

Revised Repair Instructions

ESW 308.6

Service Manual: H1-58-01-02-Ä

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1. Introduction and Safety Instructions

The control honeycomb ESW 308.6 is a sensor-controlled control unit which allows controlling of the cooking zones without contacting them. In contrast to the forerunning model ESW 307.6, the ESW 308.6 is additionally equipped with a minute minder. From the outside, however, the functions have remained identical while the internal structure of the control electronics has completely changed. With the ESW 308.6 manual balancing of the sensors is no longer required. The control system will be automatically calibrated upon commissioning (factory-set). If required, calibration may also be repeated at the customer's. However, it is also possible to manually adjust an individual sensor by means of a special combination of the sensors. The calibration procedure is dealt with in detail in a separate chapter.

Furthermore, power supply unit and power section of the ESW 308.6 have been assembled on a joint printed-circuit board mounted on the lid. The connectors have also been changed.

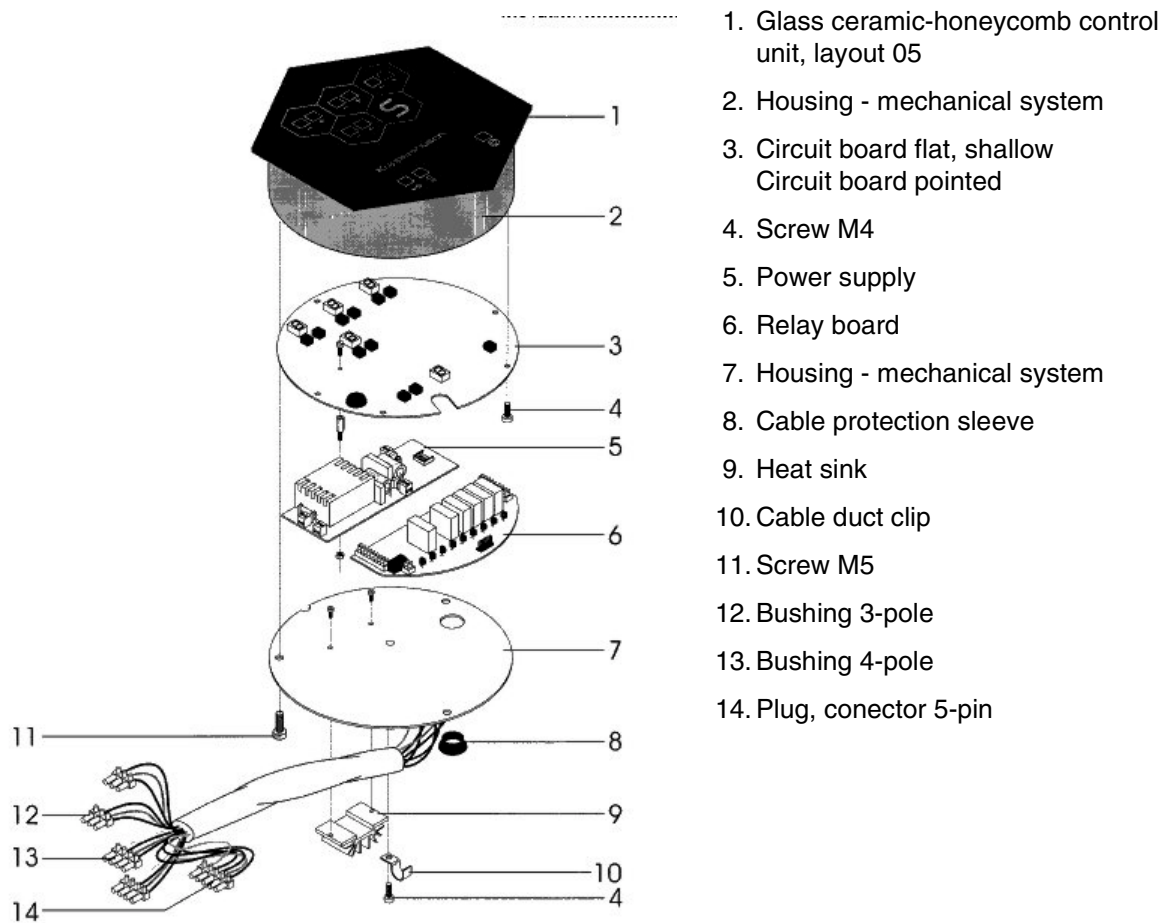
The appliances are manufactured in accordance with the applicable safety regulations.

The appliances may only be connected up to the mains, serviced and repaired by a qualified electrician according to the valid safety regulations. Work carried out incorrectly will endanger your safety.

