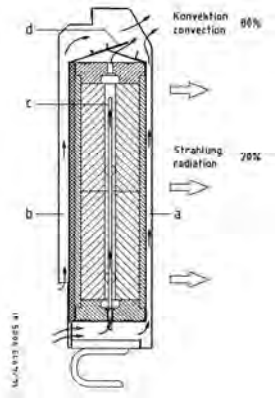
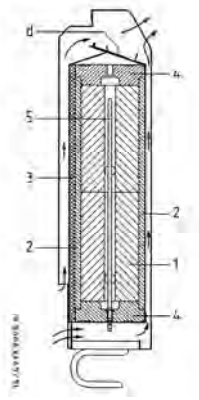
OLSBERG

Instruction Manual





Static Storage Heater manual 14/69_-3 and automatic 14/69_-4

Static Storage Heater intelligent 14/70_-3

olsberg

innovativ. seit 1577

This instruction leaflet must be:

- handed to the heater user after installation. The user is also to be instructed on the way this electric storage heater works.
- read carefully, retained for further use, and handed over to a new owner/user.
- given to any maintenance engineer before repair work is carried out.

Please read this instruction carefully. It contains important information on safety, installation, use and maintenance of the heater.

The manufacturer cannot be held responsible for problems occurring when the following instructions are not adhered to. The appliances must only be used for the function intended.

Note: Packaging materials, replacement parts and heaters or heater parts to be scrapped must all be disposed of correctly according to regulations.

Disposal of old heaters
Old electric and electronic devices often contain valuable materials. But they may also contain harmful ingredients which were necessary for their function and security. In normal waste disposal or incorrect treatment they could be harmful to the environment. Please help to protect our environment! Please do not add your old heater to normal waste in any case. Dispose of your old heater according to the local regulations.

General guarantee conditiones

Dear customer,

in guarantee case the country specified rights are valid which you may claim directly towards your dealer.

Installation Instructions

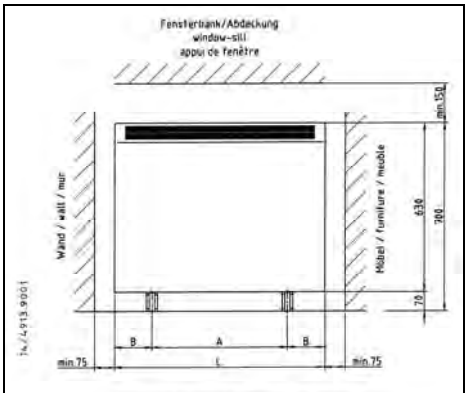
- **Delivery and packaging**
  To facilitate transport and handling, the heater cabinet (with built-in heating elements) and the bricks (SP36, SP38) are packaged separately.
  The packaging has be limited to the minimum necessary for safe transport and is made entirely of recyclable materials.

fig.1

- **Electrical connection**
  The storage heater is connected to a single-phase circuit.
  Voltage: 1/N/PE ~ 230V
  Charge period: 8h

  According to safety instructions, each electrical circuit must be protected by a circuit breaker with an all-pole contact opening of 3mm minimum.

- **Heater positioning, minimum clearances**
  The heater is to be positioned with the feet premounted against a load-bearing wall and secured according to this instruction and using the fixing materials provided.
  It is preferable to place the heater under a window so that the cold air in this vicinity can be warmed, causing natural convection.
  The floor and/or the wall must be able to take the weight of the heater. Please, therefore, note carefully the weights given in the Technical Data section of this instruction. If in doubt, consult a building engineer or architect.
  The minimum clearances in fig.2 are to be adhered to when positioning this heater.
  To facilitate installation we recommend keeping a distance of 150mm min. to the sides of the heater.



	14/691-3	14/695-3	14/692-3 14/692-4 14/702-3	14/696-4	14/693-3 14/693-4 14/703-3	14/694-3 14/694-4 14/704-3
A	125	235	345	395	505	725
B	110	110	110	140	140	140
L	345	455	565	675	785	1005

fig.2

- **Rating label, manufacturing (batch) number**
  The rating label (fig.3) contains all the data specific to the heater model. The rating label is found on the bottom right of the heater rear panel.
  The manufacturing, or batch number is on a separate label on the right hand side of the heater plinth (remove front panel).
  The model and batch numbers are important for repair and spare parts purposes.

