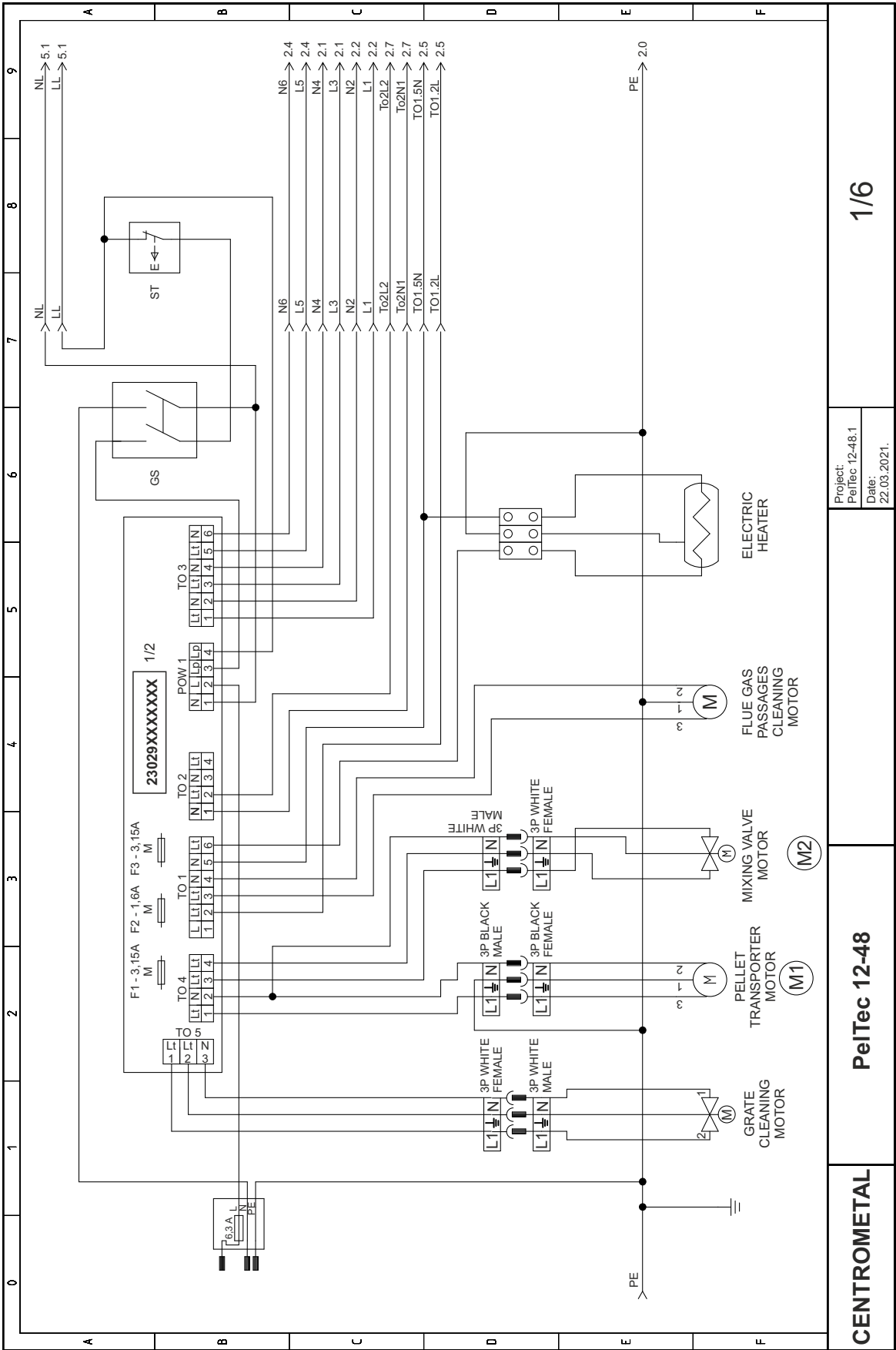


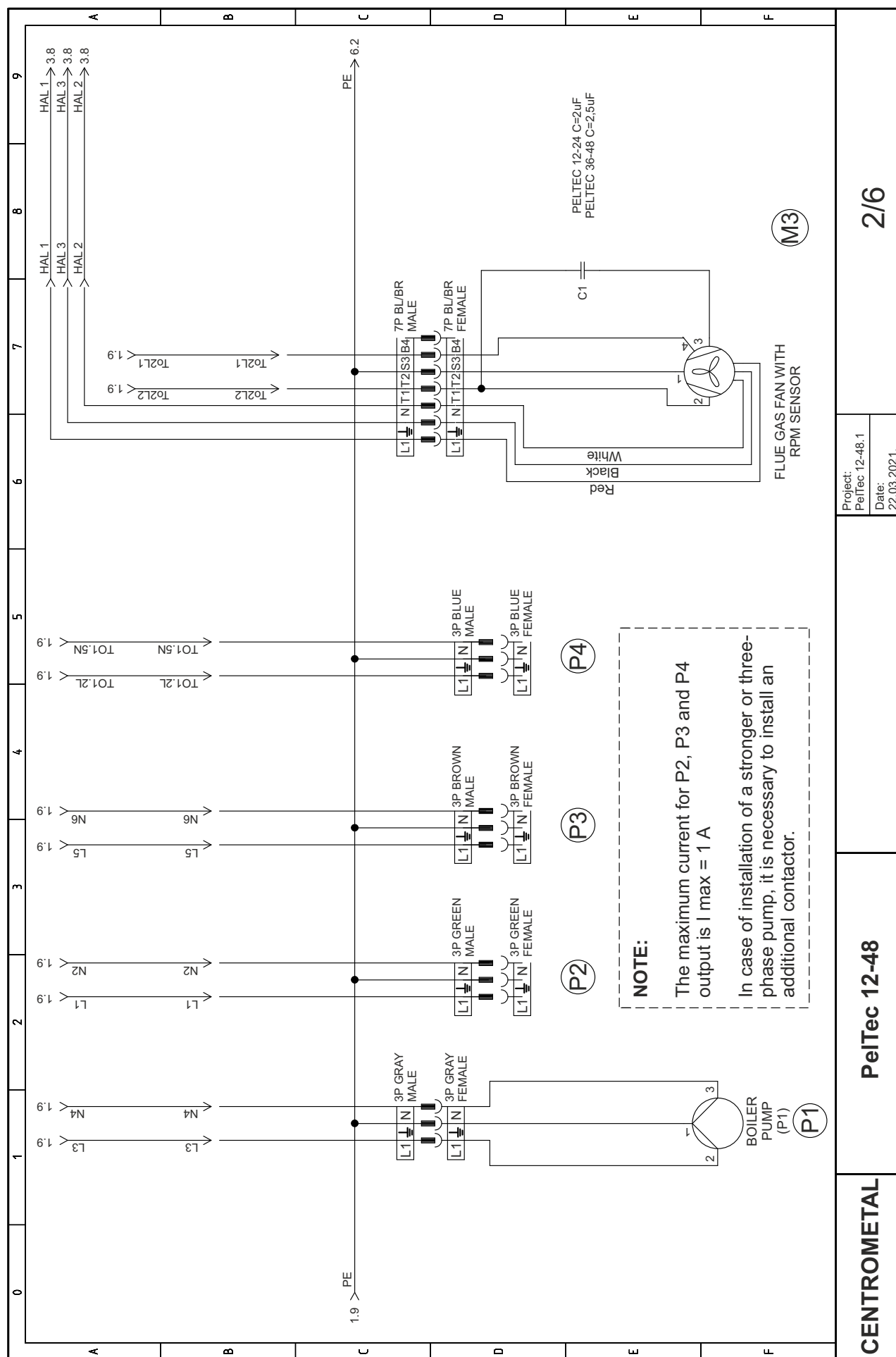
IMPORTANT:

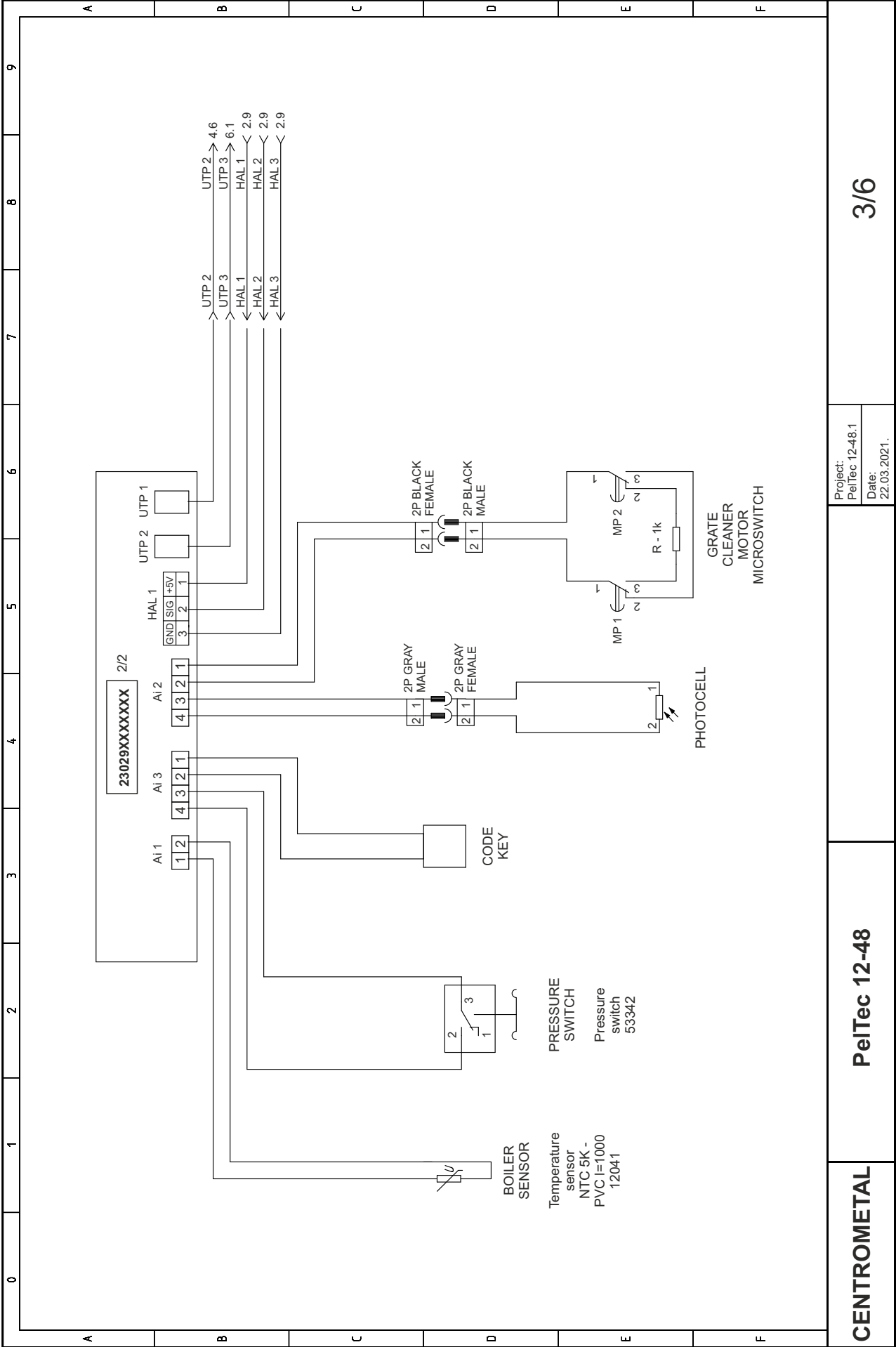
When replacing a fuse, be sure turn off the boiler at the main switch and unplug the power cord.

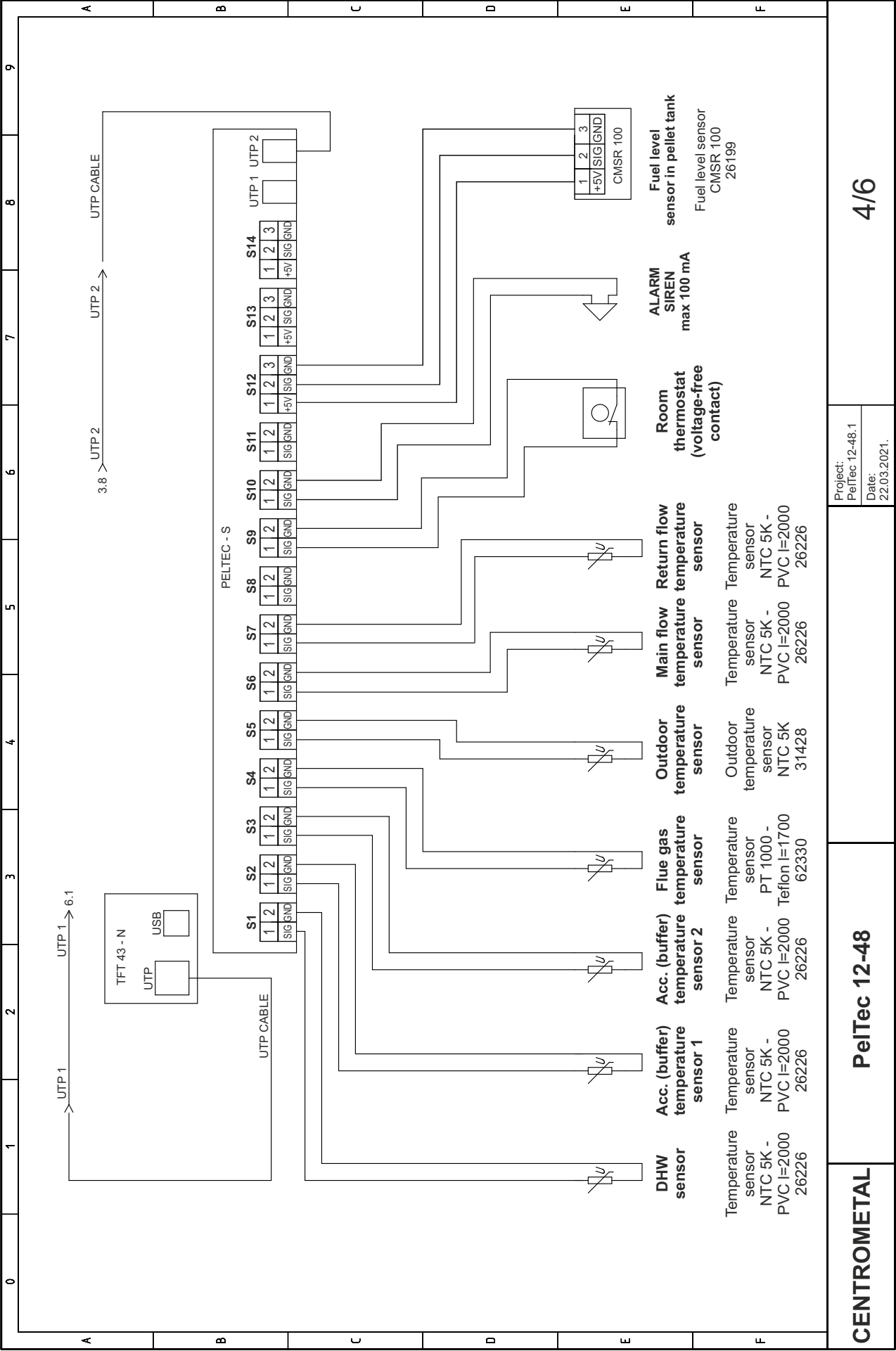
5.2. ELECTRICAL SCHEME INSTALLATION - MAIN PCB - 23029XXXXXX

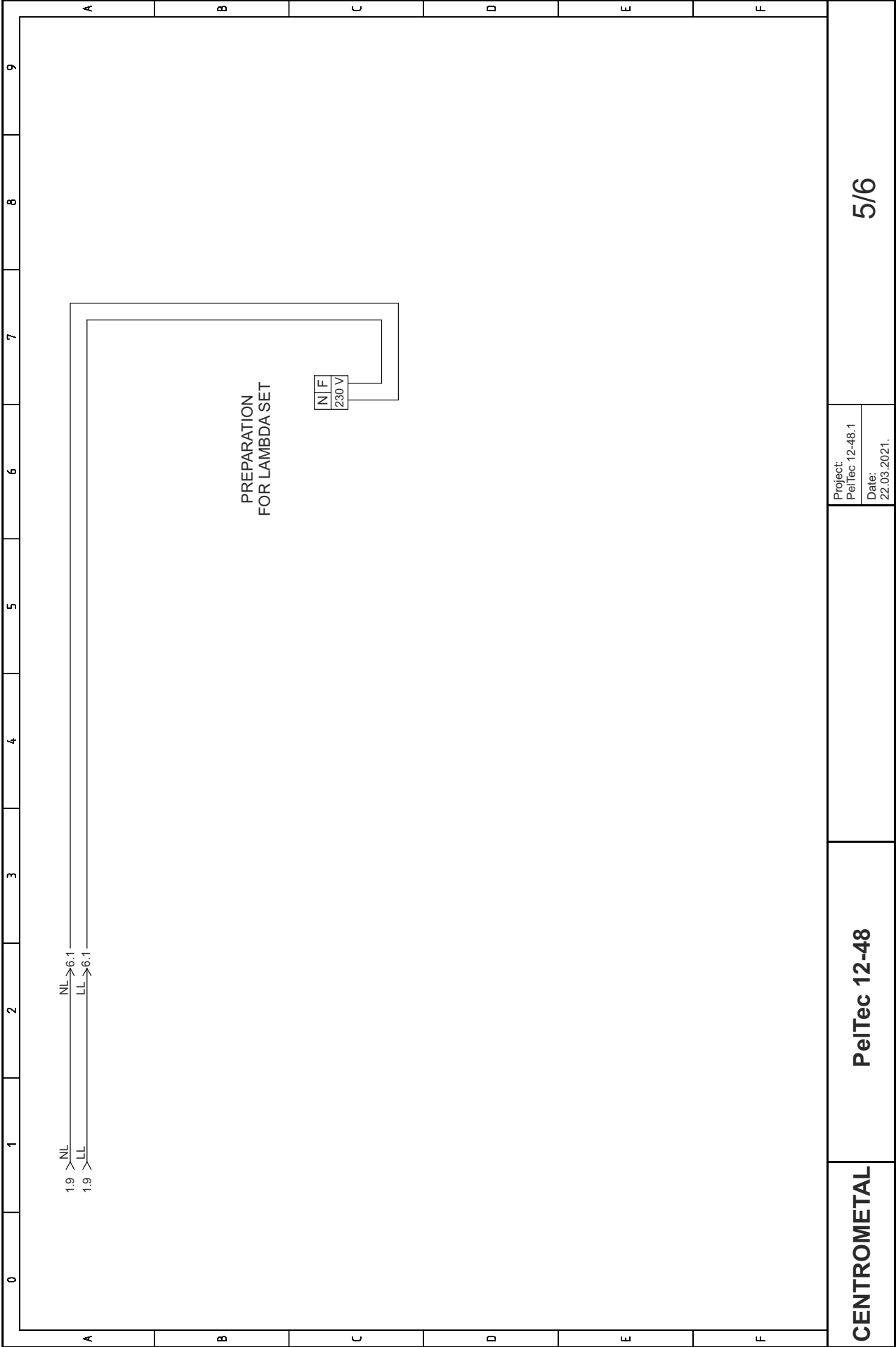
5.2.a ELECTRICAL SCHEME INSTALLATION - PelTec 12-48



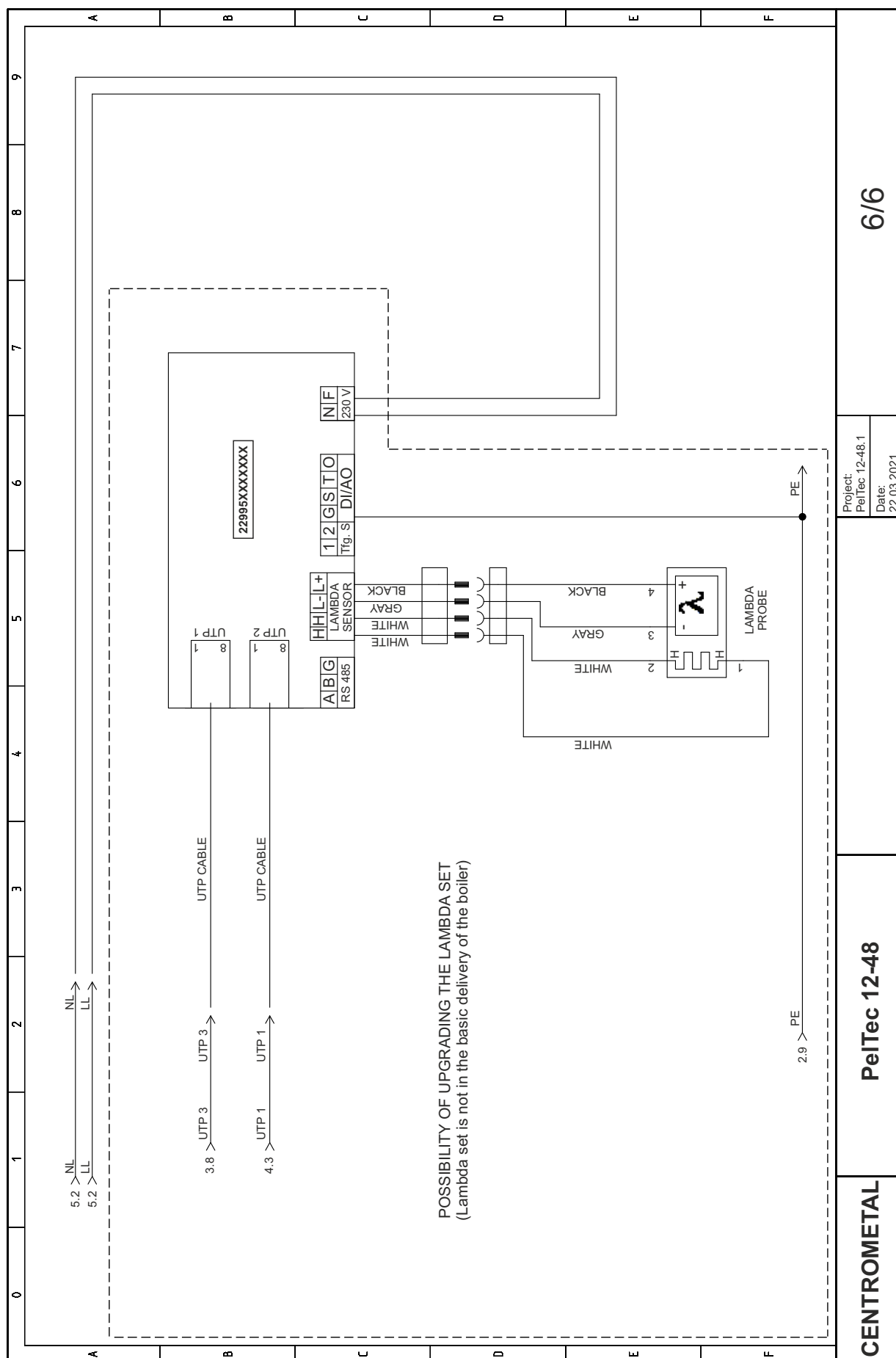




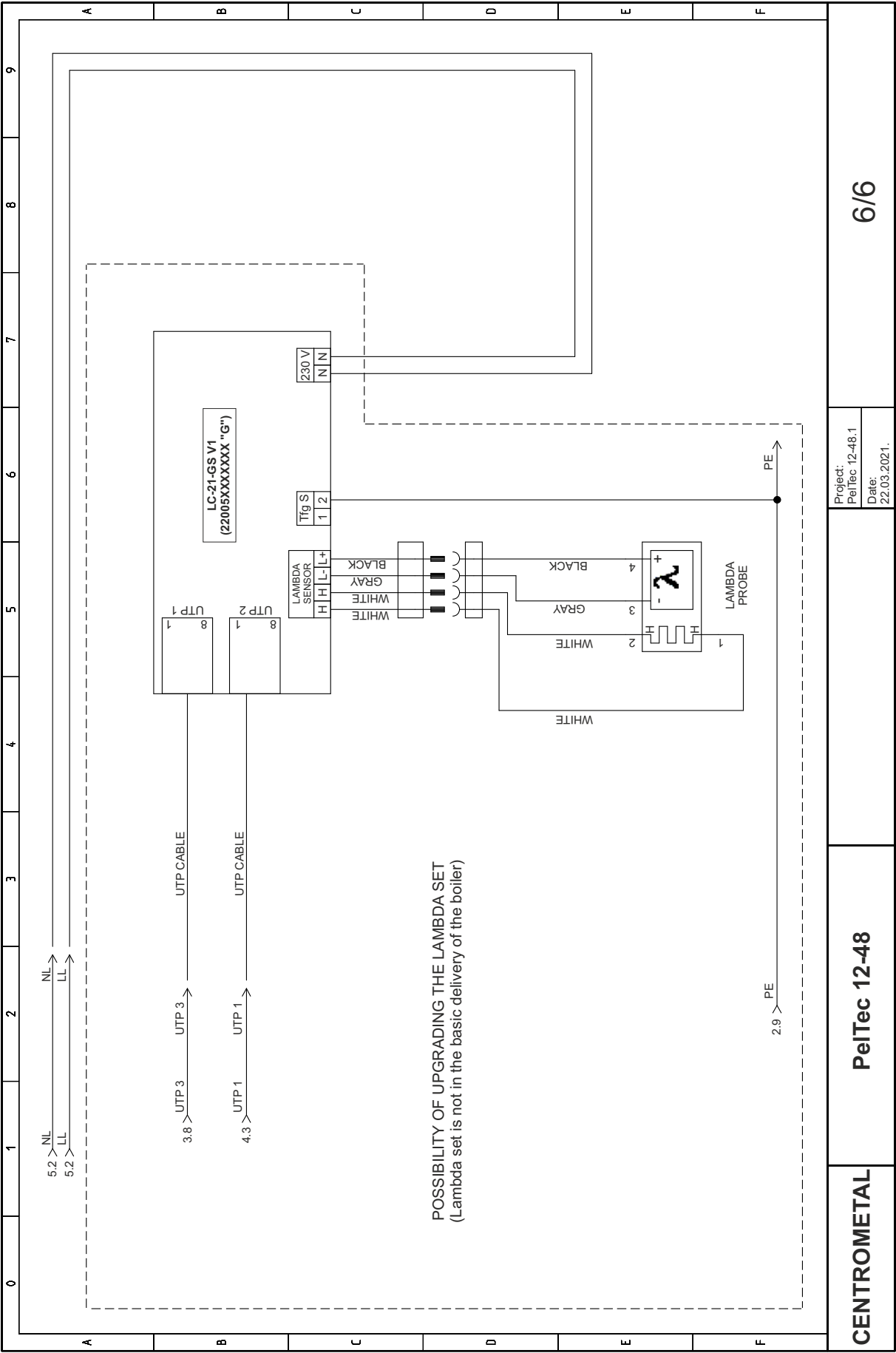




a) Installed lambda printed circuit board 22995XXXXXXX



b) Installed lambda printed circuit board LC-21-GS V1 (22005XXXXXXX "G")