When the appliance is connected up to the mains it must be ensured that there is a device which makes it possible to disconnect it from the mains at all poles with a contact opening width of at least 3 mm. Line-protecting switches, fuses and contactors are suitable cut-out devices.

Further general notes are included in the "Operating and installation instructions for honeycomb cooking zones with sensor control, series ESW/EKW".

2. The control unit at a glance



3. Tools and Devices

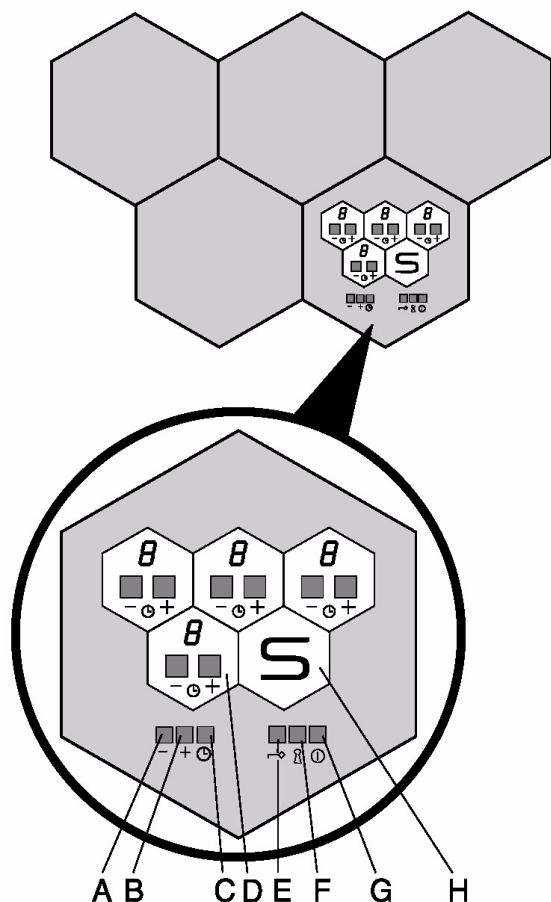
The following tools are required for a trouble-free performance of a customer service call:

- digital multimeter incl. measuring leads
- IC extraction tool for 28 poles
- small ratchet box
- 5.5 mm socket spanner (type Belzer No. 6400-5.5)
- 8.0 mm socket spanner
- side cutting pliers, small
- flat pliers, small
- screwdriver for slotted screws, various sizes (very important: with short handle)
- screwdriver for recessed head screws, various sizes (very important: with short handle)
- torch, offset

Furthermore the following devices are required:

- ◆ setting device for basic calibration of the sensor system
- ◆ glass cleansing agent, "Sidolin" or similar
- ◆ setting power supply unit
- ◆ cleaning cloths

4. Functional Description of the Honeycomb Control Unit



The honeycomb cooking zone is equipped with a convenient sensor control unit which is regulated by means of the control honeycomb.

The markings in the honeycomb control unit repeat the layout of the cooking zones on the worktop.

With the honeycomb control unit you can also control

- the cooking with auto parboil
- the minute minder
- the childproof lock

The following control fields are on the honeycomb control unit:

A and B are control fields for the minute minder with Plus and Minus sensors

C = Minute Minder

D = Control fields for the cooking zones with Plus and Minus sensors.

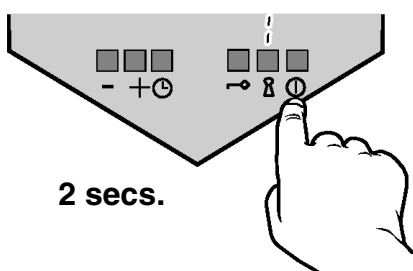
E = Key sensor for childproof lock

F = Lock sensor for childproof lock (Sensor-lock).

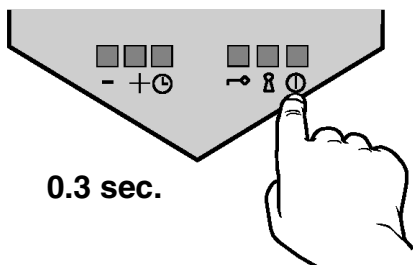
G = On / Off sensor

H = This field has no control functions. It simply indicates the position of the honeycomb control unit.

Switching on and off the appliance



2 secs.



0.3 sec.

Switching on

Touch the ON-OFF sensor for about 2 seconds. A vertical bar will light up above the lock sensor.

The appliance is now ready to be put into operation (standby mode). Each cooking zone can now be controlled individually.

Switching all functions off

Briefly touch the ON-OFF sensor (for about 0.3 seconds). The vertical bar will be extinguished. The control honeycomb unit switches off again automatically, if no further sensor is touched within 20 seconds, if it is left unused for 10 minutes after operation or if the sensor of a cooking zone is touched for longer than 20 seconds.

