



SERVICE MANUAL

Fusion Comet V2

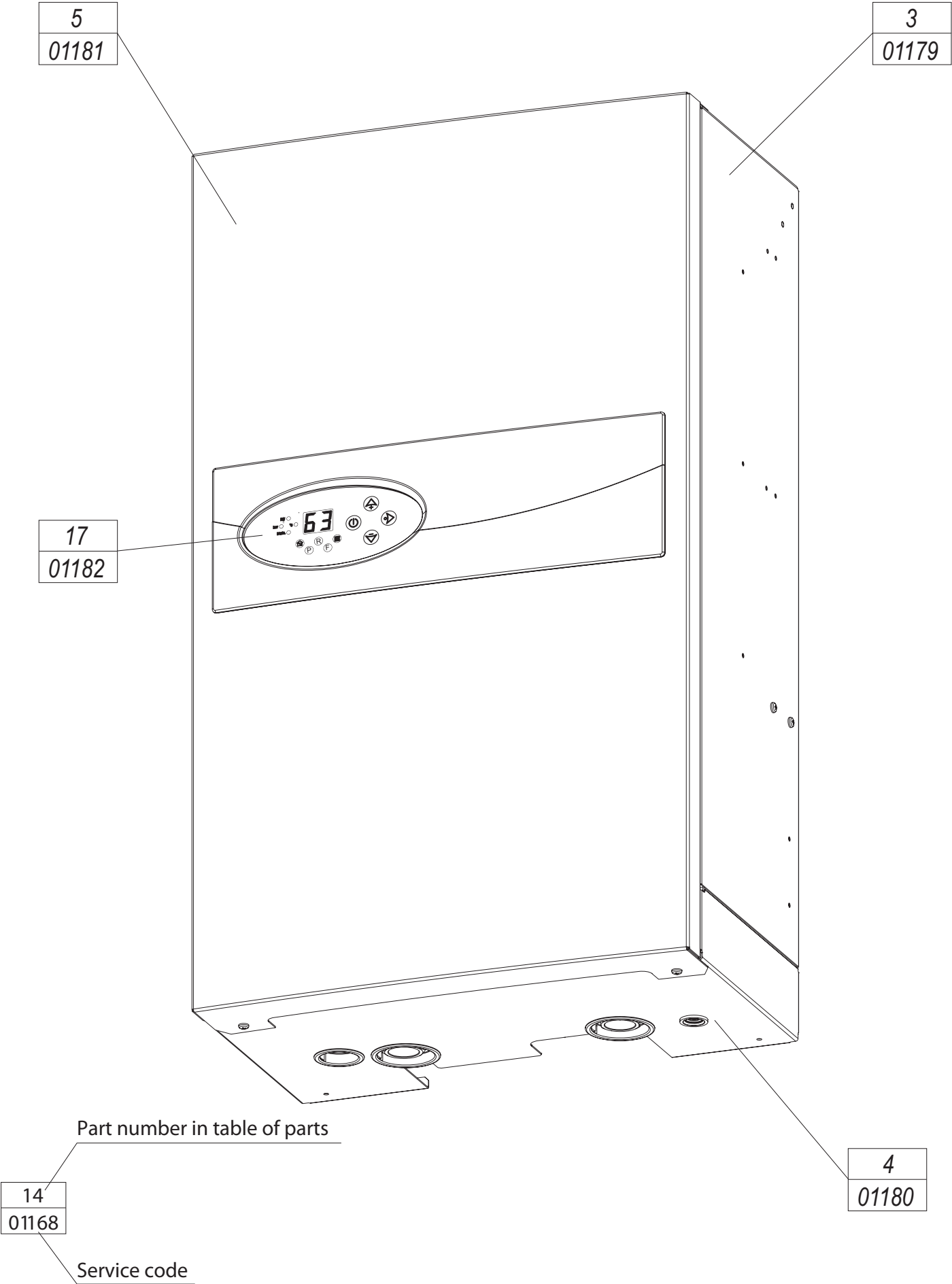
20.02.2013

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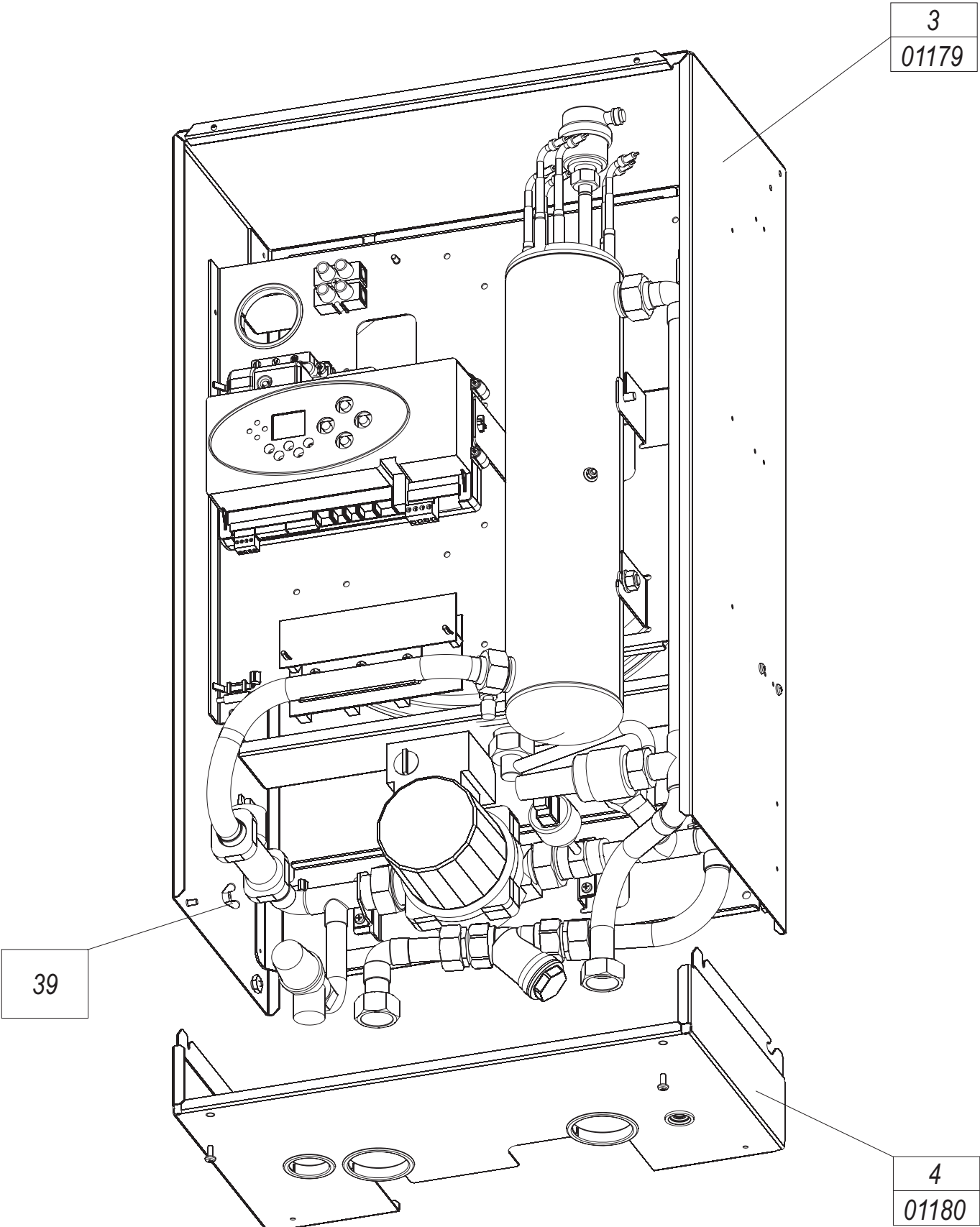
1. Exterior view of boilers.

Pic.1. Exterior view.



