



# Service Manual

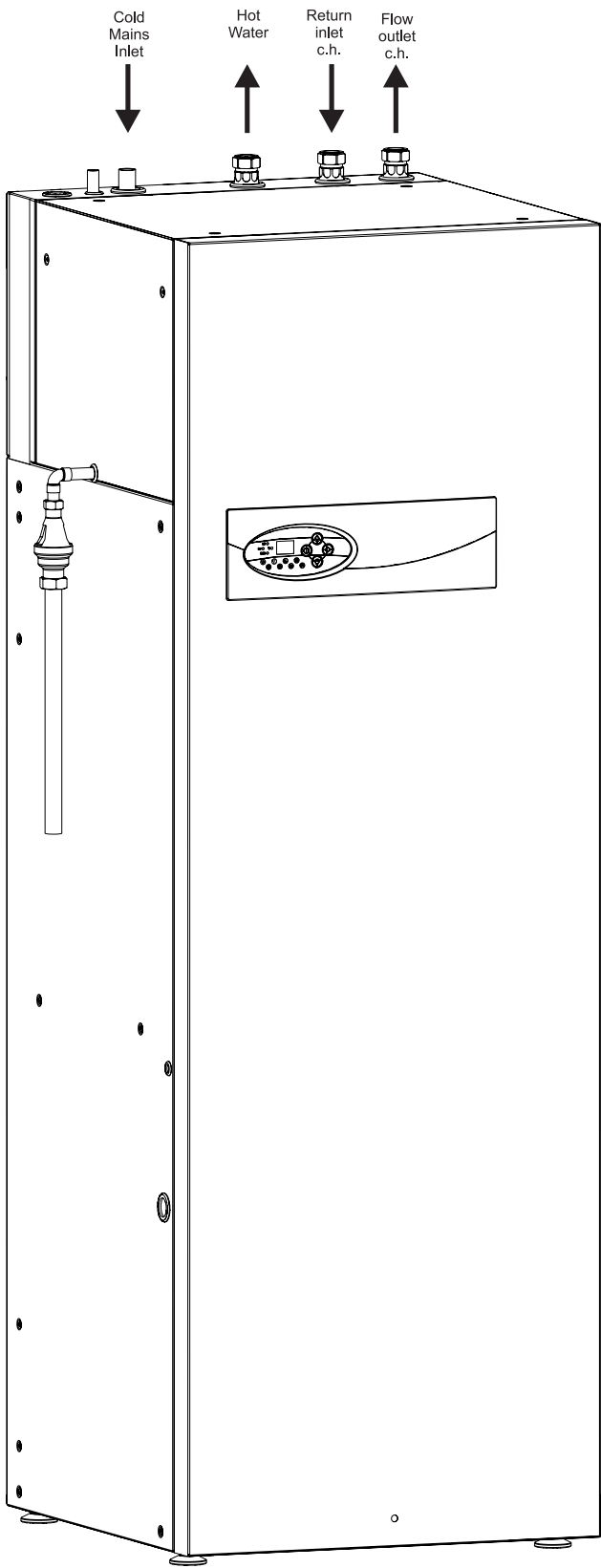
## Comet Combination Unit

14.12.2016

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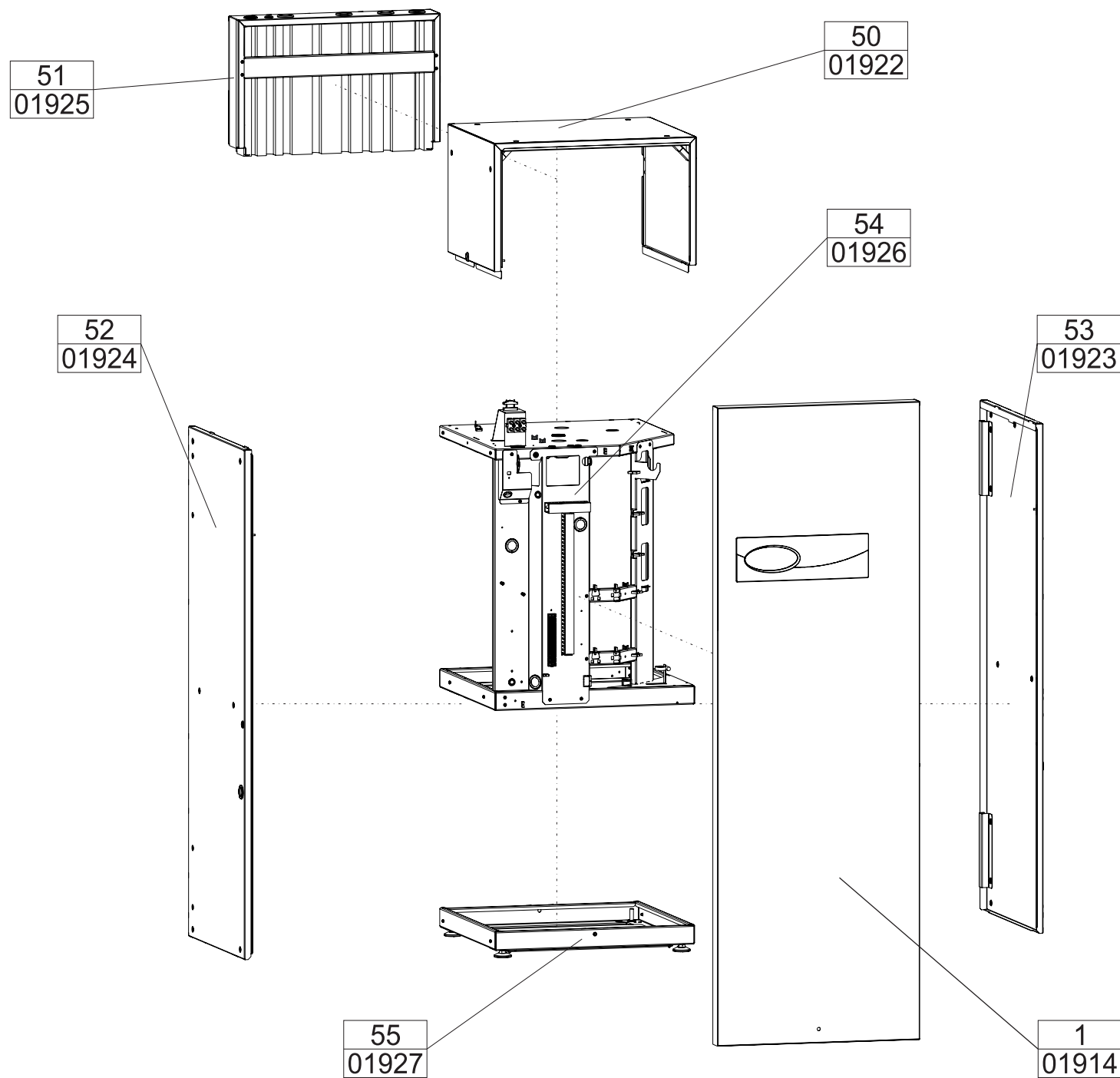
# 1. Exterior view

Pic.1. Comet Combi boiler exterior view.



