ComBi-*line*

CB 1x5(W)	CB 2x5 (W)	CB5 (W)
CB 1x10(W)	CB 2x10(W)	CB10(W)
CB 1x20(W)	CB 2x20(W)	CB20(W)
CB 1x40	CB 2x40	CB40

Service enclosure

Animo

Table of contents service enclosure

1.   ComBi-line coffee making system

Applies for CB 5, CB 5 W, CB 10, CB 10 W, CB 20, CB 20 W

A. maximum electrode
B. mass electrode
C. minimum electrode
D. flow meter
E. filling valve
F. flow heating element
G. foil heating element

Fig. 1   Working principle of coffee maker

1.1   Working principle coffee making system

Put the ON/OFF switch to I to turn the appliance on. The display lights up and shows the standard choices. Press one of the selection buttons and then the START-button.
The solenoid valve (fig.1E) opens and the cold water reservoir is filled to the maximum electrode (fig. 1A). Then the solenoid valve closes and two of the three flow heating elements are switched on (fig. 1F). If the maximum electrode (fig. 1A) is detached, the third element is switched on. This way of starting is called SOFT START and is used to start the flow process more gently.
A number of seconds after the maximum electrode is detached, the solenoid valve opens again until the water level has reached the maximum electrode again. The amount of water that has flowed in is continuously measured by the flowmeter (fig. 1D). If the set amount of water is reached, the solenoid valve closes and the water level drops. If the minimum electrode is detached, the flow heating element is switched off and the leak out time becomes active. The coffee runs from the filter unit through the coffee blender into the container where it is kept warm by the heating element (fig. 1G). The amount of coffee can be measured using the gauge glass. The coffee can be poured into cups or jugs using the no-drip tap.

1.2   Descale indicator

The coffee maker is equipped with a descale indicator.

The local water hardness can be set in the settings menu.

Using the table in the user guide, the water hardness can be converted to a certain water volume after which it must be descaled. If the set amount of water has flowed through the system a spanner symbol will appear in the display and the system can be descaled at a suitable moment.

In the operator menu the user can easily see how far away from a descaling signal the machine is. The coffee making system also has a separate descaling program that the user can execute by loading it.

1.3   Safety devices

The coffee making system comes with a swivel arm and container detector.

The following technical problems cause the system to be switched off. In that case an ERROR code report appears in the display followed by 3 long beeps.

- The maximum level is not reached within 40 seconds of the brewing process being switched on.
- The flowmeter does not indicate whether or not the solenoid valve has been opened.
- The minimum electrode is interrupted during the brewing process.

2. ComBi-line Hot water system

Applies for CB 5 W, CB 10 W, CB 20 W
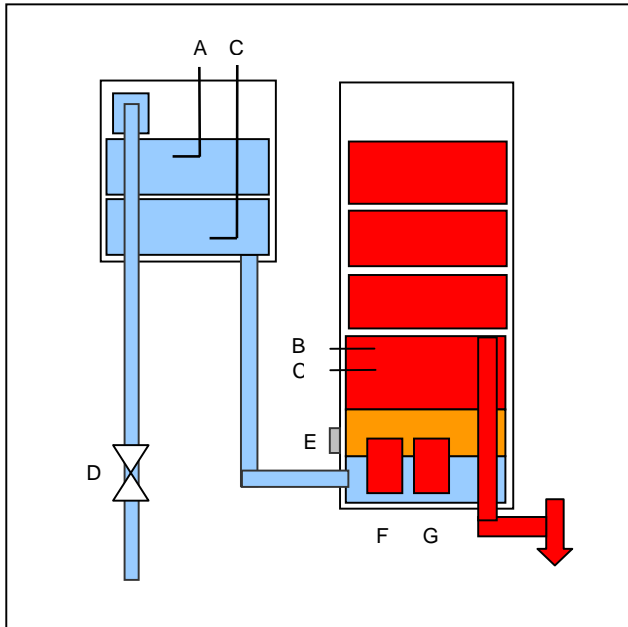
A. maximum electrode
B. minimum electrode
C. mass electrode
D. filling valve
E. NTC sensor
F. heating element
G. heating element

Fig. 2   Working principle of the hot water system

2.1   Working principle hot water system
Put the ON/OFF switch to I to turn the appliance on. The display lights up and shows the standard choices. Press the hot water system on/off button.
The solenoid valve (fig. 2D) is driven and the cold water reservoir is filled to the minimum electrode (fig. 2B) and keeps on filling for 30 more seconds. Depending on the setting, a flashing tap symbol or temperature indication appears in the display. The heating element (fig. 2) is switched on. The second element (fig. 2G) is switched on after a delay of a few seconds.
When the temperature sensor (fig. 2E) measures a temperature that is 1°C off the temperature setting, the first heating element (fig. 2G) is switched off again. When the set temperature is reached the second heating element (fig. 2F) is switched off. The whole boiler is filled in small charges and heats (see Working principle charge fill/heating system) until the maximum electrode (fig. 2A) is reached.

2.2   Draining hot water
The hot water can be drained using the hot water drainage tap. The water reservoir is automatically refilled (in charges) and kept at temperature. The maximum electrode has a small filling delay so that the electrode always has sufficient contact with the water. Also, when the electrode no longer in contact with the water level, it will be refilled with a short delay.

2.3 Charge filling/heating system

The heating system works according to the so-called charge filling/heating system. This means that after a drawing off a (large) quantity of hot water the boiler is not filled with cold water in one go, but in smaller charges. The boiler fills for a maximum of 30 seconds with fresh water (approx. 0.75 litres). This water is first heated to the set temperature. The boiler continues this 30 sec filling /heating cycle until the boiler is completely full. Using this system enables the user to have (some) hot water again in a short time.

2.4 Switching on the continuous heating function

The hot water temperature can be changed in the settings menu. The maximum temperature that can be set is 97°C. An extra feature is the 97+ setting. This heats the boiler for an extra period of time in order to make better water for tea. If the 97+ continuous heating function is set, then the heating element (fig. 2F) stops when 96° is reached. After the boiler water has reached 97°C the heating element (fig. 2G) keeps on heating for an extra time period*, and then switches off.

*Continued heating CB5W = 50 seconds / CB10W + CB20W = 100 seconds *(Continued heating times yet to be confirmed)*

The continuous heating function only starts working:

- after the last charge filling has occurred.
- if hot water has been drawn off and fresh water has been added.

WARNING

The hot water system moisture outlet can be found on the top of the column.
Steam can escape through this opening during normal heating and heating with the continuous heating function (97+) switched on! Do not touch the moisture outlet. There is a danger of burning.

2.5 Switching on the temperature display

The tap symbol that appears in the display when the hot water system is switched on can be replaced by the hot water temperature in the settings menu.

2.6 Descale indicator

The hot water system is equipped with a descale indicator.
The local water hardness can be set in the settings menu.
Using the table in the user guide, the water hardness can be converted to a certain water volume after which it must be descaled. If the set amount of water has flowed through the system a spanner symbol will appear in the display. The system can be descaled at a suitable moment.
In the settings menu the user can easily see haw far away from a descaling signal the system is. The hot water system also has a separate descaling program that the user can execute by loading it.

2.7 Safety devices

The following technical problems cause the heating elements and the solenoid valve to be switched off and an ERROR code report to appear in the display followed by 3 long beeps.

- When the solenoid valve is open for longer than is normally the case
- If the maximum level is not reached after 10 minutes of the hot water system being activated.
- When the temperature sensor gives an invalid value.
- When the heating elements stay on for longer than 20 minutes.
- When the minimum electrode is interrupted during the heating process.

3.   The service menu

This chapter describes how the different settings can be changed by **trained, qualified service personnel**. To gain access to the **service menu** read below. Once you entered the service menu the control panel has the following functions:

Button ⊙ selection arrow ➡ up

Button ⊙ selection arrow ➡ down

Button ❌ back (without saving changes)

Button ✅ accept (activate)

Menu functions

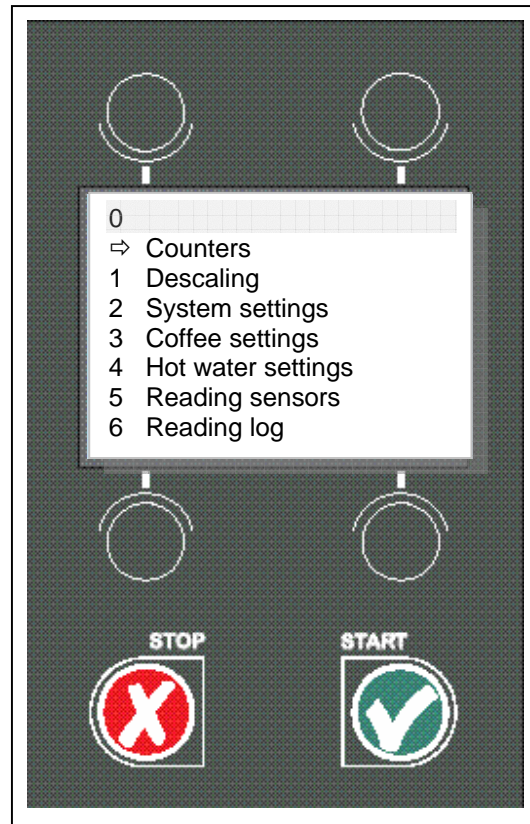You have access to a number of **extra** maintenance functions, as well as the standard operator menu functions (see user guide), via the service menu. It is possible to select the following functions:

Menu	Explanation of Operator menu	
0	Counters	see 3.1
1	Descaling	see 3.2
2	System settings	see 3.3
3	Coffee settings	see 3.4
4	Hot water settings	see 3.5
5	Reading sensors	see 3.6
6	Reading log	see 3.7
7	Erase log	see 3.8
8	Load defaults	see 3.9

How do you get access to the service menu?
1. Switch the appliance off (0)
2. Hold the START button (fig.   ) and switch the ON / OFF switch (fig.   ) to (I) .
3. Release the START button when the display lights up. In the display appears: **Operator menu. Press any button.**
4. Press any button. In the display appears: **Enter PIN: _ _ _ _ _.**
5. Look up the associated 5 digit PIN and enter it using the numbered buttons in the display. Please note: the code number is produced at random, so the PIN is always different!
6. After entering the PIN, the **service menu** will light up in the display.

0
⇨ Counters
1 Descaling
2 System settings
3 Coffee settings
4 Hot water settings
5 Reading sensors
6 Reading log

STOP   START

Code no.	PIN code service menu				
1	4	1	2	1	4
2	2	1	4	1	1
3	4	4	4	1	3
4	1	4	1	3	4
5	2	4	3	3	3
6	3	4	4	4	1
7	4	1	1	1	4
8	4	3	2	2	4
9	2	3	2	2	4
10	1	1	4	3	4
11	4	2	1	1	1
12	3	4	4	1	1
13	1	2	1	3	3
14	4	2	2	2	3
15	2	4	2	4	3
16	3	4	3	1	2
17	3	3	1	3	1
18	2	3	2	2	2
19	2	1	2	2	4
20	2	3	1	4	3

3.1 Counters (menu 0)

<u>All</u> counters can be reset in the service menu.
The coffee system count is kept by the flowmeter. The hot water system counter is kept by the 'open' time of the hot water filling valve.