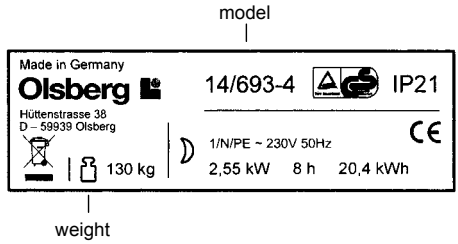


fig.3

- **Technical Data**

Model	Nominal charge kW	Storage capacity kWh	Voltage	Dimensions Width x Depth x Height [1] mm	Weight ca. kg	Heating elements	Core brick packs
manual							
14/691-3	0,85	6,8		345x170x700	48	1x0,85kW	2x SP36
14/695-3	1,3	10,4		455x170x700	69	1x1,3kW	2x SP38
14/692-3	1,7	13,6		565x170x700	89	1x1,7kW	4x SP36
14/693-3	2,55	20,4		785x170x700	130	1x0,85kW 1x1,7kW	6x SP36
14/694-3	3,4	27,2		1005x170x700	171	2x1,7kW	8x SP36
automatic			1/N/PE ~ 230V				
14/692-4	1,7	13,6		565x170x700	89	1x1,7kW	4x SP36
14/696-4	2,15	17,2		675x170x700	110	1x0,85kW 1x1,3kW	2x SP36 2x SP38
14/693-4	2,55	20,4		785x170x700	130	1x0,85kW 1x1,7kW	6x SP36
14/694-4	3,4	27,2		1005x170x700	171	2x1,7kW	8x SP36
intelligent							
14/702-3	1,7	13,6		565x170x700	89	1x1,7kW	4x SP36
14/703-3	2,55	20,4		785x170x700	130	1x0,85kW 1x1,7kW	6x SP36
14/704-3	3,4	27,2		1005x170x700	171	2x1,7kW	8x SP36

[1] Height includes feet. Height of feet: 70mm

Installation

- Turn the heater in its packaging upside down and open the carton where indicated.
  Remove the Styrofoam sheet.
  Remove the heater feet (and their fixing materials) from the packaging.

fig.4

- Pull away the transparent cover sheet.
  Fix the feet firmly to the underside of the heater using the materials provided (4 screws M6x12, washers and lock-washers). **Make certain that the closed side of the feet face the wall!**
  Remove the Styrofoam corners from the packaging.

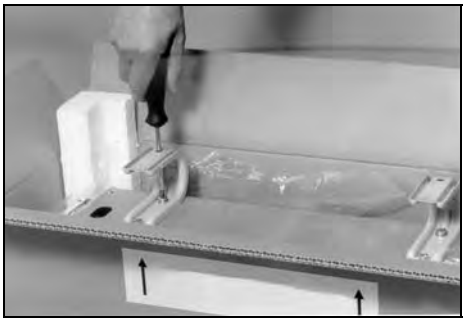


fig.5

- Remove the heater from the packaging using the feet and lay it onto a soft surface (the Styrofoam sheet can be used if necessary).

fig.6

- Turn the heater upright to stand on its feet.
  Make certain that the painted surfaces are not scratched!
  Remember that the heater can easily tilt and fall forward! If necessary, lean it against the wall!

- Open the heater:
  Take off the plastic covering caps left and right.
  Remove the screws.

fig.7

Pull the front panel at the bottom 10cm outwards from the heater and push upwards to remove. Take out the Styrofoam strip between the inside and outside front panels.

fig.8

Remove the fixing screws from the top of the right and left side panels.
Tilt out the side panels 3cm and push backwards to remove.

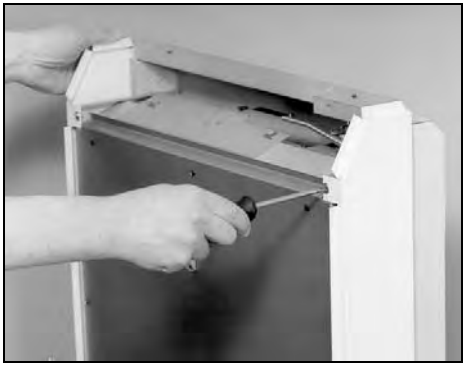


fig.9

- Fixing the wall-mounting/tilt-safe bracket:
  Drill two holes in the wall with a clearance C according to fig.10 and fig.11.
  Use wall-plugs (Ø6x30) provided.

  Note: Use the heater rear panel as a template to mark the hole positions. Place the heater against the wall and mark the screw slots through the heater panel. The drill holes must correspond to the lower part of the slots (fig.11, Detail E).

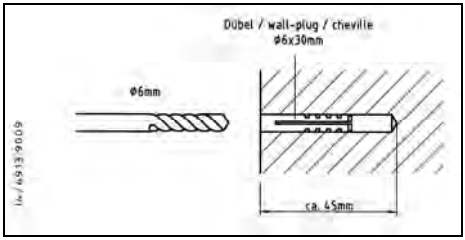
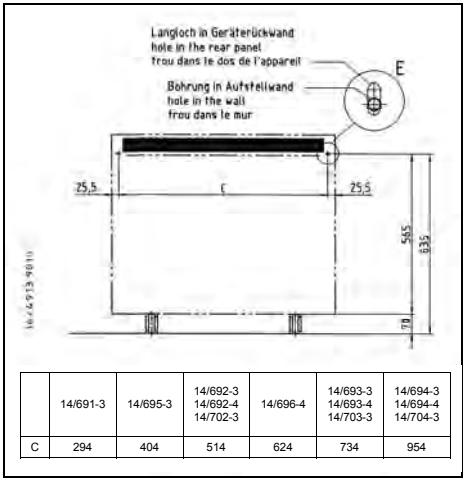


fig.10



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C	294	404	514	624	734	954

fig.11

fig.12

The heater is fixed from the front, through the rear panel, using the fixing materials provided (2 screws each 5x100mm, clearance spacers 12mm long and clearance spacers 50mm long).
The clearance spacers are in the packaging and can be slipped over the fixing screw. The length of spacer chosen depends on the necessary clearance to the wall.