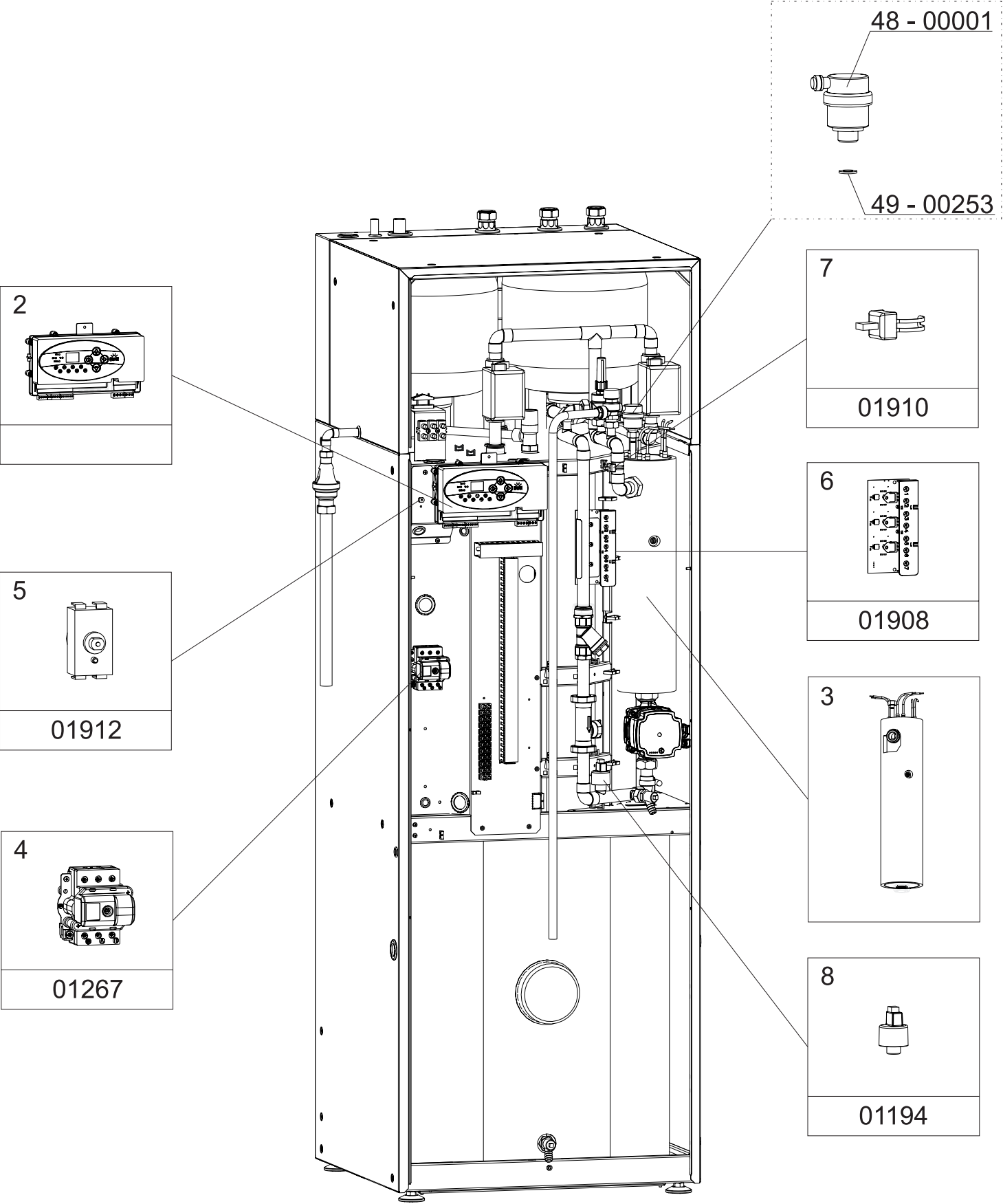
# 1.1 Main view - cover.