Menu	Explanation of counter items
0.0	daily counter of coffee made in litres
0.1	reset daily counter coffee
0.2	total counter of coffee made in litres
0.3	reset total counter coffee
0.4	daily counter of hot water in litres
0.5	reset daily counter hot water
0.6	total counter hot water in litres
0.7	reset total counter hot water

Via the system settings (menu 2) the different counter reset functions in the operator menu
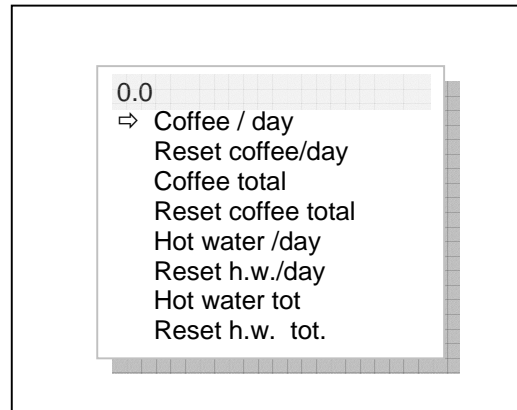can be turned on or off.

Fig. 3 Counters

3.2 Descaling (menu 1)

Besides the standard operator functions this menu contains two extra features:
Reset flow counter 1.1
You can reset the flow counter here without running the descaling program.
Reset hot water counter 1.4
You can reset the hot water counter here without running the descaling program.

You can also start the descaling program from this menu. It works in the same way as the operator descaling program, except thatthe program can be interrupted at any moment.
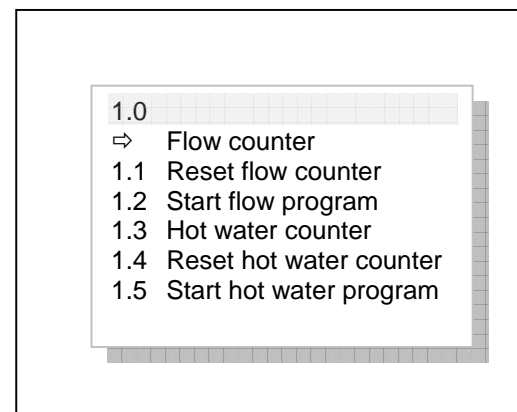

Fig. 4 Descaling

3.3 System settings (Menu 2)

Besides the standard operator functions this menu contains two extra features:
I/0 reset D. Counter (menu 2.4)
In the operator menu counters are in the *Reset coffee/day-* and *Reset hot water/day-*function <u>as standard</u>.
By de-activating (no) this function, the daily counter reset function disappears from the operator menu.
I/0 reset T. Counter (menu 2.5)
In the operator menu there are <u>no</u> counters in the *Reset coffee total* and *Reset hot water total* function.
The total counter reset function is added to the operator menu by activating (yes) this function.
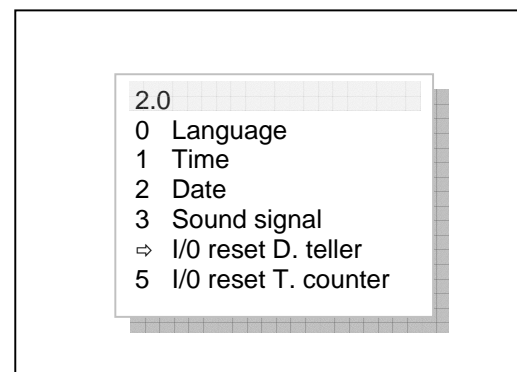

Fig. 5 System settings menu

3.4 Coffee settings (menu 3)

Besides the standard operator functions this menu contains 6 extra features:

Menu	Explanation of coffee system items	
3.0	Water volume	see *
3.1	Unit	see *
3.2	Cup volume	see *
3.3	Jug volume	see *
3.4	Button 1	see *
3.5	Button 2	see *
3.6	Button 3	see *
3.7	Button 4	see *
3.8	Auto container heating	see *
3.9	De-scale indicator	see 3.4.1
3.10	Coffee dosage	see *
3.11	Interval	see *
3.12	1st charge	see *
3.13	Leak out time	see *
3.14	Priority function	see 3.4.2
3.15	Swivel arm sensors	see 3.4.3
3.16	Container sensors	see 3.4.4
3.17	Auto continuous start	see 3.4.5
3.18	Continuous start time out	see 3.4.6
3.19	Show flowmeter	see 3.4.7

* see user guide operator menu

3.4.1 De-scale indicator
If there is a water treatment filtering system through which the water can be brought to the ideal hardness of approx. 5°D, it can be desirable to switch off the de-scale indicator. The signaling can be switched off by setting the de-scale indicator to 0 liters.
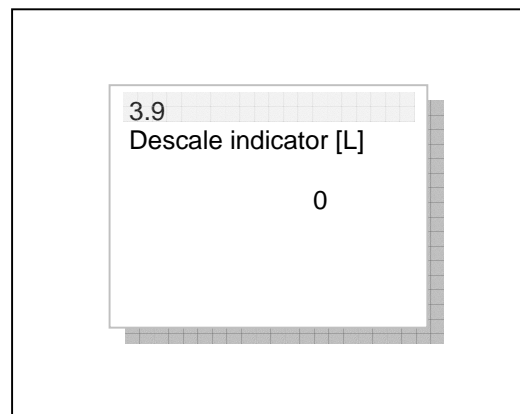
Fig. 6 Coffee brewing descale indicator

3.4.2 Priority circuit function (menu 3.14)

The heating of the hot water system will not work at the same time as the continuous flow water heating when this function is activated.
- The priority function is switched off as standard.
- Once the priority circuit function has been activated it will <u>not</u> be switched off by activating the default values (Load defaults menu 5) in the operator menu.
- Once the priority circuit function has been activated it <u>will</u> be switched off by activating the default values (Load defaults menu 8) in the service menu.
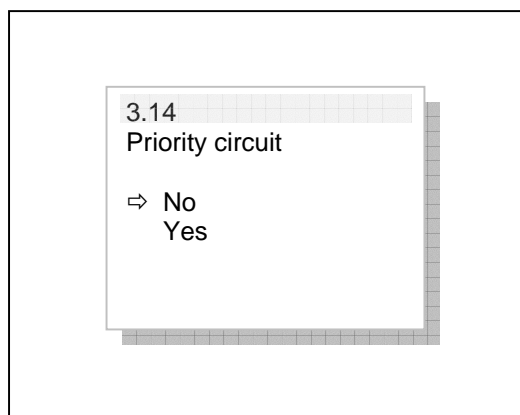
Fig. 7 Priority function

WARNING!
- Switched off sensors can lead to dangerous situations.
- The manufacturer accepts no responsibility for the consequences of changed settings

3.4.3 Swivel arm sensors (menu 3.15)
Use this function to (temporarily) deactivate the swivel arm sensors during maintenance work.

3.4.4 Container sensors (menu 3.16)
Use this function to (temporarily) deactivate the container sensors during maintenance work.
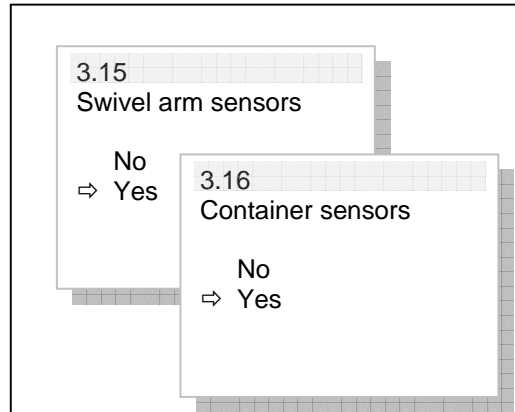

Fig. 8 Swivel arm sensors / Container sensors

3.4.5 Auto continuous start (Menu 3.17)
The coffee brewing process will not be lost in the event of a power cut.
The pc board will remember the stage of the coffee brewing process in the event of a power cut, or if the swivel arm and/or container is moved out of position. For safety reasons this is brought to the user's attention by a beeping signal and the brewing process will only be restarted after the START button (v) has been pressed.

If this is not required, you can activate (yes) the auto continuous start function. The brewing process will be restarted automatically once a power cut has been restored. Re-positioning the swivel arm and/or container will also restart the brewing process automatically.
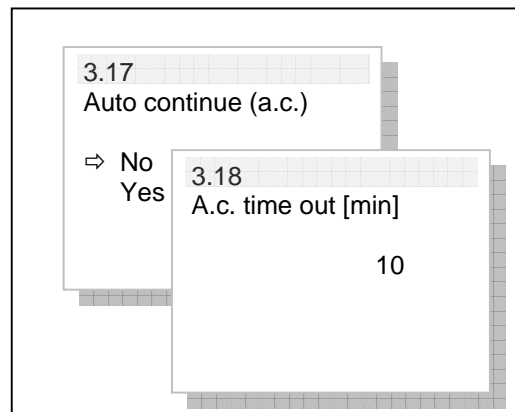

Fig. 9 Auto continuous start / continuous start time out

3.4.6 Continuous start time out (menu 3.18)

You can use the continuous start time out to set the maximum time in which the brewing process can be restarted. If the set time out time elapses, there is no automatic continuous start and the brewing process can be considered lost.

- The default continuous start time out is set to 10 minutes and has a scope of 0 to 30 minutes in steps of 1 minute.

3.4.7 Show flow meter (menu 3.19)
Use this function to check the flow meter during maintenance work.
If this function is active a rotating stripe will appear in the user menu at the bottom right of the display when the flowmeter (coffee maker) is sending signals to the pc board.
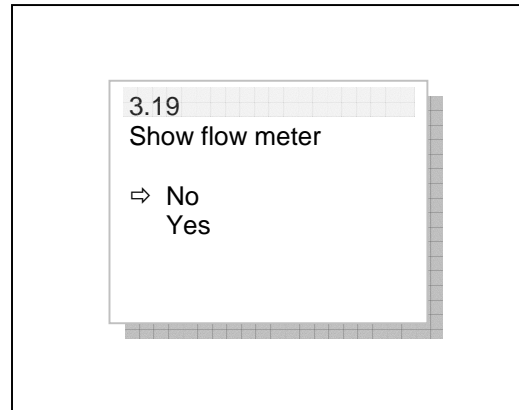
3.5 Hot water settings (menu 4)
There are <u>no</u> extra functions in the service menu

Fig. 10 Show flow meter

3.6 Reading sensors (menu 5)
Use this menu to read the different sensors in a simple way during maintenance work.

3.6.1 Temperature (menu 5.0)
By activating this function you can read the actual boiler temperature.

3.6.2 Sensors level (menu 5.1)
By activating this function you can read the actual status of the following level of sensors:
- Maximum level coffee maker   yes/no
- Minimum level coffee maker   yes/no
- Maximum level hot water system   yes/no
- Minimum level hot water system   yes/no

Fig.11 Reading sensors

3.6.3 Reed contacts (menu 5.2)
By activating this function you can read the actual status of the following reed contacts:
- Swivel arm L   yes/no
- Swivel arm R   yes/no
- Container left   yes/no
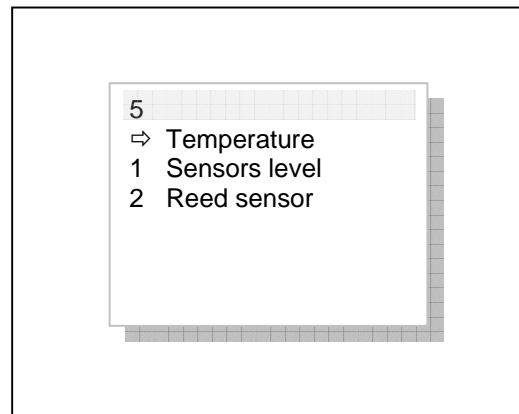- Container right   yes/no

3.7 Read log (menu 6)

During use the last 15 error reports are registered and recorded.