An acoustic signal already sounds after 10 seconds to warn you that the appliance will switch off after another 10 seconds.

5. Electronics of the ESW 308.6

5.1 Universal electronics unit

5.1.1 Components

The following spare parts are required when constructing a universal electronics unit:

Spare part no.	Quantity	Indication
538414	1	Flat universal electronics unit
or		
538415	1	Pointed universal electronics unit
538416	1	EEPROM
538417	2	EPROM (master and slave)

In the case of ESW 307.6 honeycombs from honeycomb no. 200 to approx. honeycomb no. 930, a check is to be made on whether additional components are required.

538418	1	Trip line	Electronics relay platinum
538430	1	Power supply	Electronics relay platinum
5384xx	1	Lower casing	Mains relay platinum
536963	1	Relay platinum	essential for 0μ0.1 filters

In the case of ESW 307.6 honeycombs up to approx. honeycomb no. 200, a check is to be made on whether a complete new unit has to be installed. To be recognised on the stopped (raised) input sensors.

These must always be completely replaced, including the glass pane and on indication of the honeycomb number.

5.1.2 Exchanging an universal electronics unit

It is essential to observe the following on exchanging a universal electronics unit:



Attention!

It is essential to carry out a potential adjustment on the exposed conductive part prior to unpacking and installing the electronics unit!

In the region of the elongated holes for attaching the universal honeycomb it must be ensured that the areas around the soldering joints are sufficiently covered with tape.

The inversion layer must be clean. If necessary clean with water.

Once installed, the electronics unit must be adjusted so that at the bottom all of the sensors are exactly in line with the input fields on the glass.

Shine a lamp on from below and if necessary adjust the position.

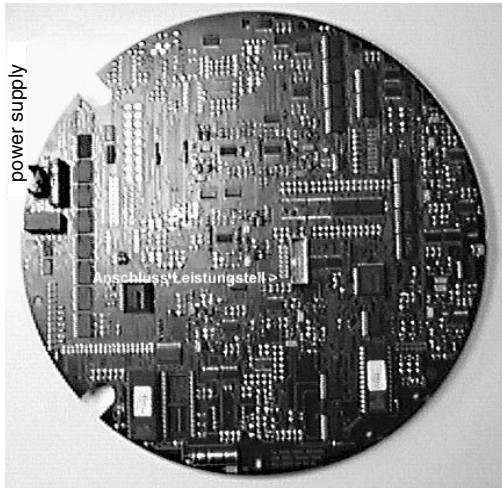
Then screw all three screws, but not too tightly.

Finally install all of the other components, the mains supply unit and the relay platinum and then close the lid.

Carry out a VDE 7001 test.

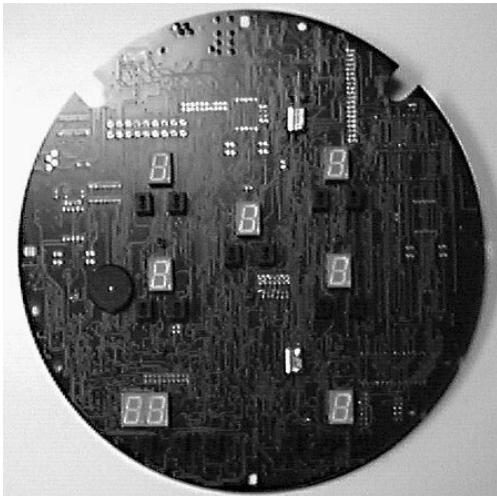
Then calibrate.

5.2 Control System

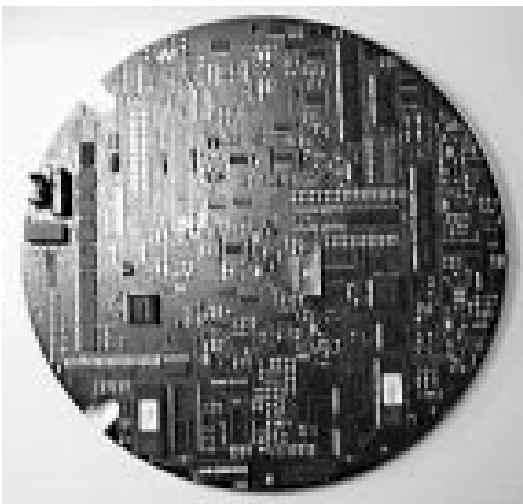


The control board is connected to the power section by means of 2 cables.

1. a 4-pole cable for power supply
2. a 14-pole ribbon cable for power section control.