Pic.2. Boiler's cover Comet Combi



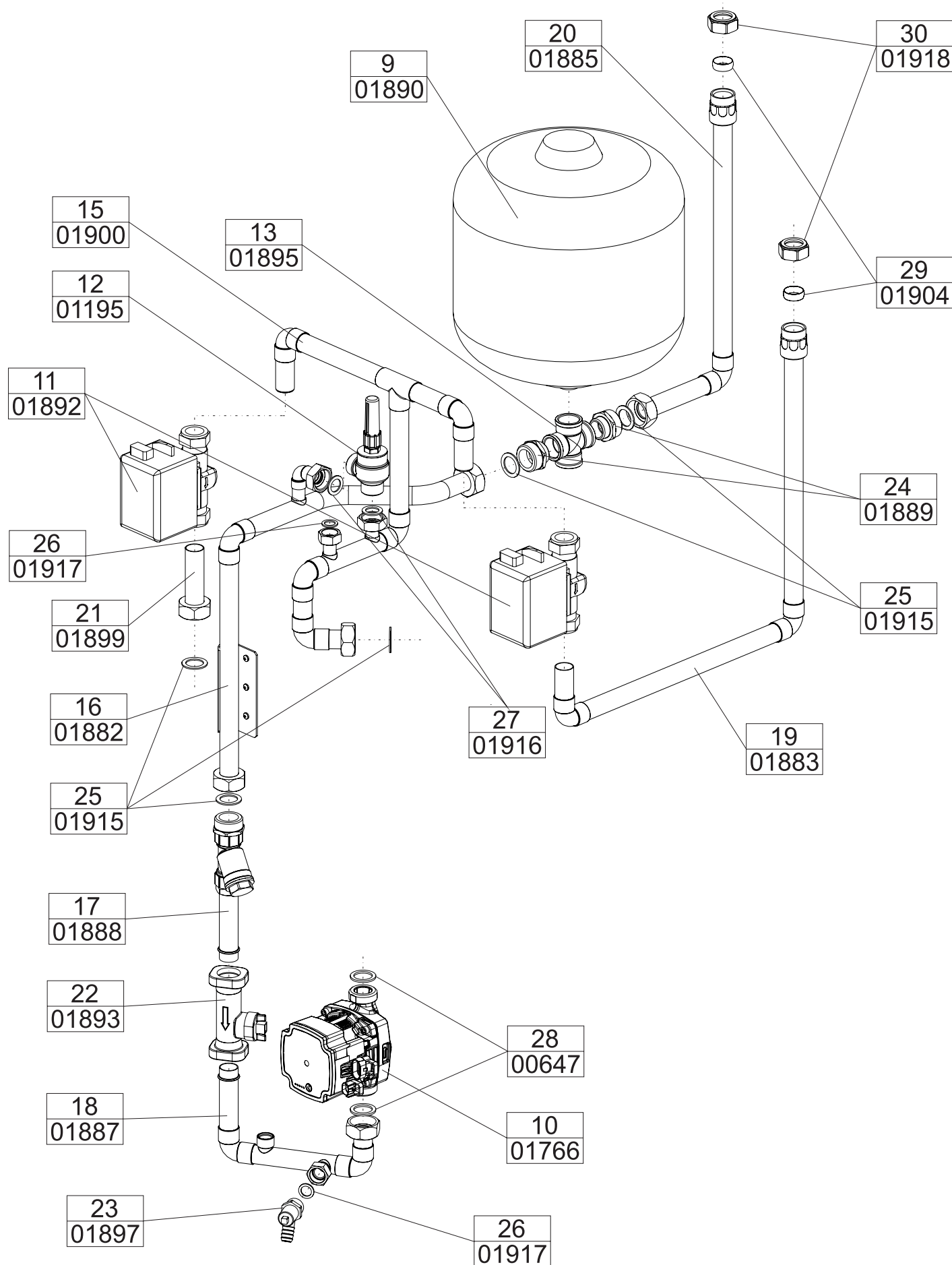
# 2. Interior view

Pic.3. Comet Combi interior view



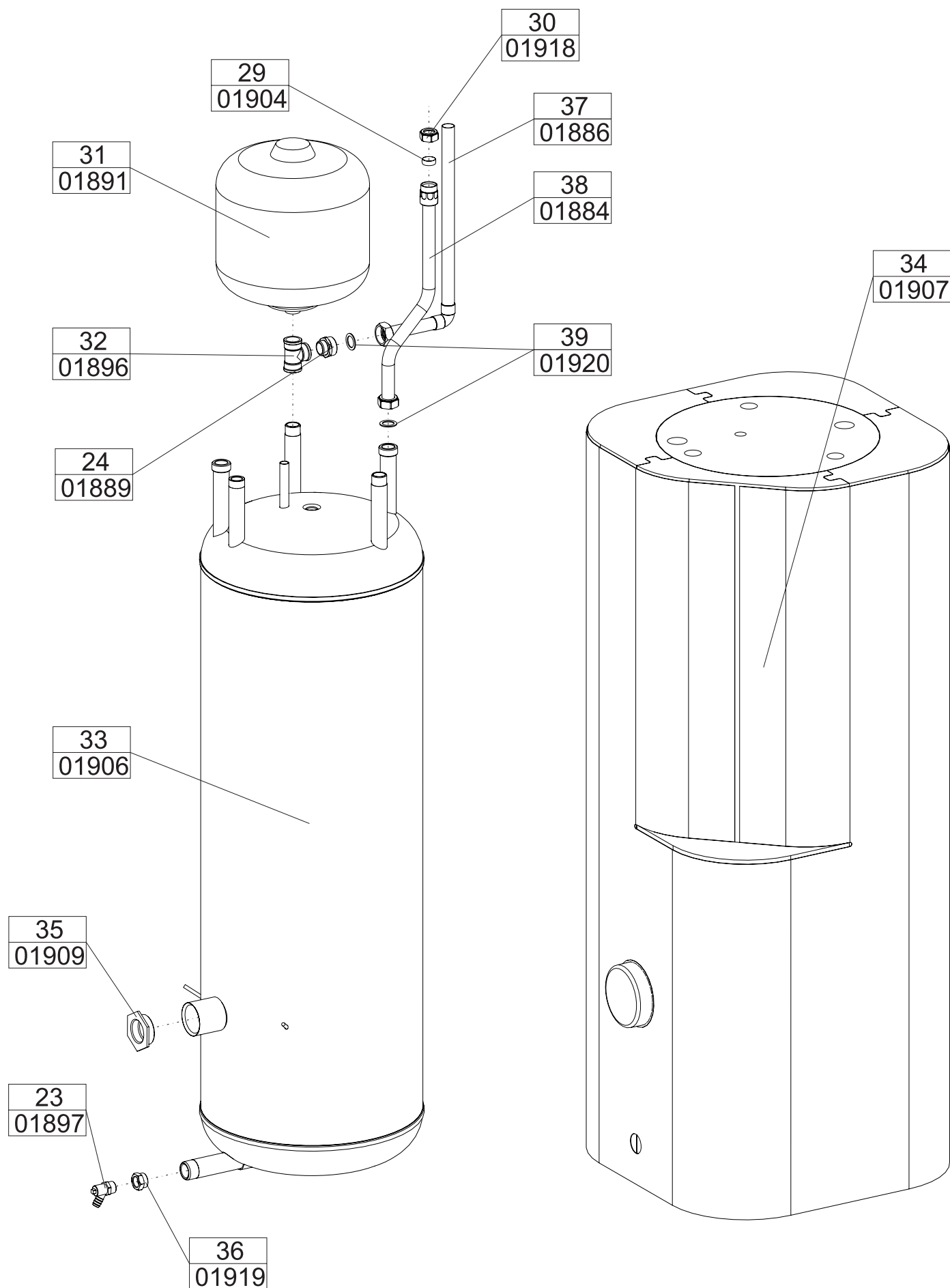