To read these error reports activate the Read log menu (menu 6). The bottom fault registration is always the most recent error report.

The same fault codes appear in the first column as shown in the fault analysis table (see chapter 4). In most cases this is a letter/digit combination.

A double digit combination is a code that only appears in the log menu when loading the basic defaults.

F: 03 LVL: 20   machine defaults loaded
F: 04 LVL: 20   model defaults loaded

The level codes appear in the second column.

LVL	problem level
01	Problem solved, disturbance removed
02	Operator menu
04	Service menu
10	Hardware (NTC/flowmeter/valve)
20	Software
FF	Software registers a fault on pc board

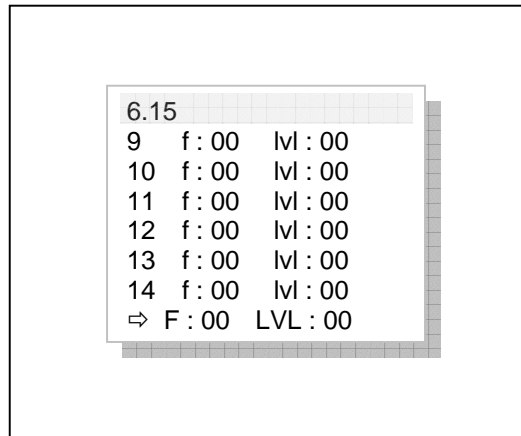### 3.8 Erase log (menu 7)

Use this function to erase the log menu.
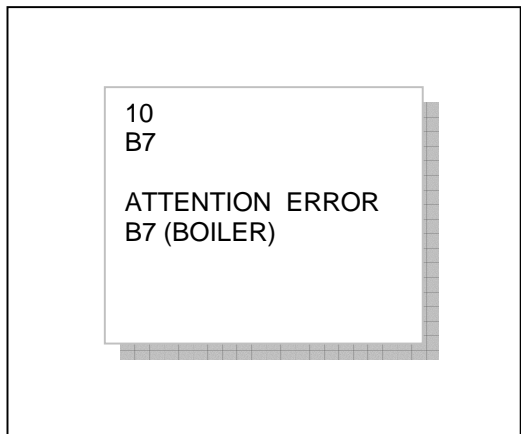

Fig. 12 Load defaults

```
6.15
9    f : 00     lvl : 00
10   f : 00     lvl : 00
11   f : 00     lvl : 00
12   f : 00     lvl : 00
13   f : 00     lvl : 00
14   f : 00     lvl : 00
⇨  F : 00   LVL : 00
```


Fig. 13 Example of an error message

```
10
B7

ATTENTION  ERROR
B7 (BOILER)
```

3.9   Load defaults (menu 8)

Use this function to load the correct model settings (defaults).

Tip:
- From Software V1.5 the CB40 model settings are inside the Eprom.
- Only activate Model E if you want to use a CB5 in combination with 6 liter containers instead of 5 liter coffee containers.

Put in a new pc board as follows:
1. Place the pc board and mounting connectors and plug in the appliance. In the display appears: Load defaults.
2. The factory settings for the model CB 5 are loaded. The software automatically detects if the model is equipped with a hot water system.
3. If it is <u>not</u> a CB5 model go to Load defaults (menu 8) via the **service menu**.
4. Select the required model and confirm your choices with the start button ✔. The language setting is set to English as standard, select another language if required.
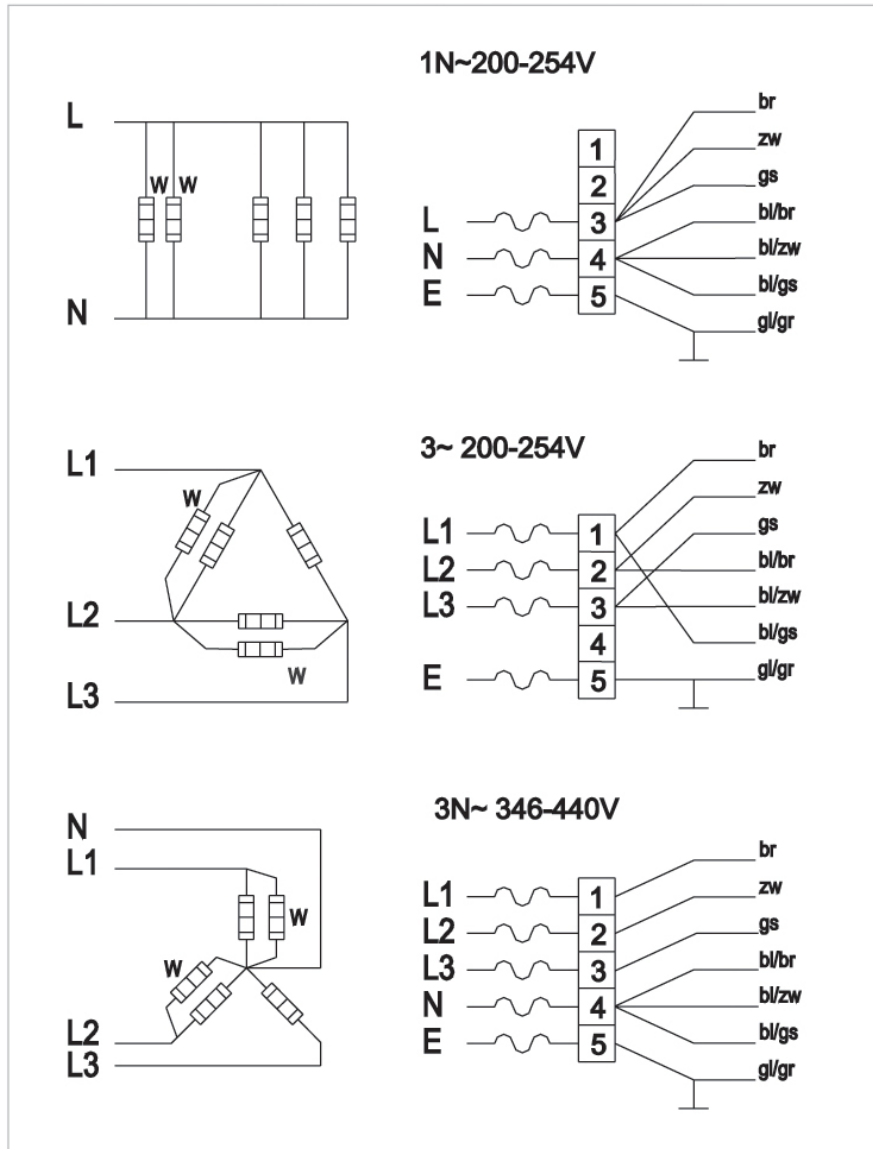

8	
⇨	Model CB5
1	Model CB10
2	Model CB20
3	Model CB40
4	Model E
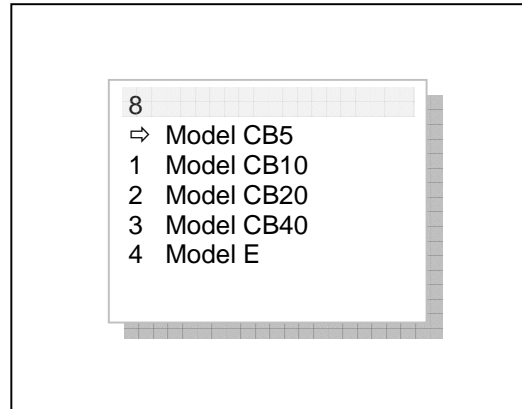
Fig.14 Load defaults

4. Electrical connections

The appliance can easily be adapted to most common main voltages.

*Note: By various changes it is necessary to change the connection cords as well.
There for see the arrays on the next page.*

- br	bruin	brown	Braun	brun
- zw	zwart	black	Schwarz	noir
- gs	grijs	gray	Grau	gris
- bl	blauw	blue	Blau	bleu
- gr	groen	green	Grün	vert
- gl	geel	yellow	Gelb	jaune

Model	Power supply (50-60Hz)			Power Coffee system	Power Boiler system	Power Tot		Current /phase	Fuse	Cable H 05 VV-F	Cable article number
	V			kW	kW	kW		A	A	mm2	
CB5	1	N~	230	3,0	-	3,2		13,9	16	3 x 1,5	02178
	1	N~	240	3,3	-	3,5		14,6	16	3 x 1,5	02178
	3	~	230	3,0	-	3,2		8,0	10	4 x 1,5	02196
	3	N~	400	3,0	-	3,2		4,6	10	5 x 1,5	02196
	3	N~	415	3,3	-	3,5		4,9	10	5 x 1,5	02196
	3	~	440	3,0	-	3,2		4,2	10	4 x 1,5	02196
CB10	1	N~	230	6,0	-	6,2		27,0	32	3 x 4	02253
	1	N~	240	6,5	-	6,7		27,9	32	3 x 4	02253
	3	~	230	6,0	-	6,2		15,6	16	4 x 1,5	02196
	3	N~	400	6,0	-	6,2		9,0	10	5 x 1,5	02196
	3	N~	415	6,6	-	6,8		9,5	10	5 x 1,5	02196
	3	~	440	6,0	-	6,2		8,1	10	4 x 1,5	02196
CB20	1	N~	230	9,0	-	9,2		40,0	50	3 x 4	02253
	3	~	230	9,0	-	9,2		23,1	25	4 x 2,5	02236
	3	N~	400	9,0	-	9,2		13,3	16	5 x 2,5	02236
	3	N~	415	9,8	-	10,0		13,9	16	5 x 2,5	02236
	3	~	440	9,0	-	9,2		12,1	16	4 x 2,5	02236

Model	Power supply (50-60Hz)			Power Coffee system	Power Boiler system	Power Tot		Current /phase	Fuse	Cable H 05 VV-F	Cable article number
	V			kW	kW	kW		A	0	mm2	
CB5 W	1	N~	230	3,0	2,2	5,4		23,5	25	3 x 1,5	02178
	1	N~	240	3,3	2,4	5,9		24,6	25	3 x 1,5	02178
	1	N~	230	3,0	2,2	3,2	#	13,9	16	3 x 1,5	02178
	3	~	230	3,0	2,2	5,4		15,8	16	4 x 1,5	02196
	3	N~	400	3,0	2,2	5,4		7,5	10	5 x 1,5	02196
	3	N~	415	3,3	2,4	5,9		7,9	10	5 x 1,5	02196
	3	~	440	3,0	2,7	5,9		9,2	16	4 x 1,5	02196
CB10 W	1	N~	230	6,0	2,2	8,4		36,5	40	3 x 4	02253
	1	N~	240	6,5	2,4	9,1		37,9	40	3 x 4	02253
	1	N~	230	6,0	2,2	6,2	#	27,0	32	3 x 4	02253
	3	~	230	6,0	2,2	8,4		23,4	25	4 x 2,5	02236
	3	N~	400	6,0	2,2	8,4		11,8	16	5 x 1,5	02196
	3	N~	400	6,0	2,2	6,2	#	9,0	10	5 x 1,5	02196
	3	N~	415	6,6	2,4	9,2		12,5	16	5 x 1,5	02196
	3	~	440	6,0	2,7	8,9		13,2	16	4 x 1,5	02196
CB20 W	1	N~	230	9,0	2,2	9,2	#	40,0	50	4 x 4	02253
	3	~	230	9,0	2,2	11,4		30,9	32	4 x 4	02253
	3	N~	400	9,0	2,2	11,4		16,2	25	5 x 2,5	02236
	3	N~	400	9,0	2,2	9,2	#	13,3	16	5 x 1,5	02196
	3	N~	415	9,8	2,4	12,4		17,0	25	5 x 2,5	02236
	3	~	440	9,0	2,7	11,9		17,1	25	4 x 2,5	02236

= Under condition that the priority circuit is activated.