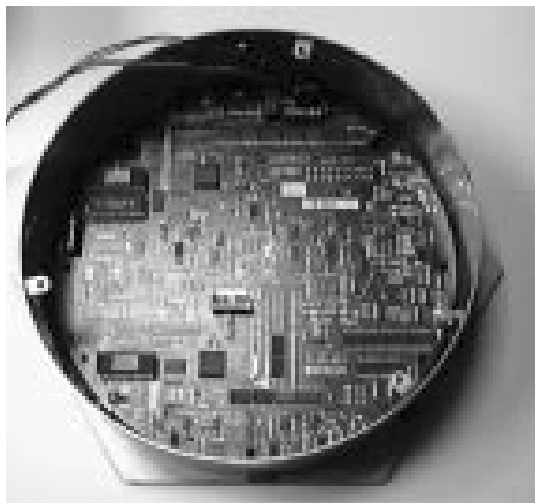


5.3 Disassembly of the Control Section



Control board

For the disassembly of the control board the steps "Removing and loosening the lid with power section" have already been performed.



Afterwards the 3 fastening screws of the control board are removed. The pc board is removed towards the top with the recess matching one of the fastening brackets. Then it is removed.

The new control electronics is inserted and fastened by means of the 3 fastening screws.

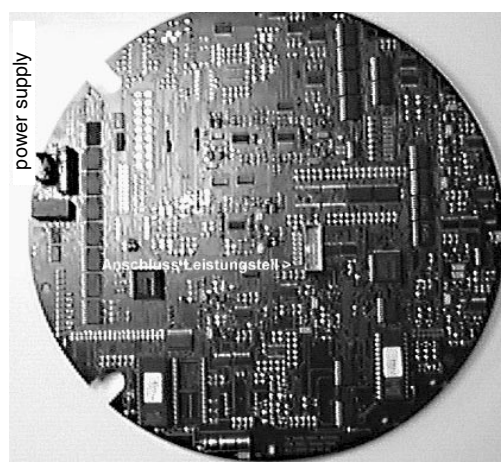
The pc board is now illuminated from the rear side by means of a torch so that the position of the display elements can be checked from above.

In case the sensors do **not** match the imprint on the glass ceramic surface, the pc board must be loosened again in order to position it correctly.

When the position then matches the imprint, the 3 screws are tightened.

Assembly

Spare part no.	Quantity	Indication
538414	1	Flat universal electronics unit
or		
538415	1	Pointed universal electronics unit
538416	1	EEPROM
538417	2	EPROM (master and slave, indicating the honeycomb number (W xxxx)



The electronics unit must be re-calibrated subsequent to assembling the lid with the mains supply unit and the relay platinum.

6. Adjustment and Balancing of the Sensors

General

For balancing the sensors of the ESW 308.6 it is no longer required to carry out manual adjustments via a potentiometer as with the forerunning model ESW 307.6. Sensor balancing of the ESW 308.6 is performed from the control field, i. e. the cabinet needs no longer to be opened for this purpose.

6.1 Calibration mode without changing the electronics

In order to enter the calibration mode proceed as follows:



Disconnect the control honeycomb from the power supply via the circuit breaker. Switch the circuit breaker on again, then press the **lock sensor** within **5 seconds** and keep it depressed. (*During this procedure the actual software version is displayed in the 7-segment displays from the left to the right*).

After another 10 seconds the **key** sensor must be pressed. As soon as the key sensor has been activated, first the **lock sensor** must be released.

In this way the **COMMAND MODE** is activated.

6.1.1 Main Reset

The main reset deletes **all** sensor values stored in a memory module **EEPROM** on the control electronics. However, this is only required if an automatic calibration procedure has to be performed afterwards.

When the **clock sensor** is activated an **acoustic signal** will sound after expiry of a certain time. Afterwards the control system can be disconnected from the power supply via the circuit breaker **independently of the time**.

Now all memory contents regarding the sensors **EEPROM** have been deleted!

6.1.2 Automatic Calibration

Clean the pane. Remove fingerprints and any other soiling with Sidolin or a similar product.

Before switching on the circuit breakers again, the balancing device is positioned on the control **with the light side facing downwards** in such a way that no sensor is covered by the spacers.

Now the circuit breakers can be switched on again.

After approx. 2 minutes (*the electronics unit twice counts up to 60 seconds in the left segment indicator*) 4 successive acoustic signals will sound to signal that calibration is completed.

In this status the ESW 308.6 can be operated as usual again. It is recommended, however, to check each sensor again.