## 2. 1 Interior view - c.h. heating part

Pic.4. C.h. heating part



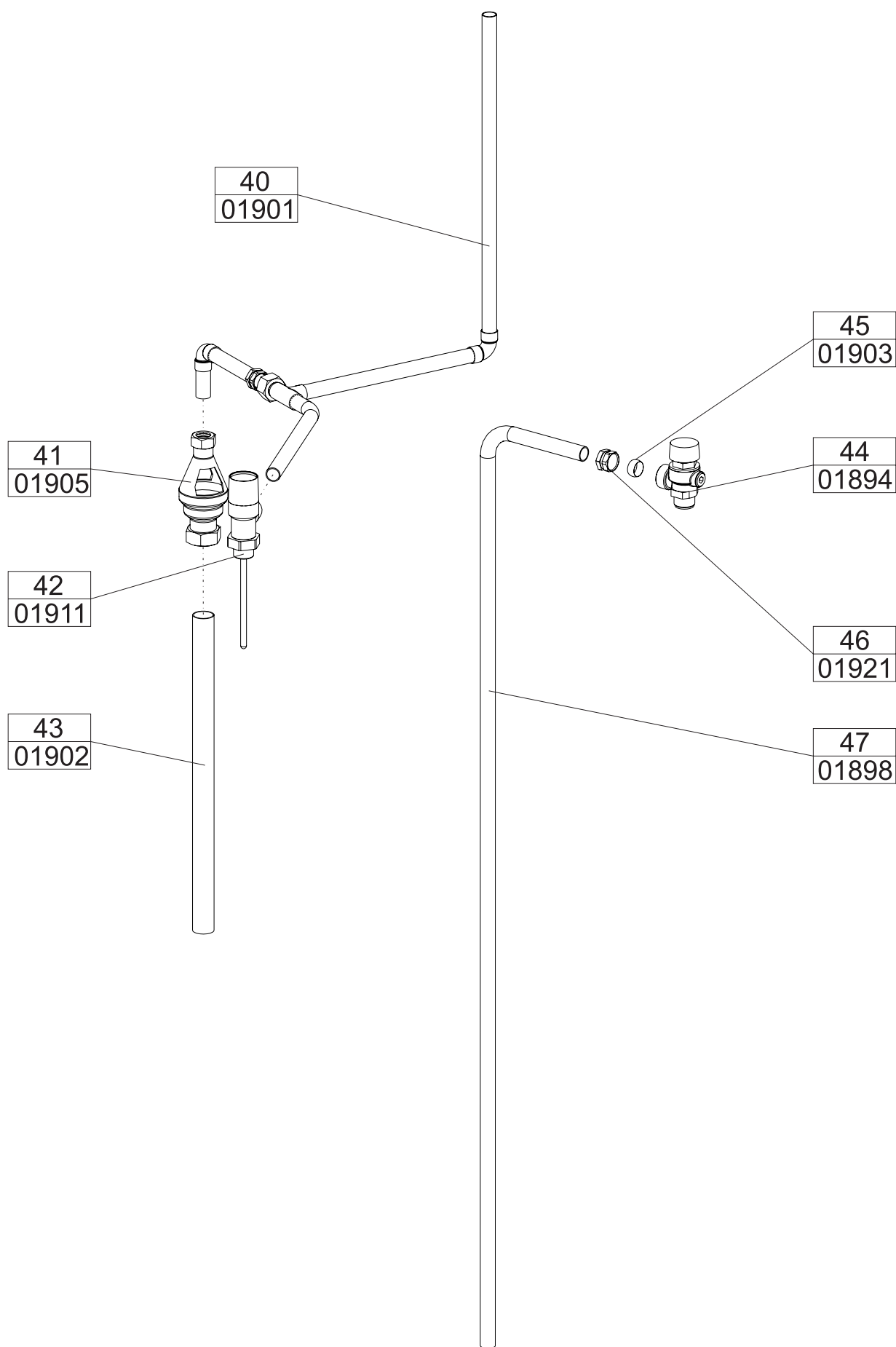
## 2. 2 Interior view - D.H.W. water part