5. Troubleshooting

| Error message Display	Possible cause	Action
C2 (coffee)	Coffee maker doesn't work. Dry – boil protection switched off.	Reset dry-boil protection coffee making unit (fig. ?). Check to see if the coffee maker needs to be descaled, and descale if necessary.
Service engineer→	Flow element is on for more than twenty minutes.	Check if the coffee maker produces a constant flow of hot water, without being excessive. Descale if necessary
		Check if all 3 phases are live.
		Check the resistance of all three heating elements (flow heater).
		When LED next to CON 10 (main PC board) lights without activated brewing process, replace main PC board
C3 (coffee) I	Coffee maker doesn't fill any more.	Check the water pressure, turn the water supply taps completely open, check if the connecting hose is fastened. Problem solved, error message disappears
Service engineer→	Min. electrode fault; The min. electrode is not reached during the coffee making.	+ check if the inlet valve is working.
C3 (coffee) II	Coffee maker fills too slowly	Check the water pressure, turn the water supply taps completely open, check if the connecting hose is bend.
Service engineer→	Filling time fault; The max. electrode is not reached within 40 seconds of the coffee maker starting.	+ check the water circuit from the inlet valve to the water reservoir for obstructions. Check if the max. electrode is working. Tip; check the working level of the sensors with service menu 5.1
C4 (coffee)	Water inlet valve doesn't close properly.	Call the service engineer or dealer.
Service engineer→	Solenoid valve fault; Flowmeter registers water flow while the inlet valve is electrically closed.	+ check if the inlet valve is working.
C7 (coffee)	Minimum electrode fault;	Call the service engineer or dealer.
Service engineer→	Minimum electrode fault; Min. electrode doesn't see any water, max. electrode does.	Check if the minimum electrode is working. Tip; check the working level of the sensors with service menu 5.1
C8 (coffee)	Error C3 changes to C8 after 10 minutes. The inlet valve is closed for safety. Please note: this also happens when the max level is reached!	Restore water supply and restart the coffee making process.

| Service engineer→	Filling time fault; error C3 changes to Error C8 after 3 minutes. Coffee maker inlet valve closes.	+ check the water circuit from the inlet valve to the water reservoir for obstructions.
C9 (coffee)	Problems with registering the volume of water.	Check the water pressure, turn the water supply taps completely open, check if the connecting hose is bend. Call the service engineer or dealer.
Service engineer→	Flowmeter fault; inlet valve is electrically opened, but the flow meter doesn't register any water flow	Check fuse (4A) on main PC board (fuse is located between connector 1+2)
		Check if the inlet valve and flow meter are working. Tip; check flow meter working with service menu 3.19.
B0 (boiler)	Hot water system temperature sensor problem	Call the service engineer or dealer.
Service engineer→	Temperature fault; NTC sensor registers a temperature lower than 0°C	Check the NTC sensor. Tip; check if the NTC sensor working with service menu 5.0
B1 (boiler)	Hot water system temperature sensor problem	Call the service engineer or dealer.
Service engineer→	Temperature fault; NTC sensor registers a temperature higher than 108°C	Check the NTC sensor. Tip; check if the NTC sensor working with service menu 5.0
B2 (boiler)	Hot water system doesn't heat up. Dry heating safety switched off.	Reset dry boil protection coffee making part. Check to see if the hot water system needs to be descaled, and descale if necessary.
	Hot water system heats up longer than usual (keeps heating)	Possibly because of limescale forming on the boiler wall. Check to see if the hot water system needs to be descaled, and descale if necessary.
Service engineer→	Flow element is on for more than twenty minutes.	+ Check if the NTC sensor is fixed to the boiler wall. Descale if necessary.
		Check if all 3 phases are live.
		Check the resistance of the boiler heating elements.
		When LED next to CON 11 (main PC board) lights without activated boiler, replace main PC board.
B3 (boiler)	Hot water system fills too slowly. Error C3 changes to C8 after approx. 10 minutes.	Check the water pressure, turn the water supply taps completely open, check if the connecting hose is bend. Restart the hot water system.
Service engineer→	Filling time fault; The max. electrode is not reached within 120 seconds of the hot water system being switched on.	+ check the connecting hose between the cold and hot reservoir. Check the water circuit from the inlet valve to the water reservoir for obstructions. Tip; check the working level of the sensors with service menu 5.1

B7 (boiler)	Minimum electrode fault;	Call the service engineer or dealer.
Service engineer→	Minimum electrode fault; Min. electrode doesn't see any water, max. electrode does.	Check if the minimum electrode is working. Tip; check the working level of the sensors with service menu 5.1
		Check hose connection between cold- and hot water reservoir for air bubbles or other obstructions.
B8 (boiler)	Hot water system fills too slowly. The inlet valve is closed for safety.	Check the water pressure, turn the water supply tap completely open, check the connecting hose on bends. Restart the hot water system.
Service engineer→	Filling time fault; Max. electrode has not been reached within approx. 10 minutes. Hot water system inlet valve closes.	Check the connecting hose between the cold and hot reservoir. Check the water circuit from the inlet valve to the water reservoir for obstructions.
E0	Problem taking the temperature of hot water system	Call the service engineer or dealer.
Service engineer→	No NTC sensor is detected.	Check the NTC sensor. Tip; check the NTC sensor working with service menu 5.0
E1	Problem taking the temperature of hot water system	Call the service engineer or dealer.
Service engineer→	NTC sensor is closed short-circuited	Check the NTC sensor. Tip; check if the NTC sensor working with service menu 5.0