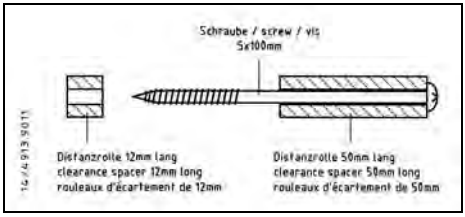


fig.13

For skirting boards up to 70mm in height, the heater can be placed flush to the wall (fig.14, Detail A).
For skirting boards with a height of 70 to 120mm the heater must fixed using a wall clearance spacer (fig.14, Detail B), so that enough air can circulate under and behind the heater.
Skirting boards of more than 120mm height must be cut out in the area around the heater. The heater is then fixed using the clearance spacer as shown (fig.14, Detail B).

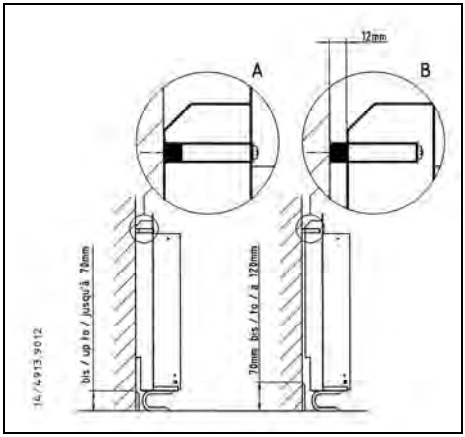


fig.14

Lean the heater against the wall so that it cannot tilt forward.
The final fixing is made when the core bricks have been installed and the heater has 'settled' somewhat.

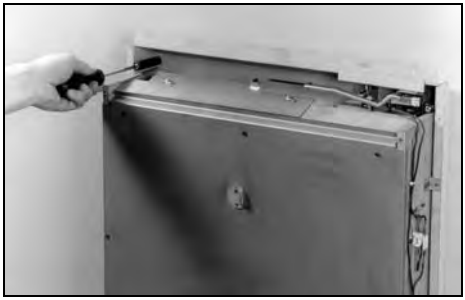


fig.15

Feed the electrical supply cable through the right conduit in the heater base and then forwards through the strain relief. Secure the cable in the strain relief using a 2 point pozidriver (fig.16a).
Connect the cables according to the wiring diagram (wires N and L to the terminal block; earth wire to the lower right of the plinth).

fig.16a

- **Static Storage Heater intelligent 14/70_-3**

  On Peak Supply (A1/Z1 und A2/Z2):
  Feed the electrical cable 3x1,5mm² through the left conduit in the heater base and then forwards through the strain relief. Secure the cable in the strain relief using a 2 point pozidriver (fig.16b).
  Connect the cables according to the wiring diagram (wires A1/Z1 and A2/Z2 to the terminal block; earth wire to the lower right of the plinth).

fig.16b

- Remove the side and top screws from the inside front panel.
  Tilt the inner front panel 5cm outwards and pull upwards and outwards. **Make sure that the heat insulation mat fixed to the rear of the panel is not damaged!**

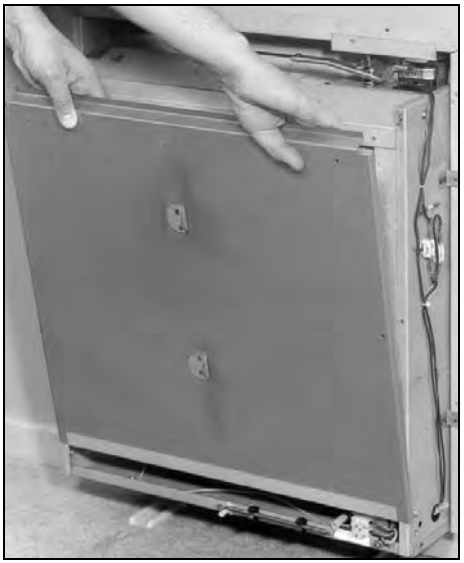


fig.17

- Remove the Styrofoam strip between the heating elements and the top insulation.

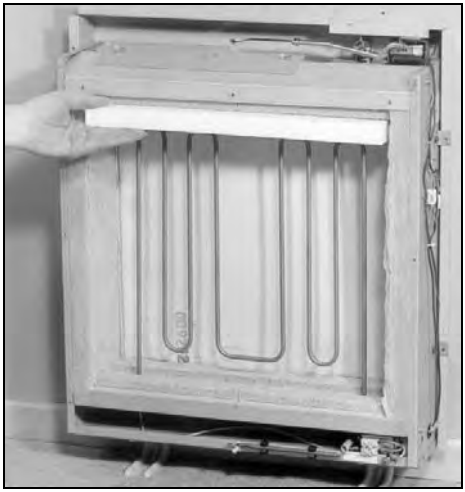


fig.18

- Remove the heating elements with the pre-fitted cables upwards from the lower insulation and lay the elements in front of the heater. Use a Styrofoam strip to lay the elements onto.
  Make sure that the element connection tails and the wire connections are not damaged!
  Install the bricks into the heater core, starting with the lower rear row. **For heaters with 3 or 4 bricks in a row**, put the outside bricks in first!