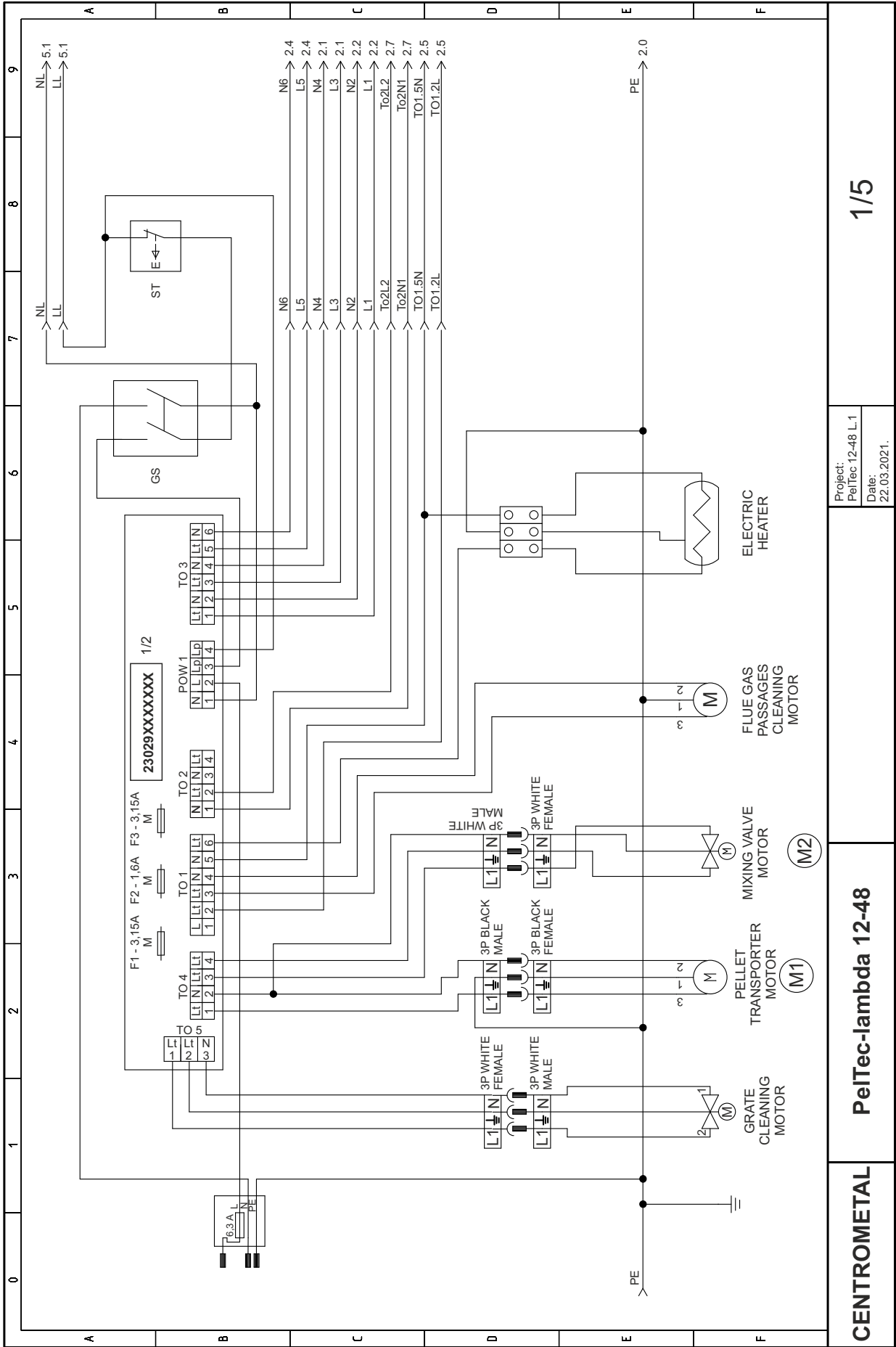
6/6

Project:
PeITec 12-48.1
Date:
22.03.2021.

PeITec 12-48

CENTROMETAL

5.2.b ELECTRICAL SCHEME INSTALLATION - PelTec-lambda 12-48

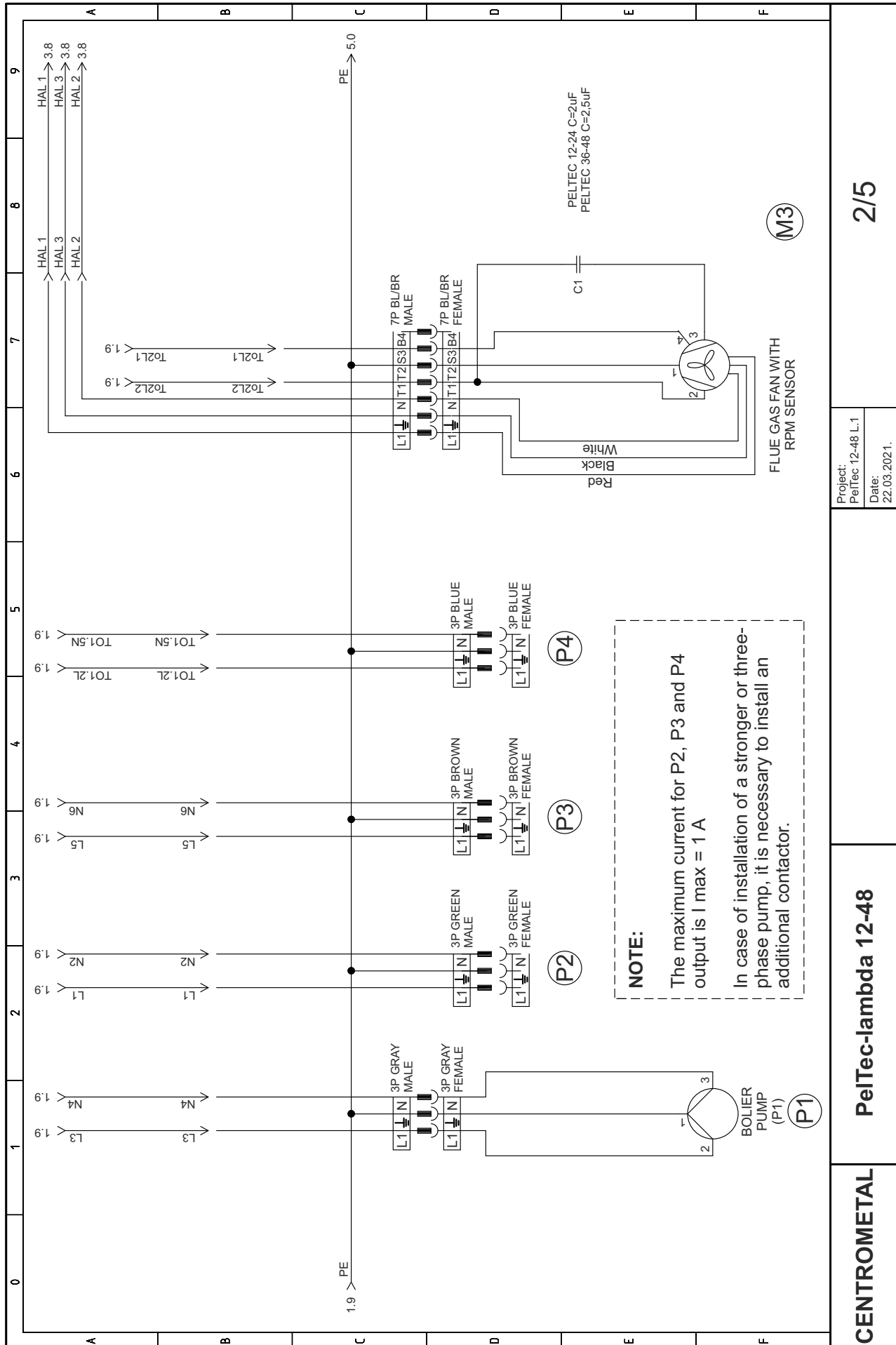


1/5

PelTec-lambda 12-48

CENTROMETAL

Project:
PelTec 12-48 L.1
Date:
22.03.2021.

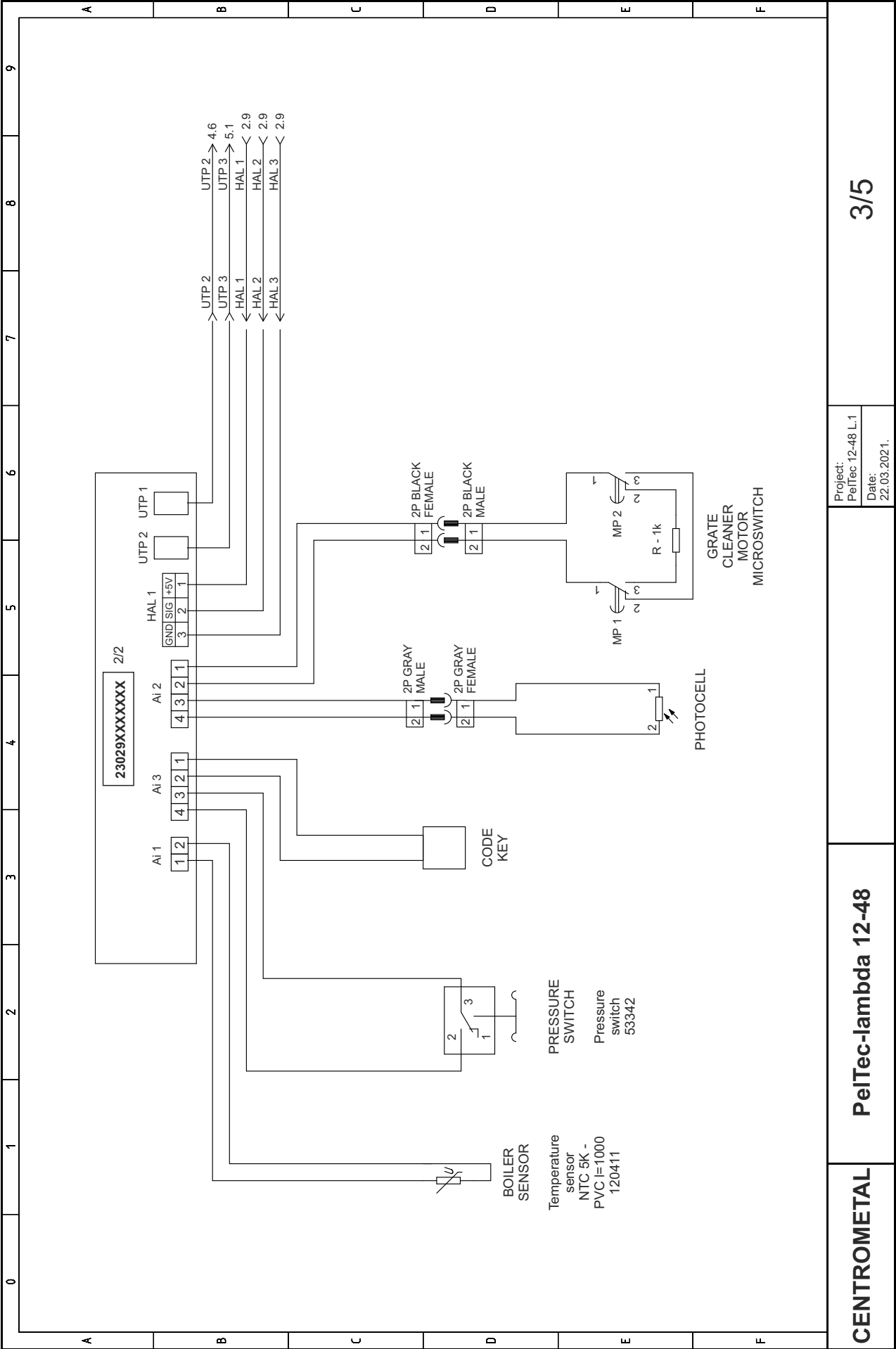


2/5

Project:
PelTec 12-48 L.1
Date:
22.03.2021.

PelTec-lambda 12-48

CENTROMETAL

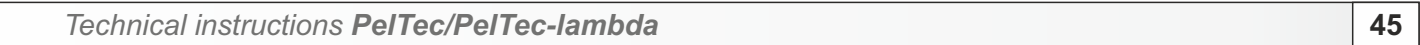


3/5

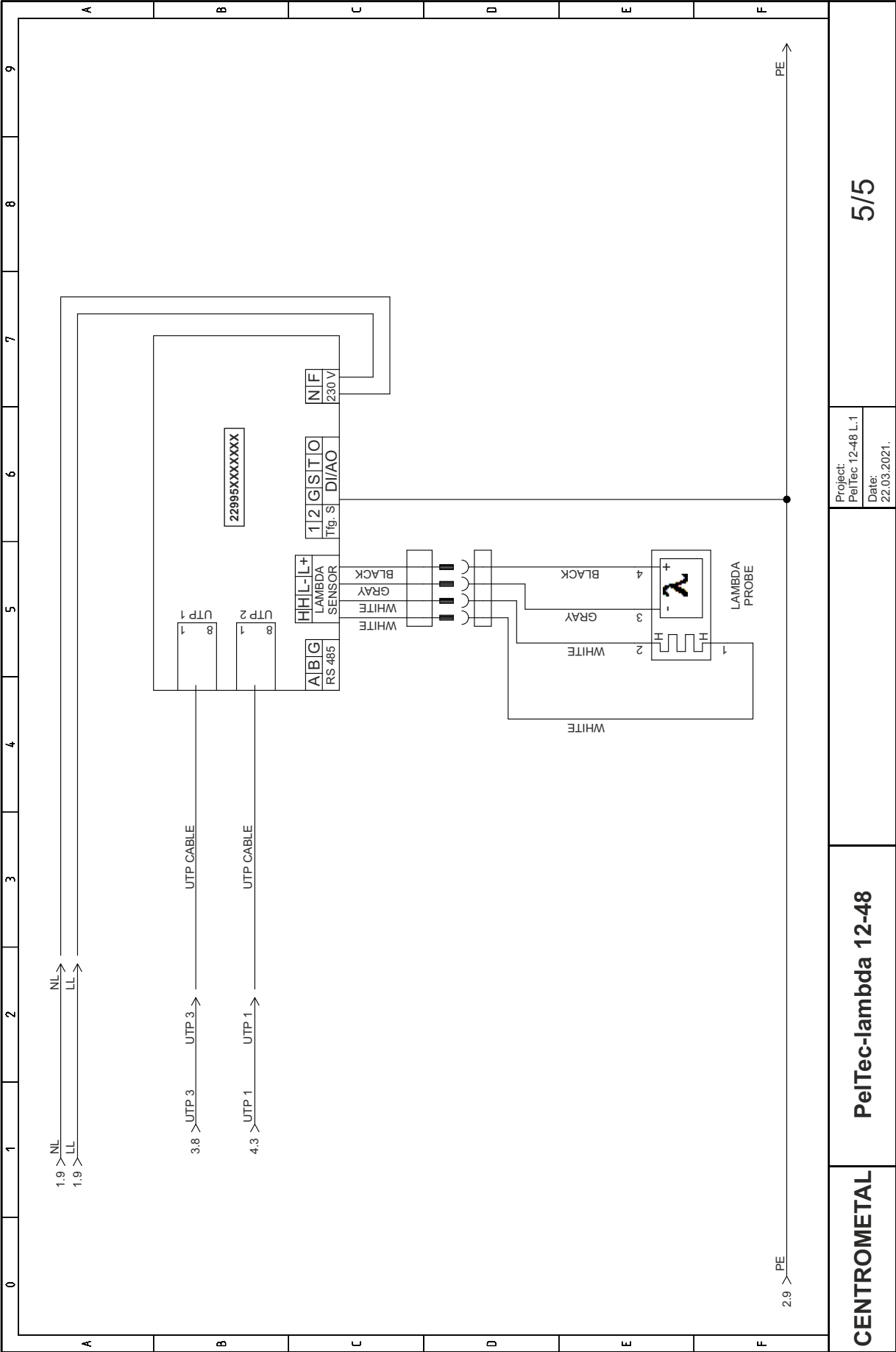
Project:
PeITec 12-48 L.1
Date:
22.03.2021.

PeITec-lambda 12-48

CENTROMETAL



a) Installed lambda printed circuit board 22995XXXXXXX

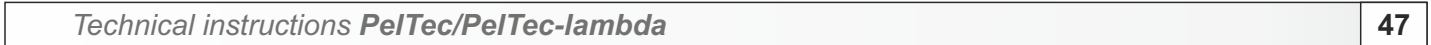


Project:
PeITec 12-48 L.1
Date:
22.03.2021.

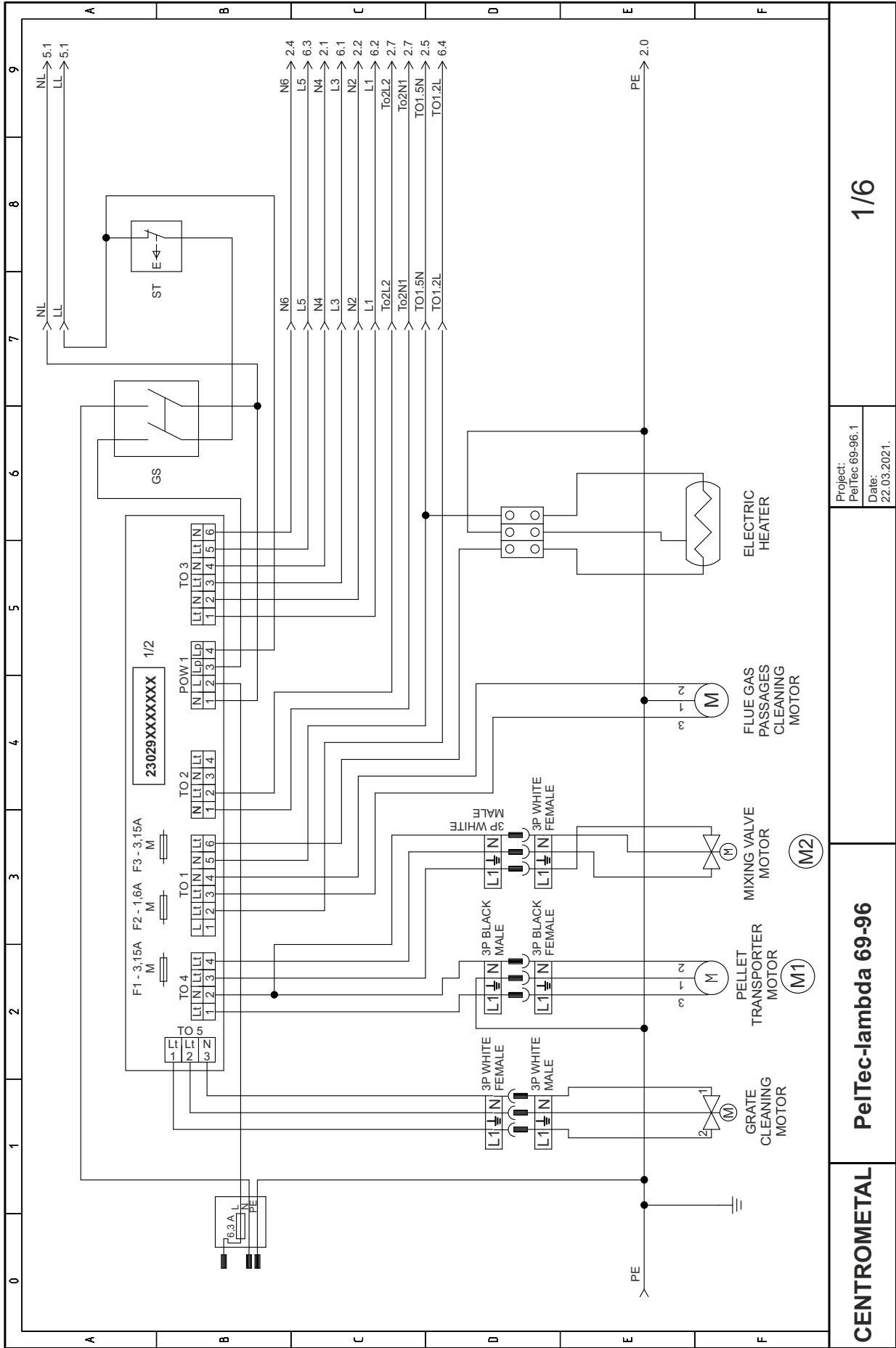
5/5

PeITec-lambda 12-48

CENTROMETAL



5.2.c ELECTRICAL SCHEME INSTALLATION - PeITec-lambda 69/96

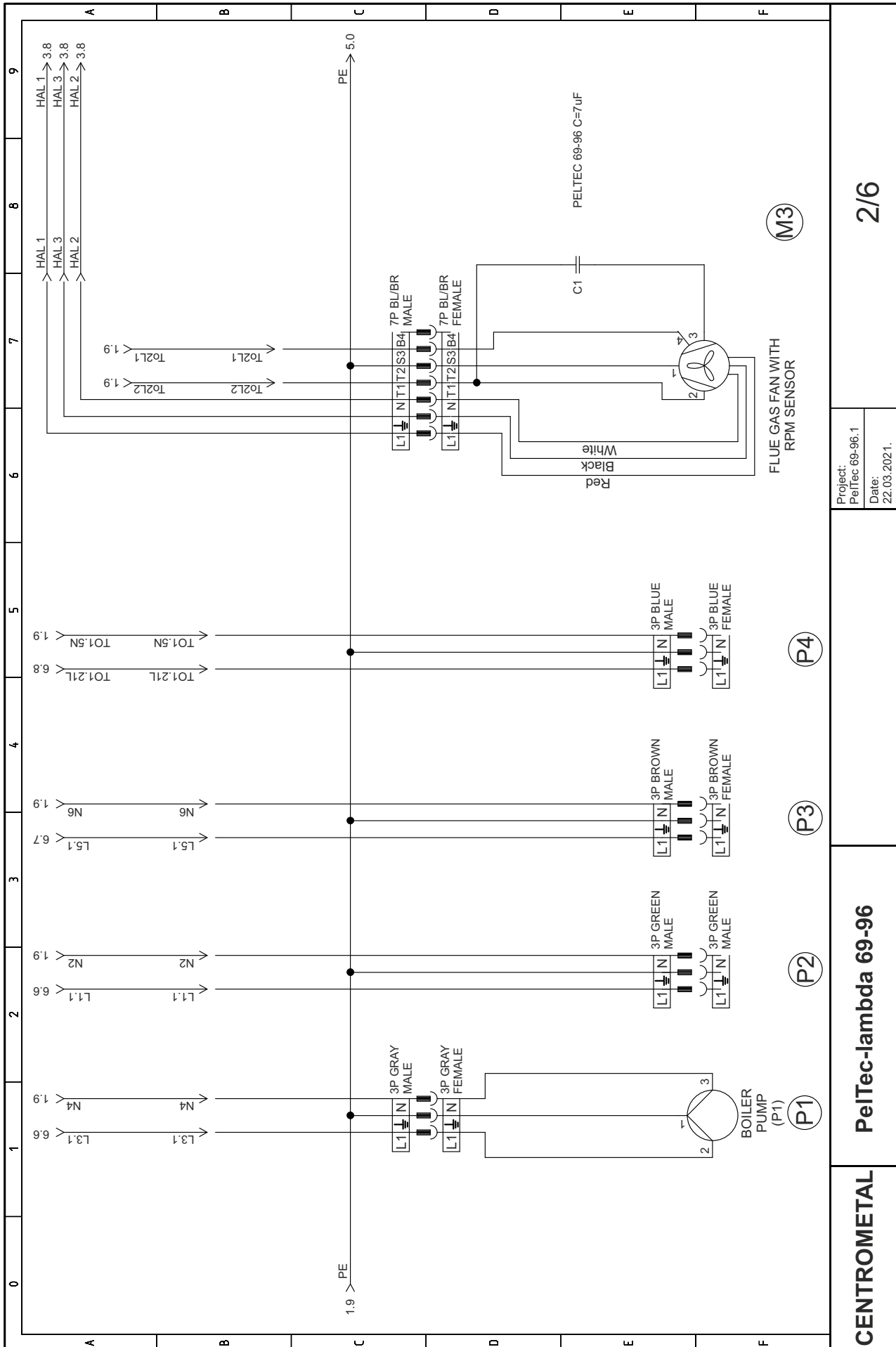


1/6

Project:
PeITec 69-96.1
Date:
22.03.2021.