6. Maintenance instructions
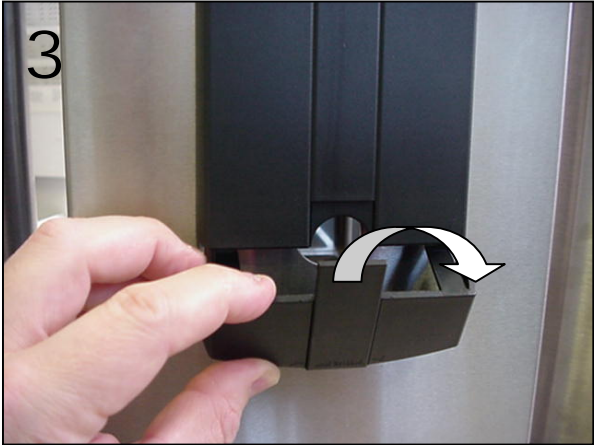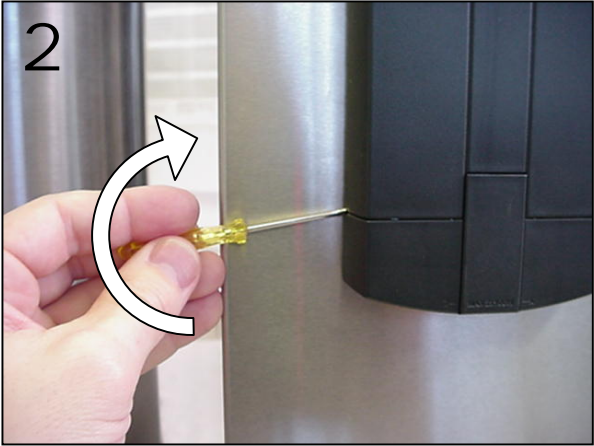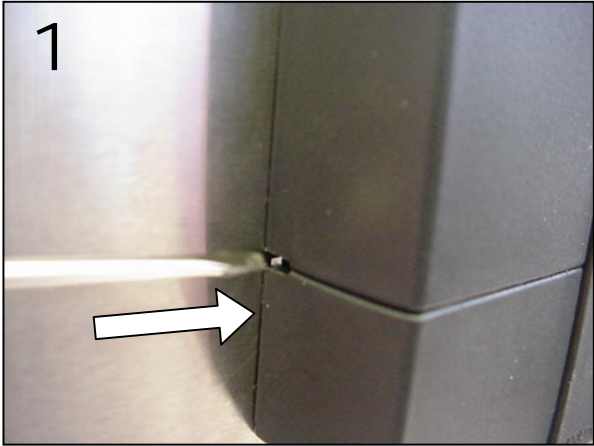
6.1 Swivel arm stop adjustment
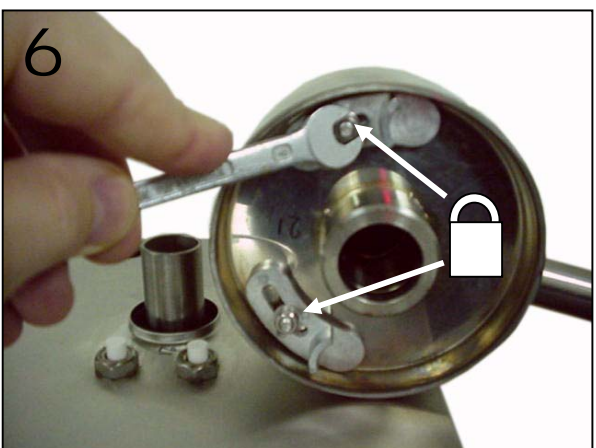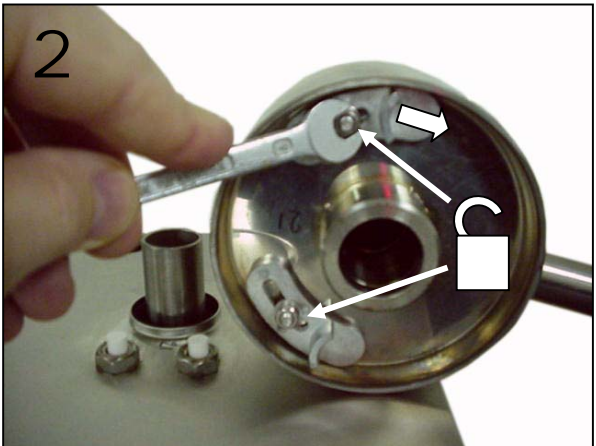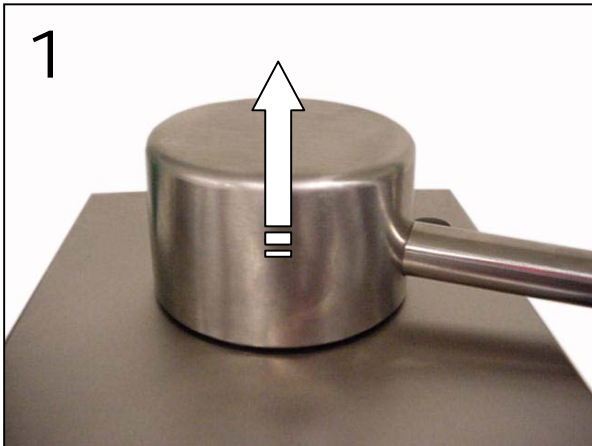
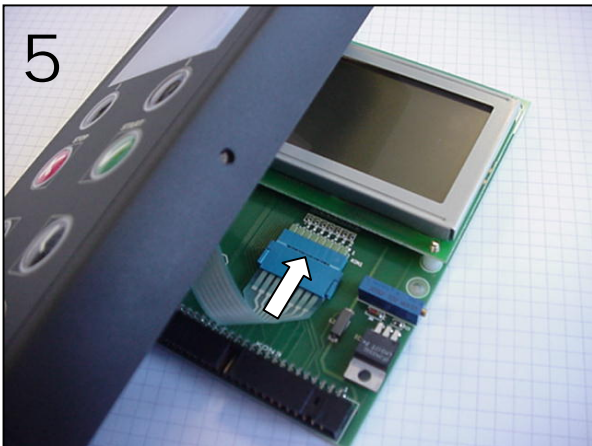**6.2   Opening of the hot water tank (CB-W)**
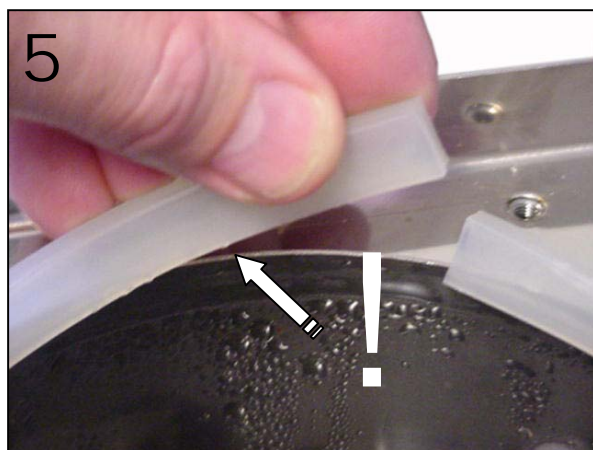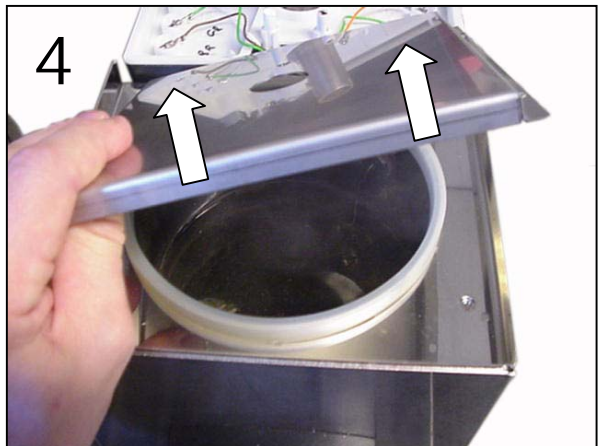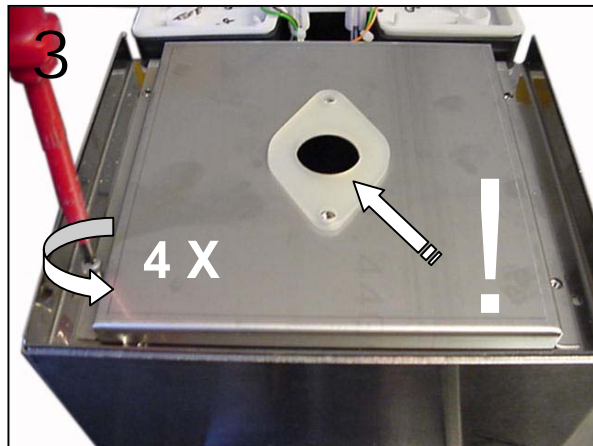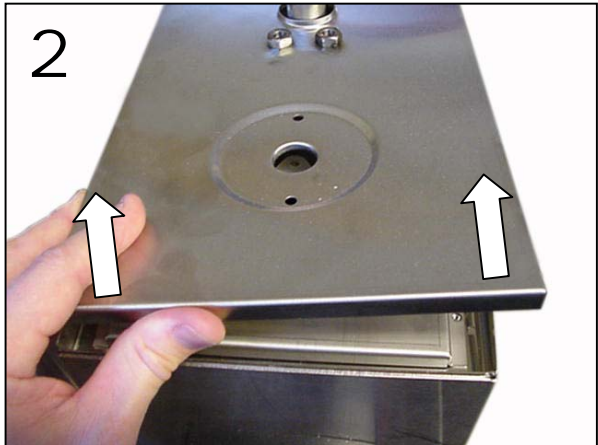
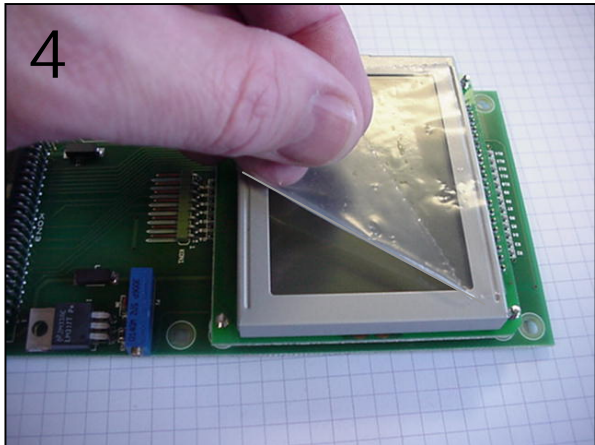**6.3   Replace reed sensors and level probes**
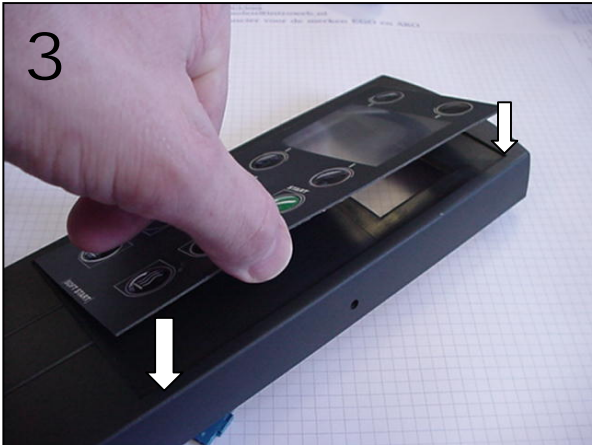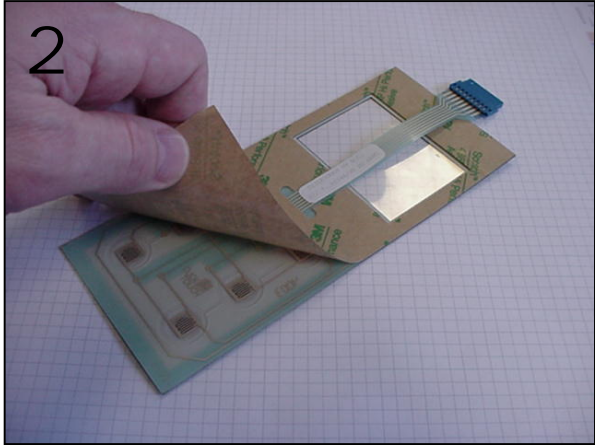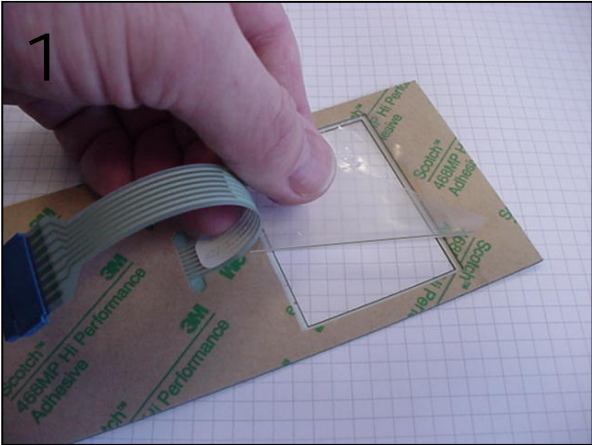