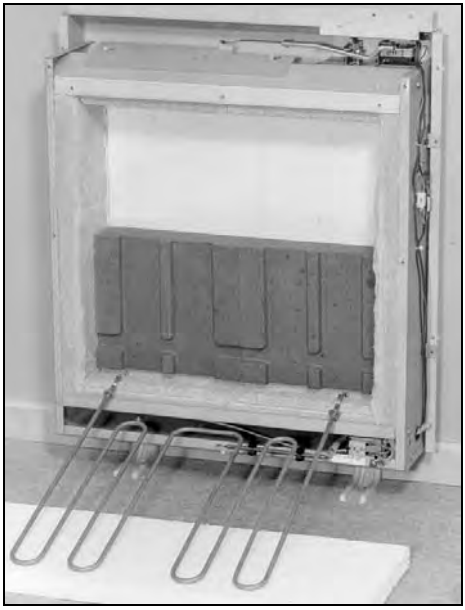


fig.19

- Build up the complete rear brick columns.
  Reinstall the heater elements (fig.20).
  Make sure that the element connection tabs are not damaged and also, that they fit neatly into the openings in the lower insulation.

  Build up the complete front brick columns.(fig.20).
  Make certain that the front and back row of bricks are flush to each other.

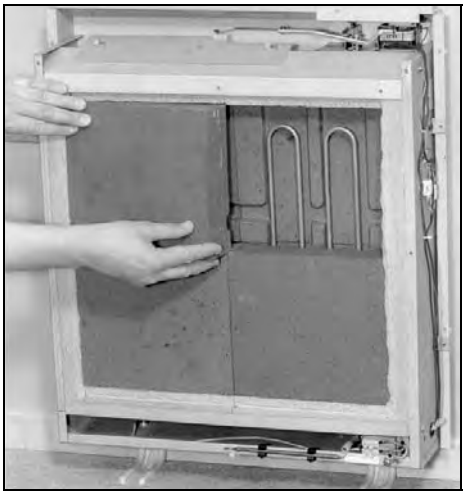


fig.20

- Replace the inside front panel with the insulation mat facing the bricks.
  Make sure that the lower end of the inside front panel is firmly between the lower insulation and the lip in the inner housing!

fig.21

- Push the inside front panel firmly against the heater core and fix to the inner housing using the screws above and on the side.

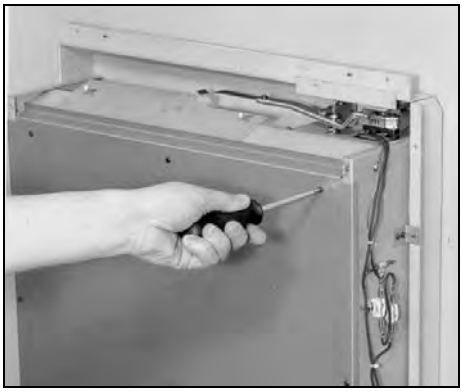


fig.22

- Now fix the heater to the wall using the screws through the heater rear panel left and right.

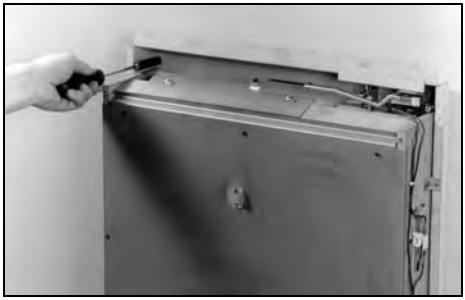


fig.23

- Remove the tape holding the plastic cover plate of the adjustment knobs on the upper right side of the heater rear panel. Lift the cover plate.

- Check that the air-mixing plate is functioning correctly (only heaters 14/692, 14/693, 14/694, 14/695, 14/696 and 14/70). To do this, turn the output regulator knob from full left (CLOSED, fig.24) to full right (OPEN, fig.25) and back.

fig.24

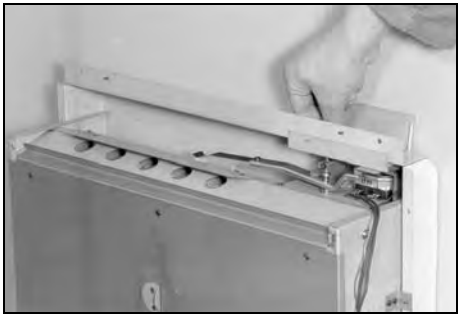


fig.25

- Close the heater (fig.26):

  Firmly fix the side panels to the upper right and left side inner cabinet using the screws.

  Set the front panel on the upper lip of the heater rear panel in such a way that the tabs in the front panel fit into the slots in the rear panel.

  Tilt the front panel downwards so that the fixing brackets on the lower left and right hand sides of the front panel fit between the inner cabinet and the side panels.

  Please ensure, that between front and side panels the circumferrending gap has a constant width! The inside of the front panel is then closely attached to the edges of the side panels!

  Secure the fixing screws.