6.1.3 Calibration of Individual Sensors

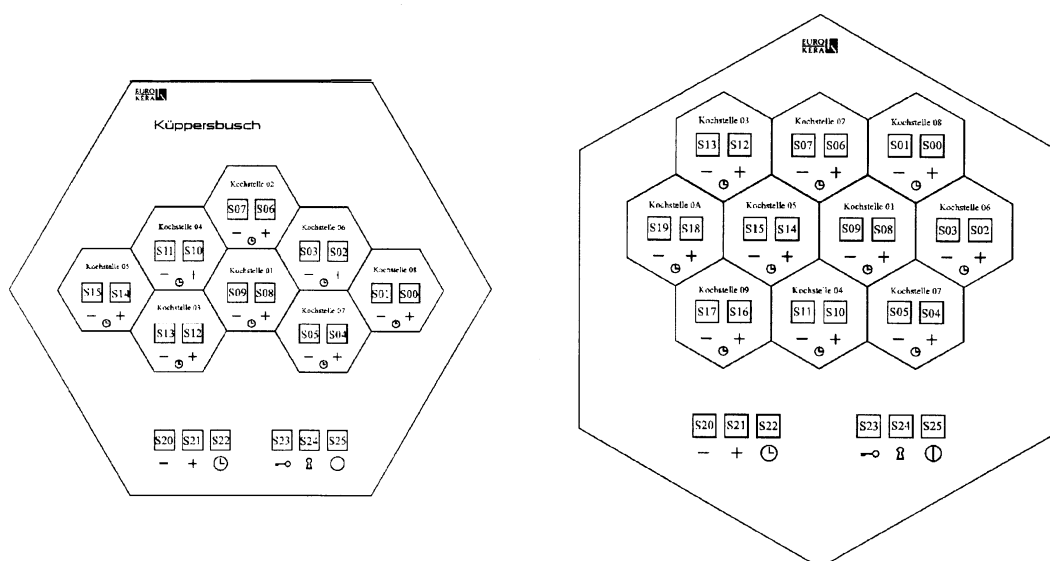
Set the appliance to the **COMMAND MODE** again.

Once again to remember:

Disconnect the control honeycomb from the power supply via the circuit breakers. Switch the circuit breakers on again, depress the lock sensor within 5 seconds and keep it depressed. (During this procedure the actual software version will be displayed in the 7-segment displays from the left to the right). After another 7 seconds the key sensor must be activated. The lock sensor must be released as soon as the key sensor is activated. In this way the **COMMAND MODE** is set.

General notes for the manual adjustment of a sensor:

In the version “**pointed**” and “**flat**” the sensors are numbered from **S00** to **S25** each. During manual adjustment the sensors are successively displayed, independent of whether they are physically existing are not.



After having activated the **COMMAND MODE** the **ON/OFF sensor** is touched and a “1” is displayed. Now sensor 01 can be set. The sensor sensitivity can be decreased by means of the **key sensor** and increased by the **lock sensor**, respectively. The sensor can be set to a value between **00 and 60**. The respective setting is displayed.

If the **ON/OFF sensor** is touched again, display “1” changes to “2” which represents sensor S02. In order to store the modified values, the ON/OFF sensor is kept depressed while it slowly counts up to “25”. When “25” is reached, the sensor is still kept depressed until **4 successive acoustic signals** sound. Now the values have been stored and the ESW 308.6 can be operated as usual.

Note: If more than 2 sensors have to be reset, automatic calibration has to be performed.

6.2 Calibration modus on exchanging the electronics unit

Automatic calibration

Clean the pane. Remove fingerprints and any other soiling with Sidolin or a similar product.

Before switching on the circuit breakers again, the balancing device is positioned on the control in such a way that no sensor is covered by the spacers.

Now the circuit breakers can be switched on again.

First the current status of the software is indicated in the segment display.

After approx. 2 minutes (*the electronics unit twice counts up to 60 seconds in the left segment indicator*) 4 successive acoustic signals will sound to signal that calibration is completed.

In this status the ESW 308.6 can be operated as usual again. It is recommended, however, to check each sensor again.

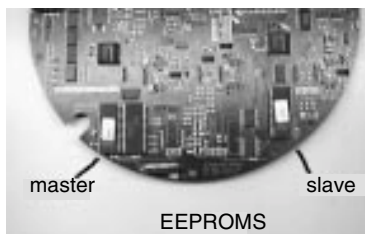
See the operation manual of the honeycomb present.

Balancing aid: product no. 340252

7. Faults

7.1 General notes

The control honeycomb ESW 308.6 is not equipped with an optical fault display.



Three defects may occur:

1. heater is defective
2. control board of the ESW 308.6 is defective
3. power section of the ESW 308.6 is defective

In order to be able to differentiate between control board and power section, a testing unit will be available in the near future which optically displays the power section control.