PeITec-lambda 69-96

CENTROMETAL

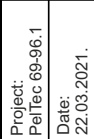


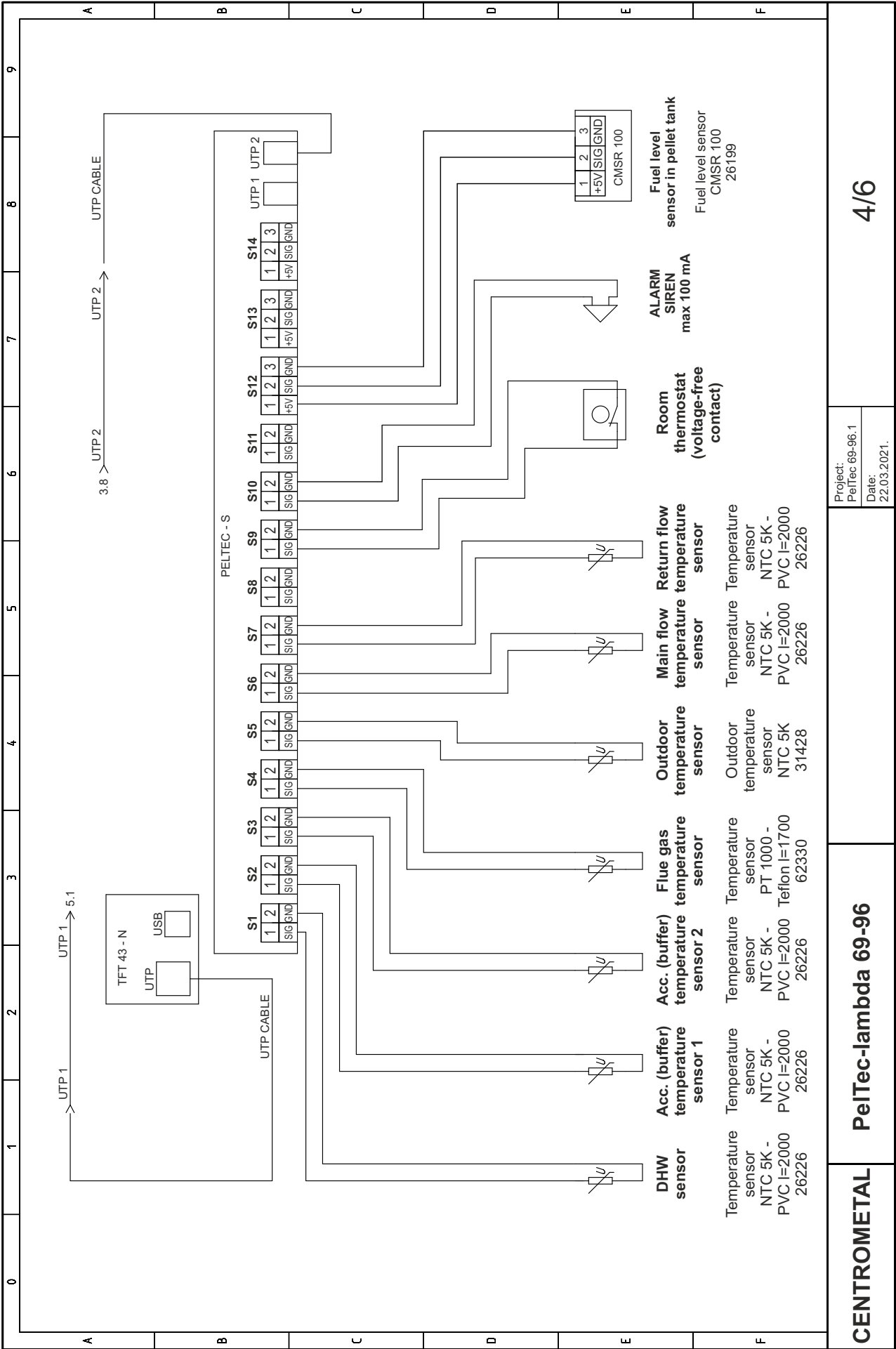
Project:
PelTec 69-96.1
Date:
22.03.2021.

PelTec-lambda 69-96

CENTROMETAL

2/6





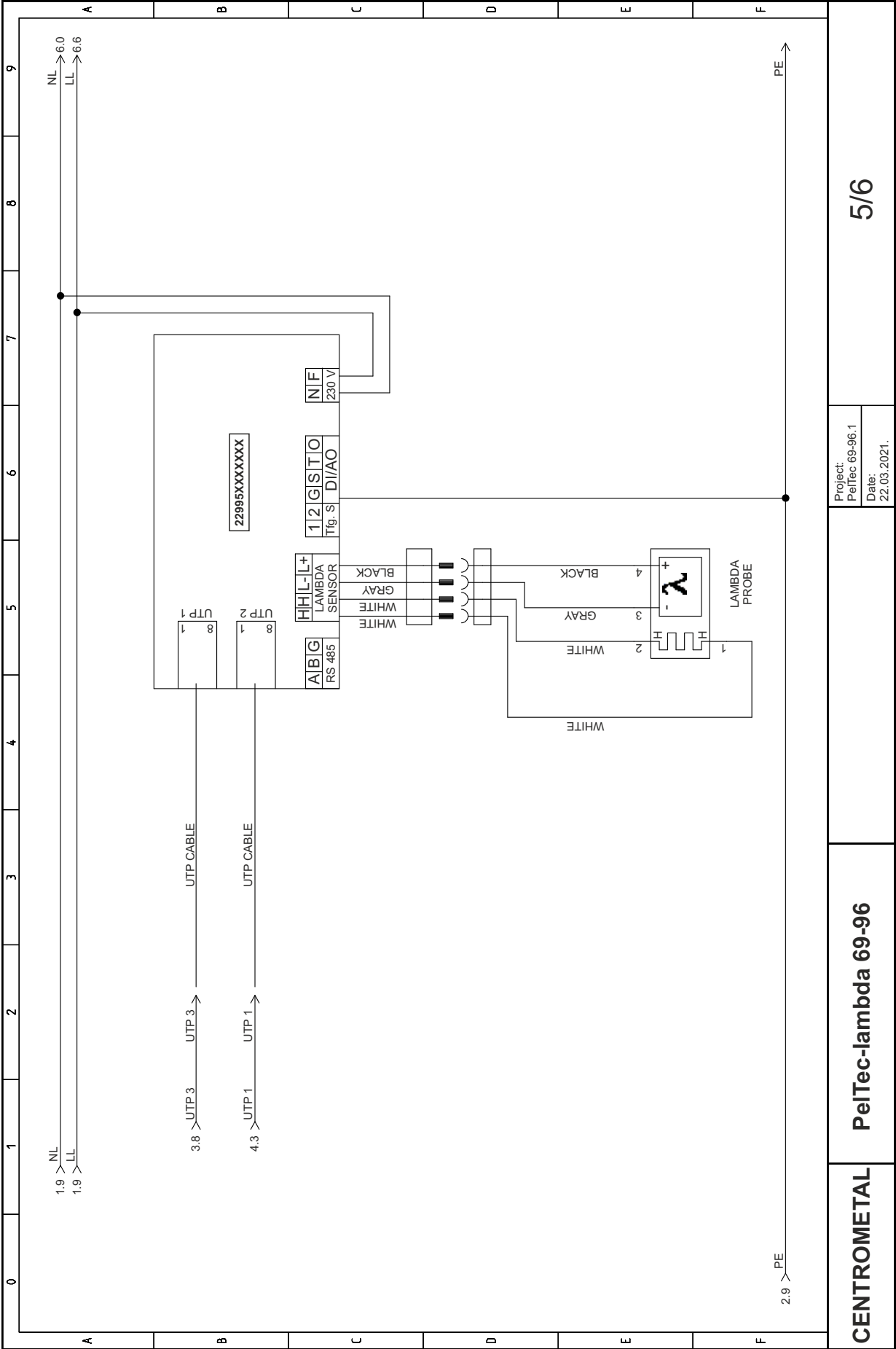
4/6

Project:
PelTec 69-96.1
Date:
22.03.2021.

PelTec-lambda 69-96

CENTROMETAL

a) Installed lambda printed circuit board 22995XXXXXXX



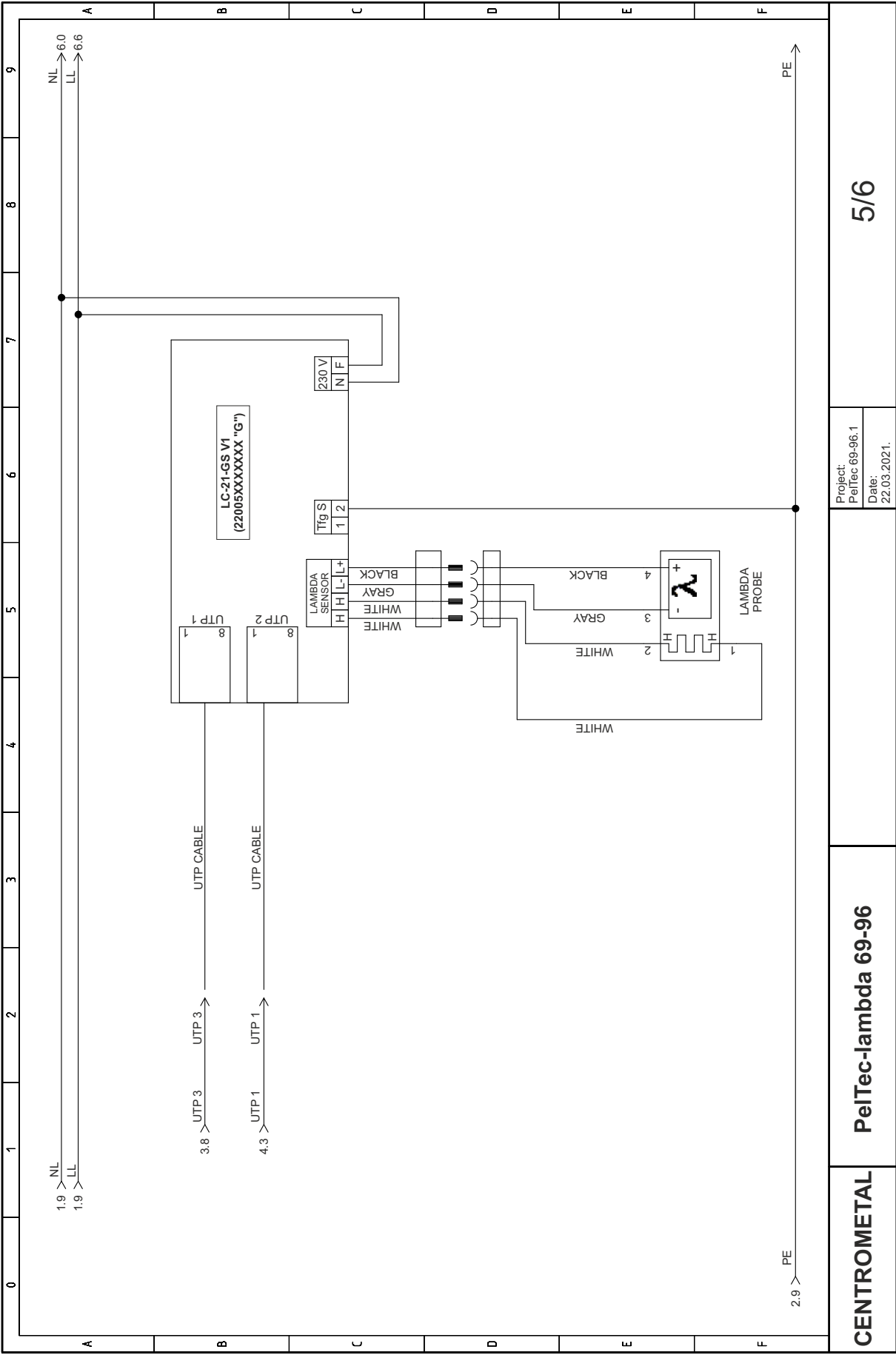
Project:
PeITec 69-96.1
Date:
22.03.2021.

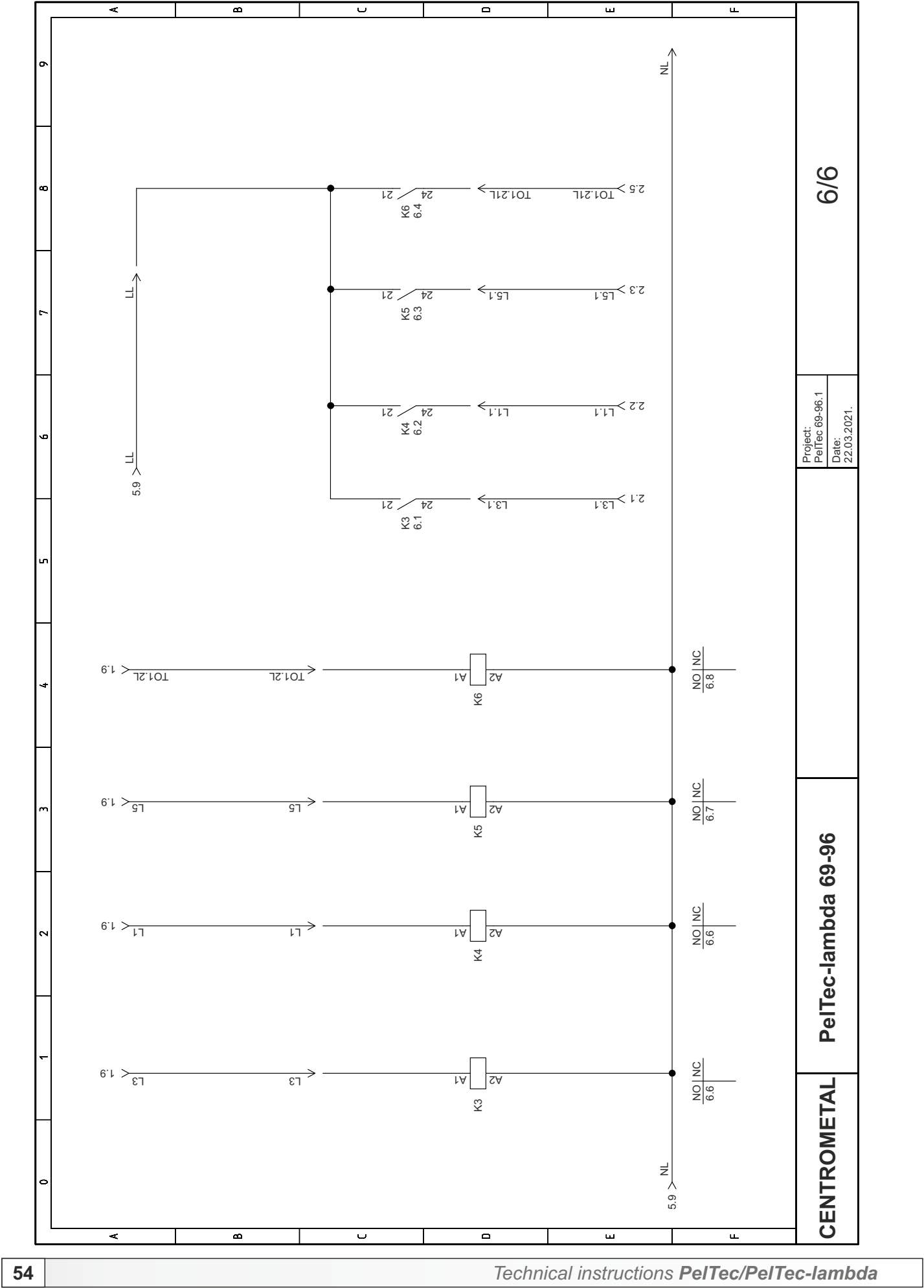
PeITec-lambda 69-96

CENTROMETAL

5/6

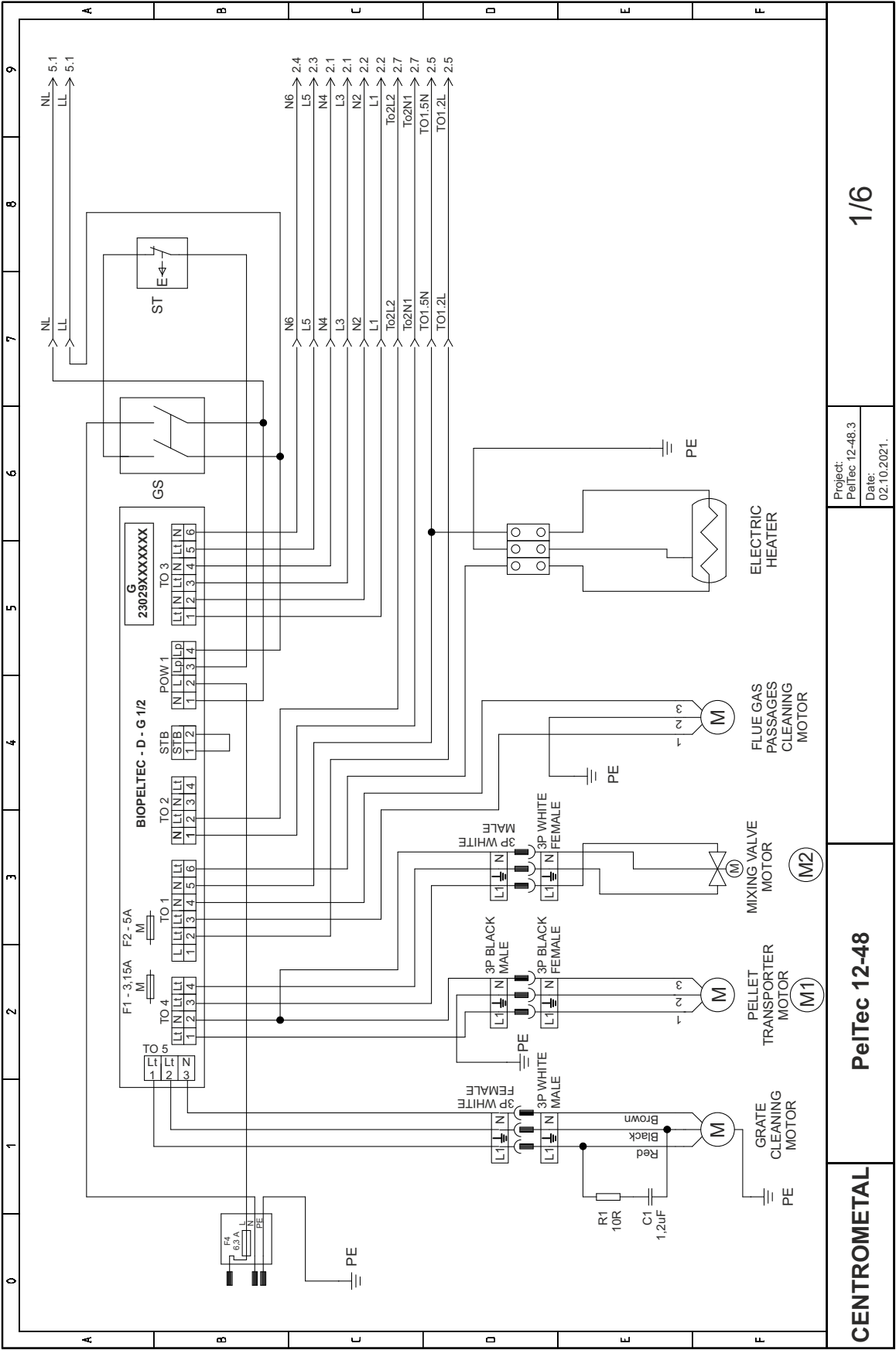
b) Installed lambda printed circuit board LC-21-GS V1 (22005XXXXXXX "G")





5.3. ELECTRICAL SCHEME INSTALLATION - MAIN PCB - 23029XXXXXX "G"

5.3.a ELECTRICAL SCHEME INSTALLATION - PelTec 12-48



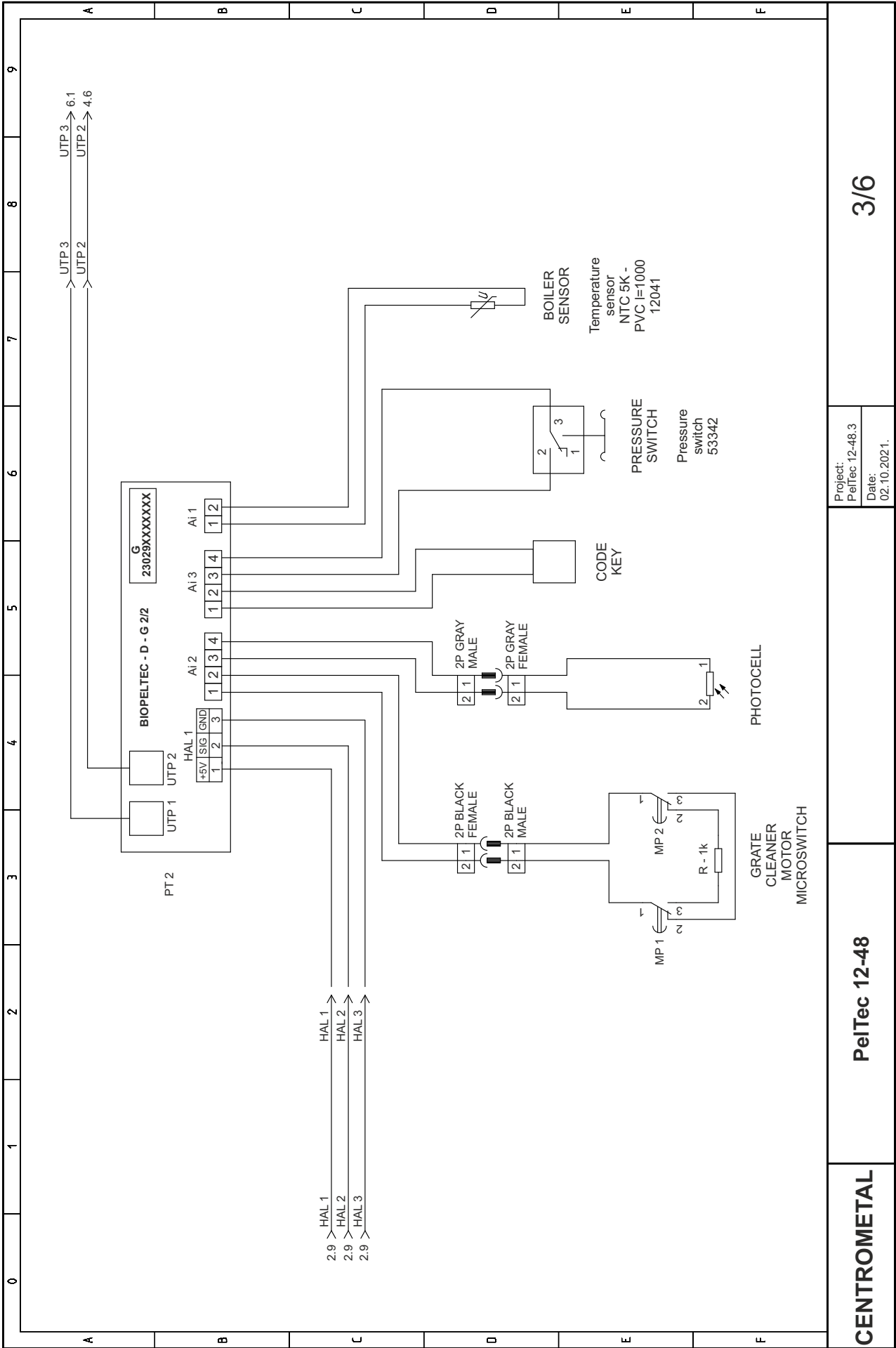
Project:
PelTec 12-48.3
Date:
02.10.2021.