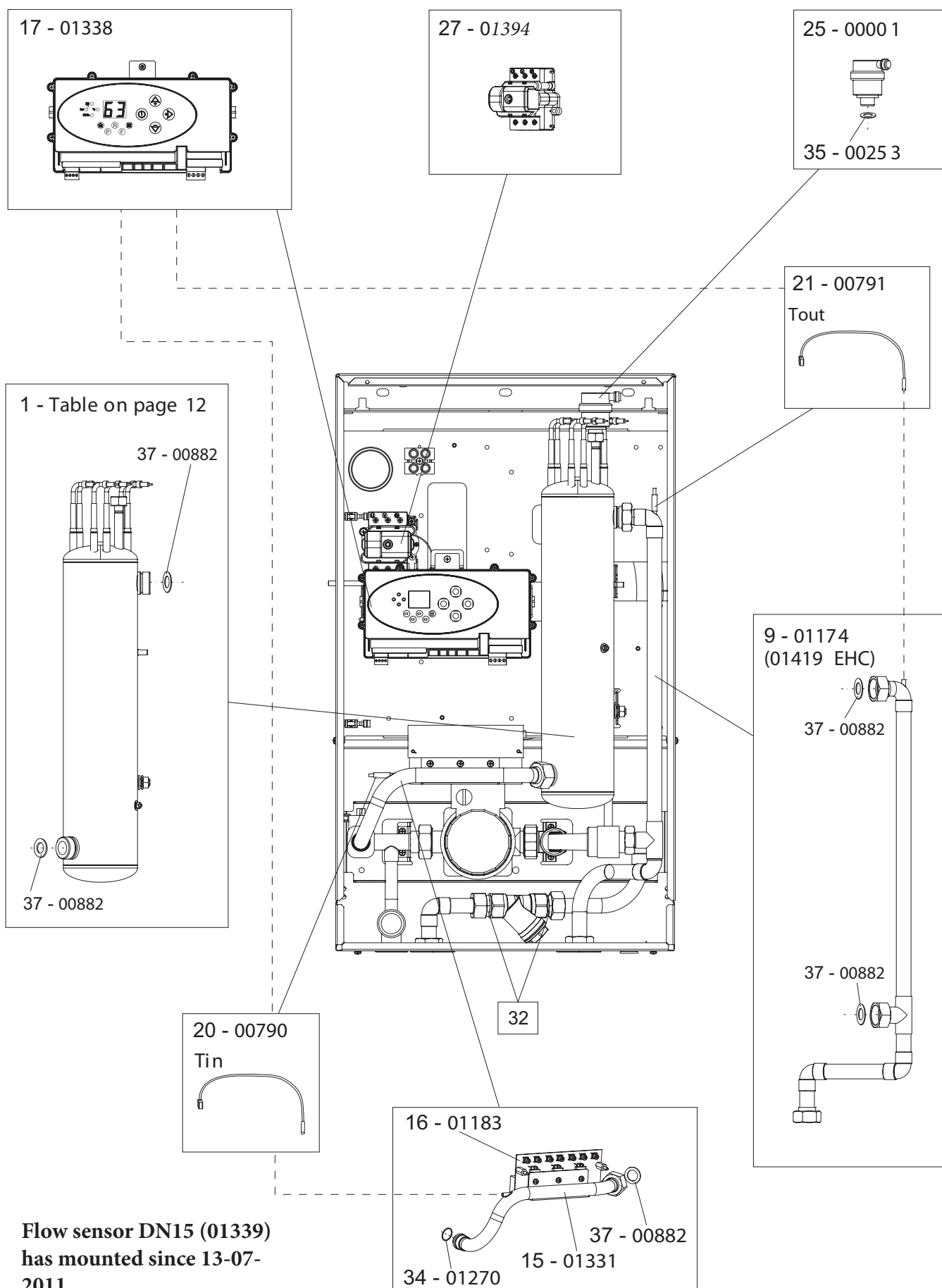
1.1. Exterior view of boiler - open case.

Pic.2. Boiler with open case (flow sensor HubaControl, date of production after 29-03-2011).



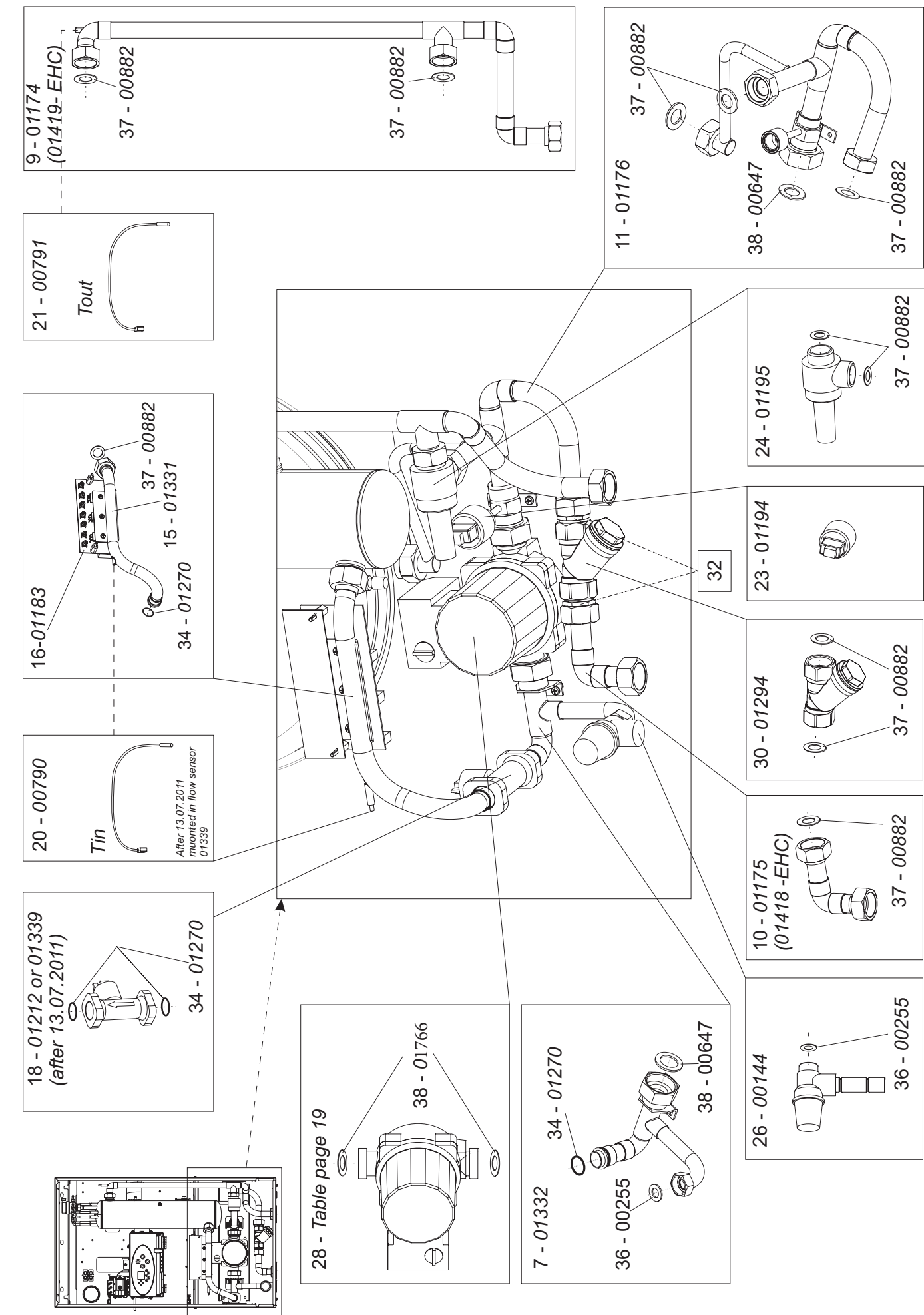
2. Construction of boilers.