In case the control board is defective, a printed board assembly will be made available to the Customer Service for the versions "pointed" and "flat". If this board is used, the slave EEPROM and the master EEPROM must be removed from the defective pc board by means of a special tool (IC extraction tool) and installed on the new board.

IC extraction and installation tool

A power section assembly will also be made available to the Customer Service.

Thus faults may be located and remedied very quickly.

With respect to the control electronics, there may generally only occur 2 basic faults:

1. complete failure or
2. a sensory problem.

In most cases, a sensor problem can be remedied as described above without opening the appliance.

7.2 Rectifying faults

7.2.1 The honeycomb is difficult to operate (The sensors react too sluggishly or not at all)

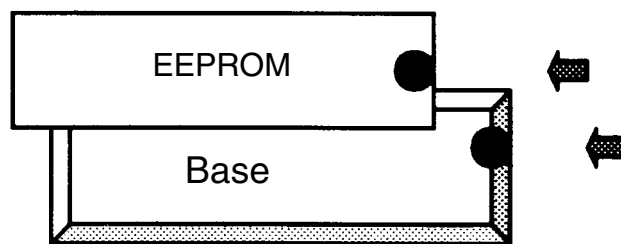
Measure

Erase the **EEPROM** modus and re-calibrate (see Manual).

Replace the **EEPROM** should it not be possible to erase it or should it not be possible to carry out the process of removal.

On exchanging the EEPROM please ensure that it is positioned correctly.

It is essential that the pre-set dent on the **EEPROM** ● be inserted in the direction indicated on the base.



Subsequent to removal or exchange of the EEPROM, the honeycomb is to be re-calibrated as indicated.

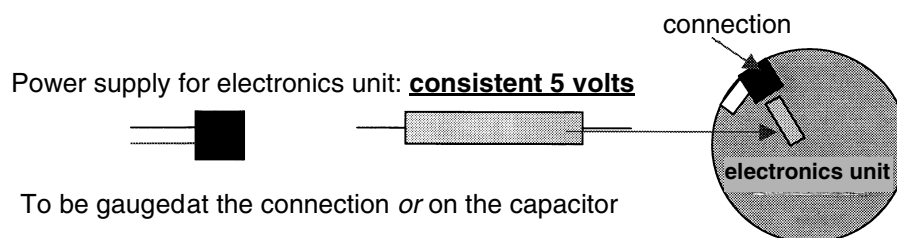
Should the removal of the EEPROM mode or the exchange not be successful and the sensors activate the input data unreliably even after re-calibration:

Measure

Exchange the electronics unit (see universal electronics unit)

7.2.2 The honeycomb only reacts briefly on being switched on and then switches off again

Check the power supply.



7.2.3 Power supply for the relay platinum: consistent 15 volts at the connection

Measure

If one of the two voltages is not present or instable:

Exchange the mains connection and/or, if necessary **exchange the voltage regulator**.

7.2.4 The honeycomb is difficult to operate (the sensors activate the wrong honeycombs or none at all)

Measure

Exchange the EPROM.

Determine the honeycomb number. Burn the master and the slave again and replace.

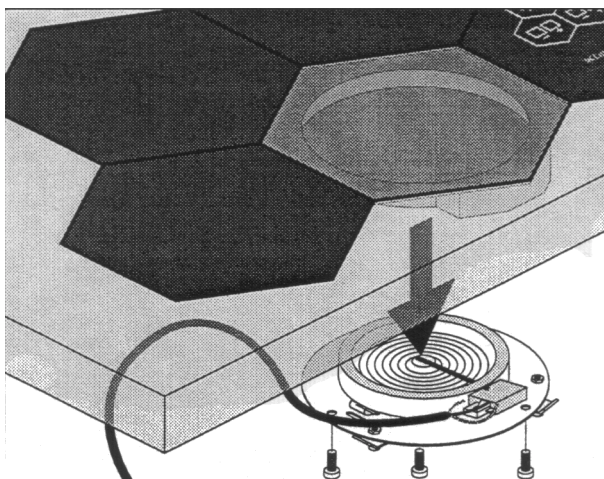
Should exchanging the EPROM be unsuccessful, replace the entire electronics unit (see Universal electronics unit).