1/6

PelTec 12-48

CENTROMETAL



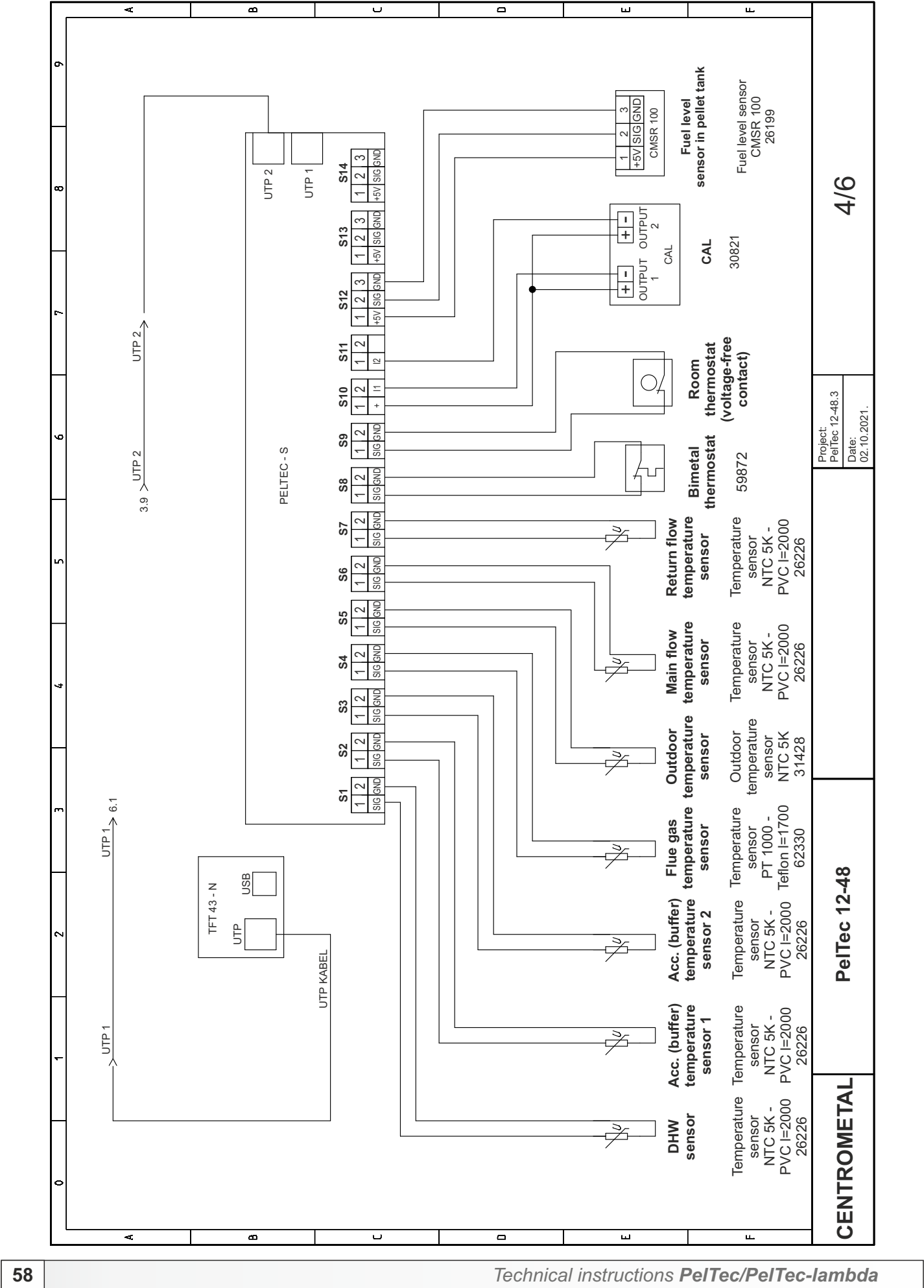


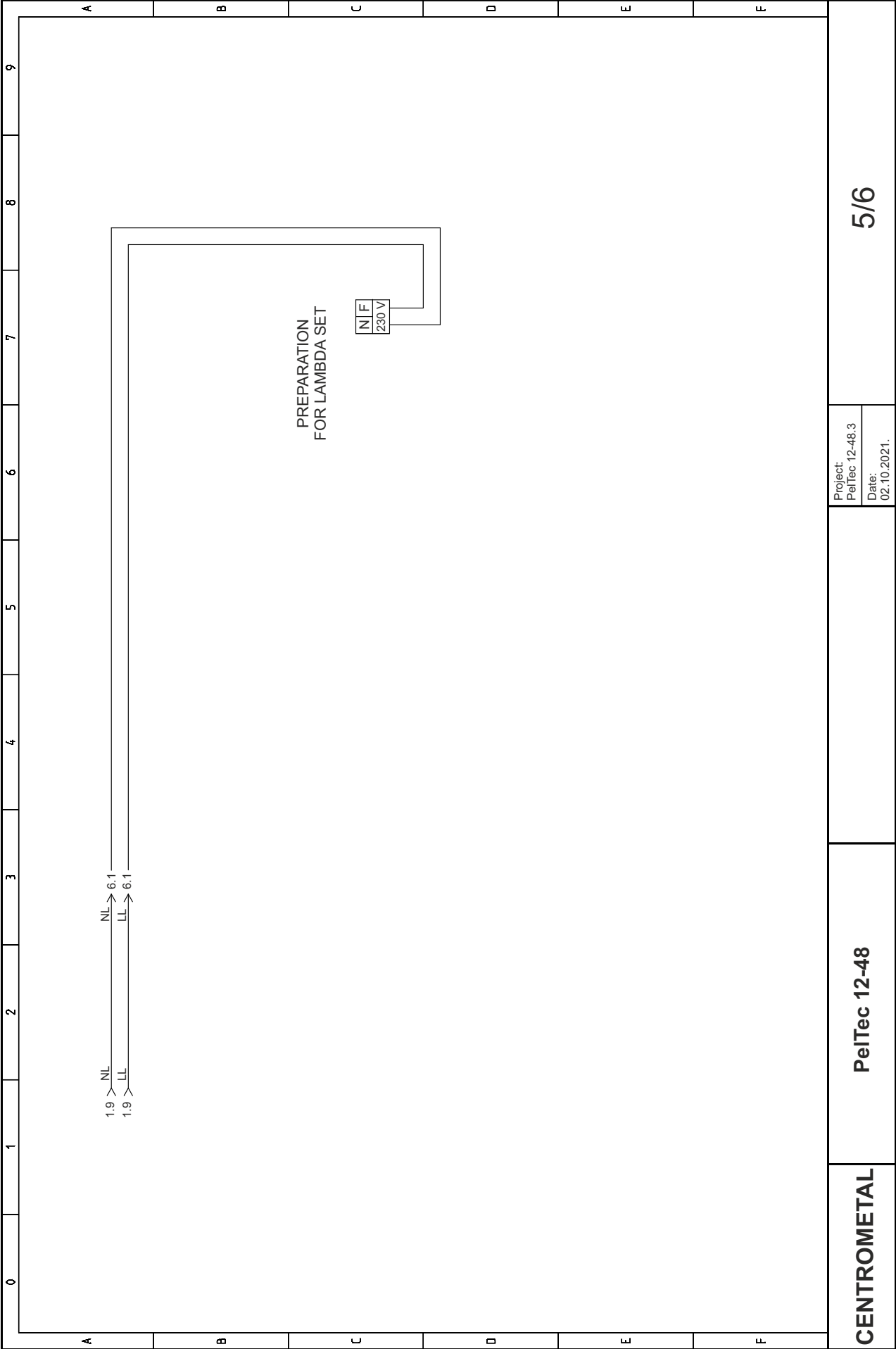
3/6

Project:
PelTec 12-48.3
Date:
02.10.2021.

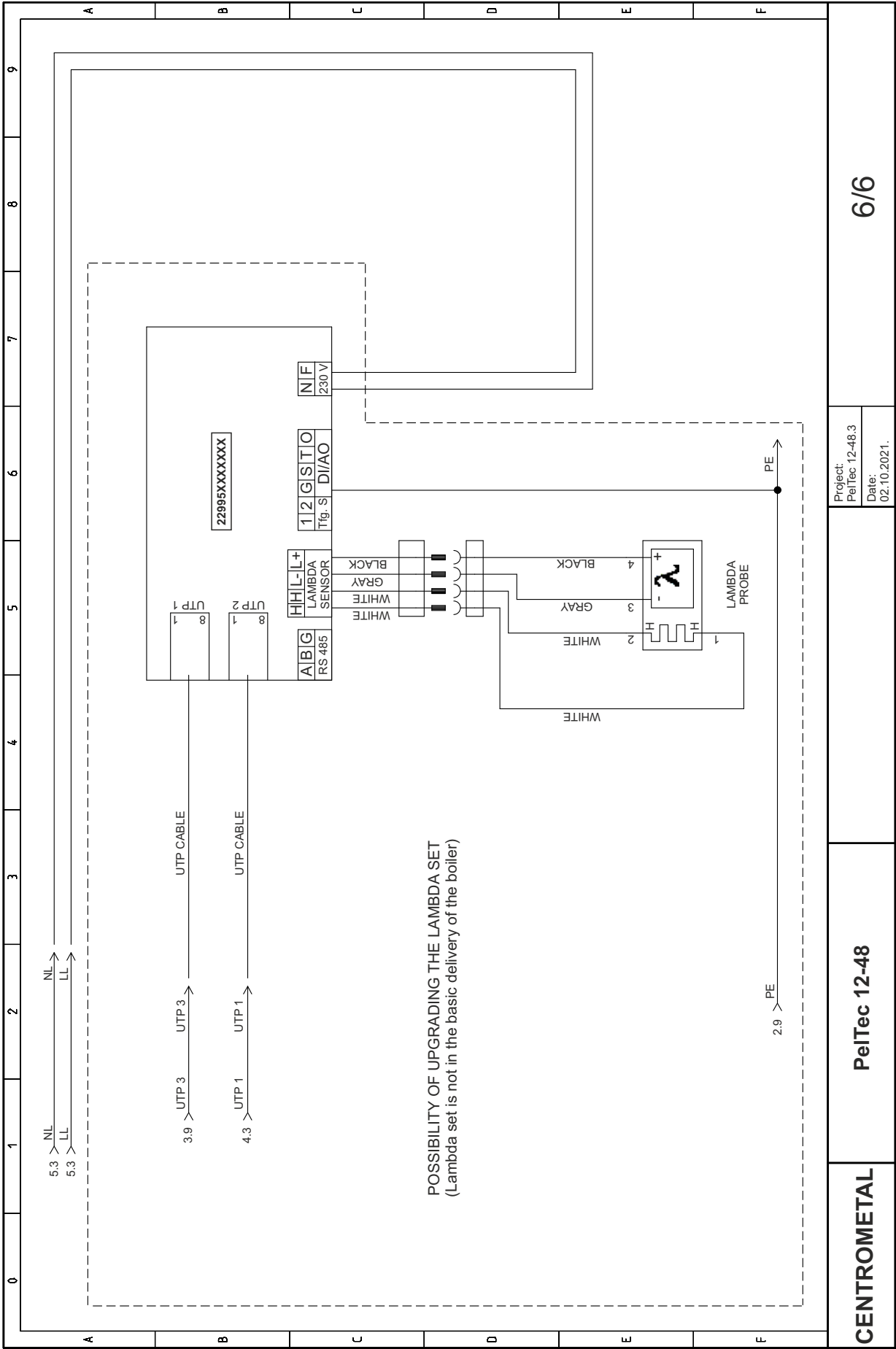
PelTec 12-48

CENTROMETAL



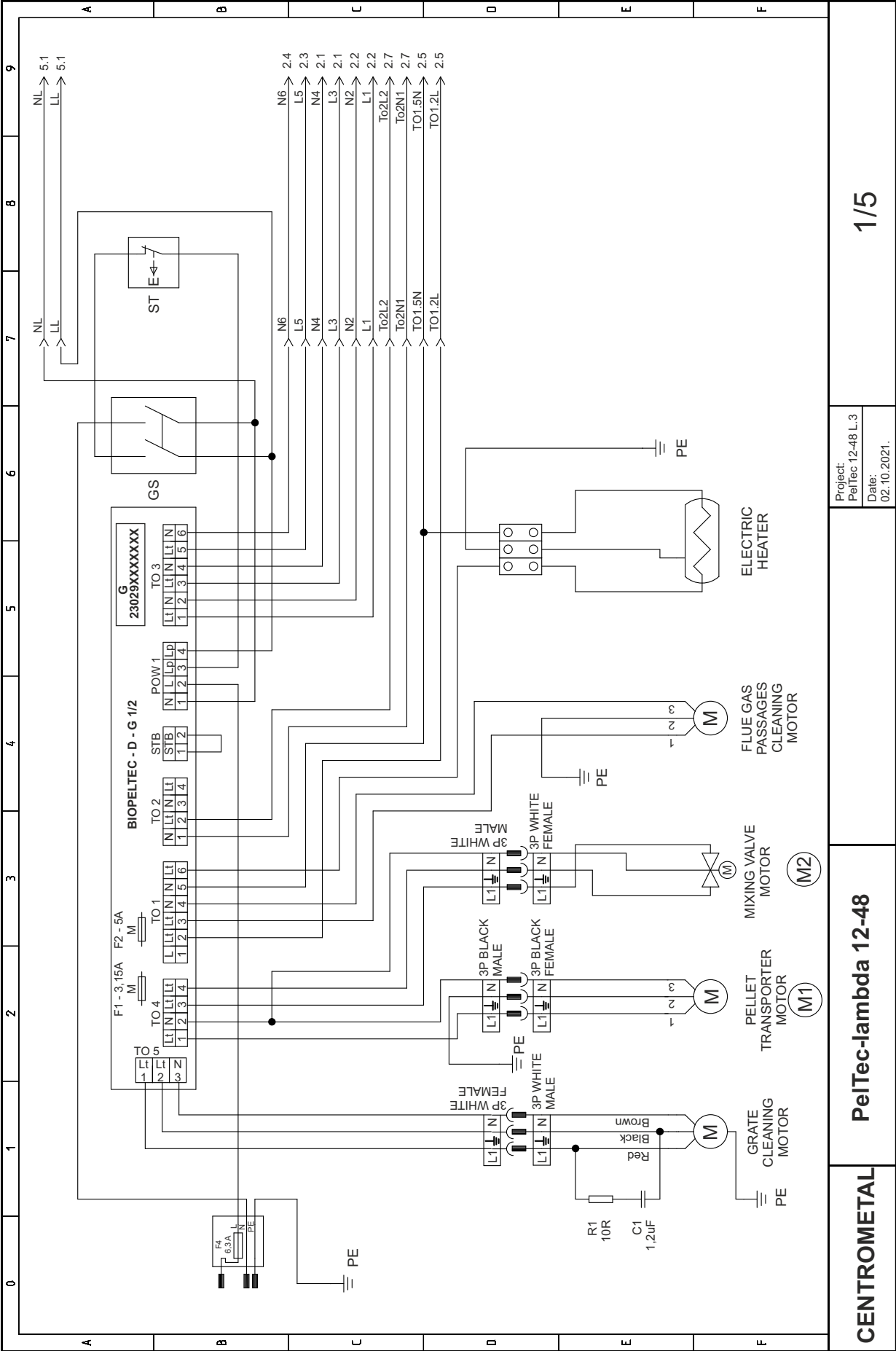


a) Installed lambda printed circuit circuit board 22995XXXXXXX





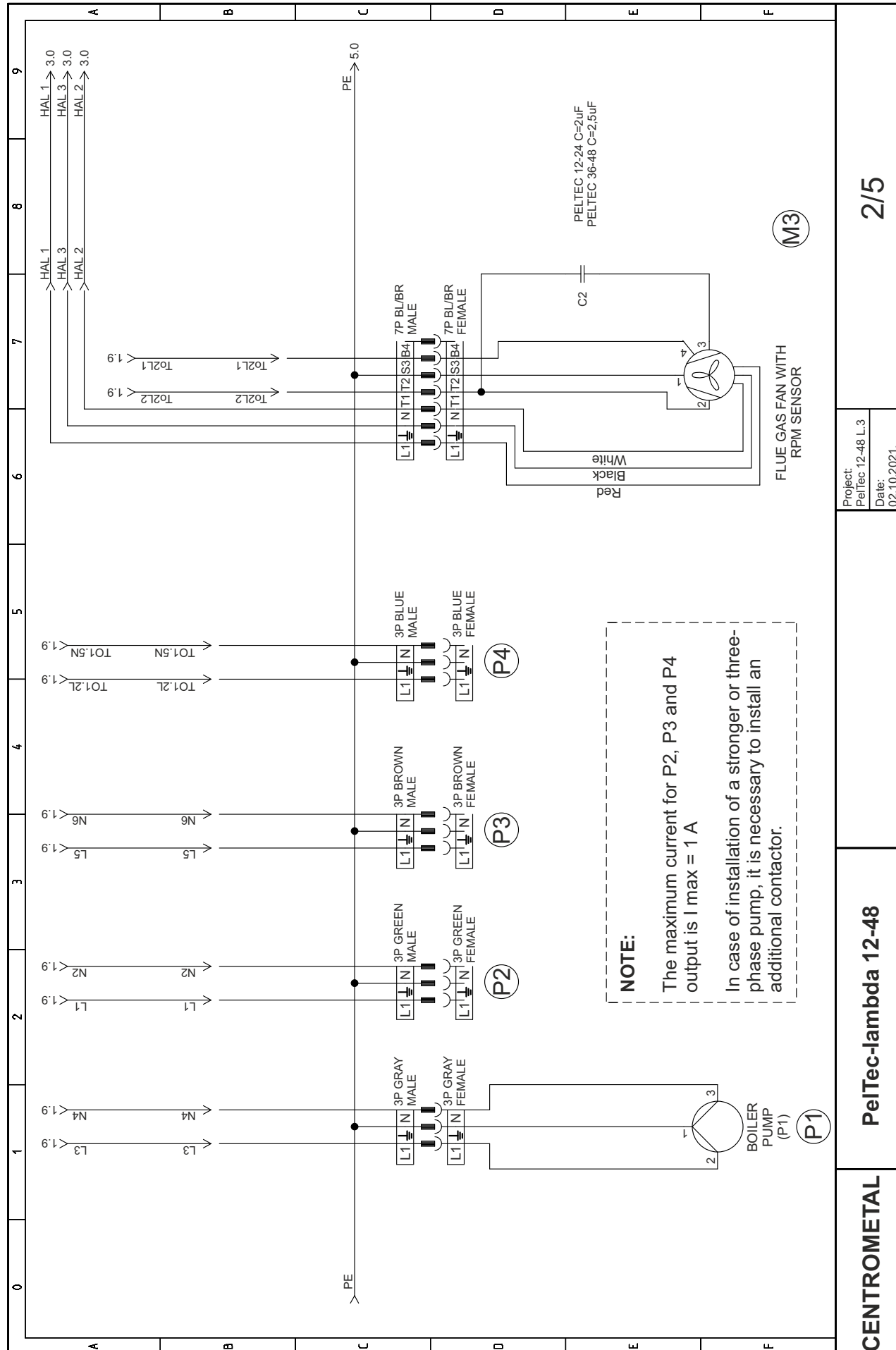
5.3.b ELECTRICAL SCHEME INSTALLATION - PelTec-lambda 12-48

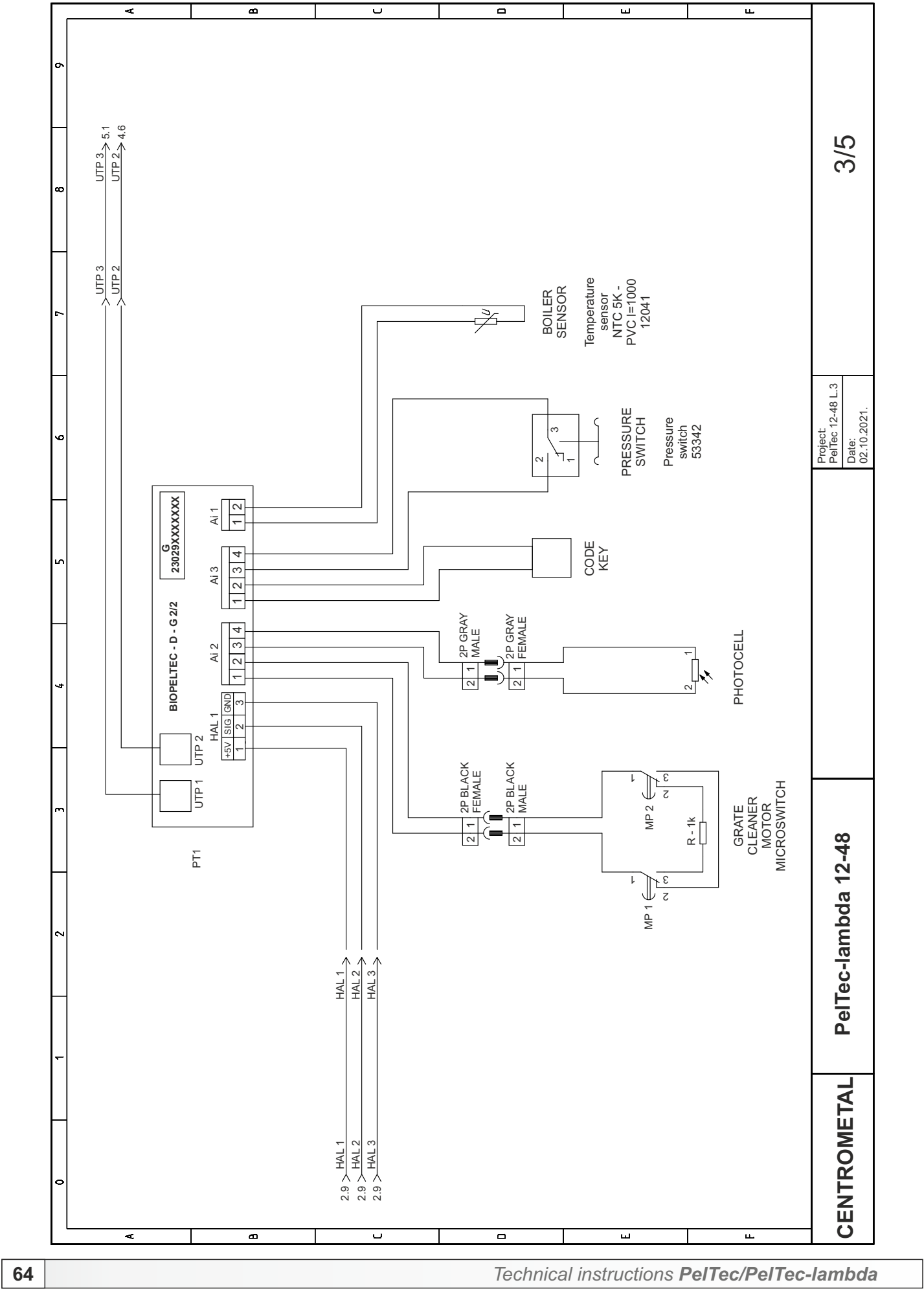


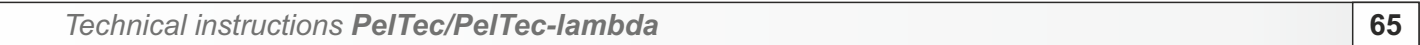
Project:
PelTec 12-48 L.3
Date:
02.10.2021.