  Replace the plastic covering caps.

fig.26

Important instructions for installation and operation

- The electrical installation of this heater must be approved by your local electricity company.
- The installation must be carried out by a competent electrician in accordance with I.E.E. regulations.
- Local safety regulations must also be adhered to.
- **Following tests must be carried out before commissioning the heater**
  - Insulation test with a voltage of at least 500V. The dielectric resistance must be at least 0,5MOhm.
  - The electrical installer must measure the power draw of the elements. This can be done using a kW and time measurement or alternatively by measuring the cold element resistance. The value is to be compared with that of the rating label or in the 'Technical Data' Section.
- The storage heater is only to be used in rooms where neither explosive gases (e.g. from floor-sealant), nor inflammable dust is present!
- Electrical appliances conform to valid safety regulations. Repairs and service to electrical appliances must only be carried out by a competent electrician. Improper repair can mean distinct danger to the user.
- As the surfaces of the heater cabinet get hot in use, flammable or other objects presenting a danger of fire must not be placed on, or near the heater.
  Do not, therefore, place any wooden objects, clothes or washing, newspapers, blankets or the like on or over the heater and do not put any pieces of furniture made of inflammable materials, nor spray tubes or similar objects closer than 25cm in front of, or on the heater, especially not in front of the air-outlet grille.
- It is important to remember that the surfaces of the heater can reach temperatures in excess of 80°C (60K) during operation.
- The storage heater is designed to need very little maintenance.
- Cleaning and maintenance intervals are very dependent on the respective circumstances surrounding installation and operation. We recommend that the first inspection take place at the latest before the second heating period. Further maintenance intervals can then be set according to individual circumstances.
- Heater surfaces must not be cleaned with any scouring or soft-scrub materials. Only use normal household cleaning liquids.
- Heaters that have already been in operation or have been taken apart and repositioned must be re-installed according to these instructions. The commissioning tests described on this page must also be carried out.
  - any insulation parts which are, or seem to be, damaged or have changed properties which could influence their function and safety, must be replaced by new ones.
- Packaging materials, replaced parts and decommissioned appliances and/or parts must be disposed of correctly.
- This heater is not intended for operating by persons (including children), with reduced physical, sensory or mental abilities or for lack of experience and/or for lack of knowledge to be used it by a person responsible for their security is supervised or received from instructions like the heater to use. Children should be supervised, in order to guarantee that they do not play with the heater.

Operation

- **General**
  We thank you for purchasing one of our heaters. It was manufactured in a modern production facility. An elegant form, simple operation, excellent heating performance and reliability are the main features of this appliance.
  An electric storage heater is an appliance which draws electricity during the OFF-PEAK period and converts it into heat which is stored and then dissipated gradually into the room to be heated, depending on the heat load of that area.
  If the heater is sized correctly it will store just enough heat to keep the room satisfactorily warm. It is of course an advantage if the dwelling is well insulated as this helps save heating costs. If, for any reason, the heater installation does not work satisfactorily, our after-sales service engineers can check out the system and correct possible problems.

- **Please note the section 'Important instructions for installation and operation' when commissioning, using, cleaning, repairing or repositioning this heater.**

- **Do not cover**
  This heater must not be covered!
  All appliances carry a 'DO NOT COVER' label on the top panel which should act as a reminder.

- **Major components**
  - Storage core (1):
  The storage core bricks are made of a refractory material which can reach a temperature of more than 700°C at full heater charge.

  - Heat insulation:
  The heat insulation allows a continuous and gradual dissipation of the core heat into the room.

  The following materials are used:
  * Microtherm-G (2) at core front and rear
  * Mineral wool (3) at the rear and in the left and right panels
  * Vermiculite (4) in the support and upper part of the core

  - Sheathed heating elements (5):
  heat resistant steel 1.4828

  - Control, regulation and safety components
  which monitor the charge and discharge.

- Cabinet
stove-enamelled steel plate.

- Feet
pressed steel plate, powder coated or painted.

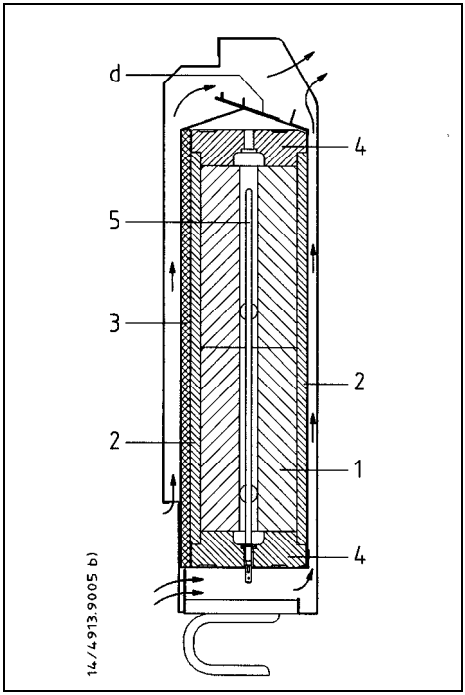


fig.27

- **Operation**
  The heater operates without noise. The only mechanically moving part is the air mixing plate (d, fig. 28). The thermal expansion of the core is absorbed by the insulation.

  The heat dissipation into the room takes place to 80% via natural convection, whereas 20% is radiated into the room from the heater surfaces.

  The convection processes cause an air-stream from the surfaces of the heater into the upper layers of the room. Colder air masses are displaced, causing a hardly noticeable air circulation which allows for a gradual and even heating of the room.