8. Instructions for replacing glass ceramic honeycomb units

Replace the ceramic honeycomb as follows:

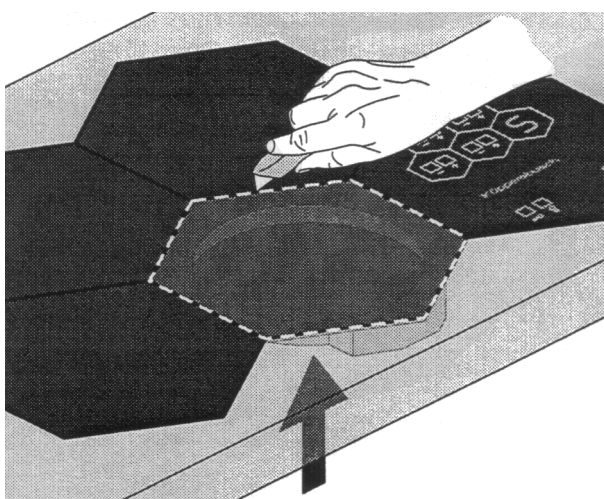
Parts required:

53 69 25	Glass ceramic honeycomb	53 69 25	Casing section mechanism
53 69 30	Glass ceramic control honeycomb	53 69 55	Casing section mechanism
09 15 81	Adhesive cleane		
53 58 85	PACTAN primer		
09 15 80	PACTAN adhesive		



Disconnect the appliance from the mains!

Undo and remove from the casing the casing cover with power unit and control board and/or casing cover with radiant heat unit.

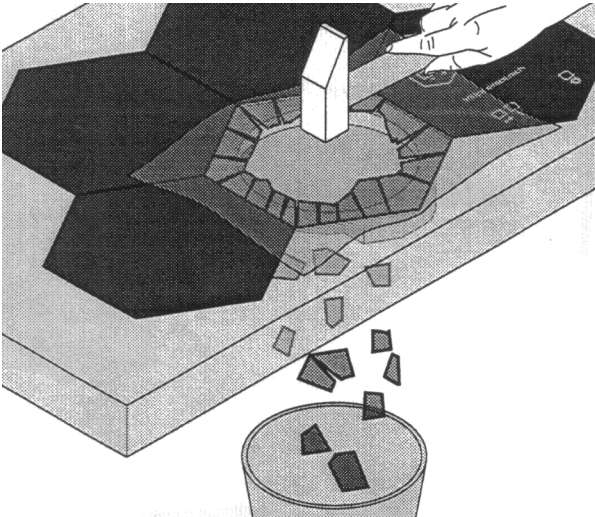


Carfully cut the silicone seam between the glass and worktop with a knife.

The glass ceramic honeycomb and casing can usually be separated from the worktop by exerting gentle but constant pressure from below.

With wood or chipboard worktops, keep the amount of wooden fragments removed to an absolute minimum.

If the casing is bonded in firmly and cannot be released, follow these steps carefully.



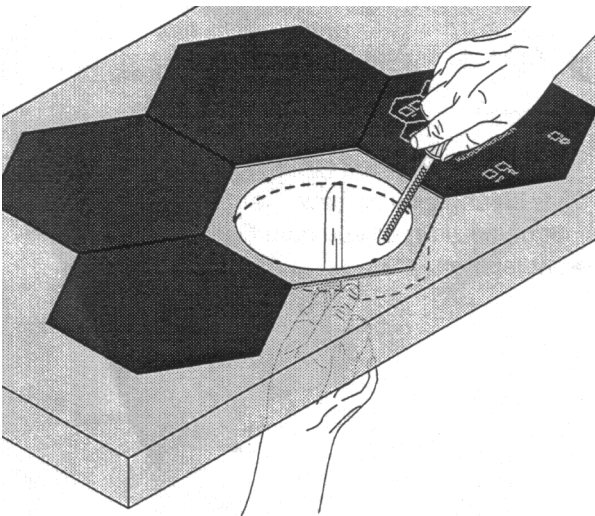
Danger. Risk of accidents!



Gloves and goggles must be worn!

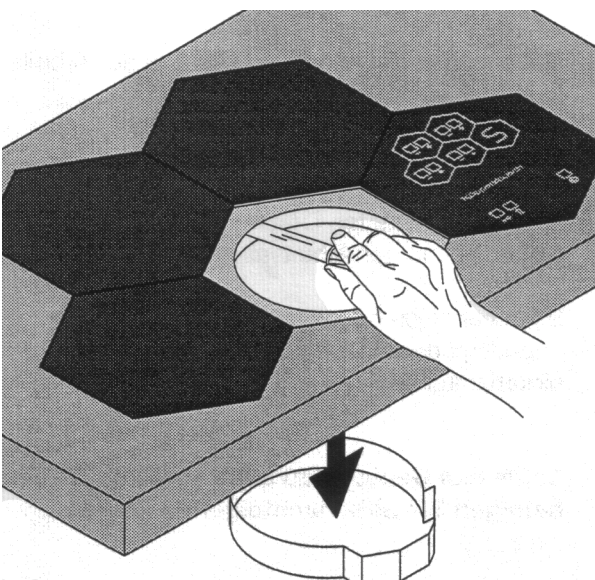
Cover the glass ceramic honeycomb to be replaced with a damp cloth and place a receptacle underneath to catch any glass splinters.