PelTec-lambda 12-48

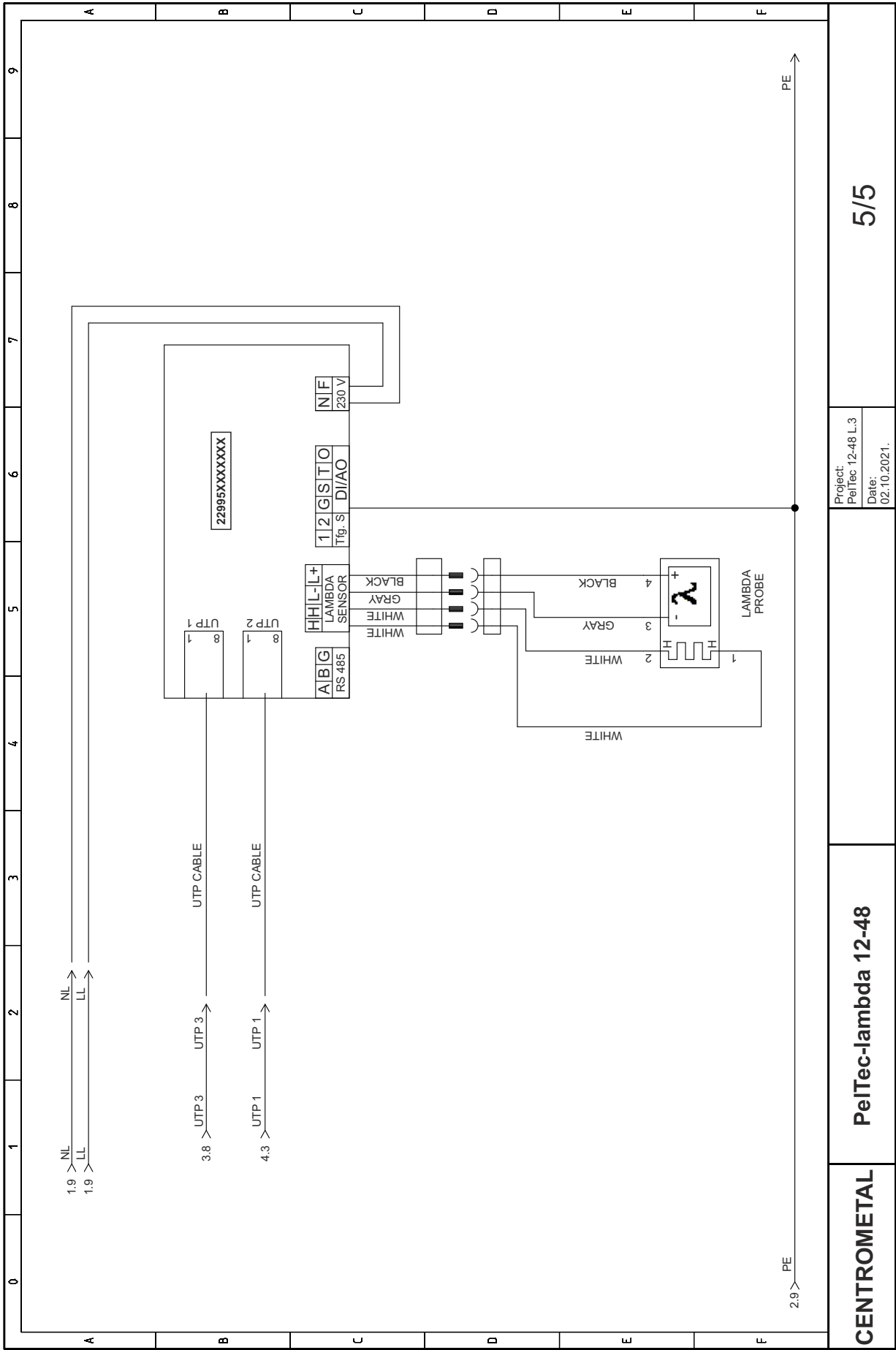
CENTROMETAL



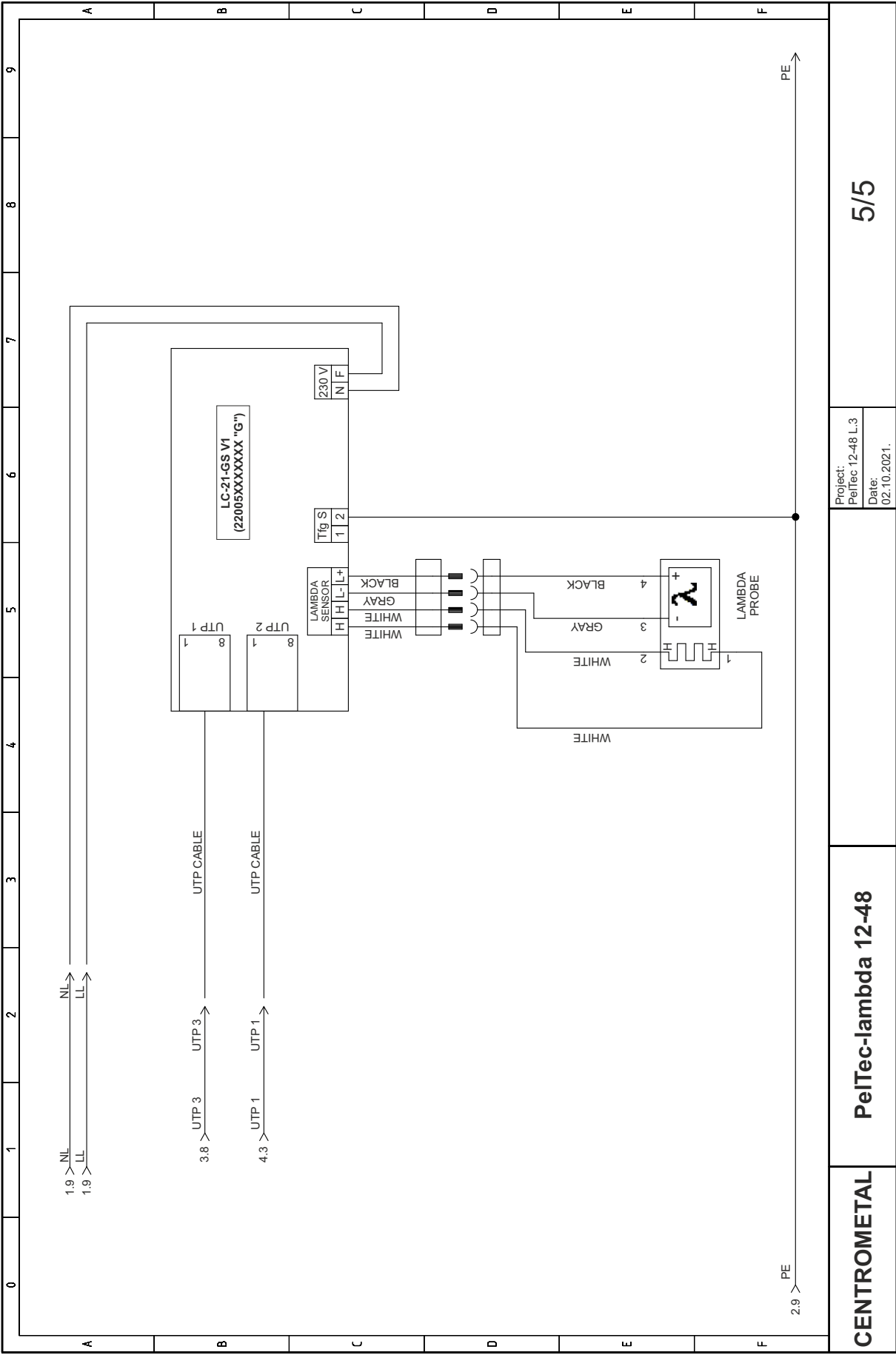


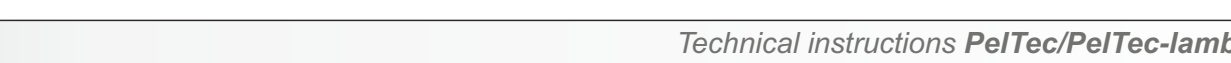


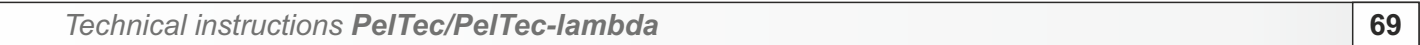
a) Installed lambda printed circuit board 22995XXXXXXX

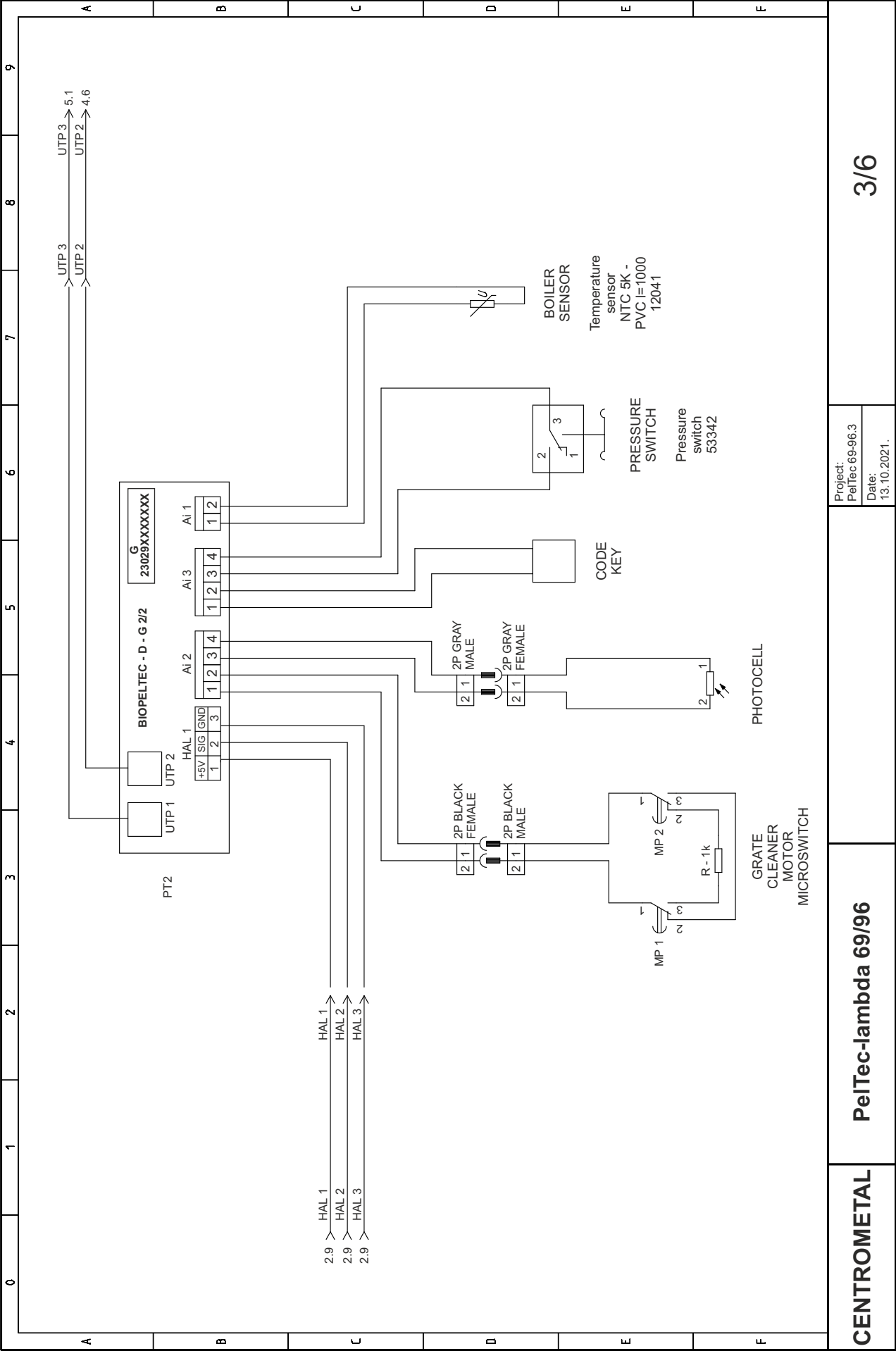


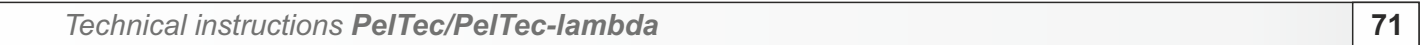
b) Installed lambda printed circuit board LC-21-GS V1 (22005XXXXXXXX "G")

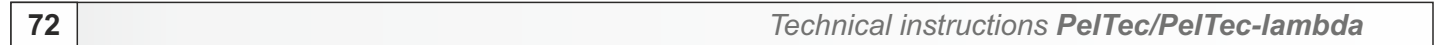




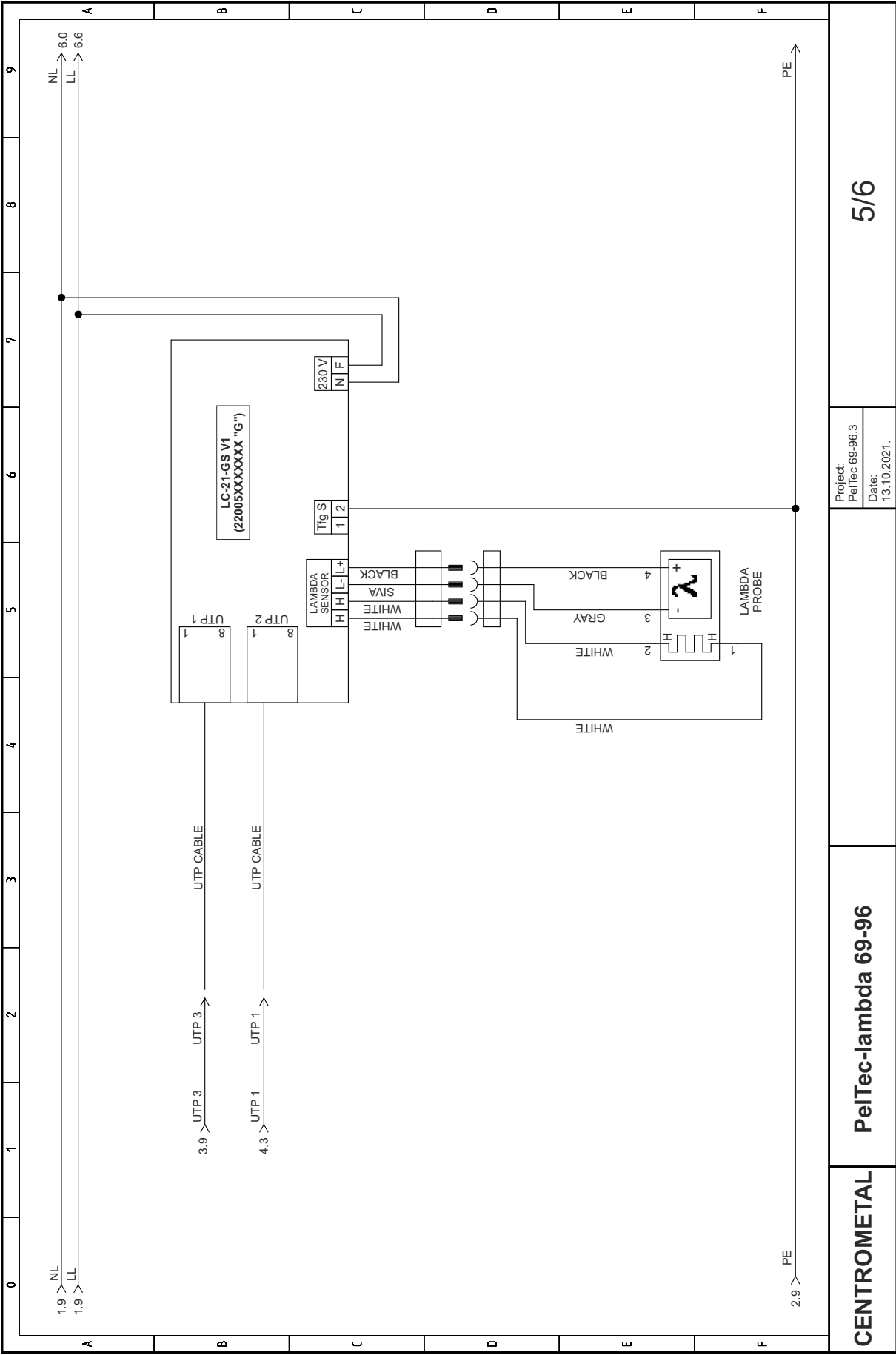








b) Installed lambda printed circuit board LC-21-GS V1 (22005XXXXXXX "G")





6.0. OPERATING THE SYSTEM

Boiler must not be used in flammable and explosive environment.

It must not be used by children or disabled persons (either physically or mentally), as well as by person without knowledge or experience, unless they are under control or trained by a person responsible for their safety.

Children must be supervised in the vicinity of the product. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified.

6.1. SAFETY INSTRUCTIONS FOR THE INSTALLATION ROOM

Boiler room must be frost-proof and well ventilated. Boiler has to be positioned so that it can be properly connected to the chimney (see point 4.0) and simultaneously, enabling tending of boiler and additional equipment, control during operation, and cleaning and maintenance

6.2. INITIAL STARTUP

See technical instructions for PelTec / PelTec-lambda digital control unit where is explained initial startup.

Note:

The start up has to be done by the authorized person, otherwise the warranty for this product is not valid and the product must not be used.

Note:

If condensation escapes during the initial heatup phase, this does not indicate a fault.

If this occurs, clean up using a cleaning rag.

6.3. FILLING / REFILLING PELLET TANK WITH FUEL



CAUTION:

Use only permitted pellets!

6.3. BOILER USE

Boiler must not be used in flammable and explosive environment.

It must not be used by children or disabled persons (either physically or mentally), as well as by person without knowledge or experience, unless they are under control or trained by a person responsible for their safety. Children must be supervised in the vicinity of the product. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. Protective gloves are obligatory.

Check whether boiler and equipment are installed and connected in accordance with these Technical instructions. Check whether chimney meets requirements of point 3.0 therein. Check whether boiler room meets all requirements therein. Check if fuel fulfils all requirements therein. Check whether the boiler and the entire heating system are filled with water and vented.

Note:

Before every use check if the boiler doors and cover door are closed (Figure 6).

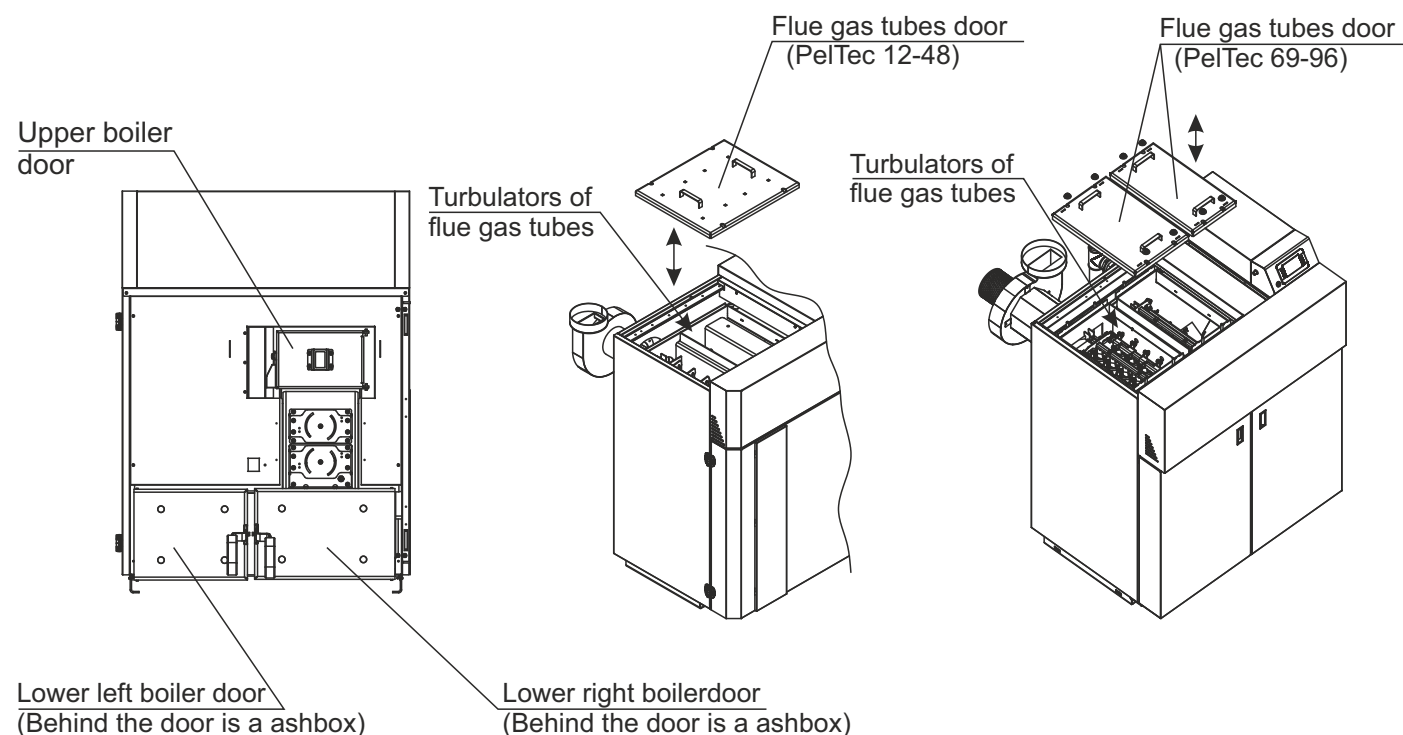
If you smell flue gas:

- shut down the heating system
- ventilate the boiler room
- close all doors leading to the living space



Flue gas can lead to life-threatening poisoning!

Figure 6. PelTec / PelTec-lambda boiler doors



7.0. CLEANING AND MAINTENANCE

Every millimeter of soot on the exchange surfaces and in the flues means about 5 % more fuel consumption. A clean boiler saves fuel and protects the environment.

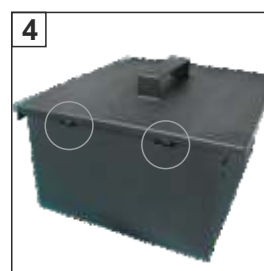
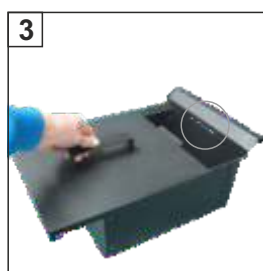
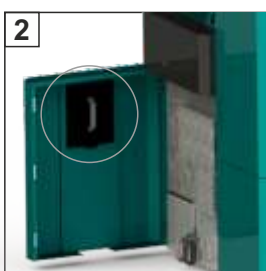
Save fuel – always clean the boiler in good time!

PROTECTIVE GLOVES ARE OBLIGATORY!!



Cleaning interval	Boiler type	Description
After spent 150-250 kg of pellets	12kW	Discharge ash boxes
After spent 250-350 kg of pellets	18kW	Discharge ash boxes
After spent 300-450 kg of pellets	24kW	Discharge ash boxes
After spent 400-600 kg of pellets	31/36/48kW	Discharge ash boxes
After spent 600-800 kg of pellets	69kW	Discharge ash boxes
After spent 800-1000 kg of pellets	96kW	Discharge ash boxes

Emptying the ash box:



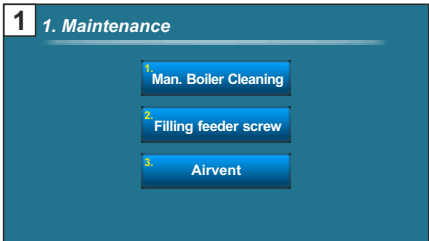
1. Take out ash boxes.
2. For carrying ash boxes, use a protective cover which is located on the inside of front door.
For boilers 18-96 kW take out one by one box in order to use the same cover (Figure 2).
3. Attach the cover to the 3 holes (Figure 3.4) .
4. Put the cover and ash box back to original position.

IMPORTANT! The ash can be disposed of only in a metal container!

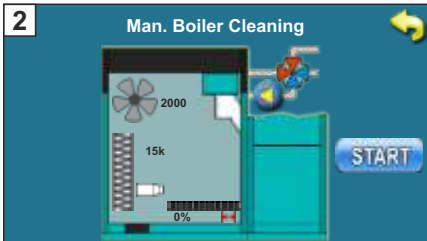
Cleaning interval	Boiler type	Description
At least once per year (This procedure is very simple and is recommends even more often)	12-96 kW	Cleaning of exchanging surfaces (above the burner)

Clanling of exchanging surfaces (above the burner)

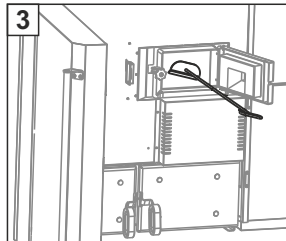
1 1. Maintenance



2 Man. Boiler Cleaning



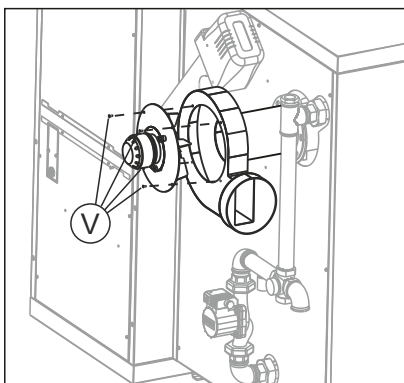
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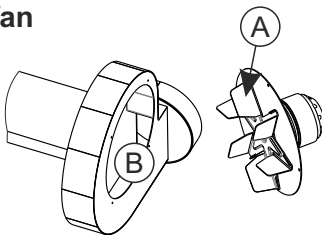


- 1 - Press the "maintenance" on the regulation and then "Boiler Cleaning".
- 2 - Press "START" (it will start the fan and it will open a grate.)
- 3 - By using scraper, brush or vacuum cleaner, through the door clean exchanging surfaces
- 4 - After you finish cleaning, press "back" (↩) on regulation to control the boiler back to normal mode and close the front door of the boiler.

Cleaning interval	Boiler type	Description
When needed	12-96 kW	Cleaning the blades and box of the fan

Cleaning the blades and box of the fan



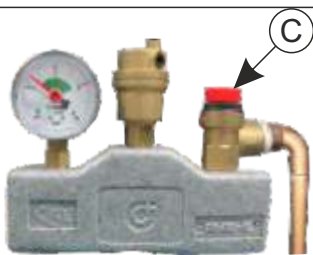


6



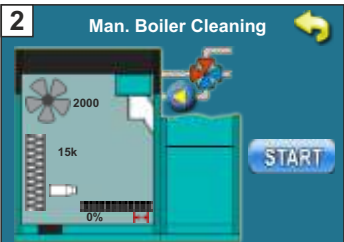
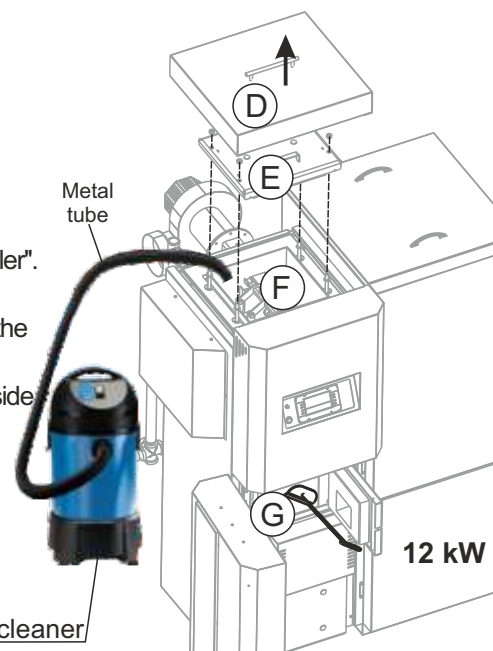
1. Switch off the boiler and disconnect from electric. power.
2. Pull out the 7 pin connector (Figure 6) from boiler control unit. Then unscrew four screws (V) and remove the fan, clean the fan blades (A), check the condition of the fan box (B) and clean it when is necessary by using vacuum cleaner or remove it from the boiler and clean thoroughly.
3. Set back the fan into original position and secure it with screws, then connect 7-pin connector on the M3 (see page 31, figure 5) and connect the power supply to the boiler.