Pic.5. D.H.W. water part



# 2.3 Interior view - safety group

Pic.6. Safety group



### 3. Heating box Comet Combi

Pic.7. Heating box

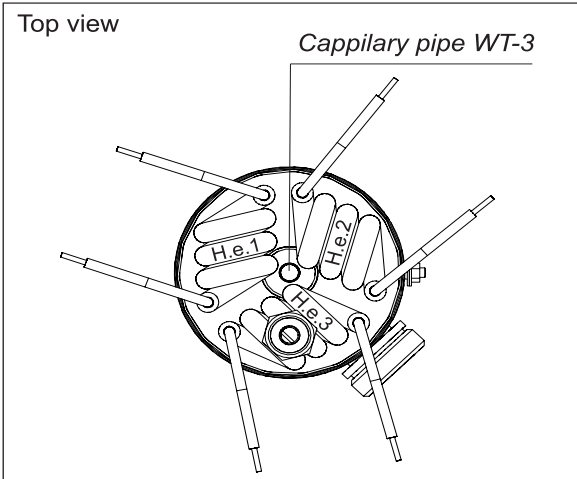
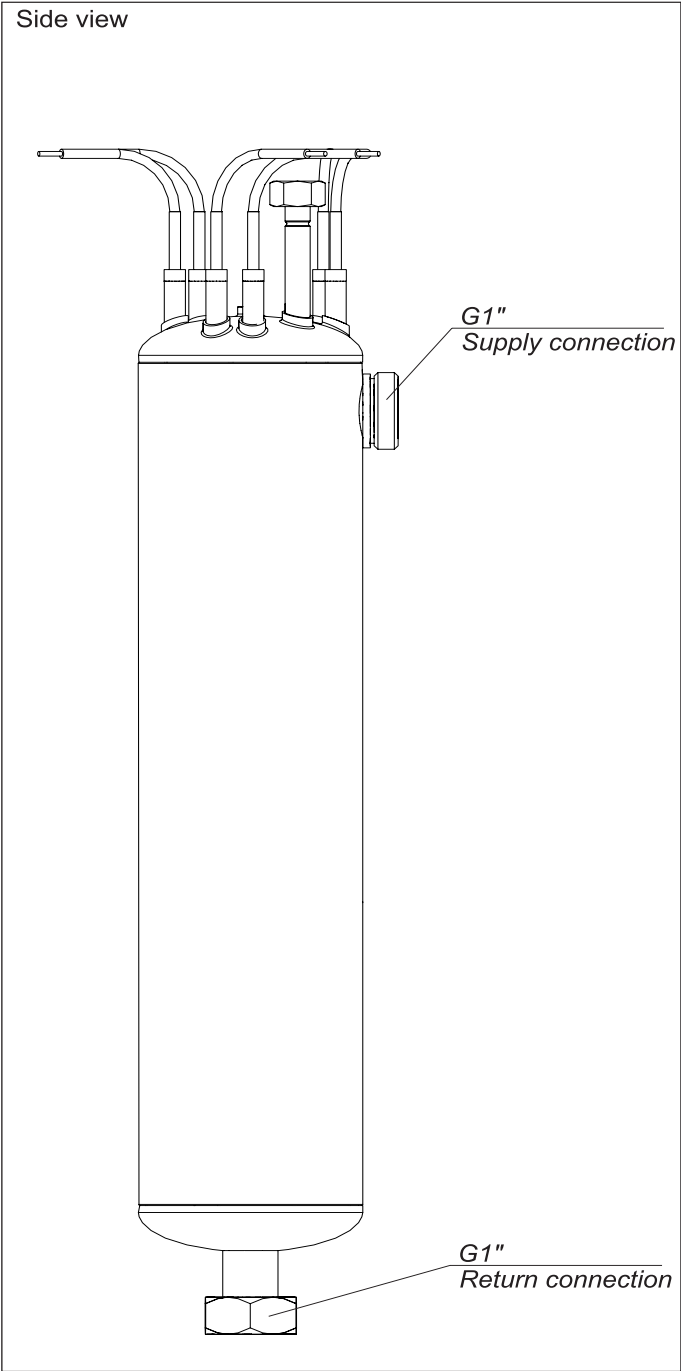
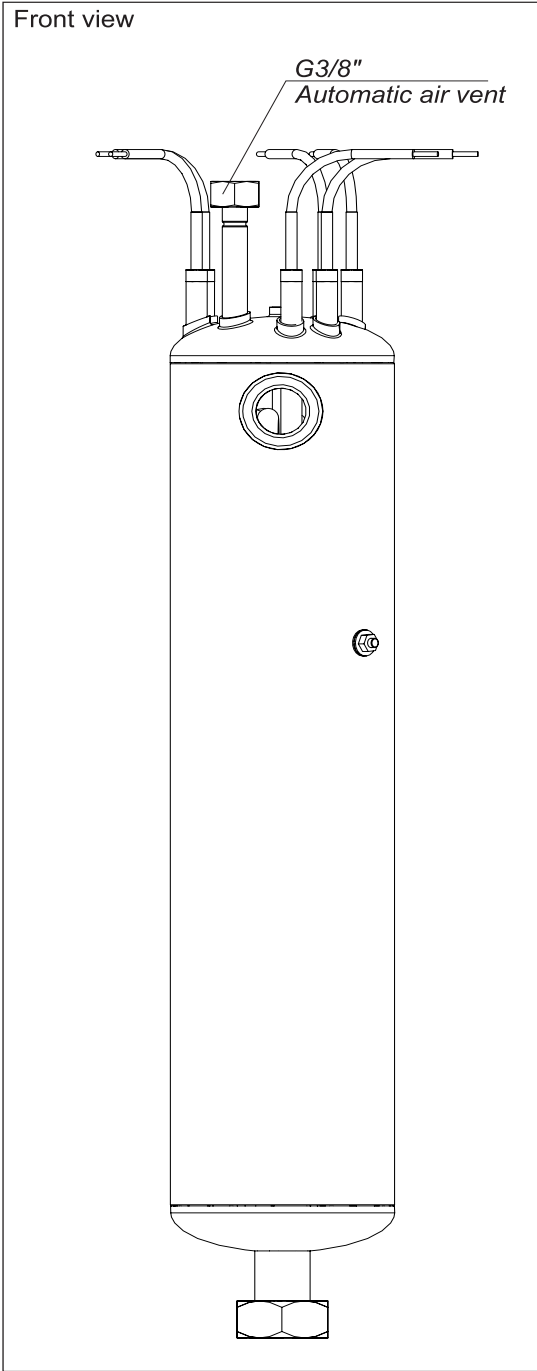
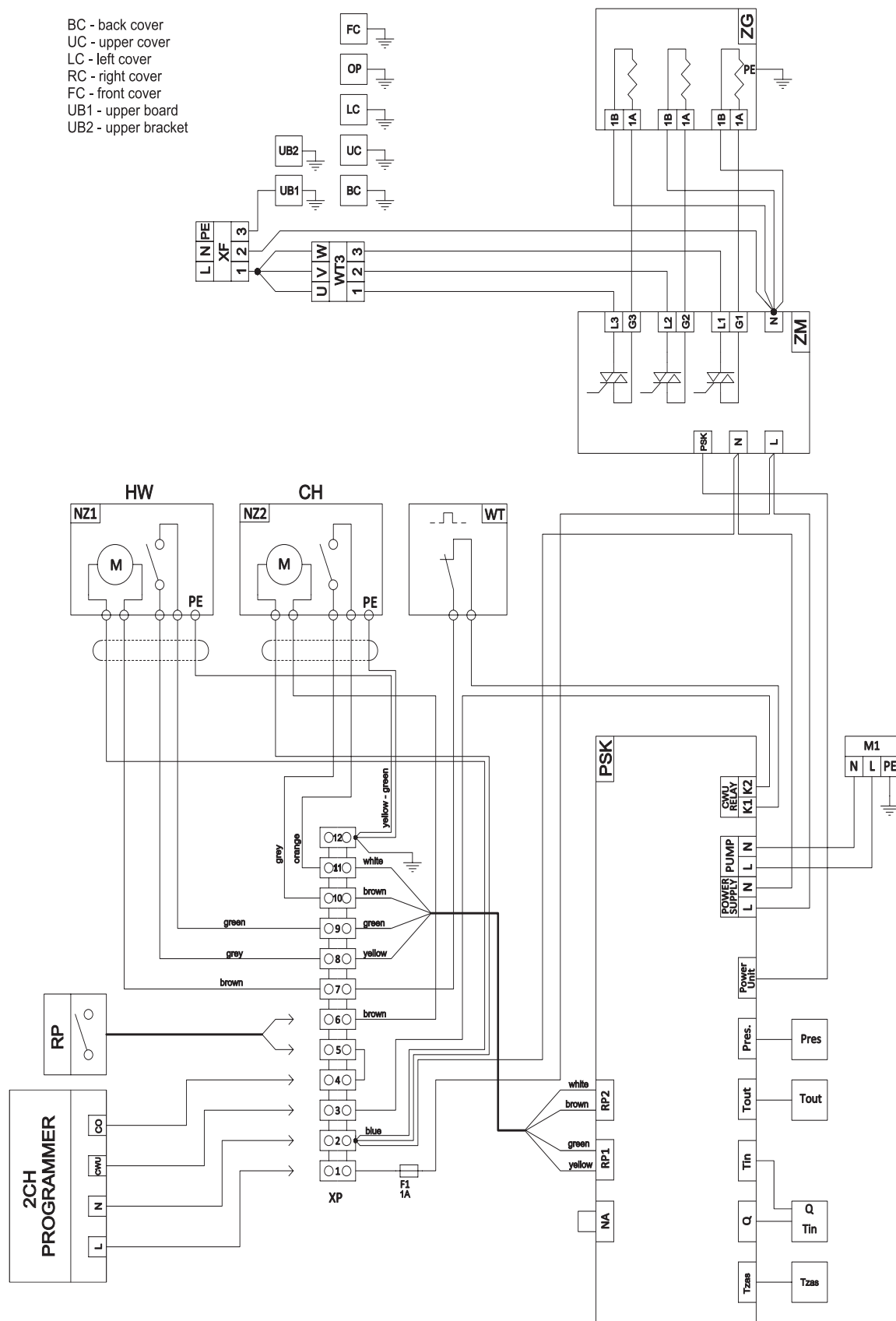


Table 1. Heating box parameters

| Boiler type        | Service code | Elements | Heating el. resistance[Ohm] |
|--------------------|--------------|----------|-----------------------------|
| EKD07 9kW/240V~    | 01879        | 3        | 18,4÷19,6                   |
| EKD07 12kW/240V~   | 01880        | 3        | 13,6÷14,7                   |
| EKD07 14,4kW/240V~ | 01881        | 3        | 11,3÷12,3                   |