Pic.3. Construction of boiler (low sensor HubaControl, date of production after 29-03-2011)



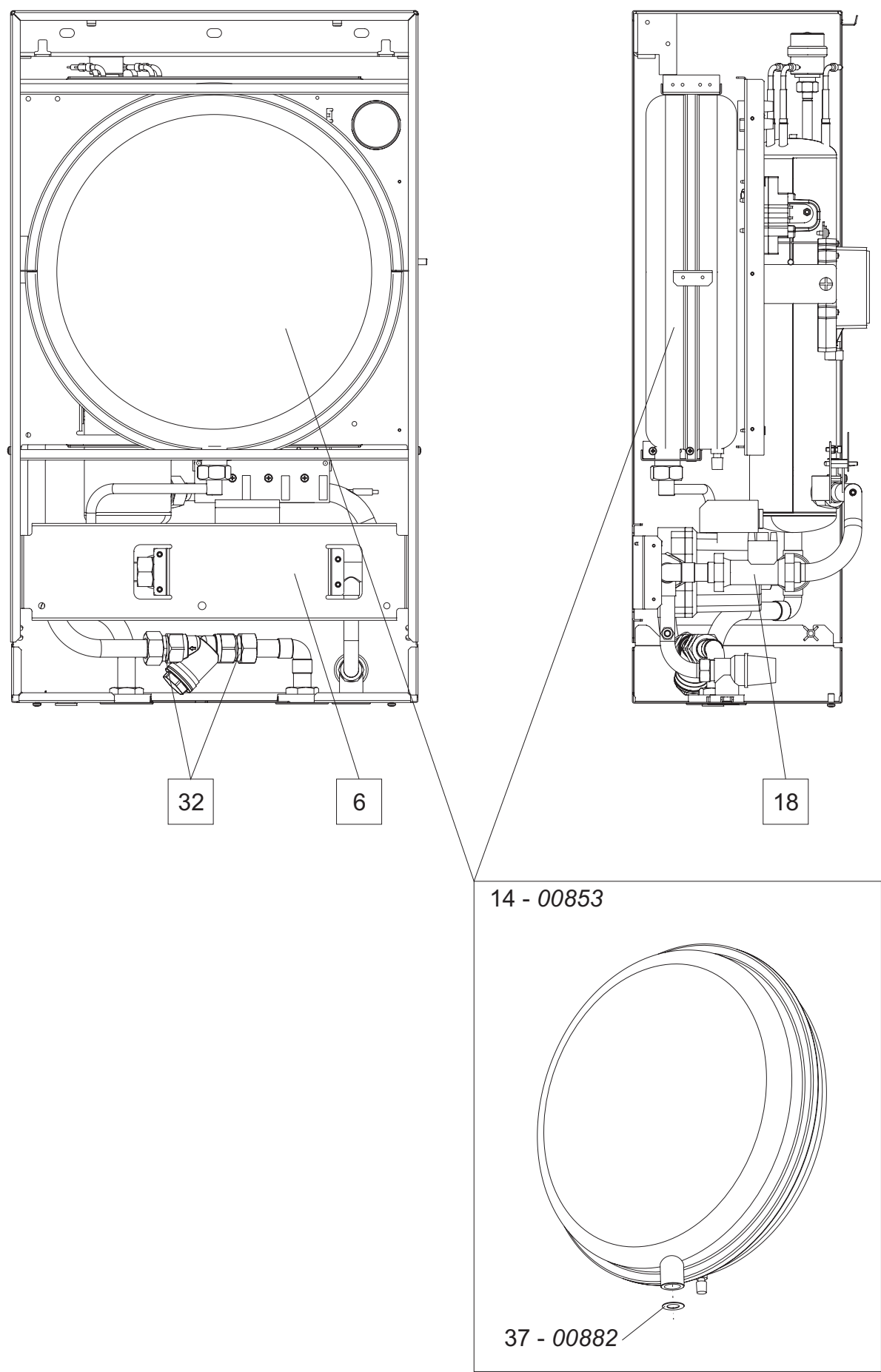
2.1.Construction of boilers - hydraulic part.

Pic.4. Hydraulic connection (flow sensor HubaControl date of production after 29.03.2011).



2.2. Construction of boilers - view of expansion vessel.

Pic.5. View of expansion vessel (flow sensor HubaControl, date of production after 29.03.2011).

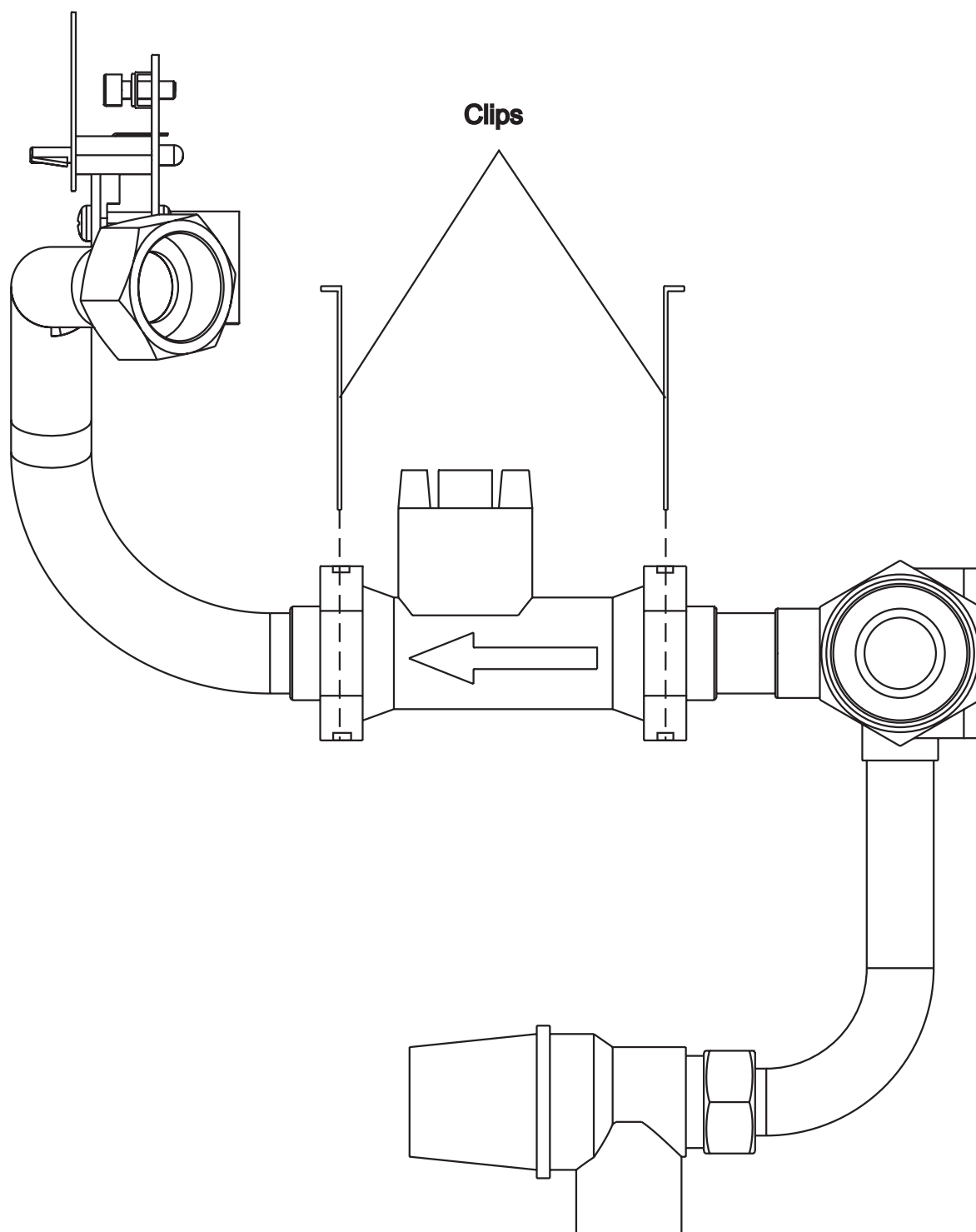


2.3. Assembly of flow sensor.

Attention! The flow sensor should be mounted as shown below. In the service menu, set the type of sensor.