1a

CB-W

1b

CB

2

3

4

5
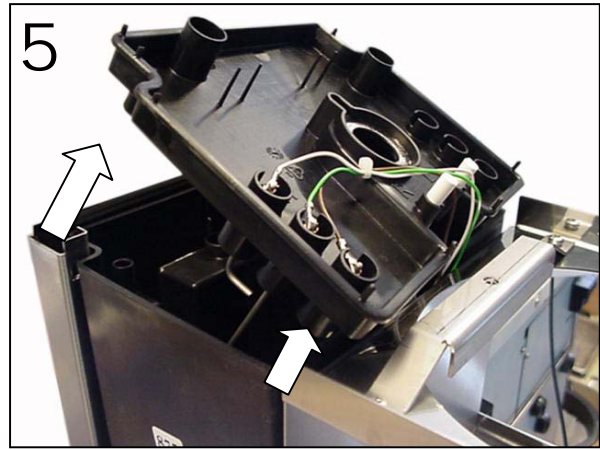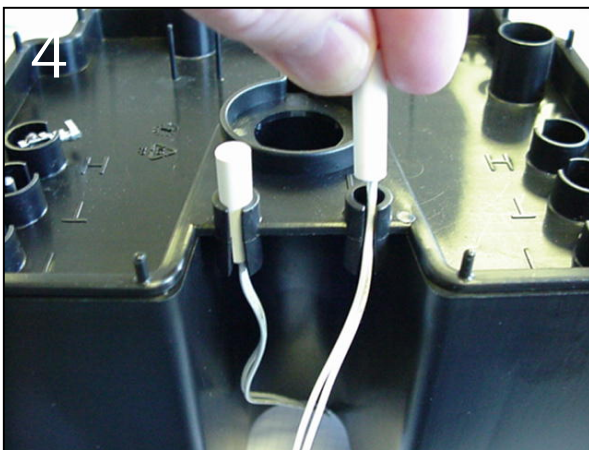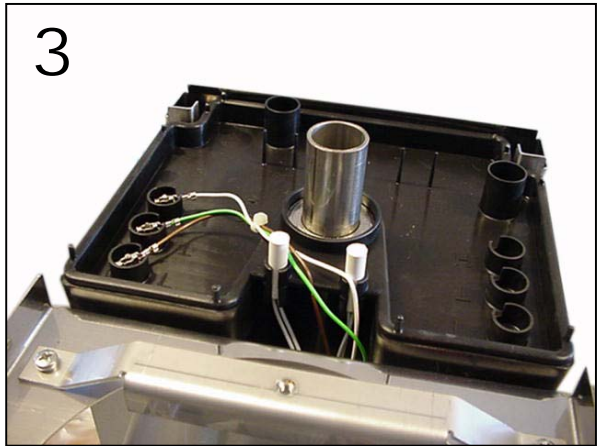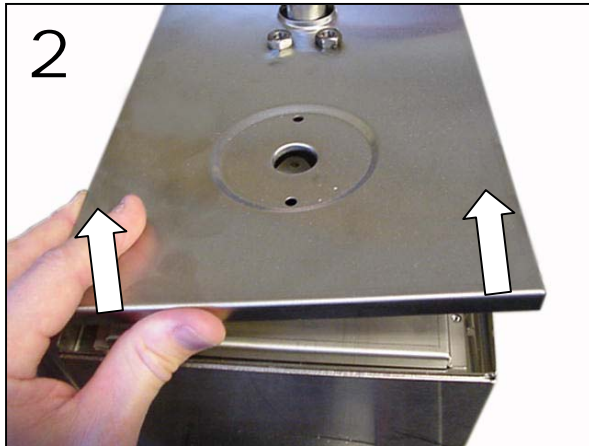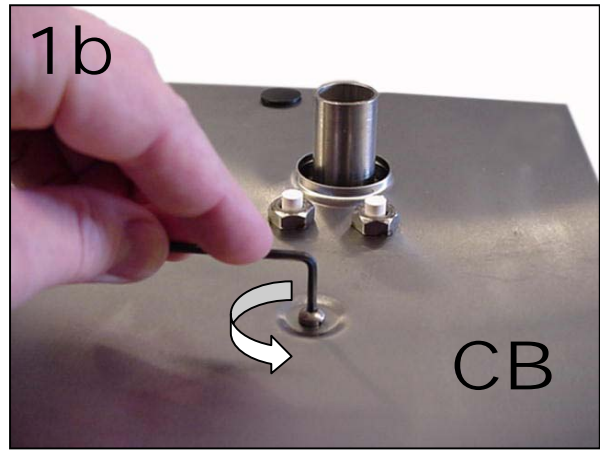
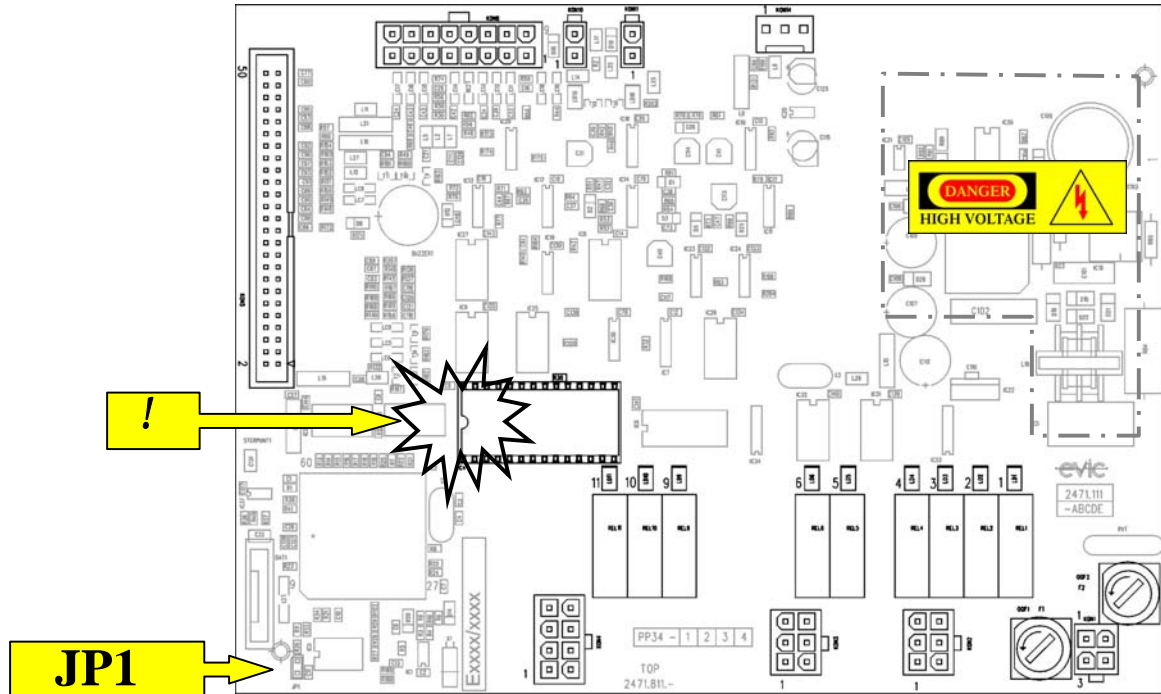## 6.4 Disassemble front panel
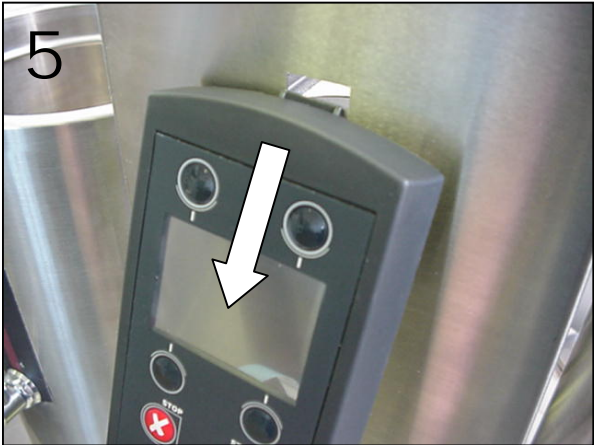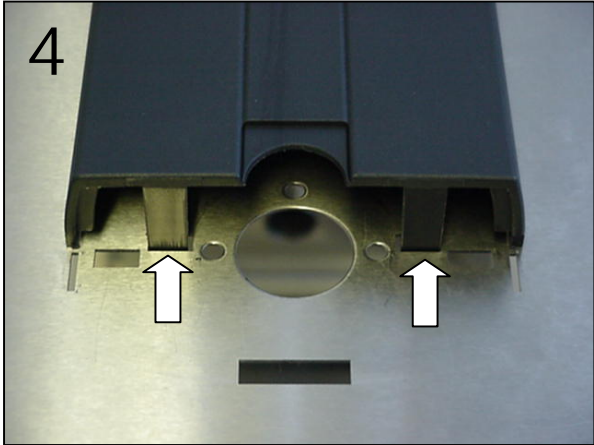
6.5 Replacing Membrane panel and Display interface PP39

6.6 Connections PC board PP34a

> **An EPROM is considered from electric and physical point of view a very sensitive component. This means that you have to take extra care of the following points when placing or replacing an EPROM:**

- Take care for a good transport of possible ESD influences.
  Notice the correct position of the EPROM (see notch at exclamation mark).
- Store the EPROM in a ESD free package.
- **Every time you change EPROM or main board you have to load default settings in the software !!!**

Installation PP34a

- *In case a new main board PP34a is installed the jumper JP1 has to be closed (see arrow). This jumper prevents the battery from getting low.*
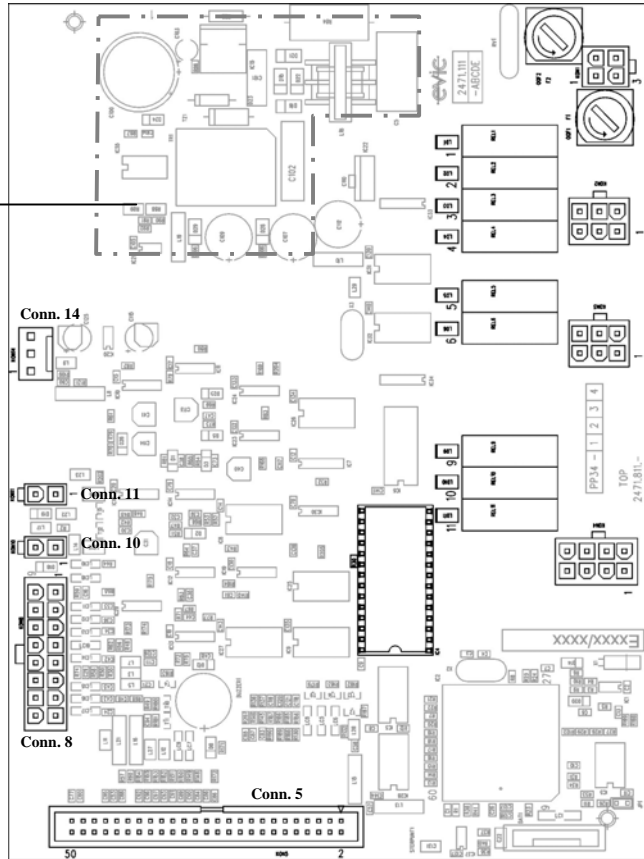- *Avoid any kind of ESD.*

DANGER HIGH VOLTAGE

CONN. 14	FLOWMETER	COLOUR
1 - VCC +5V DC		- BROWN
2 - PULSE		- WHITE
3 - PGROUND		- BLACK

CONN. 11	BOILER POWER RELAIS 24VDC	COLOUR
1 - RELAIS BOILER PP34 OUT (ground)		- BROWN
2 - COMMON RELAIS BOILER I/O BOARD OUT (+)		- GRAY

CONN. 10	COFFEE POWER RELAIS 24VDC	COLOUR
1 - RELAIS COFFEE PP34 OUT (ground)		- BROWN
2 - COMMON RELAIS COFFEE I/O BOARD OUT (+)		- BLACK

CONN. 8	INPUTS	COLOUR
1 - REED SENSOR CONTAINER LEFT		- YELLOW
2 - LEVEL SENSOR COFFEE MAX		- WHITE
3 - LEVEL SENSOR COFFEE GROUND		- GREEN
4 - LEVEL SENSOR COFFEE MIN		- BROWN
5 - LEVEL SENSOR BOILER MAX		- ORANGE
6 - LEVEL BOILER GROUND		- GREEN
7 - LEVEL SENSOR BOILER MIN		- BROWN
8 - TEMP SENSOR NTC		- VIOLET
9 - BOILER DETECTION	- ROSE	
10 - REED SENSOR SWIVEL LEFT		- WHITE
11 - REED SENSOR SWIVEL RIGHT		- YELLOW
12 - A_GROUND NTC/ BOILER DETECTION	- VIOLET/ROSE	
13 - REED SENSOR CONTAINER RIGHT		- WHITE
14 - N.C.		
15 - N.C.		
16 - PGROUND REED SENSOR CONTAINER/ SWIVEL		- BLACK

Conn. 14

Conn. 11

Conn. 10

Conn. 8

Conn. 5

CONN. 5	OUTPUT PP39	COLOUR
1 – 50 DATALINES		- GRAY

DANGER HIGH VOLTAGE

F1
Conn. 1

F2

s. coffee

s. boiler

cont. h. l

cont. h. r

Conn. 2

RL1

RL2

Conn. 3

RL3

RL4

RL5

Conn. 4

50   2
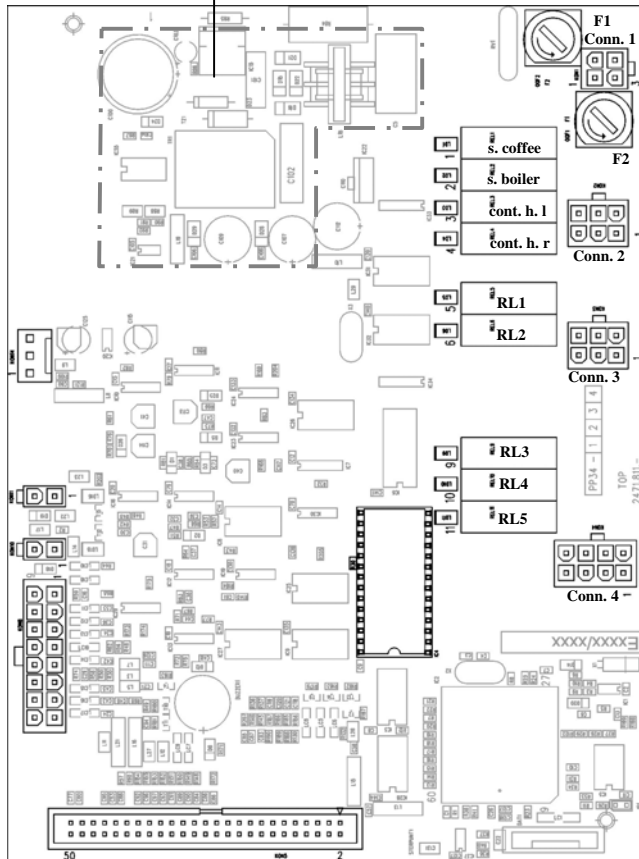
CONN. 1	POWER SUPPLY 230VAC	COLOUR
1 - 230VAC ~50HZ N		- BLUE
2 - 230VAC ~50HZ L (F1)		- BLACK
3 - 230VAC ~50HZ L		- BLACK
4 –HEATING COFFEE CONTAINERS (F2)		- BROWN

| CONN. 2	230VAC SOLENOID & HEATERS	COLOUR
1 - HEATER COFFEE CONTAINER RIGHT OUT		- WHITE
2 - N.C.		
3 - COMMON 230VAC (F2)		- BROWN
4 - SOLENOID COFFEE OUT		- BLACK
5 - SOLENOID BOILER OUT		- GRAY
6 - HEATING COFFEE CONTAINER LEFT OUT		-YELLOW

| CONN. 3	RELAIS BOILER 24VDC	COLOUR
1 - N.C.		
2 - N.C.		
3 - N.C.		
4 - COMMON 24V DC RELAIS BOILER IN		- BLACK
5 - RELAIS 1 BOILER 1 I/O BOARD OUT		- YELLOW
6 - RELAIS 2 BOILER 2 I/O BOARD OUT		- WHITE