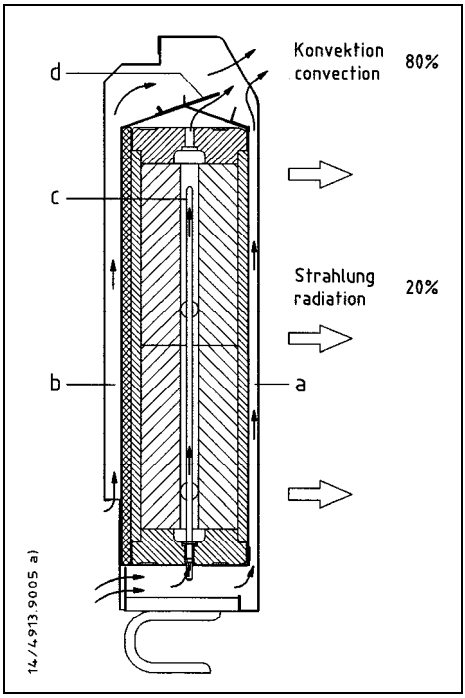


fig.28

- **Charging**
  Series Static Storage Heater have three models:
  * manual: 14/69_-3
  * automatic: 14/69_-4
  * intelligent: 14/70_-3

- Charging of manual heaters, Model 14/69_-3

The adjustment of the charge takes place using the operating knobs on the top right of the heater (e, fig.29).

The manual Model 14/69_-3 appliances are fitted with a thermo-mechanical regulator, which monitors the heater charge according to the core temperature. The residual heat left in the core from the previous day is continuously taken into account. An additional temperature safety control is fitted as a separate safety element.

The charge can be adjusted continuously from zero (control knob fully anticlockwise) to full charge (control knob fully clockwise “max.“). The charge control switches off the elements automatically on reaching the set charge.

The “max.“ adjustment should only be used on the coldest days. The setting best suited to the ambient conditions is ideally found by trial and error.

- Charging of automatic heaters, Model 14/69_-4

The adjustment of the charge takes place using the operating knobs on the top right of the heater (e, fig.29).

The automatic Model 14/69_-4 appliances are fitted with a thermo-mechanical regulator, which monitors the heater charge up to 90% in relation to the room temperature. The other 10% is influenced by the temperature of the storage core. The room temperature sensor is mounted inside the front right of the heater cabinet. The temperature at this point is in close correlation to the ambient temperature.
Two additional temperature safety controls are fitted as separate safety elements.

The charge can be adjusted continuously from zero (control knob fully anticlockwise) to full charge (control knob fully clockwise “max.“). The charge control switches off the elements automatically on reaching the set charge. Setting the adjustment knob **’e’** in fig. 29 to the end of the ‘comet tail’ will cause the heater only to charge at temperatures below 5°C (frost protection setting).

The setting best suited to the ambient conditions can best be found by trial and error. We recommend measuring the room temperature on different days at different adjustment settings to find the best setting suited to the ambient conditions.

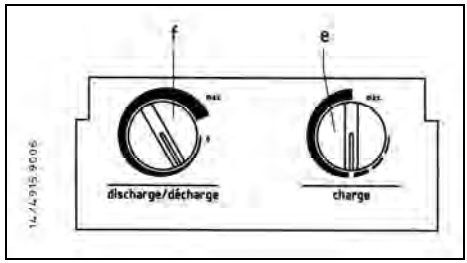


fig.29

- **Manual reset cut-out**
  All storage heaters are fitted with a manual reset cut-out, which will isolate the appliance in the event of a fault occurring causing the heater to overheat. This device must be reset by a competent electrician, and the appliance inspected to determine the reason for operation of the control.
  Possible faults:
  - Defective charge control regulator B1.
  - Appliance has been draped/covered causing heat stagnation.

- **Static Storage Heater intelligent, Model 14/70_-3**

  The charge control registers the outside temperature and converts this value into a control current. This current is passed via the control wires A1/Z1 and A2/Z2 to the control resistance in each storage heater.

  At the same time, the temperature in the heater core is also registered. The switch-off point of the charge thermostat is therefore determined by both the outside temperature and the temperature of the heater core.

  In this way, a control of charge according to the outside temperature and the residual heat in the heater is achieved, thus complying with Energy Saving Legislation.

  The control wires can be run together with cable feeds L, N and PE.

  Please also read the Instruction Leaflet supplied with the Charge Control.

- **Discharge**
  (all heaters except Model 14/691)

  As already explained in section 'Operation', approximately 80% of the stored heat is dissipated into the room via convection through the three channels made for this purpose.

  In fig.28 the front channel is shown as **'a'**, the rear channel as **'b'** and the middle channel as **'c'**. The air flow through the middle channel **'c'** is controlled by the flap **'d'**. This flap is adjusted using the left control element **'f'** on the upper right hand side of the heater (fig. 29). It is continuously adjustable from "0" (fully counter-clockwise) to "max." (fully clockwise).

  This discharge control enables the heat dissipation via the air flow through the middle channel **'c'** to be regulated by means of naturally boosting or throttling the convection.

  fig.27 shows the flap **'d'** in the closed, fig.28 in the open position.

  Discharge can be classified in two distinct methods:

  - Manual Discharge

  In position "0" (fully counter-clockwise, start of the comet tail) the flap will not open at all, regardless of the ambient conditions and the state of the storage core.

  If an increased heat dissipation into the room is desired, for instance at the start of the evening, the control mechanism must have a higher setting, so that the flap can open.

  - Automatic Discharge

  With the control element **'f'** at setting "max." (see fig.29), the air flap opens according to the residual heat left in the storage core. If the core is still fully charged the flap remains closed, even if the control element is set at "max.".