## 4. Wiring diagram Comet Combi

Pic.8. Electric diagram Comet Combi

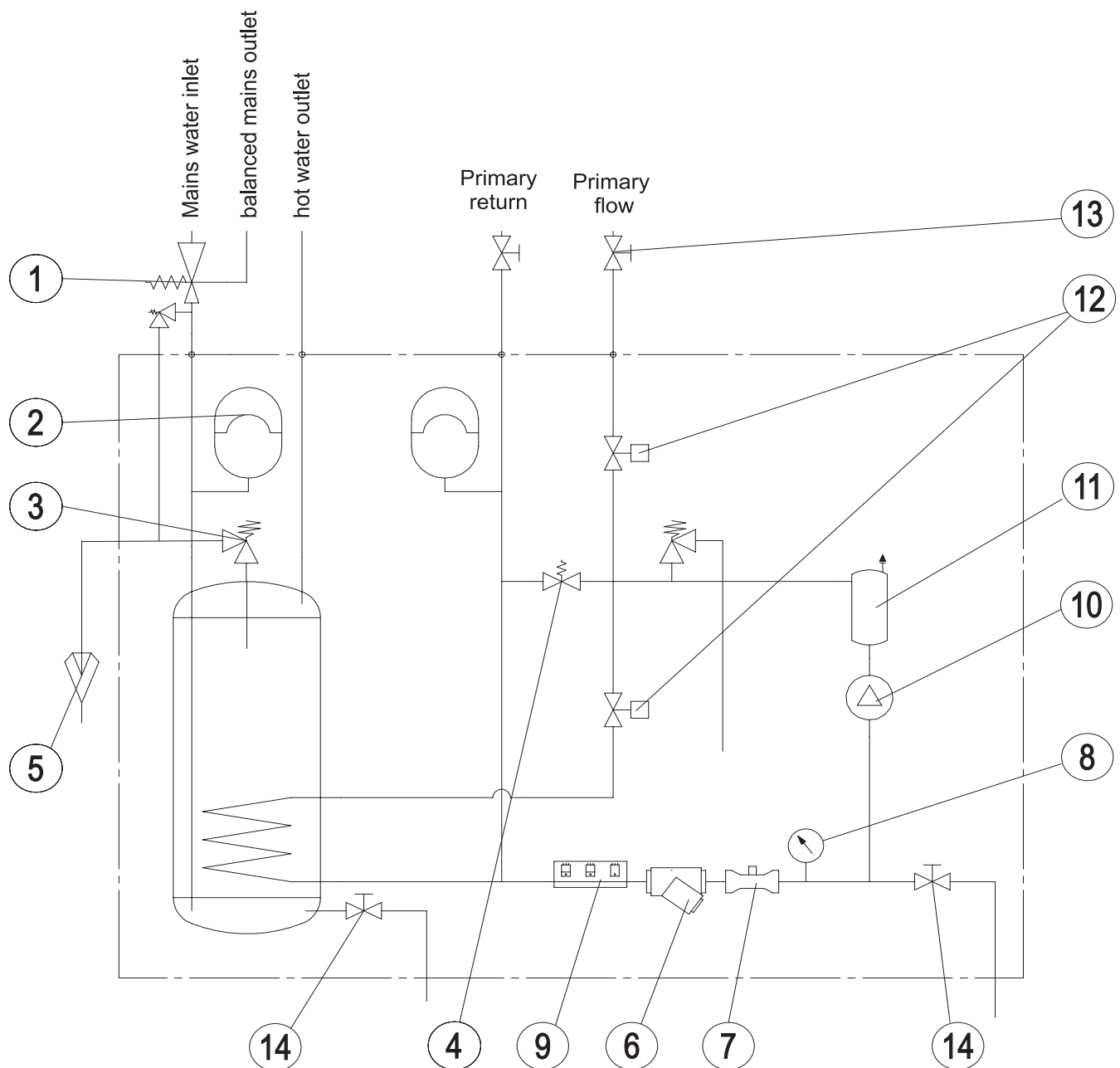


ZG - heating box  
PSK - control panel  
WT - safety cut-out  
WT-3 - thermal cut-out WT-3  
M1 - pump  
NZ1 - electric valve CWU  
NZ2 - electric valve CO

ZM - power board  
Pres - pressure sensor  
Tout - supply temperature sensor  
Q, Tin - flow sensor with return temperature sensor  
Tzas - DHW temperature sensor  
XP - terminal strip

## 5. Hydraulic diagram Comet Combi

Pic. 9. Hydraulic instalation



- 1 - Combination Valve with PRV
- 2 - Expansion vessel
- 3 - T&P Relief valve
- 4 - Automatic bypass
- 5 - Tundish
- 6 - Magnetic Filter
- 7 - Vortex Flow Sensor

- 8 - Pressure Sensor
- 9 - Power Board
- 10 - Pump
- 11 - Heat Exchanger including AAV
- 12 - electric valves
- 13 - Isolating valves
- 14 - Drain Valve

# 6. Control panel Comet Combi

Pic 10. Control panel's indicators description.

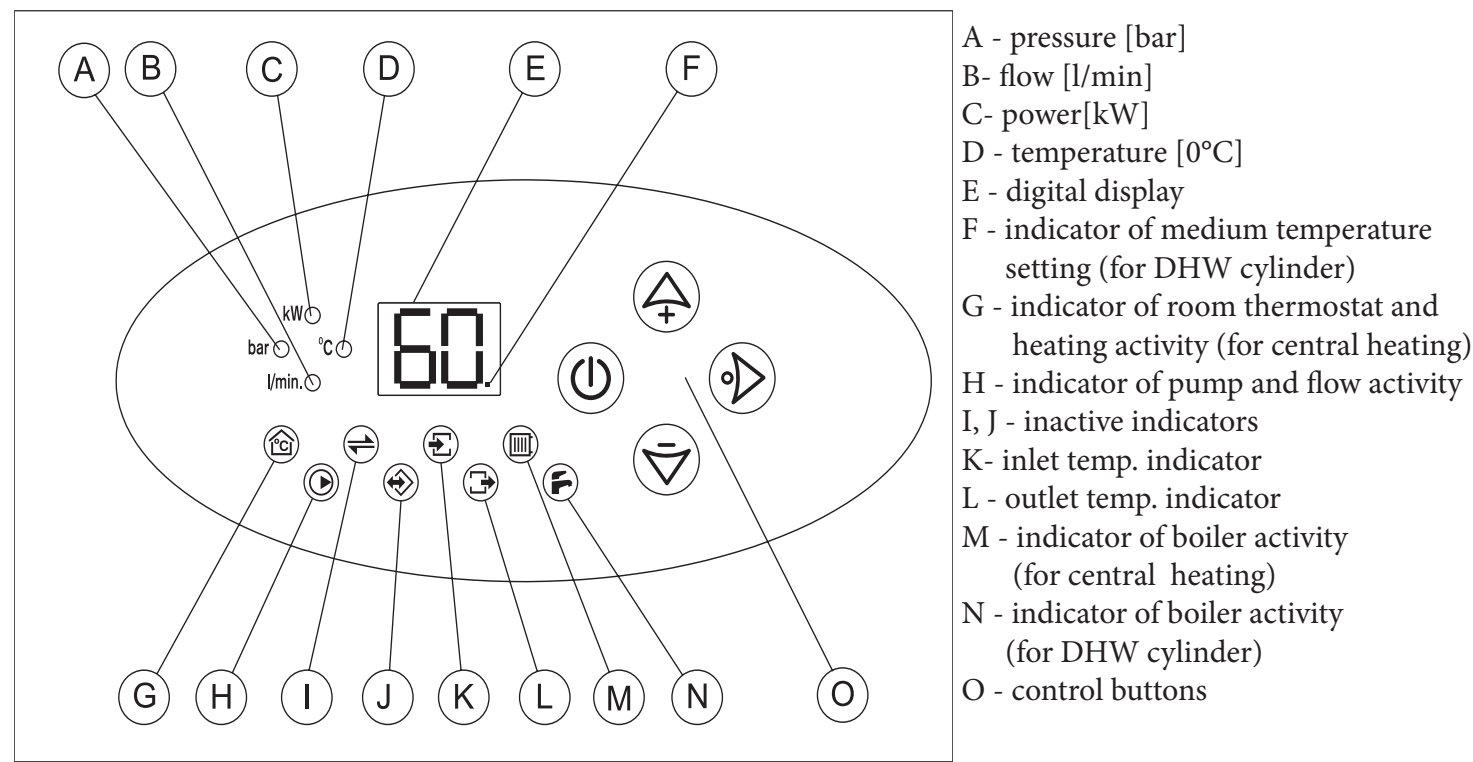
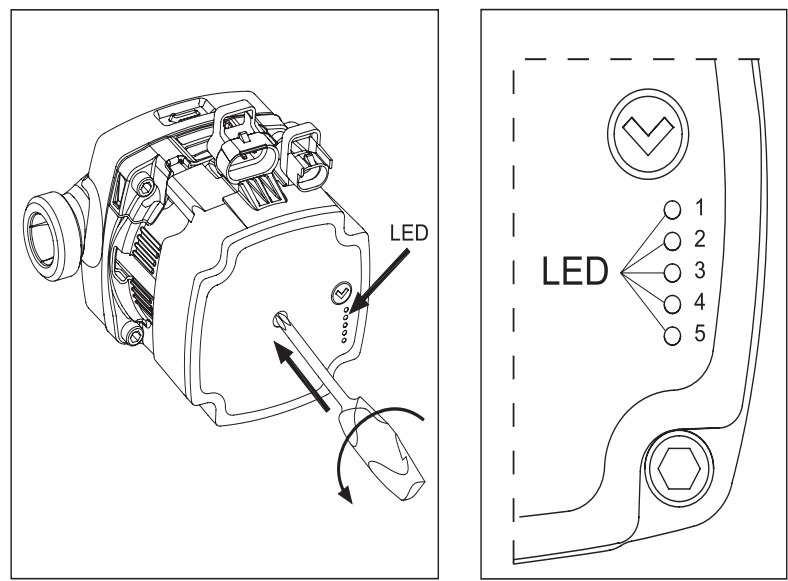