CONN. 4	RELAIS COFFEE 24VDC	COLOUR
1 - N.C.		
2 - N.C.		
3 - N.C.		
4 - N.C.		
5 - COMMON 24VDC RELAIS COFFEE IN		- BROWN
6 - RELAIS COFFEE 1 I/O BOARD OUT		- RED
7 - RELAIS COFFEE 2 I/O BOARD OUT		- GREEN
8 - RELAIS COFFEE 3 I/O BOARD OUT		- ORANGE

6.7 Connections Display interface PP39

KON 1
Membraanpanel
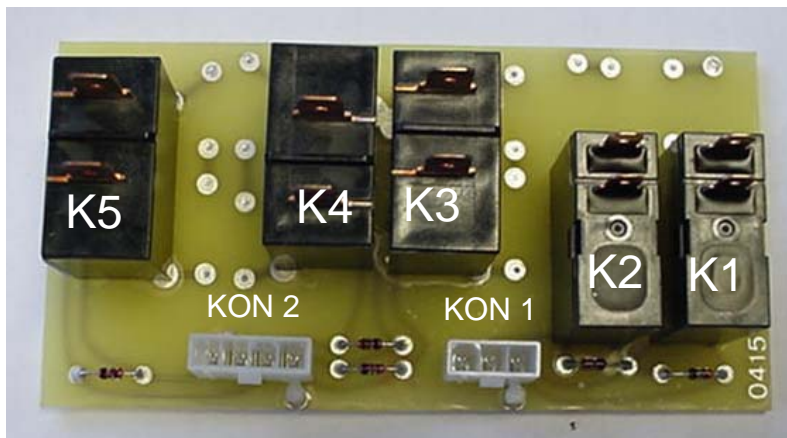
KON 3
Flatcable

P1
Contrast Display
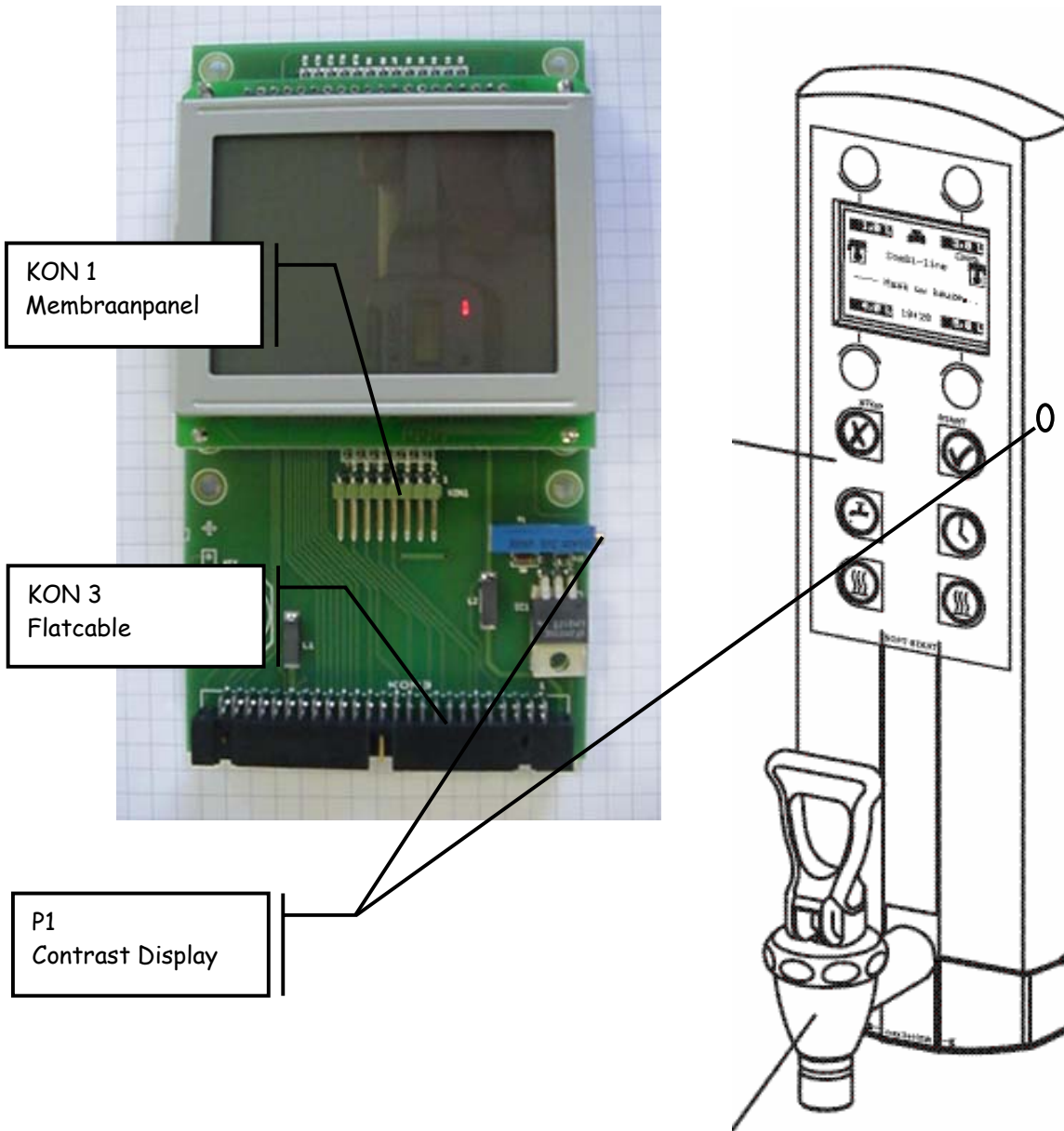
6.8   Connections I/O CB PP37
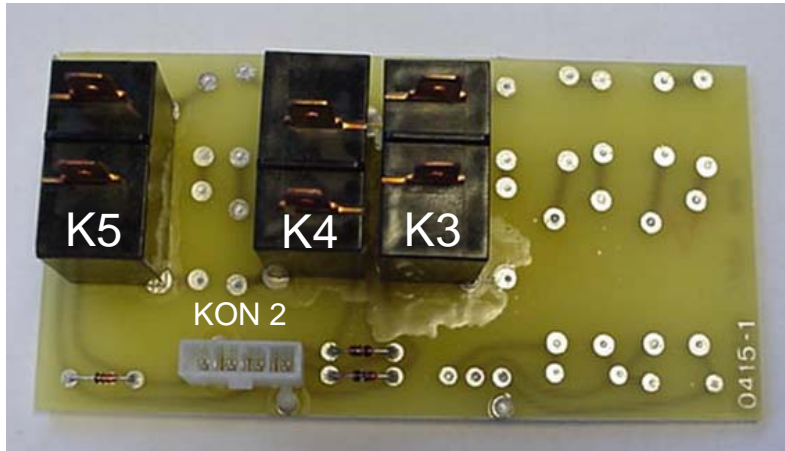

KON 2 connected with KON 4 PP34a
K3   Flow heater element 1   (brown)
K4   Flow heater element 2   (black)
K5   Flow heater element 3   (grey / purple)
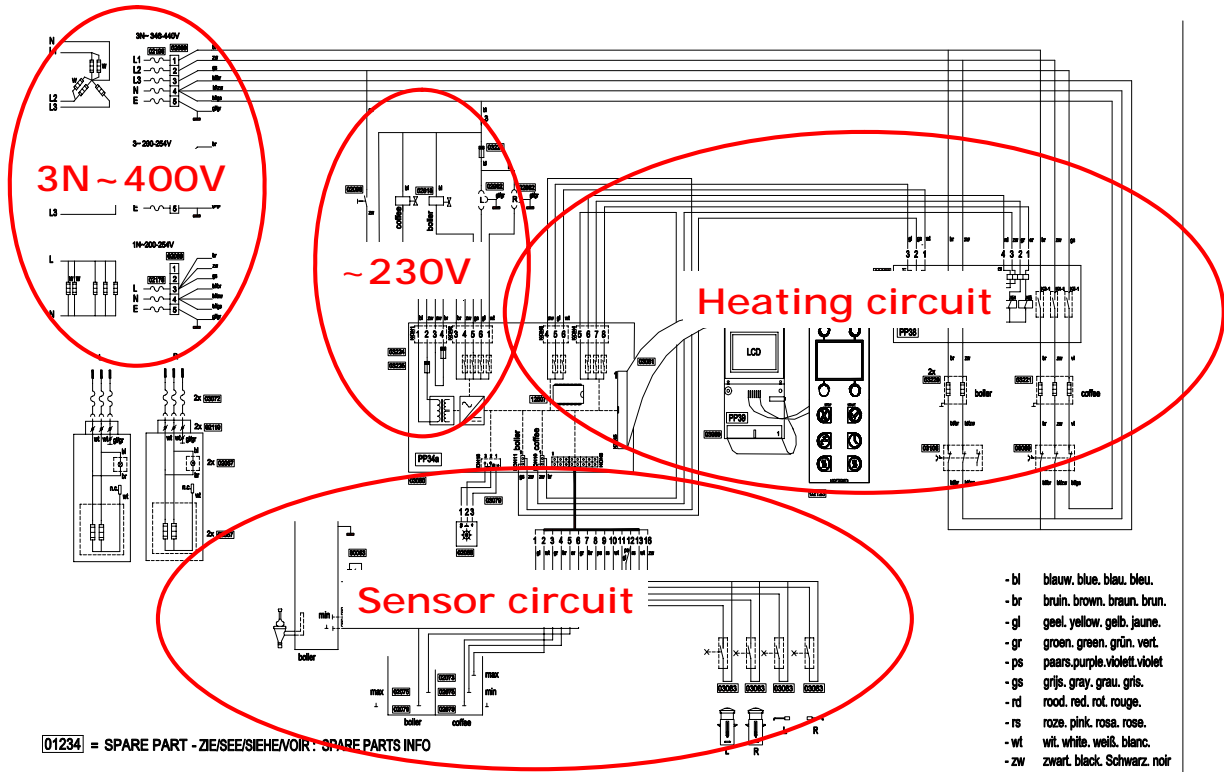

6.9   Connections I/O CB-W PP38

KON 1 connected with KON 4 PP34a
K1   Boiler element 1   (brown)
K2   Boiler element 2   (black)