  If the control element is adjusted to a certain setting, the flap opens automatically as soon as the corresponding level of heat dissipation has been reached, e.g.:

  - setting in middle position - the flap opens at the beginning of the evening
  - "max." setting, the flap opens early afternoon

  NB: Heater **14/691** has no discharge control. Heat dissipation via convection takes place only in the front and rear channels (**'a'** and **'b'** in fig.28).

- **Commissioning**

  Set charge and discharge adjusters to the "max." position and leave them in this position for 48 hours (i.e. 2 charging cycles).

  Due to manufacturing techniques, a part of the heater insulation contains some binding agents which can cause unpleasant odours during the first charging. Any dust or machine oils which have collected on the surface of, for instance, the heating elements will also burn off, causing possible odours.

  It is thus vitally important that the room(s) be well ventilated during the first 48 hours or 2 charge cycles!

  NB: Model **14/691** has no discharge control element.

Removing the control unit for servicing

- The control unit can be easily removed in one piece for servicing work.

  This is done as follows:

  - Remove front panel of heater.
  - Remove right side panel if necessary.
  - Open the plastic adjustment element cover (fig.30).
  - Pull off the adjustment knobs (fig.30).
  - Remove the front retaining screws left and right (fig.30 and fig.31).
  - Pull the control unit forward and out (fig.32 and fig.33).

- Refitting takes place in the opposite manner.

- **Make sure that:**
  - the fluid regulator capillary tube is not bent or damaged.
  - the connecting cables are not damaged.
  - the bimetal-strip is not bent or deformed.
  - the control unit slots onto the flaps in the rear panel, made for this purpose.

fig.30

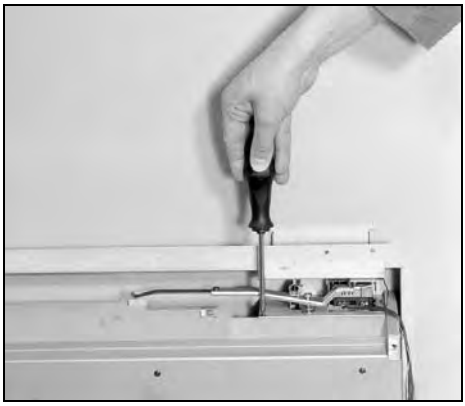


fig.31

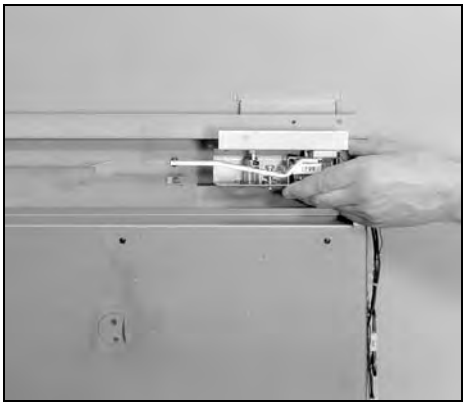


fig.32

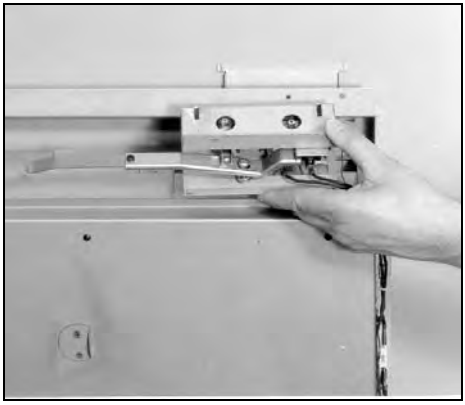


fig.33

Circuit diagram

- **manual: 14/691-3, 14/692-3, 14/693-3, 14/694-3, 14/695-3** **2) 78/4514.4923**

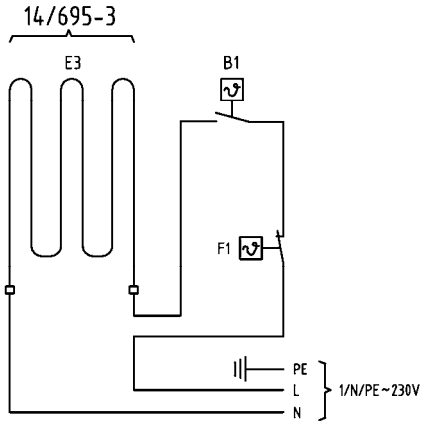
B1 Aufladeregler
Charge control regulator
Thermostat de charge

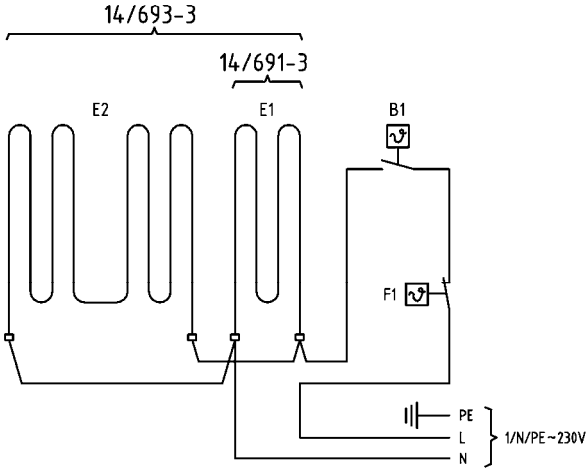
E1 Speicherheizkörper 850 Watt
Storage heating element 850 Watt
Elément chauffant 850 Watt