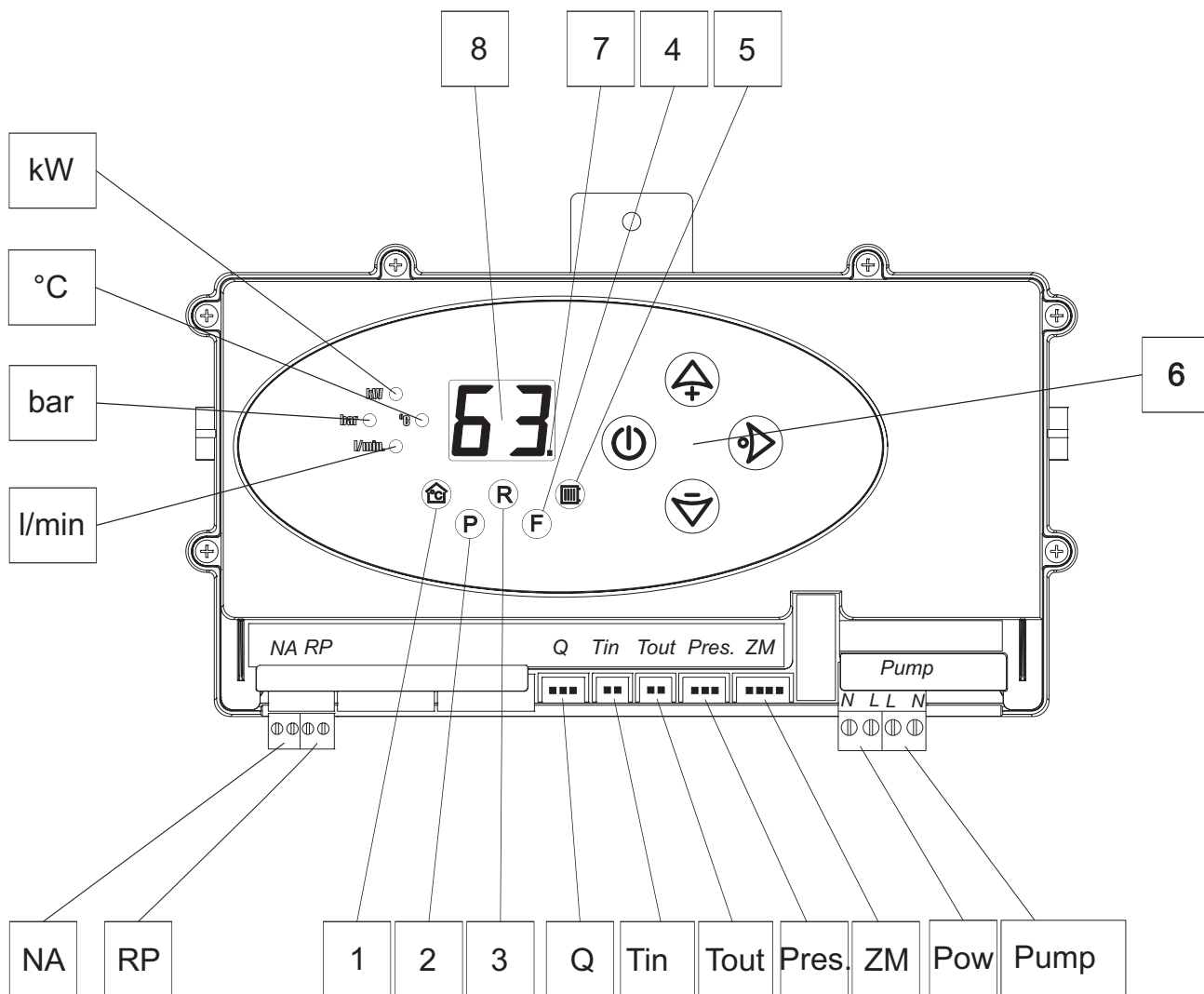
Incorrect installation of the flow sensor, and the incorrect setting in the service menu can result to incorrect measurement of flow and malfunction of the boiler.

Pic.6. Assembly of flow sensor HubaControl (date of production after 29-03-2011).



3. Control panel PSK.P5.

Pic.7 Description of control panel.



3.a. User manual of control panel.

To switch on and off boiler press and hold . When the control panel is switched to „stand-by” mode all indicators are off (only F indicator flickers).

After power supply connection to boiler, digital display shows software version and value of power. Next, boiler will start working with set parameters and required operating mode.

The digital display shows the temperature of medium (for central heating). You can check out the following working parameters by pressing the button. A display shows (in sequence): medium temp. setting (D and M indicators are on), inlet temp. (D and K indicators are on), outlet temp. (D and L indicators are on), medium flow rate through the boiler (B indicator is on), installation pressure (A indicator is on), power with which the boiler currently heats (C indicator is on).

3.b. Description of control panel.

1 - () - indicator of room thermostat (RP), superior devices (NA) and heating activity.

- off - the required temperature has been reached or RP entry is open (boiler doesn't heat),
- on - room thermostat allows the boiler to heat,
- flickers - master appliance doesn't allow to heat (NA entry is open),

2 - (P) - indicator of pump and flow activity.

- off - pump is inactive
- on – pump is active,
- flickers – pump is lack of flow or insufficient flow rate of medium (less than 5l/min), a heating elements are off,

3 - (R) - Return temperature indicator

- flickers - sensor failure.

4 - (F) - Flow temperature indicator

- flickers - sensor failure.

5 - () - Indicator of boiler activity (for central heating)

- red light - a boiler heats the medium

- green light - proper temp. has been reached

- off - a boiler operates in summer mode

6 - Control buttons

7 - stand-by indicator

- flickers - boiler operates in stand-by mode

8 - 7-segment display

kW, °C, bar, l/min - Indicators showing which parameter is displayed on digital display (in order boiler power, temperature, system pressure, flow of the medium).

NA - free-voltage entry, master appliance connection point, Work without superior device need use a jumper.

RP - free-voltage entry, room thermostat connection point. Work without room thermostat need to use a jumper.

Q -flow sensor connection point

Tin - return temperature connection point

Tout- flow temperature connection point

Pres. - pressure sensor connection point

ZM - power board connection point

Pow - Supply connection from power board (**N** - blue, **L** - red)

Pump - circulate pump connection point (**N** -blue, **L** - red)

3.c. Temperature settings (central heating).

Press  until only indicator  is illuminated. Press  or  until the desired temperature setting is achieved. To switch to the main view press  button. A controller will switch over to the main view, if you don't use a buttons for 1 min.

3.d. Service menu:

For service settings switch the control panel to standby mode (hold button  for 3 seconds) then hold the  and press . To select parameter press , buttons  or  enable you to change the value, consecutively:

1. Boiler power (value on digital display 11). Value of this parameter must be same like a power of heating box.

2. Working mode of pump

„Pa” – automatic work mode

„Pr” – manual, continuous work mode

3. Number of active heating elements

„G3” – three heating elements

„G2” – two heating elements

„G1” – one heating element

4. Boiler work mode

„no” – normal mode for central heating (temperature range **20 – 85°C**)

„Po” –floor heating mode (temperature range **20 – 60°C**)

5. Pressure lock function (bar indicator on)

„0” – inactive function

„1” - active function - heat and pump will be blocked below pressure 0,6 bar

6. Boiler work mode

„A0” – single mode

„A1” do „A9” – cascade mode (Each boiler must have a different address „A”