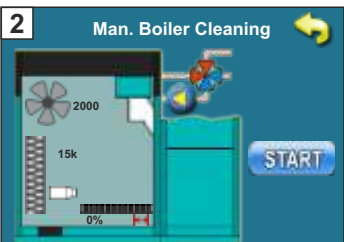
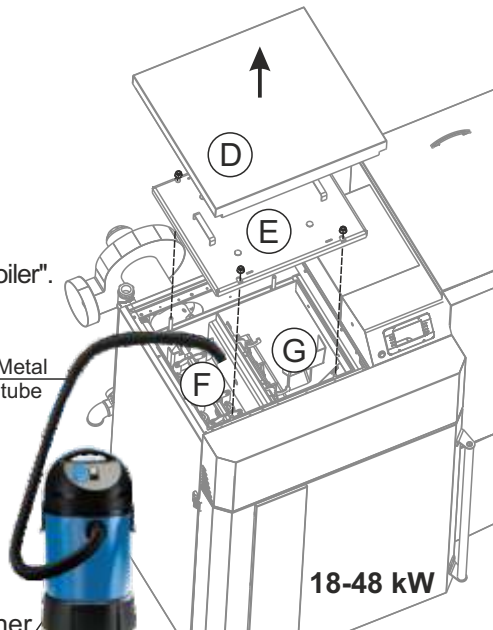
Cleaning interval	Boiler type	Description
Every 6 months	12-96 kW	Check the correctness of security valve

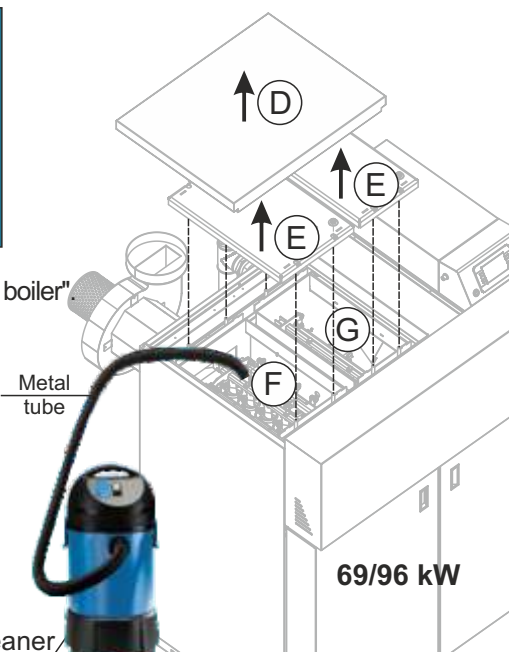


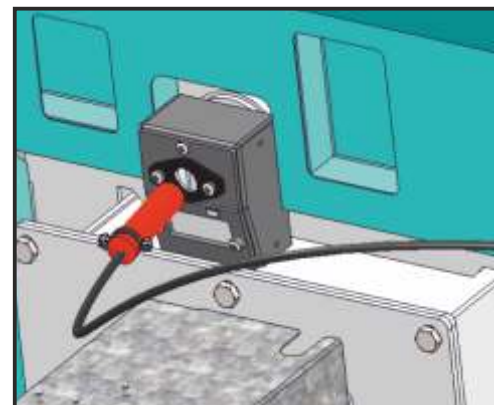
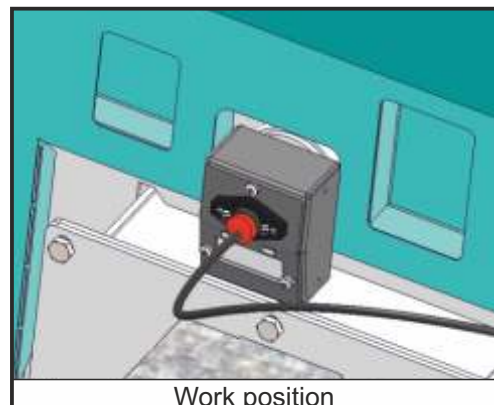
Checking the correctness of security valve

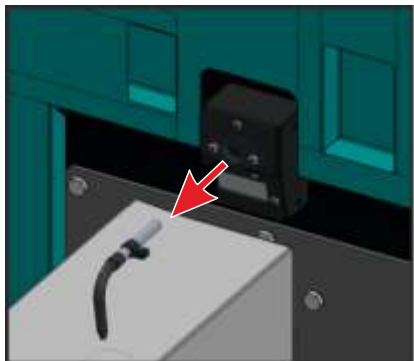
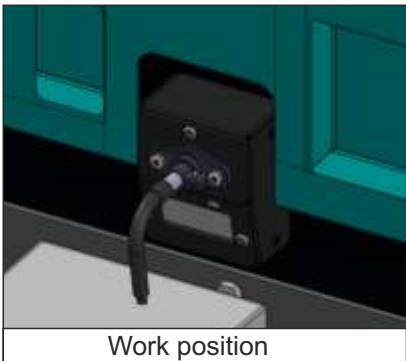
By briefly turning the cap of safety valve (C) check whether water coming out from the safety valve. If no water comes out after several repeated checks, then is necessary to replace the safety valve.

Cleaning interval	Boiler type	Description
At least once per year	12 kW	Cleaning of exchanging surfaces (around the entire boiler)
1 1. Maintenance  2 Man. Boiler Cleaning  - Press "Maintenance" on the regulation and then "Cleaning the boiler". - Press "START" (it will start the fan and it will open a grate.) - Lift the top cover (D), then unscrew the four screws and remove the upper door (E). - By using scraper, brush and vacuum cleaner, through the upper side and trough the front door clean exchanging surfaces(F,G). - When you have finished cleaning, set upper door back to original position and tighten them well, then set the top cover back to position and close the front door of the boiler. Then press "back" on the regulation (↩️) to return boiler to normal mode.  12 kW Metal vacuum cleaner		

Cleaning interval	Boiler type	Description
At least once per year	18-48 kW	Cleaning of exchanging surfaces (around the entire boiler)
1 1. Maintenance  2 Man. Boiler Cleaning  - Press "Maintenance" on the regulation and then "Cleaning the boiler". - Press "START" (it will start the fan and it will open a grate.) - Lift the top cover (D), then unscrew the four screws and remove the upper door (E). - By using scraper, brush and vacuum cleaner, through the upper side clean exchanging surfaces(F,G). - When you have finished cleaning, set upper door back to original position and tighten them well, then set the top cover back to position. Then press "back" on the regulation (↩️) to return boiler to normal mode.  18-48 kW Metal vacuum cleaner		

Cleaning interval	Boiler type	Description
At least once per year	69/96 kW	Cleaning of exchanging surfaces (around the entire boiler)
1. Maintenance 1. Man. Boiler Cleaning 2. Filling feeder screw 3. Airvent 2. Man. Boiler Cleaning 2000 15k 0% START  69/96 kW - Press "Maintenance" on the regulation and then "Cleaning the boiler". - Press "START" (it will start the fan and it will open a grate.) - Lift the top cover (D), then unscrew the four screws and remove the upper door (E). - By using scraper, brush and vacuum cleaner, through the upper side clean exchanging surfaces (F, G). - When you have finished cleaning, set upper door back to original position and tighten them well, then set the top cover back to position. Then press "back" on the regulation (↩) to return boiler to normal mode. Metal vacuum cleaner		

Old photocell cleaning interval	Boiler type	Description
At least once a year (or if you have problems with the ignition)	12-96 kW	Photocell cleaning
 Dirty photocell which can result error in ignition or flame dissappear error  Valid photocell Carefully remove the photocell from the box and then gently with a cotton swab clean the body and lens of photocell. After cleaning, carefully return photocell to work position.   Work position		

New photocell cleaning interval	Boiler type	Description
At least once a year (or if you have problems with the ignition)	12-96 kW	Photocell cleaning
 Dirty photocell which can result error in ignition or flame dissapear error  Valid photocell Carefully remove the photocell from the box and then gently with a cotton swab clean the body and lens of photocell. After cleaning, carefully return photocell to work position.  		

Cleaning interval	Boiler type	Description
At least once per year	12-96 kW	Cleaning and checking the flue installation sealing
Cleaning and checking the flue installation sealing Clean flue installation between the boiler and the chimney through the revision openings for cleaning or if not incorporated revision opened by removing the flue installation. After cleaning, inspect flue installation good sealing and seal it if the seal is not satisfactory.		

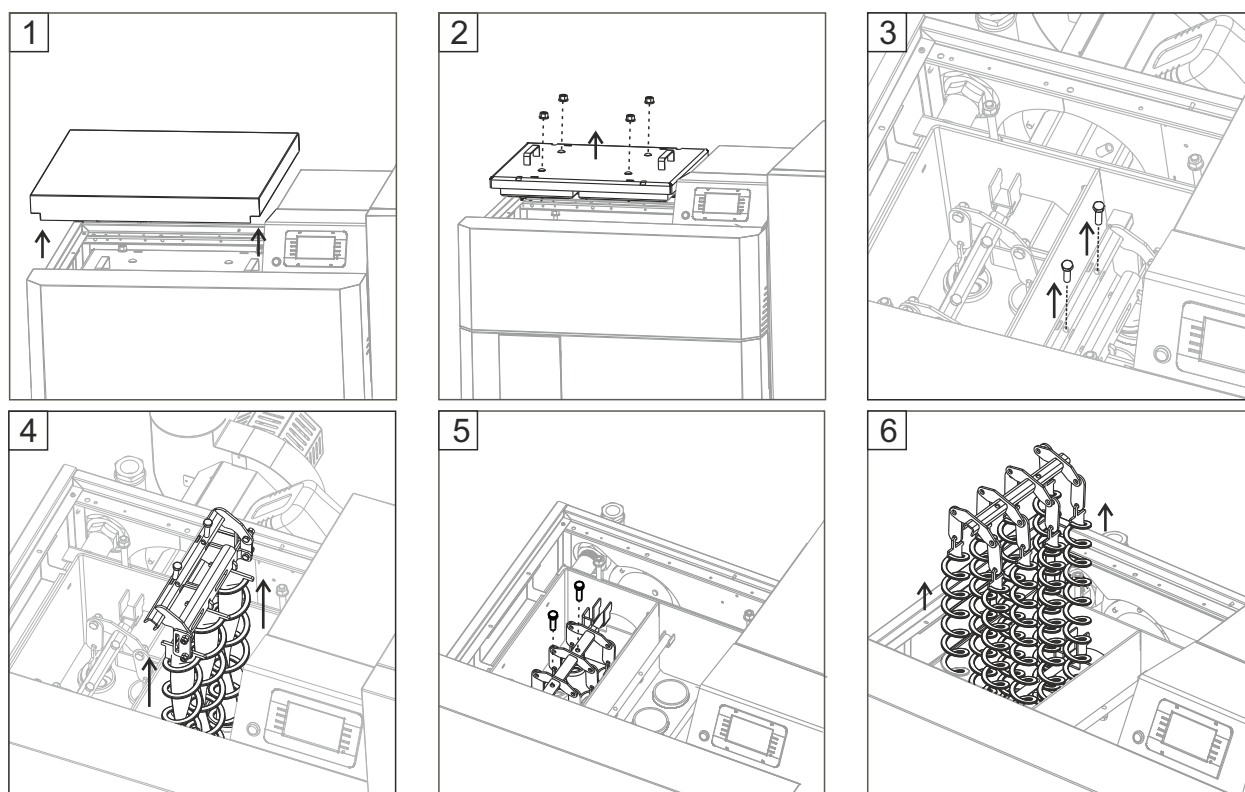


**The ecological rules and standards must be applied for disposal of
changed spare parts, wrapping material, all parts of the boiler after it's
expire.**

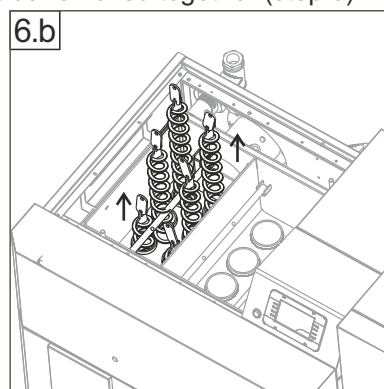
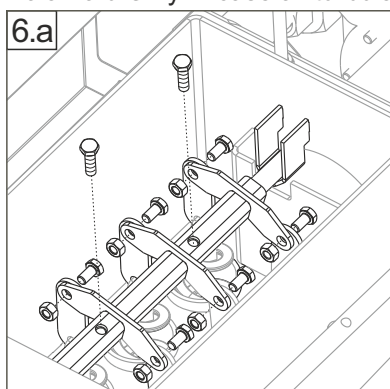
1. Electric heater
2. Failure on distribution power box with digital boiler control unit
3. Fan failure
4. Pellet feeder Motor failure
5. Temperature sensors failure
6. Photocell failure

**Every seven years to call an authorized service provider for routine maintenance and
control.**

7.1.1. EXTRACTION OF TURBULATORS - PelTec/PelTec-lambda 12-48



6.a i 6.b Only in case all turbulators can't be removed together (step 6)



Switch the boiler off and disconnect it from electric power.

- 1 - Remove the casing cover.
- 2 - Unscrew the 4 screws and remove the flue ducts door.
- 3,4 - Unscrew the 2 screws and lift turbulators (first pass) with bracket as shown in picture.
- 5 - Unscrew the 2 screws from carrier on second pass.
- 6 - Remove all turbulators with carrier. (If you can't remove all turbulators together, then unscrew all screws on all turbulators (6.a) and remove turbulators one by one (6b).

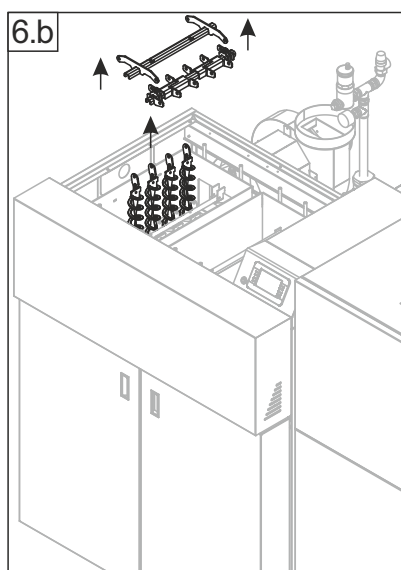
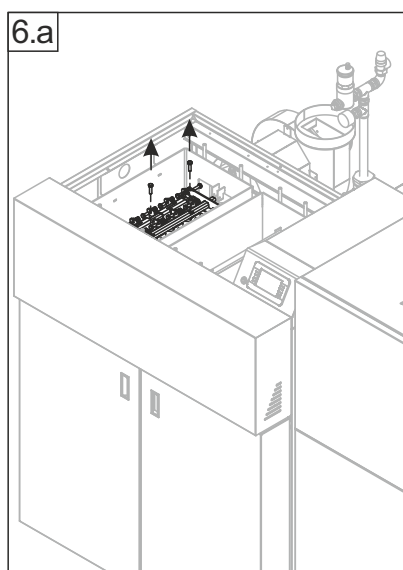
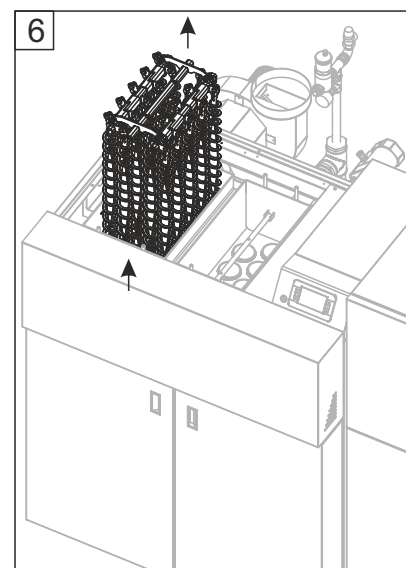
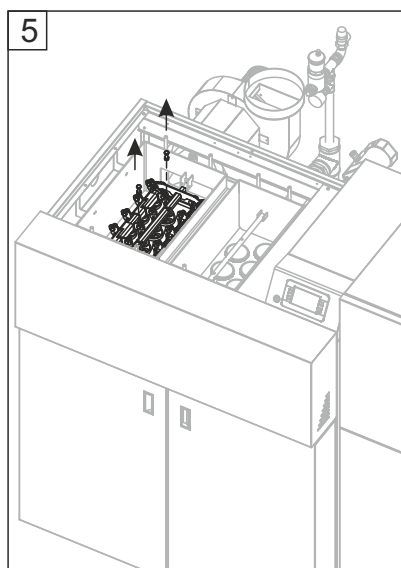
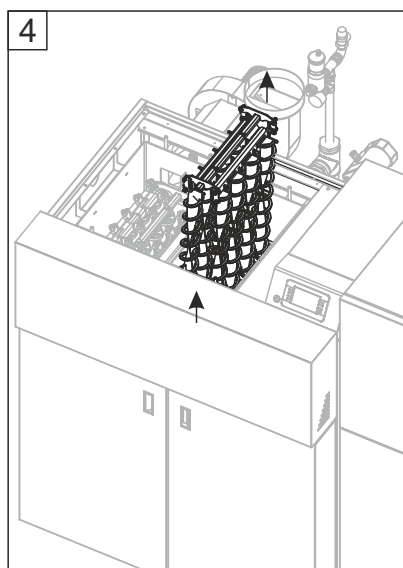
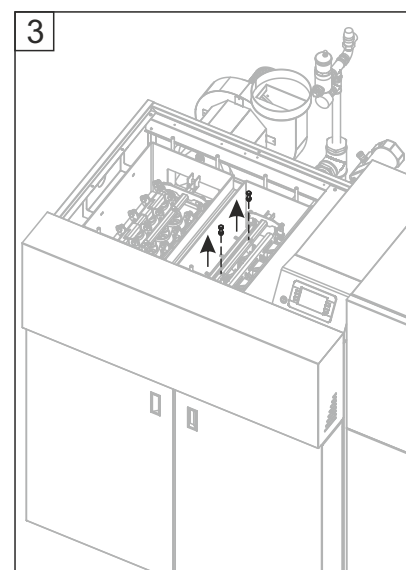
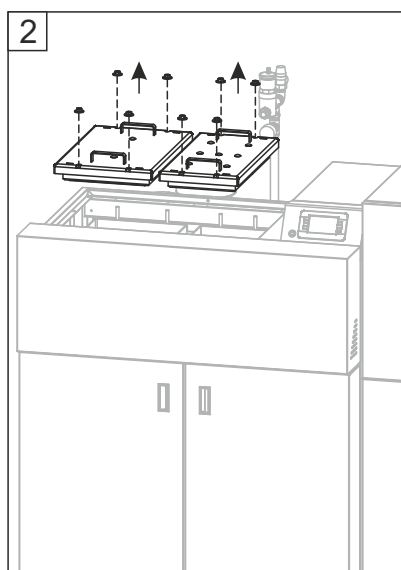
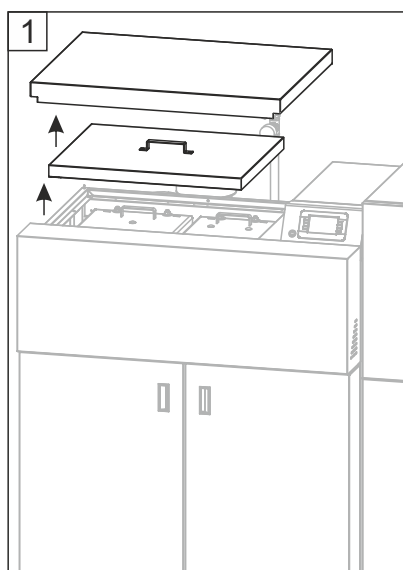
NOTE:

Place turbulators back in the same way but in the reverse order!
There are 1 or 2 sets of turbulators (depending on the model of boiler)

PROTECTIVE GLOVES ARE OBLIGATORY!



7.1.2. EXTRACTION OF TURBULATORS - PelTec-lambda 69/96



**PROTECTIVE GLOVES
ARE OBLIGATORY!**



6.a i 6.b Only in case all turbulators can't be removed together (step 6)

Switch the boiler off and disconnect it from electric power.

- 1 - Remove the casing cover.
- 2 - Unscrew the 4 nuts (which hold flue ducts cover) and remove flue duct cover.
- 3, 4 - Unscrew the 2 screws and lift turbulators (first pass) with bracket as shown in figure.
- 5 - Unscrew the 2 screws from carrier on second pass.
- 6 - Remove all turbulators with carrier. (If you can not remove all turbulators together, then unscrew all screws on all turbulators (6.a) and remove turbulators one by one (6.b)).

NOTE:

Place turbulators back in the same way but in the reverse order!

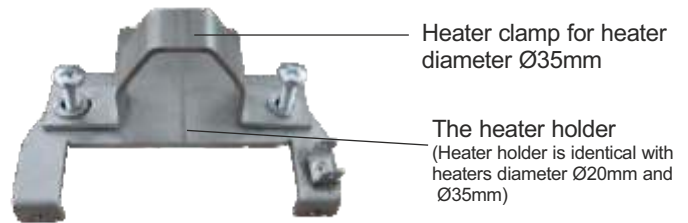
There are 1 or 2 sets of turbulators (depending on the model of boiler).

7.2. REPLACEMENT OF THE ELECTRIC HEATER - only PelTec/PelTec-lambda 12-48

7.2.1. REPLACEMENT OF THE EL. HEATER WITH NEW EL. HEATER DIAMETER Ø35mm

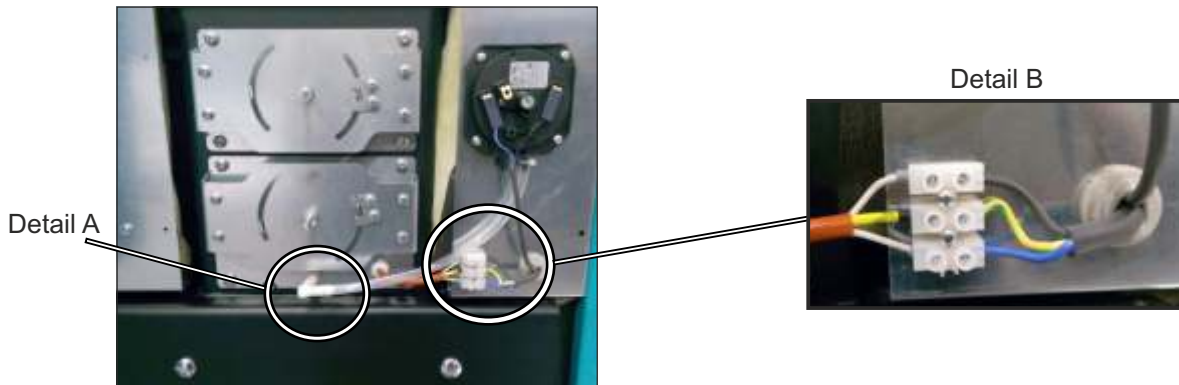


Electric heater with a diameter of Ø 35 mm

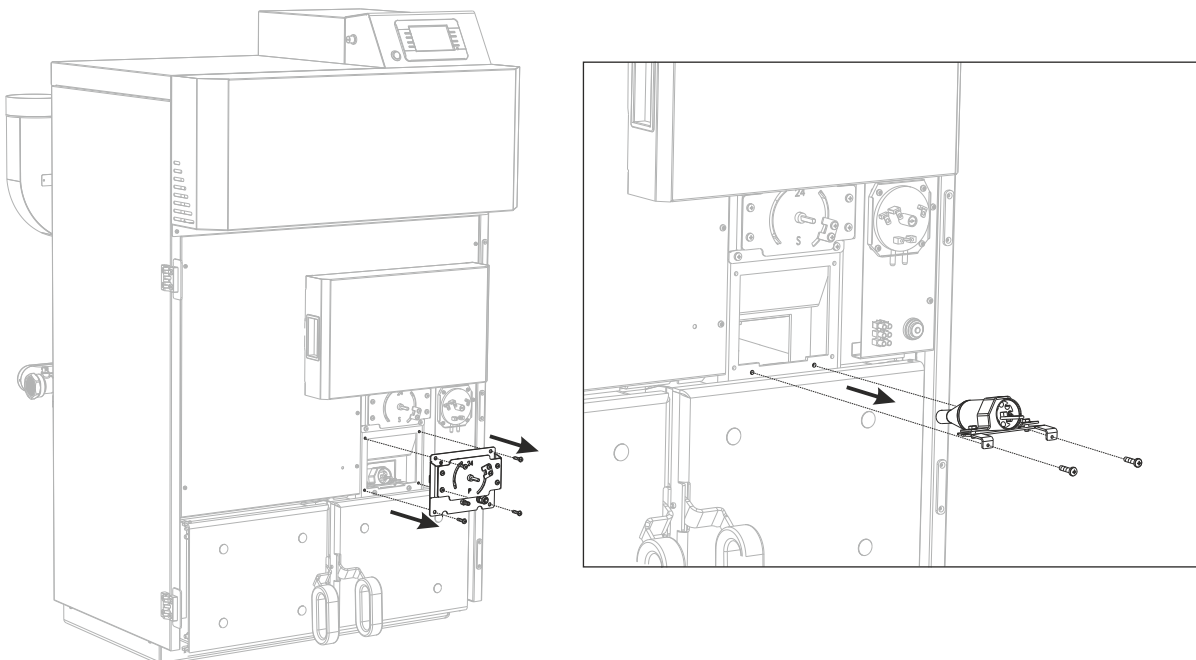


The heater holder with clamp for electric heater with a diameter of Ø35 mm

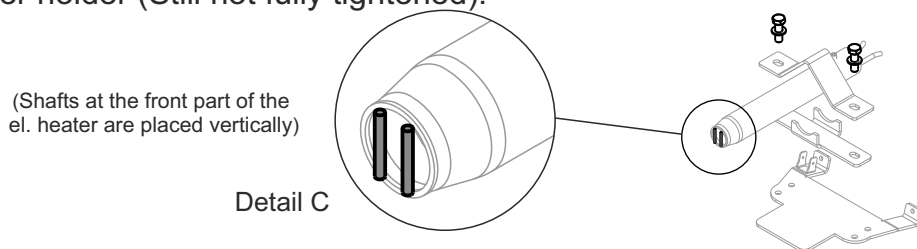
1. Unplug the safety pressure switch tube (detail A), and disconnect the wires of the electric heater from the terminal block (Detail B).