KON 2 connected with KON 4 PP34a
K3   Flow heater element 1   (brown)
K4   Flow heater element 2   (black)
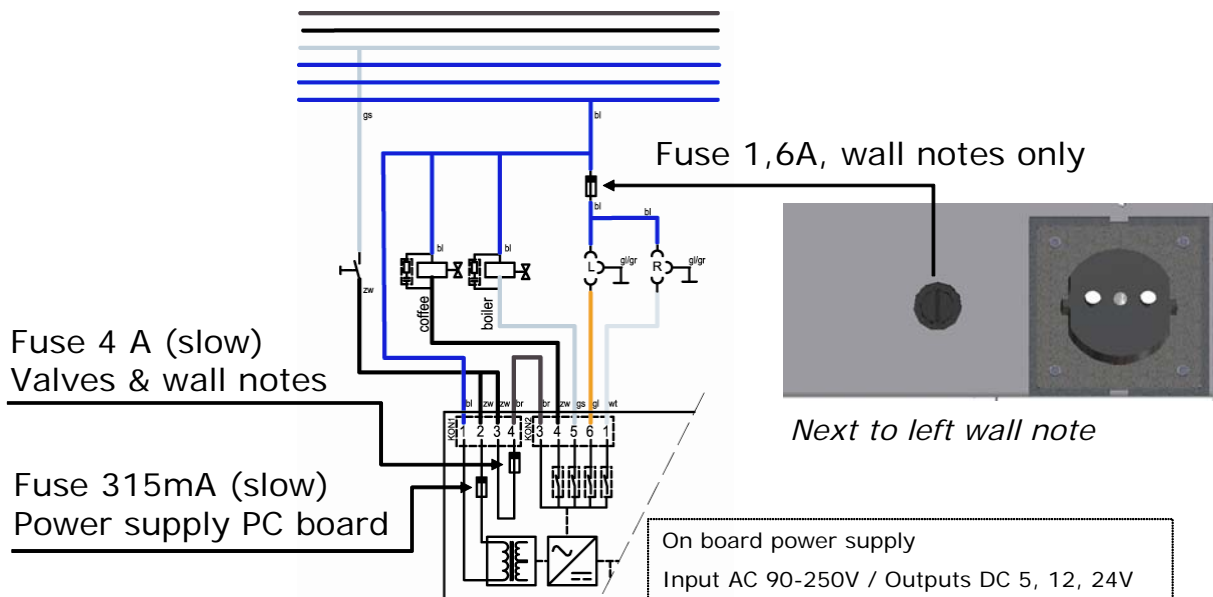K5   Flow heater element 3   (grey / purple)

7. Electrical circuit
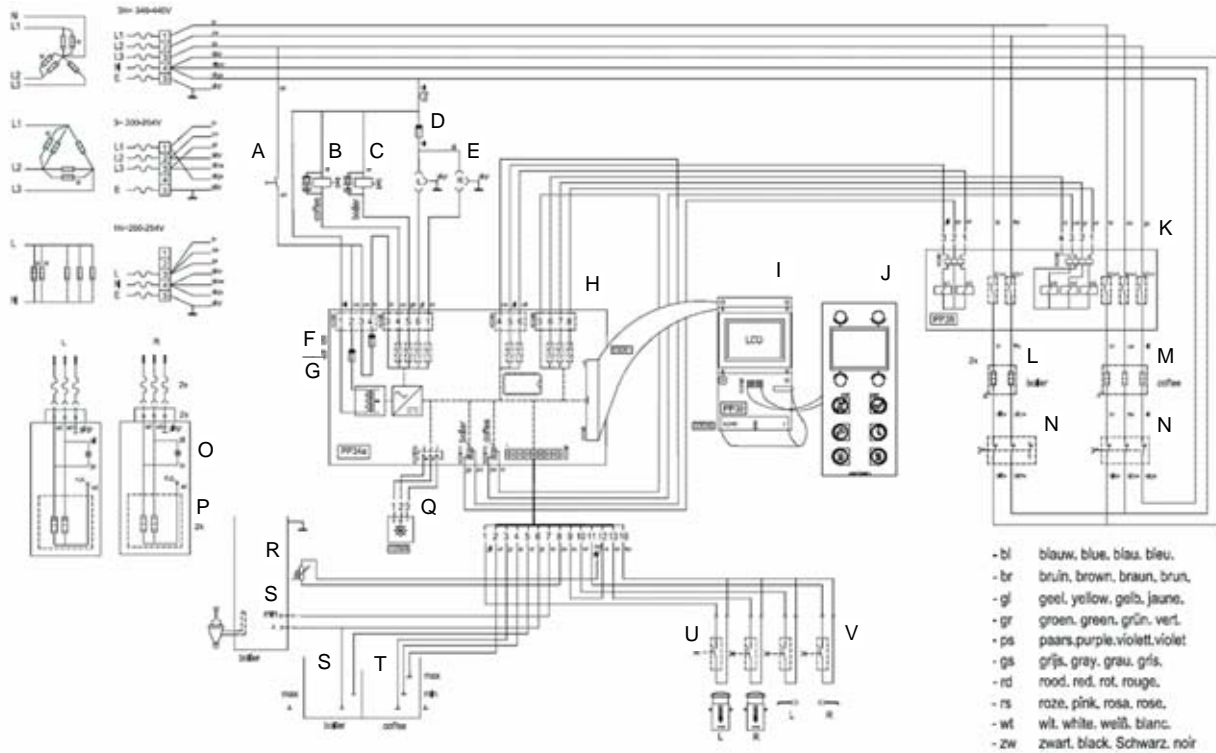
A. Main switch
B. Inlet valve coffee unit
C. Inlet valve hot water unit
D. Fuse wall notes (1,6A)
E. Wall notes
F. Fuse F1 (4A) inlet valves + Wall notes
G. Fuse P.C. board F2 (315mA)
H. P.C. Board PP34a
I. Display PP39
J. Membrane panel
K. P.C. board I/O PP37/38
L. Heating boiler
M. Flow heater
N. Dry-boil switch
O. Pilot light
P. Surface heating containers
Q. Flowmeter
R. NTC sensor
S. Level probes hot water unit
T. Level probes coffee unit
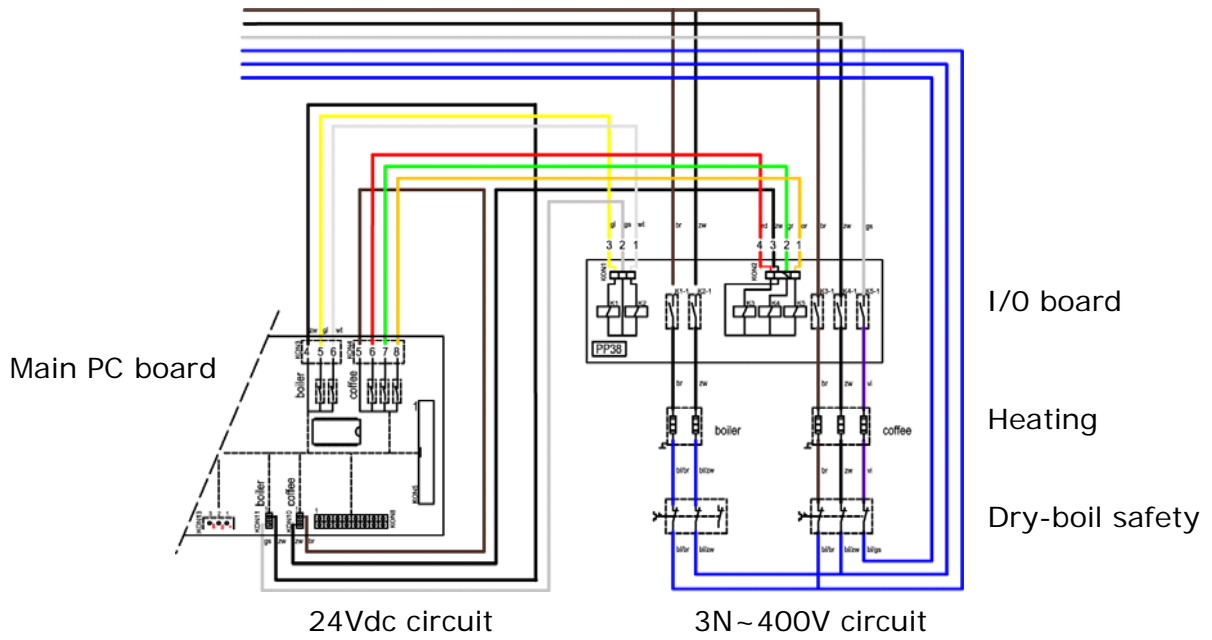U. Reed contacts swivel arm
V. Reed Contacts containers

Overview

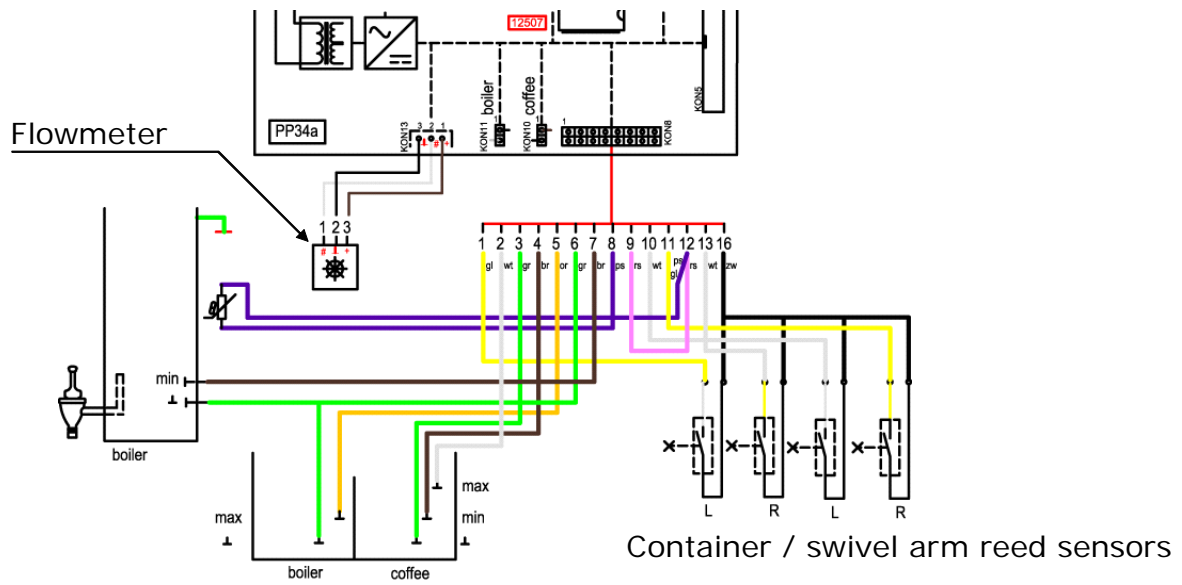3N~400V

~230V

Heating circuit

Sensor circuit

01234 = SPARE PART - ZIE/SEE/SIEHE/VOIR : SPARE PARTS INFO

- bl   blauw. blue. blau. bleu.
- br   bruin. brown. braun. brun.
- gl   geel. yellow. gelb. jaune.
- gr   groen. green. grün. vert.
- ps   paars.purple.violett.violet
- gs   grijs. gray. grau. gris.
- rd   rood. red. rot. rouge.
- rs   roze. pink. rosa. rose.
- wt   wit. white. weiß. blanc.
- zw   zwart. black. Schwarz. noir

Main PC board ~230V circuit

Fuse 1,6A, wall notes only

Fuse 4 A (slow)
Valves & wall notes

Fuse 315mA (slow)
Power supply PC board

Next to left wall note

On board power supply
Input AC 90-250V / Outputs DC 5, 12, 24V

Main PC board + heating circuit

Main PC board

I/0 board

Heating

Dry-boil safety

24Vdc circuit   3N~400V circuit

Main PC board + sensor circuit

Flowmeter

boiler

max   boiler   coffee

Container / swivel arm reed sensors

Main PC board + heating circuit CB 2x40

Animo

NVLG

ISO 9001
KEMA CERT. NR. 36507
ERKEND DOOR DE RAAD VOOR DE CERTIFICATIE