7. Type of flow sensor (l/min indicator on)

„1” - Flow sensor HubaControl

„2” - Flow sensor Kospel

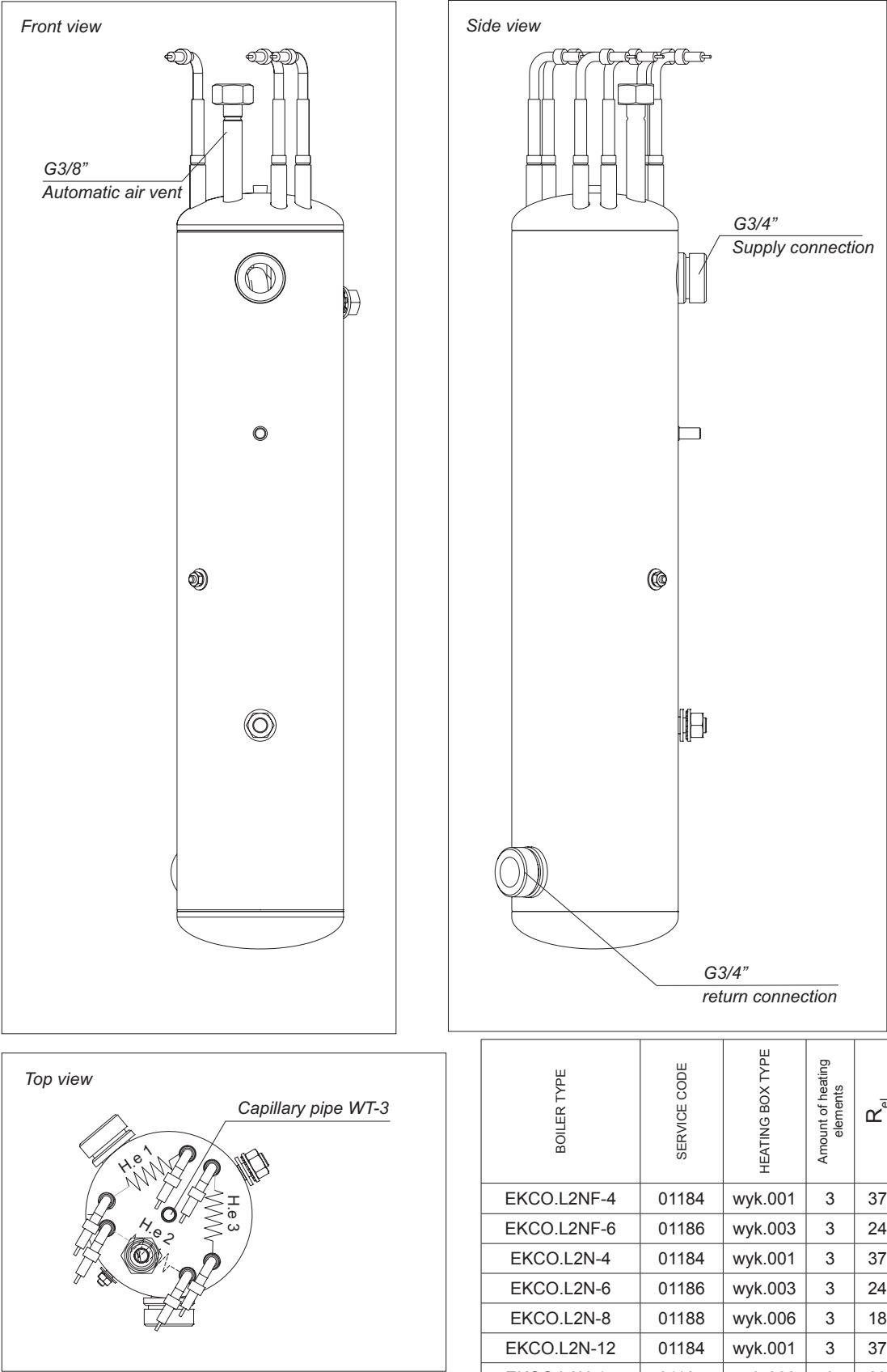
8. Work-time counter (value displayed on indicator 11) .

Counter display shows figures (without leading zeros) starting from the most important (interrupt every 1/2 second), the display will turn off (for 2 seconds) when the least important figure is shown. Example if display displayed number in order 1..2..9.....1..2..9. That mean boiler has been working for 129 hours.

Press and hold the @ button to exit and record the settings .

4. Heating box.

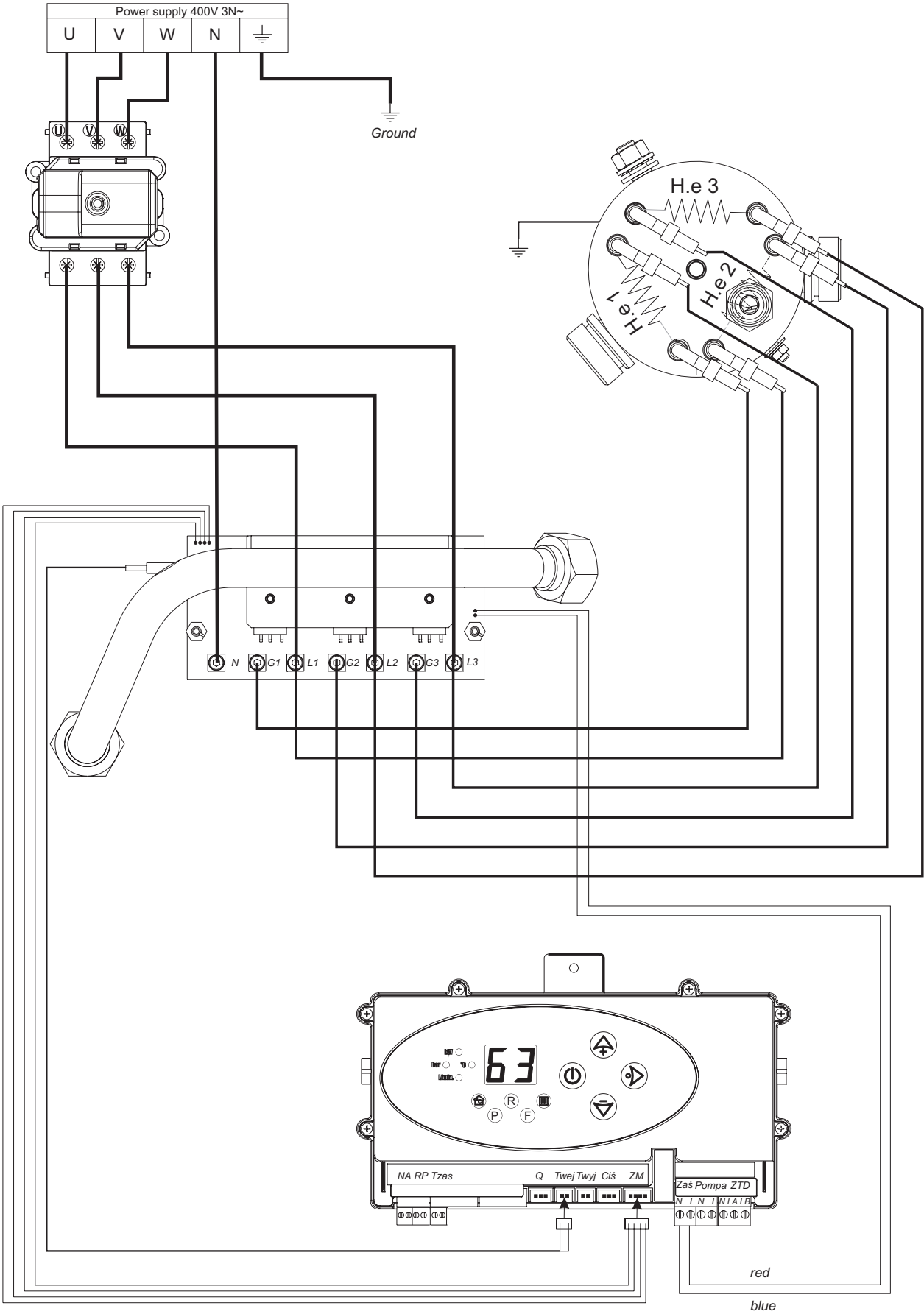
Pic.8. Heating box.