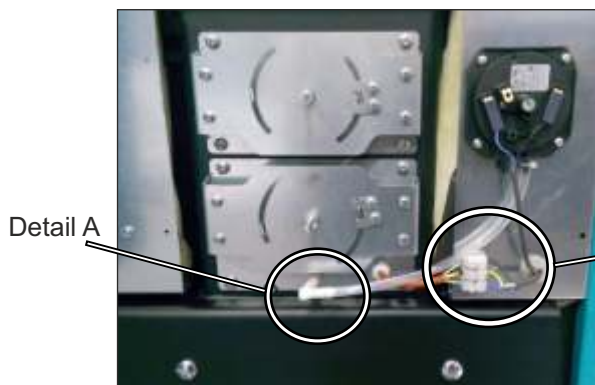
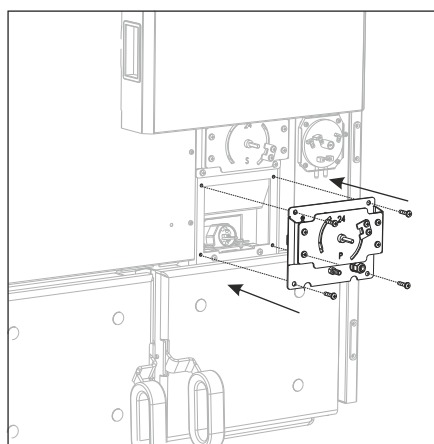
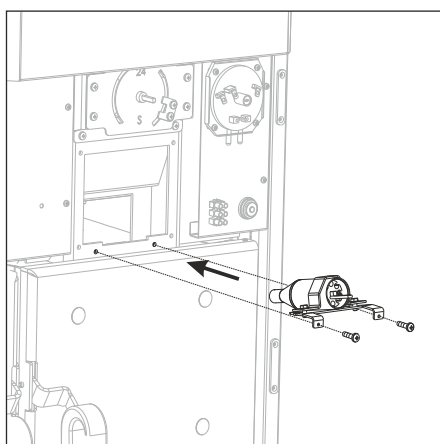
2. Unscrew the 4 screws and remove the primary air regulation. Then unscrew the 2 heater holder screw and pull out heaters holder together with the el. heater.



- Unscrew the two screws and remove the heater clamp. Insert the new el. heater, turn it so that the shaft at the front part of the el. heater is turned vertically (see detail C) and gently attach it to the heater holder (Still not fully tightened).



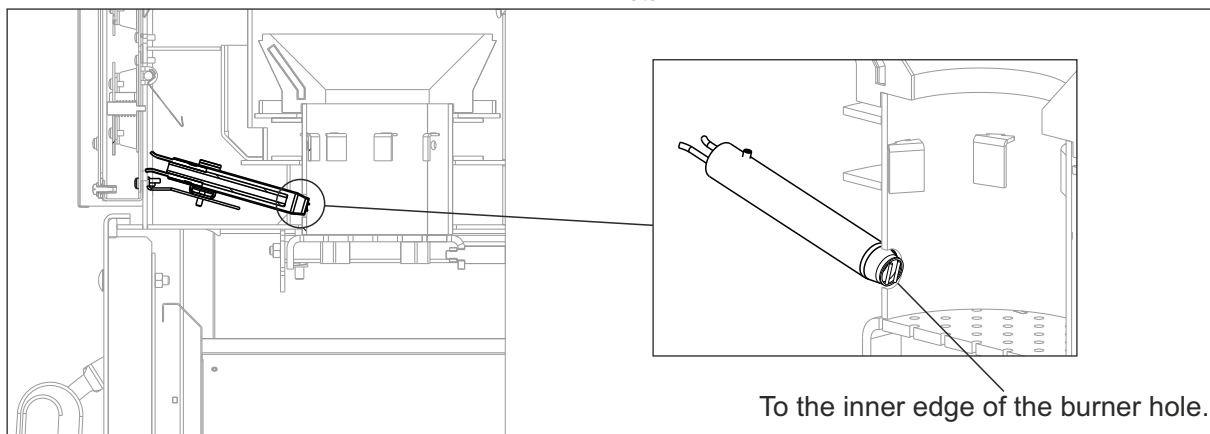
- Place the el. heater with the holder in place and fasten it with two screws. The heater set to the inner edge of the burner hole (see detail D). If necessary, loosen the clamp of the heater holder and push the holder until the edge of the burner hole and then tighten the clamp. Place the primary air regulation and connect with 4 screws. Connect the el. heater wires to the terminal block (detail B) and connect pressure switch tube (detail A).



Detail B



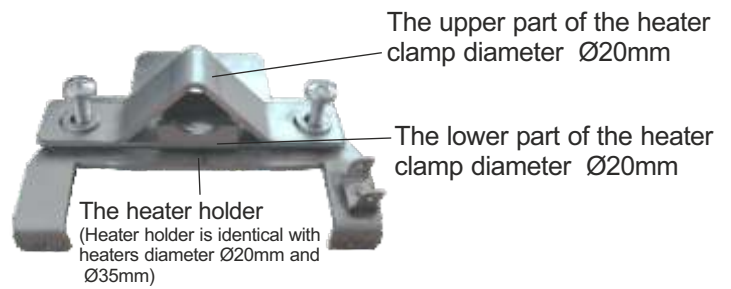
Detail D



7.2.2. REPLACEMENT OF THE EL.HEATER WITH NEW EL. HEATER DIAMETER Ø20mm

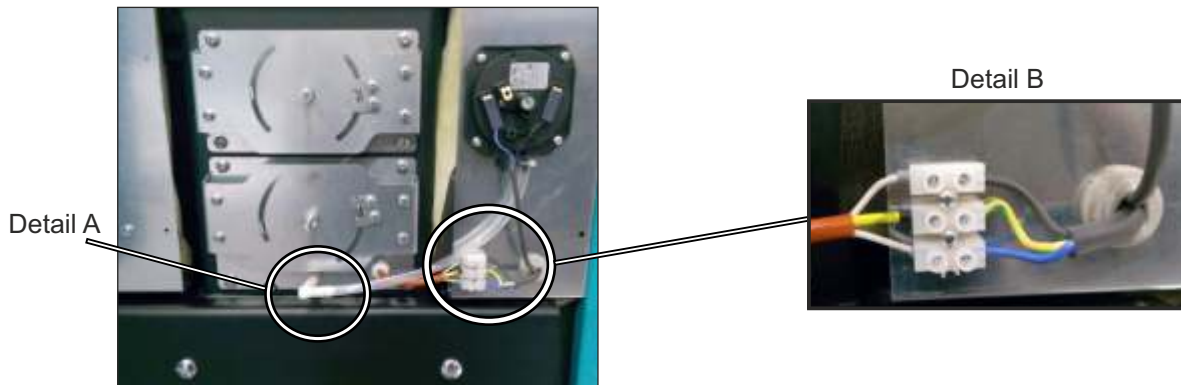


Electric heater with a diameter of Ø 20 mm

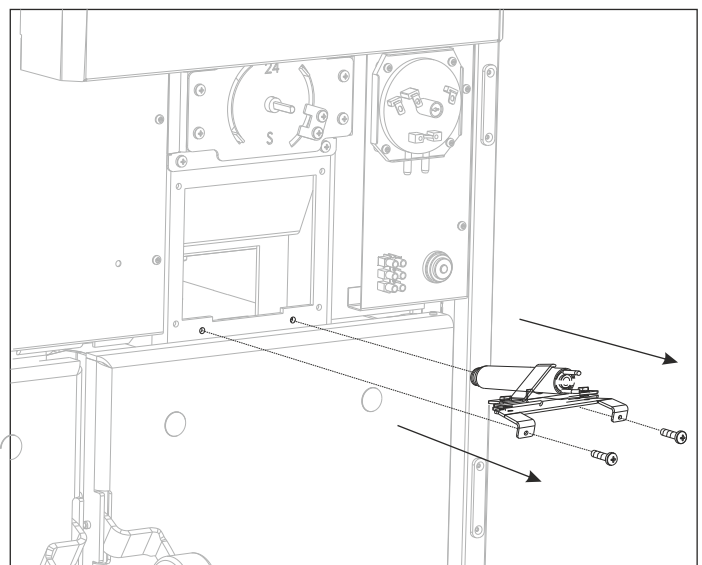
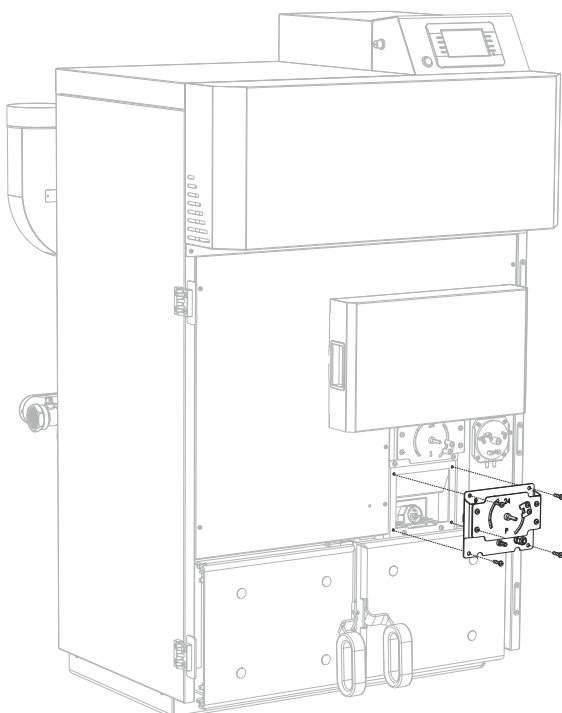


The heater holder with clamp for electric heater with a diameter of Ø 20 mm

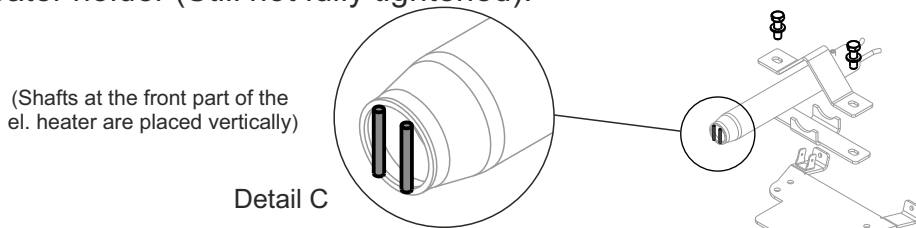
1. Unplug the safety pressure switch tube (detail A), and disconnect the wires of the electric heater from the terminal block (Detail B).



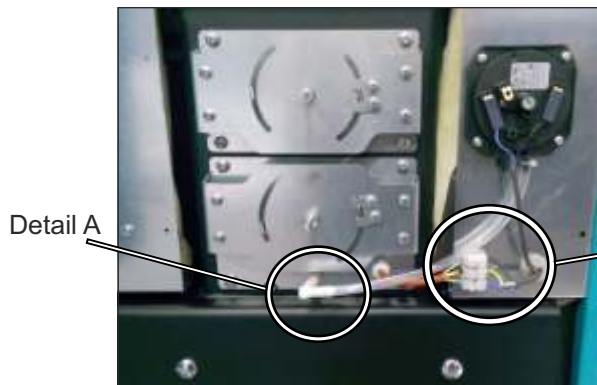
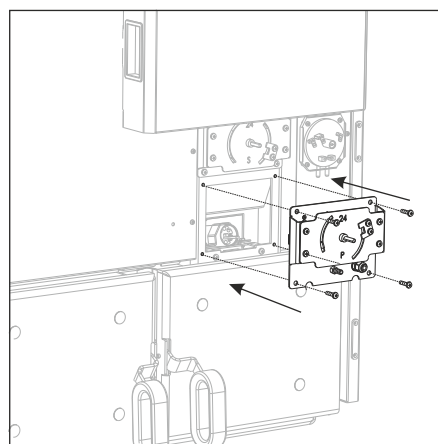
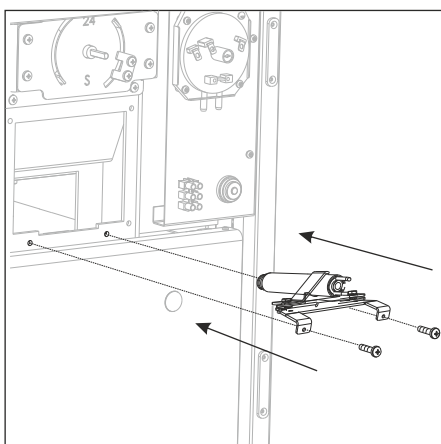
2. Unscrew the 4 screws and remove the primary air regulation. Then unscrew the 2 heater holder screw and pull out heaters holder together with the el. heater.



- Unscrew the two screws and remove the heater clamp. Insert the new el. heater, turn it so that the shafts at the front part of the el. heater are turned vertically (see detail C) and gently attach it to the heater holder (Still not fully tightened).



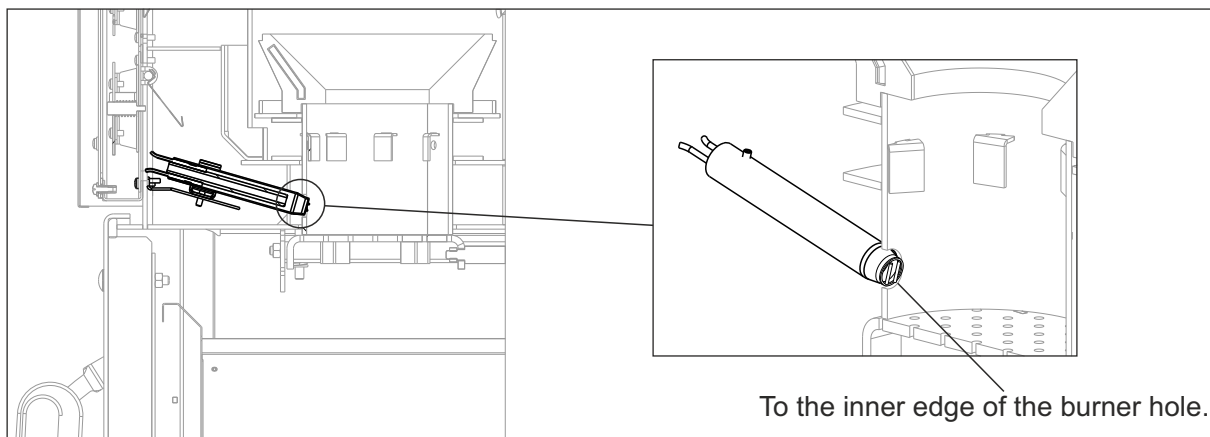
- Place the el. heater with the holder in place and fasten it with two screws. Set the heater to the inner edge of the burner hole (see detail D). If necessary, loosen the clamp of the heater holder and push the holder until the edge of the burner hole and then tighten the clamp. Place the primary air regulation and connect with 4 screws. Connect the el. heater wires to the terminal block (detail B) and connect pressure switch tube (detail A).



Detail B



Detail D

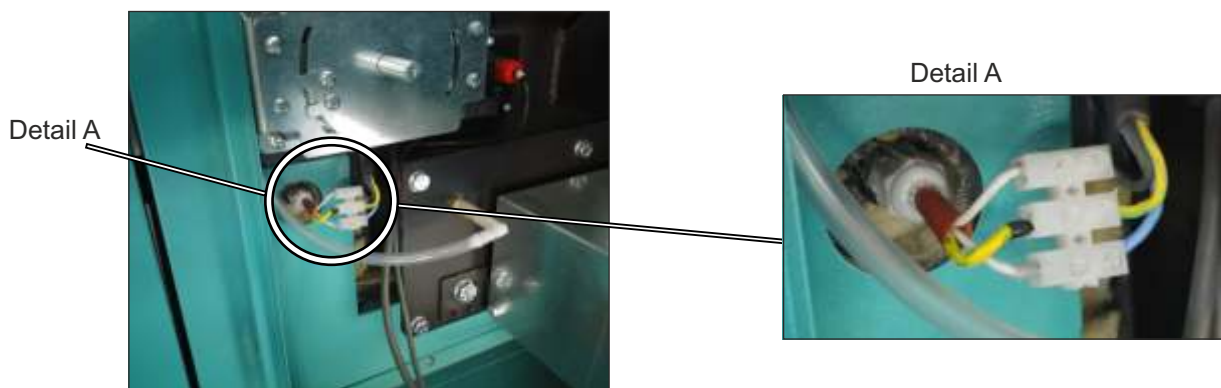


7.2.3. REPLACEMENT OF THE EL.HEATER - only PelTec-lambda 69/96

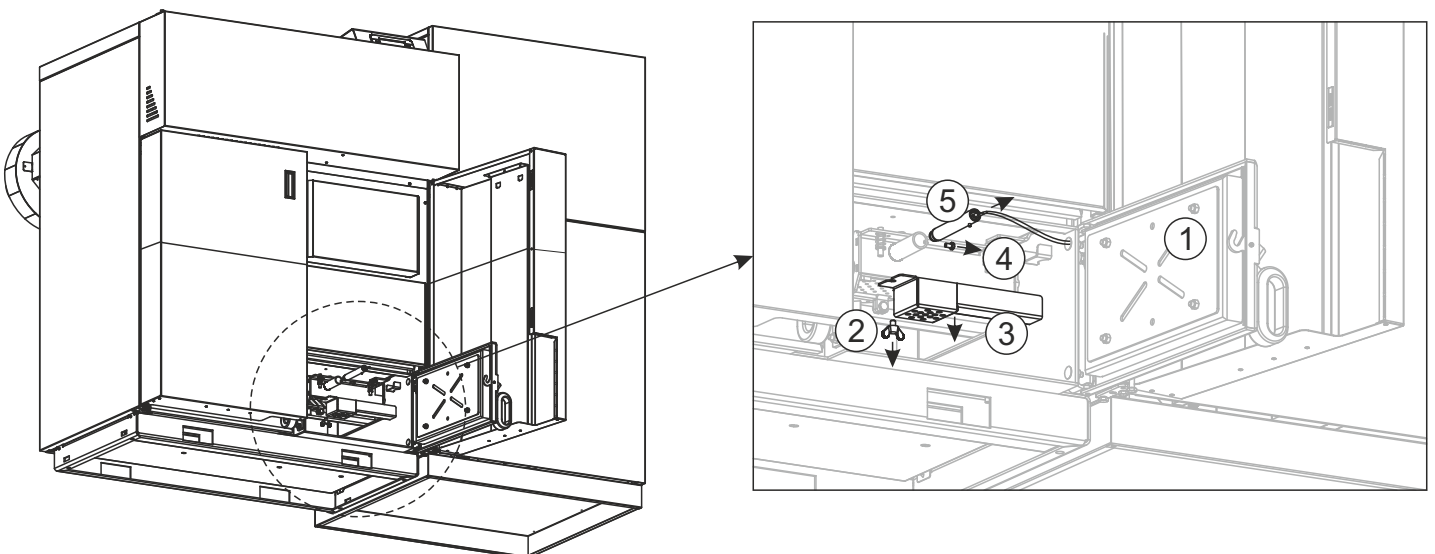


Electric heater with a diameter of Ø 20 mm

1. Disconnect the wires of the electric heater power supply from the terminal block (Detail A).
Terminal block is located on the right boiler side, behind lower pellet tank door.



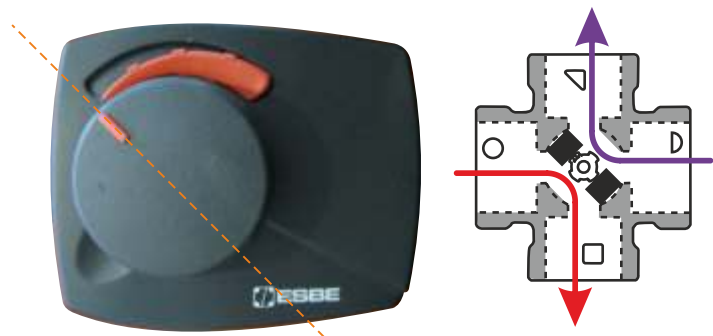
2. Open the lower right boiler door (1) and unscrew 1 M8 screw (2) to remove el. heater protection (3).
Unscrew 1 M6 screw (4) and remove old el. heater (5).



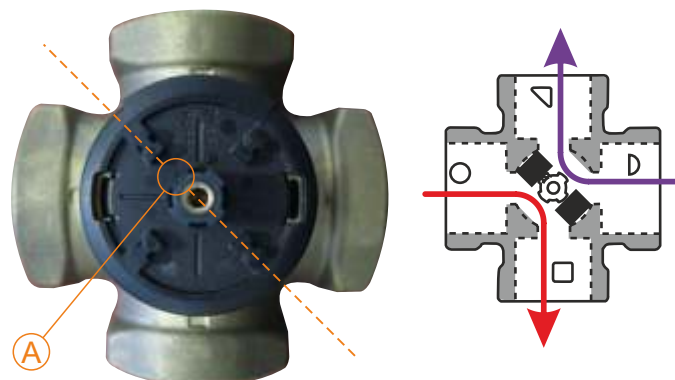
7.3. INSTALLATION OF ACTUATOR (IF THE BOILER WORKED) - only PelTec-lambda 69/96

If the boiler worked, actuator of the 4-way mixing valve can be removed only when the boiler is in OFF mode (not working). When boiler is in OFF mode, from "Manual test" menu press "Close valve" button and wait until valve closes completely (until valve actuator stops).

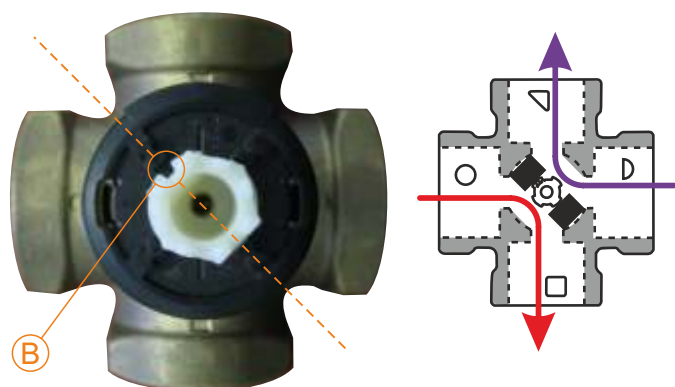
1. Actuator position when the boiler is not working (valve is closed)



2. 4-way mixing valve position when the boiler is not working (valve is closed); designation on the axle "A" is the top left corner (45°)



3. Designation position on actuator clutch before assembly, designation on the clutch "B" is at the top left corner (45°)



4. Set the actuator as shown below the movable part of the device must be turned so that green delimiter "C" is aligned with the groove of the handle "D" and it is in the top left corner (45°)



5. Tighten the screw to secure the actuator (when the screw is tightened, the movable part of the actuator is rotated to the right side, to the end position)



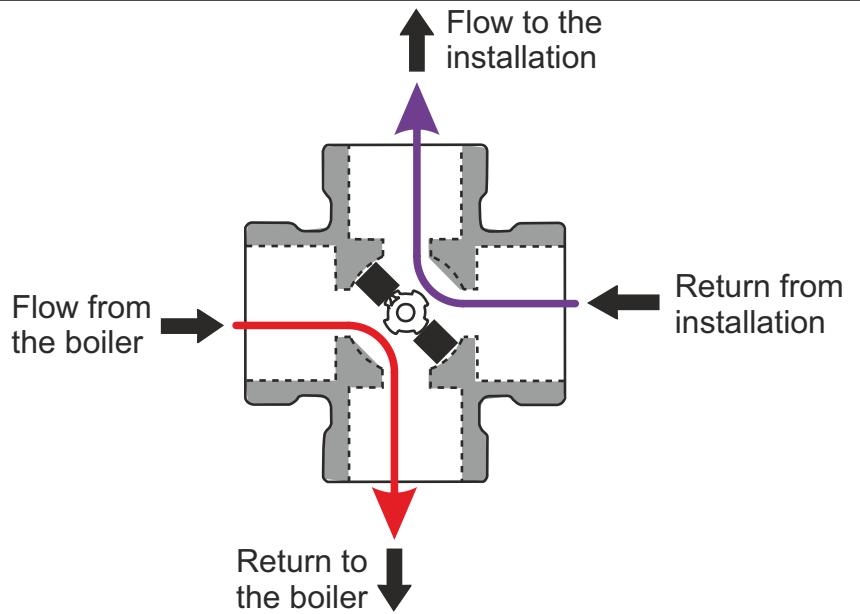
6. Install actuator handle, rotate it to the left until it can be pushed in the DOWN position - Automatic operation



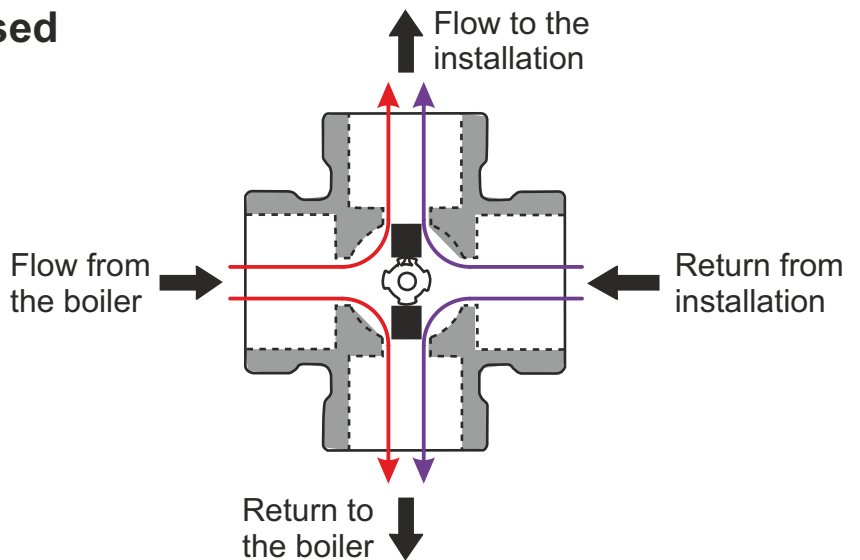
7. Actuator in DOWN position - Automatic operation; boiler ready for operation



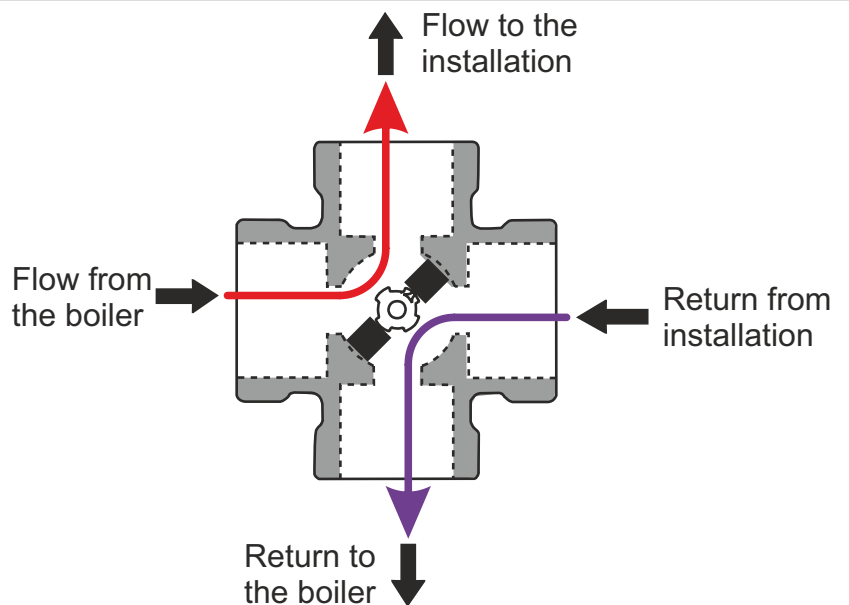
Valve is 100% closed



Valve is 50% opened/closed



Valve is 100% opened

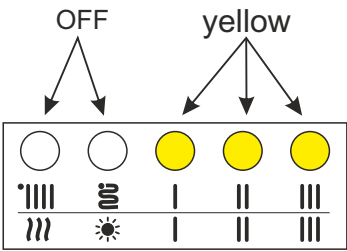


8.0. CIRCULATOR PUMP INSTALLATION

8.1. GRUNDFOS UPM3 HYBRID (25-70)
(can be installed to PelTec/PelTec-lambda 12-48)

8.1.1. FACTORY SETTINGS

Pump is factory preset to constant curve, curve 3 - MAX. Factory settings are displayed below (LED 1 = OFF, LED 2 = OFF, LED 3 = yellow, LED 4 = yellow, LED 5 = yellow).