Table 2. Icons and indicators

| Indicator | Status     | Details                                                                                                                                       |
|-----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|           | on         | room thermostat calling for heat                                                                                                              |
|           | off        | room temperature has been achieved (boiler inactive)                                                                                          |
|           | flashing   | shower sensor activated appliance inactive (NA connection is open)                                                                            |
|           | on         | pump is running, minimum system flow rate has been achieved                                                                                   |
|           | flashing   | insufficient flow rate (failure condition), (boiler inactive)                                                                                 |
|           | red        | boiler operating (boiler inactive)                                                                                                            |
|           | green      | system temp has been achieved (boiler inactive)                                                                                               |
|           |            | temp. in CH system is lower than required but the required room temperature has been reached, RP entry is open, or room thermostat is blocked |
|           | off        | no call for heat                                                                                                                              |
|           | red        | boiler heating (DHW)                                                                                                                          |
|           | green      | DHW temperature achieved (DHW)                                                                                                                |
| A         | flashing   | system pressure is low (below 0,5 bar), boiler inactive                                                                                       |
| E         | dashes     | parameter out of range or a temp. sensure failure                                                                                             |
| K i L     | flickers   | relevant temperature sensor failure                                                                                                           |
| E         | EE message | data record error                                                                                                                             |

# 7. Circulation pump settings

Pic 11. Circulation pump deblock



In the case of blocking the pump impeller due to a long layover out of heating season and simultaneous non-compliance with the recommendation to leave the driver in this period in a parking mode, please restore proper movement of the impeller. To do this, please use PH2 screwdriver, press and turn the screw left, located in the middle of the front panel of the pump. The pump impeller should be unblocked then.

Table 3. Circulation pump settings

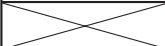
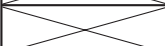
| Rated power [kW]                                                                    | Pump lifting height [m] | LED 1 red | LED 2 yellow | LED 3 yellow | LED 4 yellow | LED 5 yellow |
|-------------------------------------------------------------------------------------|-------------------------|-----------|--------------|--------------|--------------|--------------|
|  | 4                       | ●         | ●            |              |              |              |
|  | 5                       | ●         | ●            |              | ●            |              |
| 4 - 9                                                                               | 6                       | ●         | ●            |              | ●            | ●            |
| 12 - 24                                                                             | 7                       | ●         | ●            |              |              | ●            |

Table 4. Pump's faulty modes

| Indication             | LED 1 red | LED 2 yellow | LED 3 yellow | LED 4 yellow | LED 5 yellow | Counter action                                   |
|------------------------|-----------|--------------|--------------|--------------|--------------|--------------------------------------------------|
| No supply voltage      |           |              |              |              |              | Control the supply voltage<br>Check fuse pumps   |
| Zablokowany rotor      | ●         |              |              |              | ●            | Deblock the shaft.                               |
| Supply voltage too low | ●         |              |              | ●            |              | Control the supply voltage                       |
| Electrical error       | ●         |              | ●            |              |              | Control the supply voltage.<br>Exchange the pump |