BOILER TYPE	SERVICE CODE	HEATING BOX TYPE	Amount of heating elements	R _{el} Heating element resistance [Ohm]	I _r Current passing through the heating element [A]	U Working voltage of the heating element [V]
EKCO.L2NF-4	01184	wyk.001	3	37,1 ÷ 40,9	5,6 ÷ 6,2	230
EKCO.L2NF-6	01186	wyk.003	3	24,8 ÷ 28,6	8,0 ÷ 9,3	
EKCO.L2N-4	01184	wyk.001	3	37,1 ÷ 40,9	5,6 ÷ 6,2	
EKCO.L2N-6	01186	wyk.003	3	24,8 ÷ 28,6	8,0 ÷ 9,3	
EKCO.L2N-8	01188	wyk.006	3	18,6 ÷ 20,4	11,3 ÷ 12,4	
EKCO.L2N-12	01184	wyk.001	3	37,1 ÷ 40,9	9,8 ÷ 10,8	400
EKCO.L2N-15	01185	wyk.002	3	29,7 ÷ 32,7	12,2 ÷ 13,5	
EkCO.L2N-18	01186	wyk.003	3	24,8 ÷ 28,6	14,0 ÷ 16,1	
EKCO.LN2-21	01187	wyk.004	3	21,2 ÷ 23,4	17,1 ÷ 18,9	
EKCO.L2N-24	01188	wyk.005	3	18,6 ÷ 20,4	19,6 ÷ 21,5	
EHCCOM6KW	01333					240
EHCCOM9KW	01334					
EHCCOM12KW	01335					
EHCCOM15KW	01336					

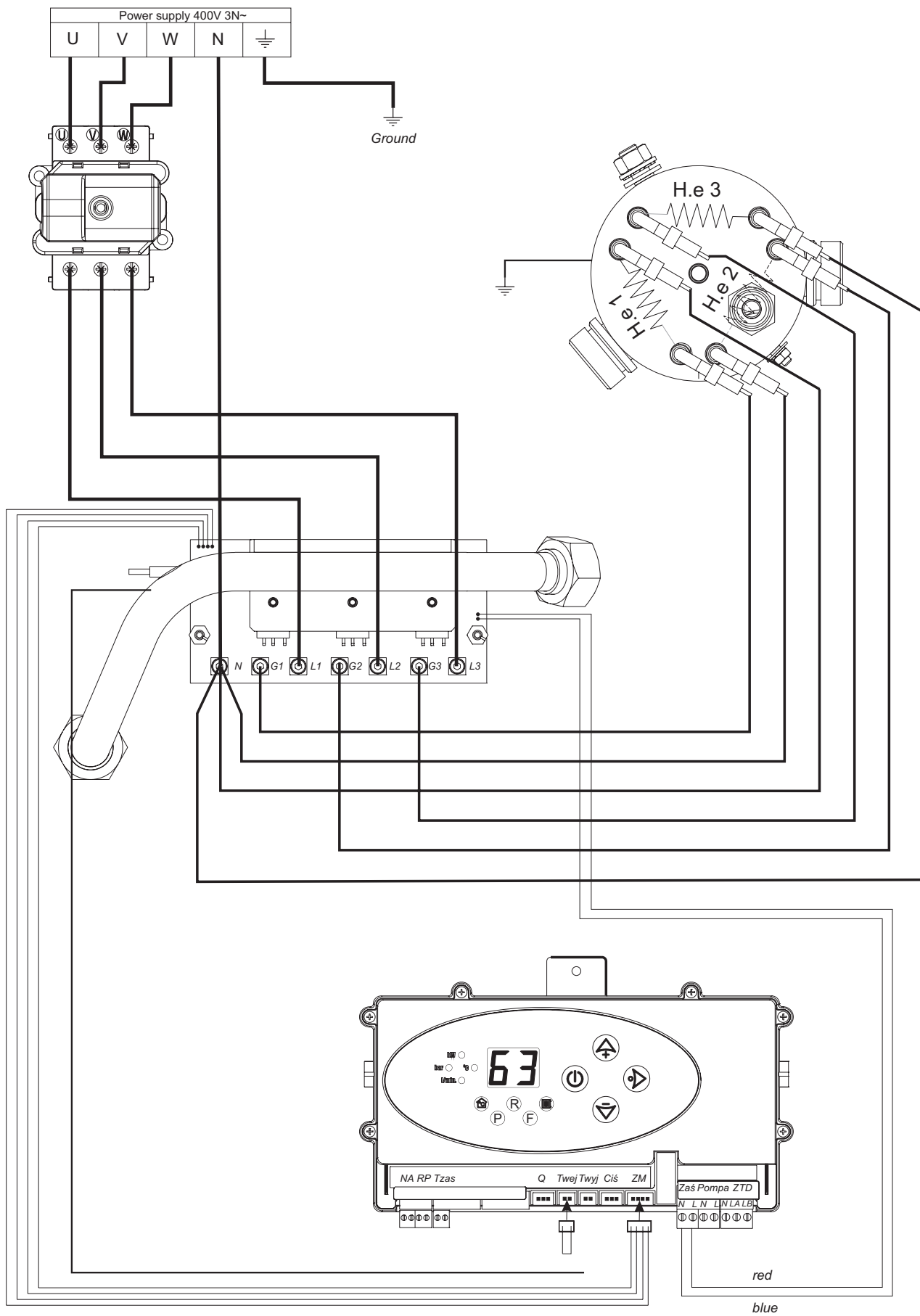
5.1. Power board - connection 400V 3N~ 12-24 kW (ver I).

Pic.9. Connection of power board 12-24 kW 3N~.



5.2. Power board - connection 400V 3N~ 4-8 kW (wyk II).

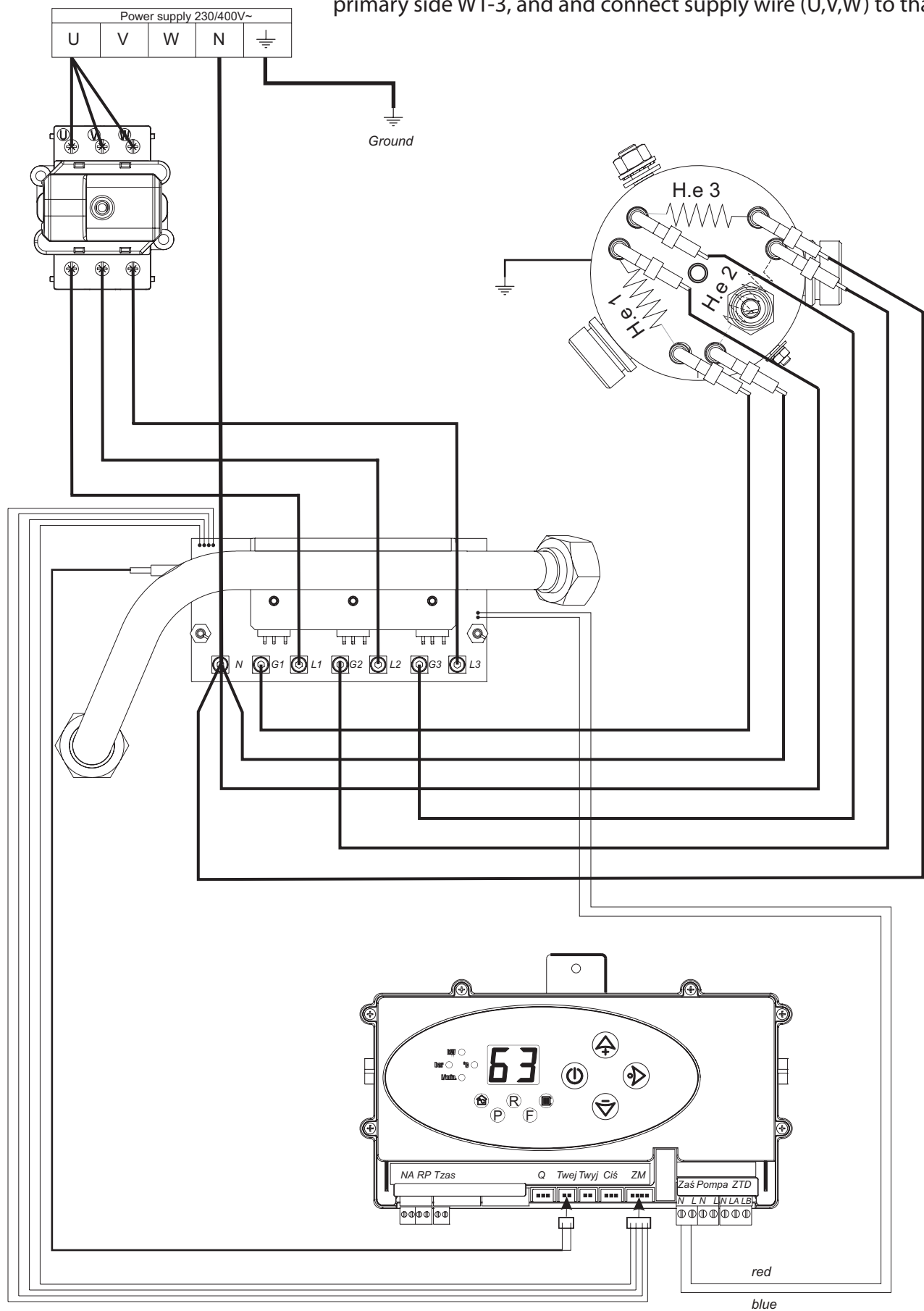
Pic.10. Connection of power board 4-8 kW 3N~.