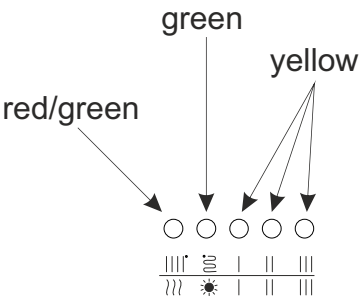
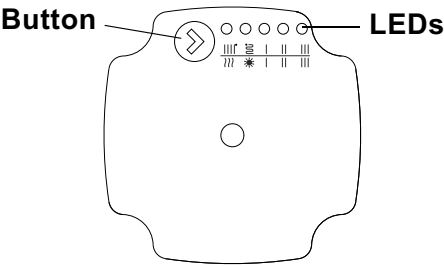
FACTORY SETTING
(constant curve, curve 3)

Important!
Each time you press the button  the pump setting changes.

8.1.2. USER INTERFACE

The user interface is designed with a single push button, one red/green LED, one green and three yellow LEDs.

User interface with one button and five LEDs.



The user interface shows:
- operation status
- alarm status/errors

UPM3 HYBRID

Circulator pump is either for external PWM signal control with profile A or C (not in use), or for internal control of two operating modes with AUTO_{ADAPT.}

8.1.3. POSSIBILITY OF ADJUSTING THE PUMP (it is recommended that the pump works at the factory setting, see point 8.1.1.)

Controlling the user interface (setting the pump) is possible by pressing a button and following the display on the LED interface. The user interface displays the schedule by turning on/blinking/turning off each LED as shown in the tables below. The currently selected setting is always displayed on the interface, which can be changed with each button press.



LED BLINKING

	1 BLINK PER SECOND
	12 BLINKS PER SECOND

	green	yellow	SETTING
0	● ○ ○ ○ ○		PROPORTIONAL PRESSURE AUTO ADAPT
1	○ ● ○ ○ ○		CONSTANT PRESSURE AUTO ADAPT
2	● ○ ● ○ ○		PROPORTIONAL PRESSURE 1
3	● ○ ● ● ○		PROPORTIONAL PRESSURE 2
4	● ○ ● ● ●		PROPORTIONAL PRESSURE 3 - MAX
5	○ ● ● ○ ○		CONSTANT PRESSURE 1
6	○ ● ● ● ○		CONSTANT PRESSURE 2
7	○ ● ● ● ●		CONSTANT PRESSURE 3 - MAX
8	○ ○ ● ○ ○		CONSTANT CURVE 1
9	○ ○ ● ● ○		CONSTANT CURVE 2
10	○ ○ ● ● ●		CONSTANT CURVE 3 - MAX
11	○ ✱ ● ● ●		PWM C PROFILE - SIGNAL OFF
	○ ✱ ● ● ●		PWM C PROFILE - SIGNAL ON
12	✱ ○ ● ○ ○		PWM A 1 PROFILE - SIGNAL OFF
	✱ ○ ● ○ ○		PWM A 1 PROFILE - PWM SIGNAL ON
13	✱ ○ ● ● ○		PWM A 2 PROFILE - SIGNAL OFF
	✱ ○ ● ● ○		PWM A 2 PROFILE - PWM SIGNAL ON
14	✱ ○ ● ● ●		PWM A 3 PROFILE - SIGNAL OFF
	✱ ○ ● ● ●		PWM A 3 PROFILE - PWM SIGNAL ON

FACTORY SETTING

Pump will not operate*

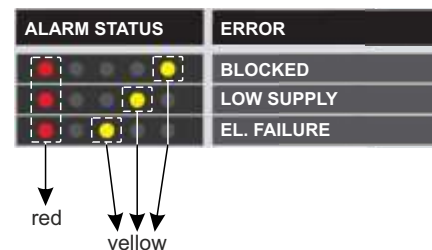
Note: Each time you press the button the pump setting changes.

***If any pump setting with PWM is selected, the pump will not operate.**

8.1.4. ALARM STATUS/ERRORS

If the pump detects one of the alarms, the 2-color LED 1 changes color from green to red. When is it alarm active, LEDs show the type of alarm according to the table below. If several alarms are active at the same time, the LEDs show only the highest priority alarm. Priorities are determined according to the schedule in table. If there is no active alarm, the operating mode is displayed.

Screen	Meaning	Pump operation	Counter action
1 red LED + 1 yellow LED (LED 5)	Rotor is blocked.	Try to operate again.	Wait or unblock the shaft.
1 red LED + 1 yellow LED (LED 4)	Supply voltage is too low.	Only warning, pump runs.	Check supply voltage.
1 red LED + 1 yellow LED (LED 3)	Electrical failure.	Pump is stopped because supply voltage is too low or serious failure has occurred.	Check supply voltage / replace the pump.



8.1.5. GRUNDFOS UPM3 ANTI BLOCKING CONCEPT

UPM3 has a double safety de-blocking system:

- deblocking software

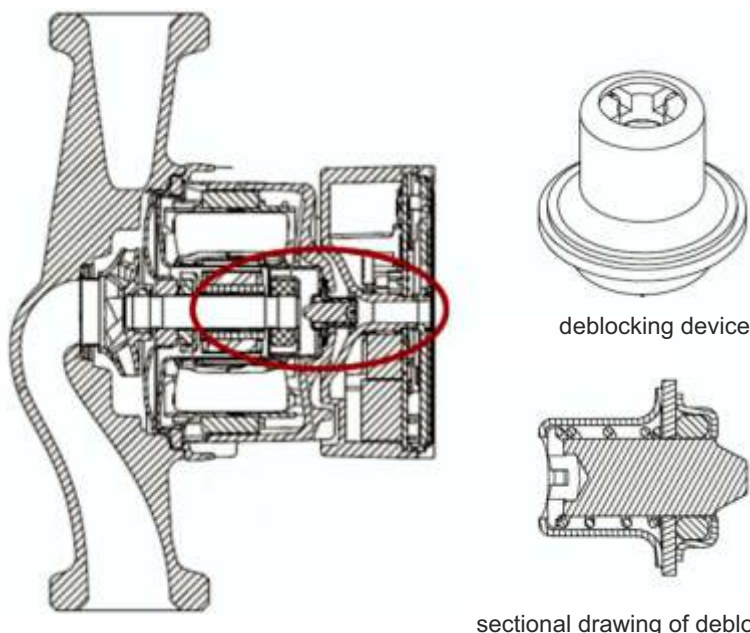
Continuous restart after 1,33 seconds with a maximum torque of 24.8 Ncm.

- deblocking device

Manual deblocking device, accessible from front side without demounting the control box.

Deblocking device

Deblocking device consists of an axially movable plunger secured with an O-ring and a retracted spring inside a stainless steel housing that is welded to the rotor. It is made for pumps integrated into the device so that the pump can be accessed from the front without demounting the control box. By pushing and turning the screwdriver, the plunger pushes the shaft axially into the pump until it can rotate. The force is sufficient to unblock the pump where limescale has accumulated, for example if the device was tested wet and stored for a long time. Before, during and after unblocking, the device must tight and must not leak water.



sectional drawing of deblocking device

Pump is blocked

If the pump or system is filled with water for the first time and the pump is stopped for a longer period (several weeks or months), it might happen that the pump is not able to start. The pump tries to start with a cycle every 1.33 seconds and the display shows LED 1 = red and LED 5 = yellow.

In this case, please use a screwdriver and put it in the hole in the middle of the front plate. Push it towards the pump and move it counter clockwise. Probably, the pump will start.



Note:

In some cases pump cannot be unblocked with screwdriver. If this happens pump must be disassembled and rotor blades must be turned (unblocked) by hand.

Error finding

ERROR	SCREEN	SOLUTION
OFF 0V		Check power supply connection.
ON 230 V		Check power supply connection.
ON <360 V		Check power supply connection.
ON 230 V		Check power supply connection.

Warning: Before starting any work at the pump, switch off the power supply. Make sure that the power supply cannot be switched on accidentally.

Warning:

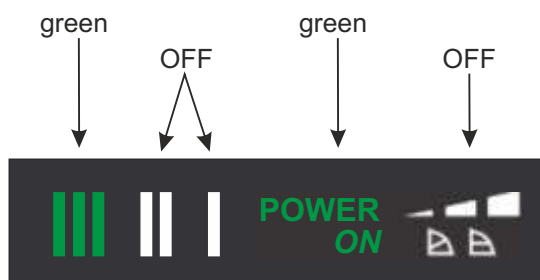
This appliance can be used by children over 8 years old and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they are under have been given supervision or if they are given instruction concerning use of the appliance in a safe way and if they understand the involved hazards. Children must not play with the appliance. Children must not clean or maintain the device without supervision.

8.2. GRUNDFOS ALPHA1 (25-60) (can be installed on PelTec/PelTec-lambda 12-36)

8.2.1. FACTORY SETTING

Pump is factory preset to constant curve, curve 3 - MAX. Factory settings are displayed below (LED 1 = III (green), LED 2 = II (OFF), LED 3 = I (OFF)).

The currently selected setting is always displayed on the interface, which can be changed with each button press.



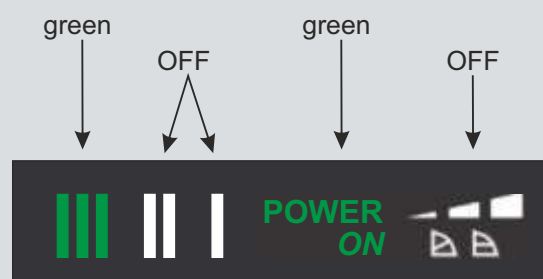
FACTORY SETTING (constant curve, curve 3)

Important!

Each time you press the button  the pump setting changes.

8.2.2. POSSIBILITY OF ADJUSTING THE PUMP (it is recommended that the pump works at the factory setting, see point 8.2.1.)

Controlling the user interface (setting the pump) is possible by pressing a button and following the display on the LED interface. The currently selected setting is always displayed on the interface, which can be changed with each button press.



FACTORY SETTING
(constant curve, curve 3)

	USER INTERFACE	SETTING
0	POWER ON	PROPORTIONAL PRESSURE 2
1	POWER ON	PROPORTIONAL PRESSURE 3 - MAX
2	POWER ON	CONSTANT PRESSURE 1
3	POWER ON	CONSTANT PRESSURE 2
4	POWER ON	CONSTANT PRESSURE 3 - MAX
5	POWER ON	CONSTANT CURVE 3 - MAX
6	POWER ON	CONSTANT CURVE 2
7	POWER ON	CONSTANT CURVE 1
8	POWER ON	PROPORTIONAL PRESSURE 1

FACTORY SETTING

Note:

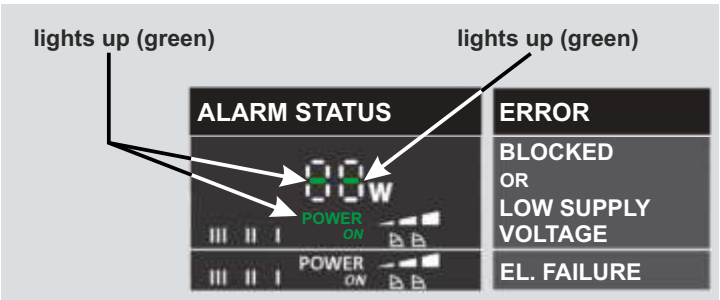
Each time you press the button  the pump setting changes.

Warning:

This appliance can be used by children over 8 years old and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they are under have been given supervision or if they are given instruction concerning use of the appliance in a safe way and if they understand the involved hazards. Children must not play with the appliance. Children must not clean or maintain the device without supervision.

8.2.3. ALARM STATUS/ERRORS

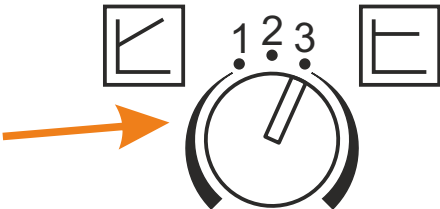
Meaning	Pump operation	Counter action
Rotor is blocked.	Try to operate again.	Wait or unblock the shaft.
Supply voltage is too low.	Only warning, pump runs.	Check supply voltage.
Electrical failure.	Pump is stopped because supply voltage is too low or serious failure has occurred.	Check supply voltage / replace the pump.



8.3. WILO YONOS PARA HF 30/10 (installed to PelTec-lambda 69)
WILO YONOS PARA HF 30/12 (installed to PelTec-lambda 96)

8.3.1. FACTORY SETTINGS

Pump is factory preset to maximum constant curve.



CORRECT DISPOSAL OF THIS PRODUCT

Your boiler is marked in accordance with Directives: 2006/42/EC, 2014/30/EU, 2014/35/EU and contains electrical components.

According to EU Regulation 2015/1189 implementing Directive 2009/125/EC with regard to Eco-Design requirements for solid fuel boilers, we draw your attention to the following:



MARK FOR MARKING SEPARATE EE WASTE COLLECTION



This marking on the product indicates that the product contains electrical and electronic parts and must be disposed of separately, it must not be mixed with other waste. Your boiler is labeled in accordance with the Waste Electrical and Electronic Equipment Regulation (WEEE) and can be returned through the return and collection system available to you.

Household users should contact the retailer from whom they purchased this product, their local distributor, or their state agency for details on where and how to dispose of this product. Business users should contact their supplier and review the terms of the sales contract or contact a government agency for details on where and how to dispose of this product.

HR	INFORMACIJSKI LIST	FR	FICHE PRODUIT	CZ	INFORMAČNÍ LIST
SLO	PODATKOVNI LIST	NL	PRODUCTKAART	SK	INFORMAČNÝ LIST
EN	PRODUCT FICHE	LV	RAŽOJUMA DATU LAPA	ITA	SCHEDA PRODOTTO
DE	PRODUKTDATENBLATT	HU	TERMÉKSIMERTETŐ ADATLAP	DK	DATABLAD

Centrometal
TEHNIKA GRIJANJA

GLAVNA 12, HR-40306 MACINEC - HRVATSKA

(EU) 2017/1369

Centrometal d.o.o.

Dobavljačeva identifikacijska oznaka modela / Supplier model identifier / Modellkennung des Lieferanten / La référence du modèle donnée par le fournisseur / De typeaanduiding van het model van de leverancier / Piegādātāja modeļa identifikators / A szállító által megadott modellazonosító / Identifikační značka modelu používaná dodavatel / Identifikačný kód modelu dodávateľa / Codice identificativo del modello del fornitore / Leverandørmodellens id-mærke:	PeITec					
	12	18	24	31	36	48
Razred energetske učinkovitosti / Razred energetske učinkovitosti / Energy efficiency class / Energieeffizienzklasse / La classe d'efficacité énergétique du modèle / De energie-efficiëntieklasse van het model / Modela energoefektivitātes klase / Energiahatékonysági osztály / Třída energetické účinnosti / Třída energetické účinnosti / Classi di efficienza energetica / Energieeffektivitetsklasse:	A+	A+	A+	A+	A+	A+
Nazivna toplinska snaga / Nazivna izhodna moč / Rated heat output / Nennwärmeleistung / La puissance thermique directe / De nominale warmteafgifte / Izteikta nominālā siltuma jauda / Mért hőteljesítmény / Jmenovitý tepelný výkon / Menovitý tepelný výkon / Potenza termica nominale / Nominel varmeydelse:	12	18	24	31	36	48
Indeks energetske učinkovitosti / Indeks energetske učinkovitosti / Energy efficiency index / Energieeffizienzindex / L'indice d'efficacité énergétique / De energie-efficiëntie-index / Energiahatékonysági mutató / Index energetické účinnosti / Index energetické účinnosti / Indice di efficienza energetica / Energieeffektivitetsindeks:	115	115	116	116	117	117
Sezonska energetska učinkovitost grijanja prostora / Sezonska energetska učinkovitost pri ogrevanju prostorov / Seasonal space heating energy efficiency / Raumheizungs-Jahresnutzungsgrad / L'efficacité énergétique saisonnière pour le chauffage des locaux ηS / De seizoensgebonden energie-efficiëntie voor ruimteverwarming / Telpu apsildes sezonas energoefektivitāte / Sezónális helyiségfűtési hatásfok / Sezonní energetická účinnost vytápění / Sezónna energetická účinnost vykurovania priestoru / Efficienza energetica stagionale del riscaldamento d'ambiente / Sæsonmæssig energieeffektivitet ved rumopvarmning:	78	78	79	79	79	79

- Poštujte upozorenja i smjernice za ugradnju i periodično održavanje navedene u poglavlju ovog priručnika s uputama.

- Upoštevacite upozorila in navodila za namestitve in redno vzdrževanje, navedena v poglavjih priročnika z navodili.

Varnostni ukrepi, ki se sprejmejo pri sestavljanju, montaži ali vzdrževanju kotla:

Kotel ne sme delovati v vnetljivi in eksplozivni atmosferi.

Pred kakršnim koli posegom na napravi mora biti izklopljeno vse električno napajanje.

- Comply with the warnings and instructions concerning installation and routine maintenance provided in the instruction manual.

- Beachten Sie die Warnungen und Hinweise betreffend die Installation und regelmäßige Wartung in den Kapiteln der Bedienungsanleitung.

- Respecter les avertissements et les indications sur l'installation et l'entretien périodique fournis dans les chapitres du manuel d'instructions.

- Neem de waarschuwingen en instructies voor installatie en periodiek onderhoud in acht zoals aangegeven in de hoofdstukken van de gebruiksaanwijzing.

- Kõvesse a használati útmutató. fejezetében közzét Gyvelemzetéseket, beépítési utasításokat és az időszakos karbantartásra vonatkozó előírásait.

- Dodržujte varování a pokyny pro instalaci a pravidelnou údržbu, které jsou popsány v kapitolách návodu k obsluze.

- Dodržujte varovania a pokyny pre inštaláciu a pravidelnú údržbu, ktoré sú opísané v dodanom návode na obsluhu.

- Seguire le avvertenze e le linee guida per l'installazione e la manutenzione periodica elencate nelle sezioni di questo manuale di istruzioni.

- Følg advarstler og retningslinjer for installation og periodisk vedligeholdelse, der er anført i afsnittene i denne brugsanvisning.

HR	INFORMACIJSKI LIST	FR	FICHE PRODUIT	CZ	INFORMAČNÍ LIST		
SLO	PODATKOVNI LIST	NL	PRODUCTKAART	SK	INFORMAČNÝ LIST VÝROBKU	(EU) 2017/1369	
EN	PRODUCT FICHE	LV	RAŽOJUMA DATU LAPA	ITA	SCHEMA PRODOTTO		TEHNIKA GRIJANJA
DE	PRODUKTDATENBLATT	HU	TERMÉKSZERTEŐ ADATLAP	DK	DATABLAD		GLAVNA 12, HR-40306 MACINEC - HRVATSKA

Naziv dobavljača / Ime dobavitelja / Supplier name / Name des Lieferanten / Le nom du fournisseur ou la marque commerciale / De naam van de leverancier / Piegādātāja nosaukums A szállító nevét / Szállító neve / Název dodávateľa / Meno dodávateľa / Nome del fornitore / Navn på leverandøren:		Centrometal d.o.o.							
		PeITec-lambda							
		12	18	24	31	36	48	69	96
		A+	A+	A+	A+	A+	A+	A+	A+
		12	18	24	31	36	48	69	96
		116	119	121	121	121	122	121	120
		79	80	82	83	83	83	83	82

- Poštujte upozorenja i smjernice za ugradnju i periodično održavanje navedene u poglavljima ovog priručnika s uputama.
- Upoštevajte opozorila in navodila za namestitev in redno vzdrževanje, navedena v poglavjih priručnika z navodili.

Varnostni ukrepi, ki se sprejmejo pri sestavljanju, montaži ali vzdrževanju kotla:
Kotel ne sme delovati v vnetljivi in eksplozivni atmosferi.

Pred kakršnim koli posegom na napravi mora biti izklopljeno vse električno napajanje.

- Comply with the warnings and instructions concerning installation and routine maintenance provided in the instruction manual.

- Beachten Sie die Warnungen und Hinweise betreffend die Installation und regelmäßige Wartung in den Kapiteln der Bedienungsanleitung.

- Respecter les avertissements et les indications sur l'installation et l'entretien périodique fournis dans les chapitres du manuel d'instructions.

- Neem de waarschuwingen en instructies voor installatie en periodiek onderhoud in acht zoals aangegeven in de hoofdstukken van de gebruiksaanwijzing.

- Kövesse a használati útmutató, fejezetében közzétett figyelmeztetéseket, beépítési utasításokat és az időszakos karbantartásra vonatkozó előírásait.

- Dodržujte varování a pokyny pro instalaci a pravidelnou údržbu, které jsou popsány v kapitolách návodu k obsluze.

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- Seguire le avvertenze e le linee guida per l'installazione e la manutenzione periodica elencate nelle sezioni di questo manuale di istruzioni.

- Følg advarsler og retningslinjer for installation og periodisk vedligeholdelse, der er anført i afsnittene i denne brugsanvisning.



EZ IZJAVA O SUKLADNOSTI EC DECLARATION OF CONFORMITY

Proizvođač / Manufacturer: **Centrometal d.o.o.**
Naziv i adresa / Name and address: **HR-40306 Macinec, Glavna 12, Hrvatska / Croatia**

S punom odgovornošću izjavljuju, da
We declare under our sole responsibility that

Proizvod: Toplovodni kotao na drvene pelete (s automatskom dobavom peleta)
Product designation: Hot-water boiler burning wood pellets (with automatic fuel supply)
Tip / model: **PelTec** (12 kW, 18 kW, 24 kW, 36 kW, 48 kW)
Type / model: **PelTec-lambda** (12 kW, 18 kW, 24 kW, 36 kW, 48 kW, 69 kW, 96 kW)

odgovara zahjevima sljedećih propisa
is in conformity with the provisions of the following regulations

1.	MD Direktiva 2006/42/EZ MD Directive 2006/42/EC
2.	LVD Direktiva 2014/35/EU LVD Directive 2014/35/EU
3.	EMC Direktiva 2014/30/EU EMC Directive 2014/30/EU
4.	Direktiva 2009/125/EZ Directive 2009/125/EC

i također zadovoljava zahtjeve sljedećih standardi
and also complies with the following standards

MD Direktiva 2006/42/EZ MD Directive 2006/42/EC	EN 303-5:2012
LVD Direktiva 2014/35/EU LVD Directive 2014/35/EU	EN ISO 12100:2010, EN ISO 14120:2015, ISO 1819, EN ISO 13857:2008, EN 60335-1 ed.3, EN 60335-2-102 ed.2, EN 61000-6-2 ed.3, EN 62233:2008
EMC Direktiva 2014/30/EU EMC Directive 2014/30/EU	EN 61000-3-2 ed.4, EN 61000-3-3 ed.3, EN 61000-6-2 ed.3, EN 61000-6-3 ed.2, EN 55014-1 ed.4, EN 60335-1 ed.3, EN 60335-2-102 ed.2, EN 62233:2008
Direktiva 2009/125/EZ Directive 2009/125/EC	Uredba komisije (EU) No 2015/1189 Commission Regulation (EU) No 2015/1189

Godina izdavanja CE oznake
Year of affixing of CE marking

2013.

Mjesto i vrijeme izdavanja
Place and date of issue

Macinec, 15.1.2020.

Ime, prezime i potpis ovlaštene osobe
Name, surname and signature of authorized person

Davor Zidarić


Centrometal d.o.o.
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