Now using a controlled level of force break the glass and completely remove it.



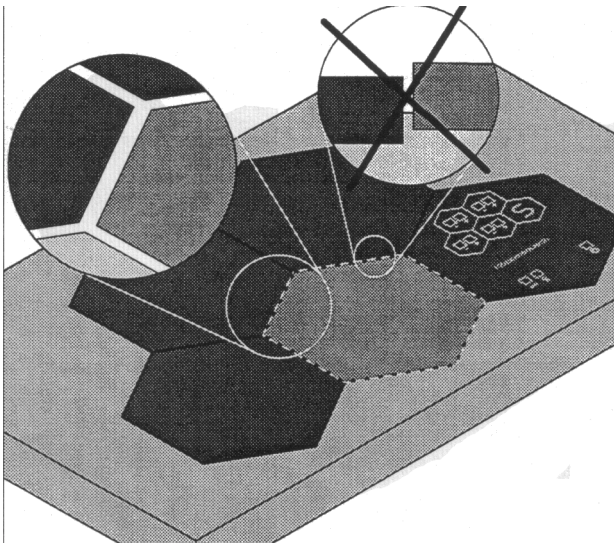
Remove any remaining welds from the ring and upper section (by filling).

Using a knife from below, cut the silicon adhesive between the ring and the worktop.



Remove the ring downwards and then carefully release the honeycombed upper section from the worktop with a knife.

Now remove any silicon residues from the worktop. If any spacers are present, take care not to damage them. Retain for later.



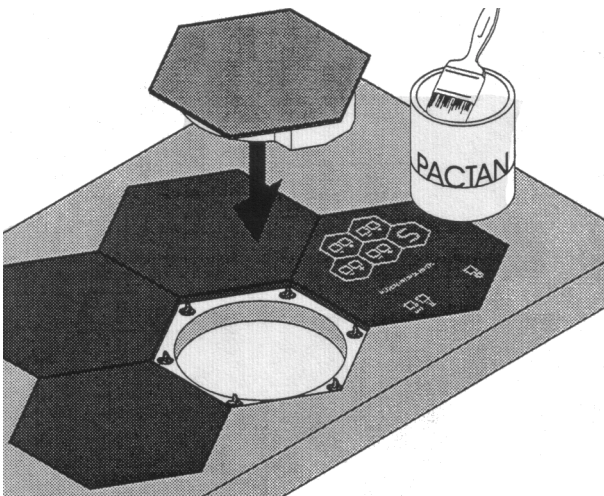
Fit the new glass ceramic honeycomb.

Make sure the surfaces are level and the joints are of even thickness.

Clean the glass ceramic honeycombs' jointing surfaces with adhesive cleaner.

Granite worktops should also be cleaned with adhesive cleaner.

First coat worktops made from wood or chipboard with PACTAN primer and leave to dry.

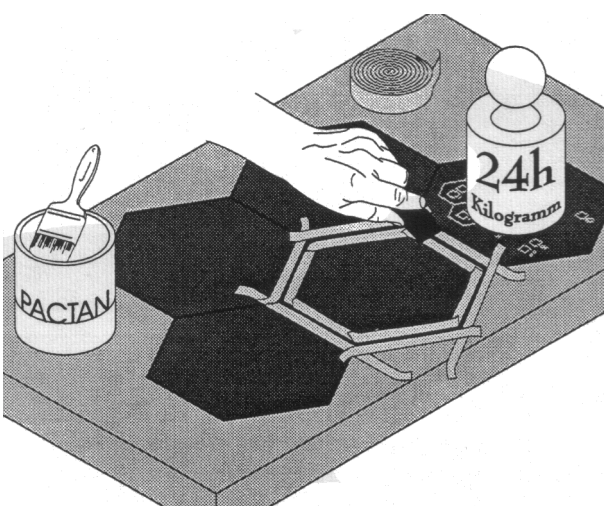


Dab the corners with PACTAN adhesive

Do not apply too thickly or the ring and the worktop will stick together again.

Carefully insert the new glass ceramic honeycomb.

Place a heavy weight on the new control honeycomb for 24 hours and screw the other honeycombs to the worktop from below with the clips.



Mask the glass surface and worktops with tape and fill the joints with PACTAN, so that the seals are absolutely watertight.

Smooth off the joints.

Carefully remove the masking tape and immediately remove any traces of adhesive from the glass or worktop.



Make clear to the customer that the hob and joints should not bear any weight for 24 hours.