5.3. Power board - connection 230/400V 4-24kW ver.2.

Pic.11. Connection of power board 4-24 kW 230/400V~ ver.2 (date of production after 17-11-2010).

The second version allows you to configure the installation for one or three-phase power. Boiler is configured for a single phase by factory. To connect boiler to three-phase installation should be removed wire on primary side WT-3, and and connect supply wire (U,V,W) to that place.

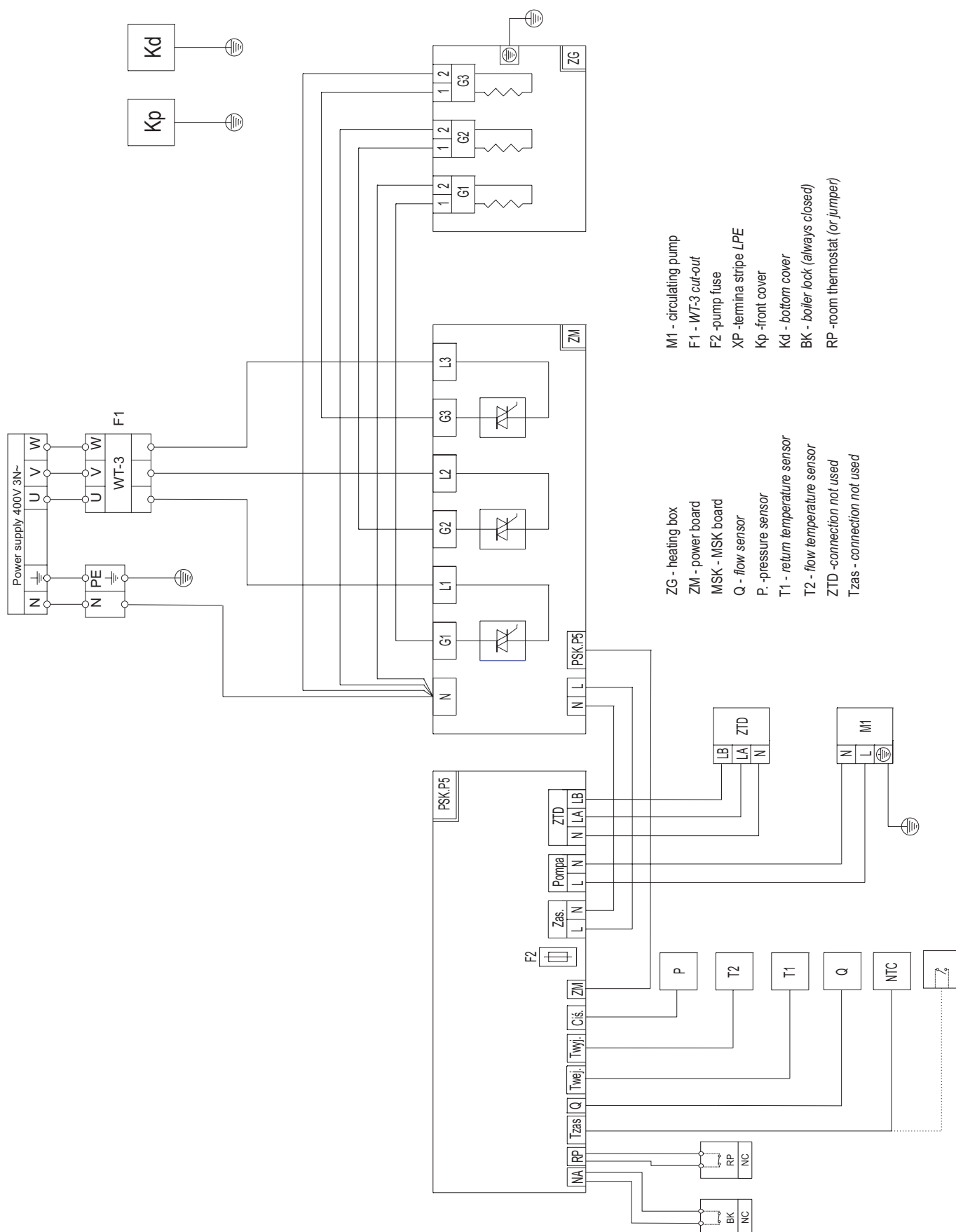


Pic.12. Electric diagram 12-24 kW 3N~.



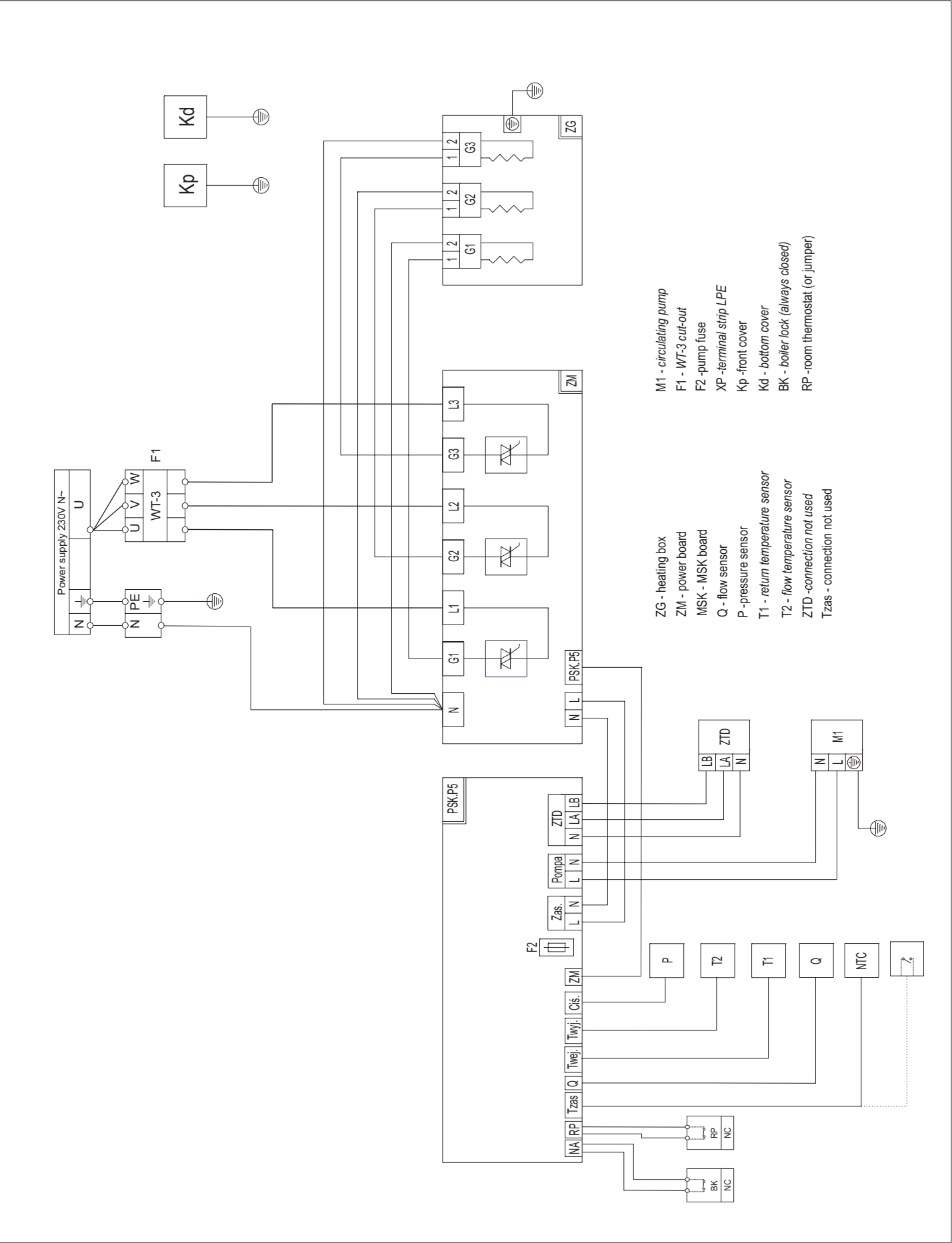
6.2. Wiring diagram - 400V 3N~ 4-8kW (ver. II).