## 8. Parts list.

Table 5. Parts list

| Pos. | Service code | Picture number    | Name                                             | Quantity (pcs) | Notice |
|------|--------------|-------------------|--------------------------------------------------|----------------|--------|
| 1    | 01914        | EKD07-02.05.00    | Cover EKD07                                      | 1              |        |
| 2    | 01928        |                   | Control panel EKD07 EHC                          | 1              |        |
| 3    | 01878        | EKD07-03.00.00/06 | Heating box EKD07 EHC 6 kW/240V~                 | 1              |        |
|      | 01879        | EKD07-03.00.00/07 | Heating box EKD07 EHC 9 kW/240V~                 | 1              |        |
|      | 01880        | EKD07-03.00.00/08 | Heating box EKD07 EHC 12 kW/240V~                | 1              |        |
|      | 01881        | EKD07-03.00.00/09 | Heating box EKD07 EHC 14,4 kW/240V~              | 1              |        |
| 4    | 01394        | WT3a-00.00.00/06  | WT3 EKD                                          | 1              |        |
| 5    | 01912        | 01.032.0021.0     | Thermal cut-out EKD07                            | 1              |        |
| 6    | 01908        |                   | Power board EKD07 (without pipe connection)      | 1              |        |
| 7    | 01910        | 01.118.0029.0     | Temperature sensor EKD07                         | 1              |        |
| 8    | 01194        |                   | Pressure sensor EKCO.L2                          | 1              |        |
| 9    | 01890        | UR 012 231        | C.H. expansion vessel EKD                        | 1              |        |
| 10   | 01766        |                   | Pump UPM3 Flex AS 15-70 130 AZJ                  | 1              |        |
| 11   | 01892        | V4043H1056        | Electric valve EKD07 EHC                         | 2              |        |
| 12   | 01195        |                   | Differential pressure valve 3/4"                 | 1              |        |
| 13   | 01895        | 01.310.0069.0     | Pipe cross G3/4                                  | 1              |        |
| 14   |              |                   |                                                  |                |        |
| 15   | 01900        | EKD07-04.02.00    | Distributor pipe EKD07 EHC                       | 1              |        |
| 16   | 01882        | EKD07-04.01.00    | Power board connection EKD07 EHC                 | 1              |        |
| 17   | 01888        | EKD07-04.09.00    | Filter set connection EKD07 EHC                  | 1              |        |
| 18   | 01887        | EKD07-04.06.00    | Pump connection EKD07 EHC                        | 1              |        |
| 19   | 01883        | EKD07-04.03.00    | Flow c.h. connection EKD07 EHC                   | 1              |        |
| 20   | 01885        | EKD07-04.05.00/01 | Return c.h. connection EKD07 EHC                 | 1              |        |
| 21   | 01899        |                   | Coil connection EKD07 EHC                        | 1              |        |
| 22   | 01893        | DN20 200.720111N  | Flow sensor DN20 EKD                             | 1              |        |
| 23   | 01897        | 01.315.0023.0     | Drain valve with 1/2" hoose connection EKD07 EHC | 1              |        |
| 24   | 01889        | Z-245             | Reduction connection G1-G3/4                     | 1              |        |
| 25   | 01915        | WP-054/15         | Gasket 1,5x21x30                                 |                |        |
| 26   | 01917        | WP-054/10         | Gasket 1,5x13x18,6                               |                |        |
| 27   | 01916        | WP-054/12         | Gasket 1,5x16x24                                 |                |        |
| 28   | 00647        |                   | Gasket 2x30x21                                   | 2              |        |
| 29   | 01904        | 01.314.0001.0     | Clamping ring connex 22                          |                |        |
| 30   | 01918        | Z-235             | Nut Z-235                                        |                |        |
| 31   | 01891        | R1012 228         | D.H.W. expansion vessel EKD                      | 1              |        |
| 32   | 01896        | 01.310.0063.0     | Tee pipe G3/4                                    | 1              |        |
| 33   | 01906        | EKD07-01.00.00    | Cylinder EKD07                                   | 1              |        |
| 34   | 01907        | EKD07-00.01.00    | Cylinder isolation EKD07                         | 1              |        |
| 35   | 01909        | Z-335             | Plug 7/4" EKD07                                  | 1              |        |
| 36   | 01919        | Z-185             | Reduction connection G3/4 - G1/2                 | 1              |        |
| 37   | 01886        | EKD07-04.05.00/02 | Cold water D.H.W. conection EKD07 EHC            | 1              |        |
| 38   | 01884        | EKD07-04.04.00/01 | Hot water D.H.W. conection EKD07 EHC             | 1              |        |
| 39   | 01920        | WP-209            | Gasket 1,5x21x30                                 |                |        |
| 40   | 01901        | EKD07-04.14.00    | Safety connection EKD07 EHC                      | 1              |        |
| 41   | 01905        | 01.300.0027.0     | Tundish 15/22                                    | 1              |        |
| 42   | 01911        | 01.303.0023.0     | Temperature-pressure valve 7bar/90               | 1              |        |
| 43   | 01902        | WM-277/02         | Outlet safety connection EKD07 EHC               | 1              |        |
| 44   | 01894        |                   | Safety valve 1/2" 3bar EKD07 EHC                 | 1              |        |
| 45   | 01903        | 01.314.0002.0     | Clamping ring connex 15                          |                |        |
| 46   | 01921        | Z-046b            | Nipple G1/2"                                     |                |        |
| 47   | 01898        | EKD07-04.13.01    | Overflow pipe EKD07 EHC                          | 1              |        |
| 48   | 00001        | 01.305.0004.0     | Automatic air-vent valve EPCO / EKCO             | 1              |        |
| 49   | 00253        | WP-54/02          | Gasket 1,5x8x14,8                                |                |        |

| Pos. | Service code | Picture number    | Name              | Quantity (pcs) | Notice |
|------|--------------|-------------------|-------------------|----------------|--------|
| 50   | 01922        | EKD07-02.04.00    | Upper cover EKD07 | 1              |        |
| 51   | 01925        | EKD07-02.03.00    | Back cover EKD07  | 1              |        |
| 52   | 01924        | EKD07-02.06.01/02 | Left cover EKD07  | 1              |        |
| 53   | 01923        | EKD07-02.06.01/01 | Right cover EKD07 | 1              |        |
| 54   | 01926        | EKD07-02.02.00    | Upper frame EKD07 | 1              |        |
| 55   | 01927        | EKD07-02.01.00    | Base EKD07        | 1              |        |

## 8. Technical parameters

Table 6. Technical parameters.

| Electric boiler Comet Combi                  |     |                                     |       |      |      |
|----------------------------------------------|-----|-------------------------------------|-------|------|------|
| Electrical Supply                            |     | 230V~50Hz                           |       |      |      |
| Rated power                                  | kW  |                                     | 9     | 12   | 14,4 |
| Rated current                                | A   |                                     | 39    | 52   | 63   |
| Minimum Permitted Cable Diameter             |     |                                     | 10 mm | 16mm |      |
| Primary system pressure relief valve setting | bar | 3                                   |       |      |      |
| Primary system operating pressure (min)      | bar | 1,0                                 |       |      |      |
| Thermal cut-out                              | °C  | t.cut-out 90-99                     |       |      |      |
| Expansion vessel                             |     | Capacity 12L - Pre-charged 1,50 bar |       |      |      |
| Outlet flow temperature                      | °C  | 40 ÷ 85                             |       |      |      |
| Bypass valve                                 | kPa | Nastawa : 01 ÷ 50                   |       |      |      |
| Primary circulating pump                     |     | Grundfos UPM3                       |       |      |      |
| Safety valve                                 | bar | Opening pressure: 3bar              |       |      |      |
| Hydraulic connections                        |     | 22 mm Connections                   |       |      |      |
|                                              |     |                                     |       |      |      |
| CYLINDER DETAILS:                            |     |                                     |       |      |      |
| Maximum water supply pressure                | bar | 10                                  |       |      |      |
| Cylinder operating pressure (Secondary)      | bar | 3                                   |       |      |      |
| Cylinder operating pressure (Primary Max)    | bar | 2,5                                 |       |      |      |
| Cylinder operating pressure (Secondary Max)  | bar | 5,5                                 |       |      |      |
| Thermostat                                   | °C  | 5 ÷ 66 °C                           |       |      |      |
| Tank capacity                                | l   | 140                                 |       |      |      |
| Temperature-pressure valve                   |     | 95 °C / 6bar TP152 - 1/2            |       |      |      |
| Expansion vessel                             |     | 3 bar (charge pressure )            |       |      |      |
| Hydraulic connections                        |     | Copper pipe ø 22 x 1                |       |      |      |
| Optional Immersion Heater                    |     | 3000W 240 V                         |       |      |      |
| Weight                                       | kg  | Net                                 | 106,8 |      |      |
|                                              |     | Gross                               | 246   |      |      |
| Dimensions                                   | mm  | 1745 x 580 x 630                    |       |      |      |



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