Pic.13. Electric diagram 4-8 kW 3N~.



6.3. Wiring diagram 230/400V~ ver.2.

Pic.14. Electric diagram 4-24 kW 230/400V~ ver.2 (production date after 17-11-2010).



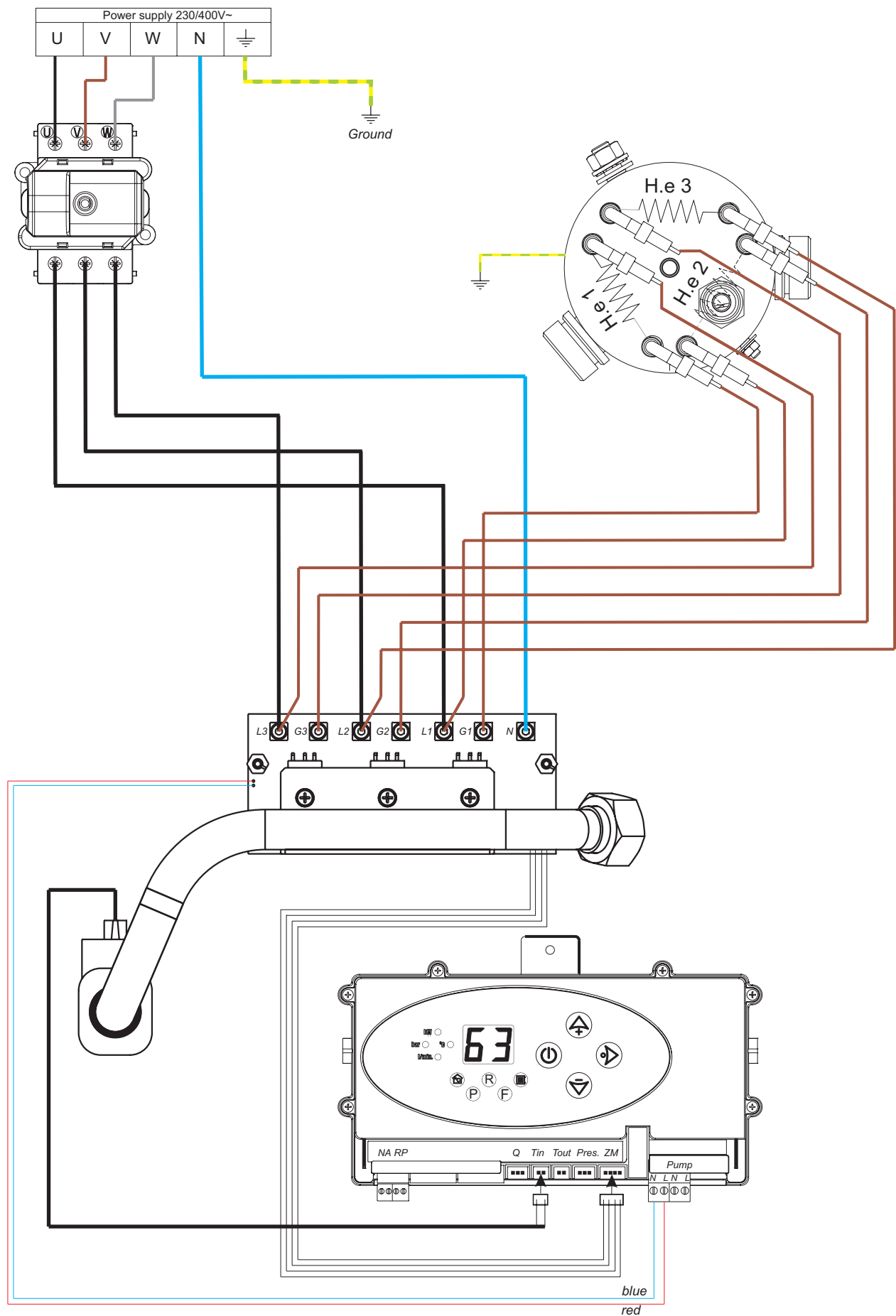
7. Spare parts list.

Table 2. Parts list.

Pos.	Service code	Picture no.	Name	Amount (pcs)	Notice
1	01184	EKCO.L2-02.00.00/001	Heating box EKCO.L2 12kW/400V	1	
	01185	EKCO.L2-02.00.00/002	Heating box EKCO.L2 15kW/400V		
	01186	EKCO.L2-02.00.00/003	Heating box EKCO.L2 18kW/400V		
	01187	EKCO.L2-02.00.00/004	Heating box EKCO.L2 21kW/400V		
	01188	EKCO.L2-02.00.00/005	Heating box EKCO.L2 24kW/400V		
	01333	EKCO.L2-02.00.00/11	Heating box EKCO.L2 6kW/240V EHC		
	01334	EKCO.L2-02.00.00/12	Heating box EKCO.L2 9kW/240V EHC		
	01335	EKCO.L2-02.00.00/13	Heating box EKCO.L2 12kW/240V EHC		
	01336	EKCO.L2-02.00.00/14	Heating box EKCO.L2 14,4kW/240V EHC		
3	01179	EKCO.L2-01.00.00	Front cover EKCO.L2	1	
4	01180	EKCO.L2-09.00.00	Bottom wall EKCO.L2	1	
5	01181	OK.B7-00.00	Case EKCO.L2	1	
6		OK.B3-01-05	Bottom suport case EKCO.L2	1	DC01A
7	01332	EKCO.L2-15.00.00	Safety valve 3 bar pipe	1	Production date after 29-03-2011
8	01173	EKCO.L2-03.00.00	Safety valve 3 bar pipe	1	Production date before 29-03-2011
9	01174	EKCO.L2-05.00.00	Outlet connection pipe	1	
	01419		Outlet connection pipe	1	conex connection
10	01175	EKCO.L2-06.00.00	Inlet connection pipe	1	
	01418		Inlet connection pipe	1	conex connection
11	01176	EKCO.L2-07.00.00	Nodes pipe	1	Construction change after 29-03-2011
12	01177	EKCO.L2-08.00.00	Pump pipe	1	Production date before 29-03-2011
13	01178	EKCO.L2-11.00.00	Expansion vessel pipe	1	Production date before 29-03-2011
14	00853		Expansion vessel	1	
15	01331	EKCO.L2-16.01.00	Inner pipe of power board EKCO.L2	1	Power board pipe
16	01183	EKCO.L2-10.00.00	Power board EKCO.L2	1	
17	01182	PSK.P5-00.00.00	Control panel PSK.P5	1	
	01338		Control panel PSK.P5 EHC	1	
18	01212		Flow sensor DN15 200.915101 EKCO.T/TM	1	
19				1	
20	00790	WE-005/09	Return temperature sensor NTC	1	before 13-07-2011
21	00791	WE-005/-2	Flow temperature sensor NTC	1	
22					
23	01194		Electronic pressure sensor	1	
24	01195		Differential pressure relief valve	1	
25	00001		Automatic air-vent	1	
26	00144		Diaphragm safety valve MSL 30.1/2"	1	3Bar
27	001394	WT3a-00.00.00/02	WT-3 safety cut-out EKCO.L2N	1	C.O. 100°C
28	01766		Pump EKCO.L2		
30	01294		Magnetic filter F-MAG 3/4	1	
31		Z-216	Sleeve 3/4"	2	Flow sensor
32		Z-217	Nipple 3/4"	2	Magnetic filter
33					
34	01270		O-ring seal 17,86x2,62 70NBR		
35	00253		Gasket 1.5x14,8x8 (3/8")	1	
36	00255		Gasket 1.5x18,2x11,7 (1/2")	1	
37	00882		Gasket 1.5x16x24 (3/4")	7	

8.1. Power board ver. 2b - connection 400V 3N~ 12-24 kW.

Pic.15. Connection of power board 4-8 kW 3N~.



8.2. Power board ver. 2b - connection 230V N~ / 400V 3N~ (4-8 kW).

Pic. 17. Connection of power board ver. 2b 230V N~ / 400V 3N~ (4-8 kW).