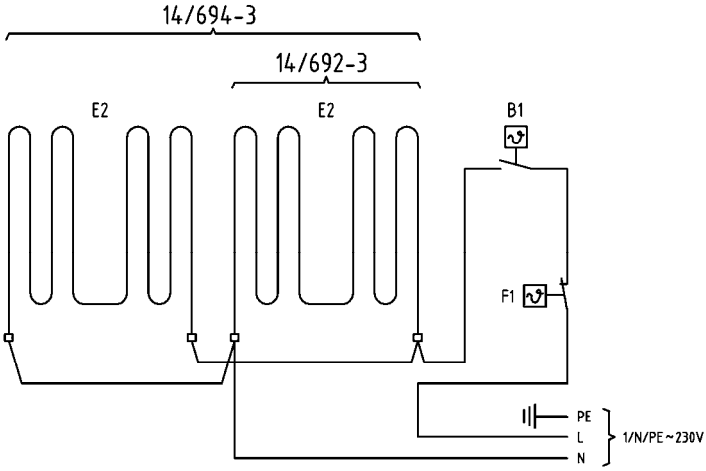
E2 Speicherheizkörper 1.700 Watt
Storage heating element 1.700 Watt
Elément chauffant 1.700 Watt

E3 Speicherheizkörper 1.300 Watt
Storage heating element 1.300 Watt
Elément chauffant 1.300 Watt

F1 Temperaturbegrenzer manuell
Manual reset cut-out
Thermostat de sécurité manuel







B1 Aufladeregler
(raumtemperaturabhängig, 2 Fühler)
Charge control regulator
(room temperature governed, twin phial)
Ambience de pendanc du thermostat
de charge *a deux capillaires*

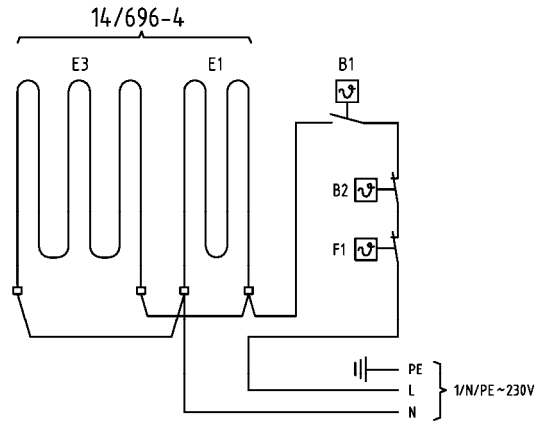
B2 Ladewächter
Storage thermostat
Thermostat de charge

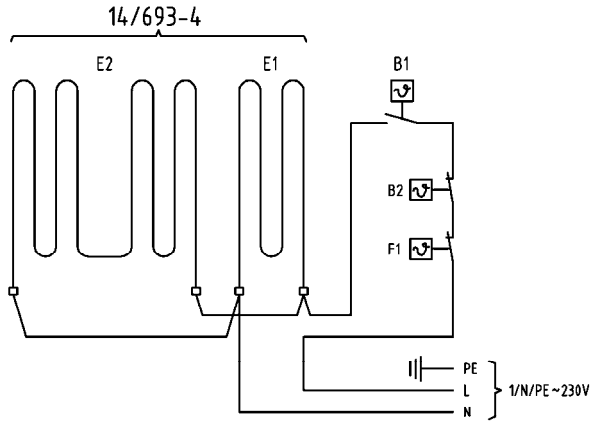
E1 Speicherheizkörper 850 Watt
Storage heating element 850 Watt
Elément chauffant 850 Watt

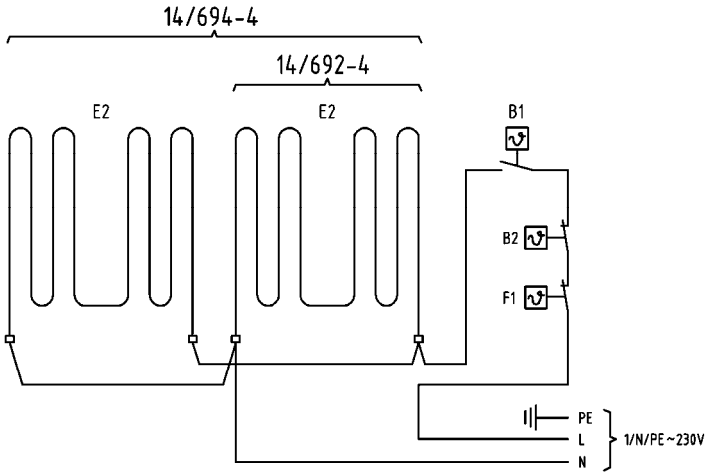
E2 Speicherheizkörper 1.700 Watt
Storage heating element 1.700 Watt
Elément chauffant 1.700 Watt

E3 Speicherheizkörper 1.300 Watt
Storage heating element 1.300 Watt
Elément chauffant 1.300 Watt

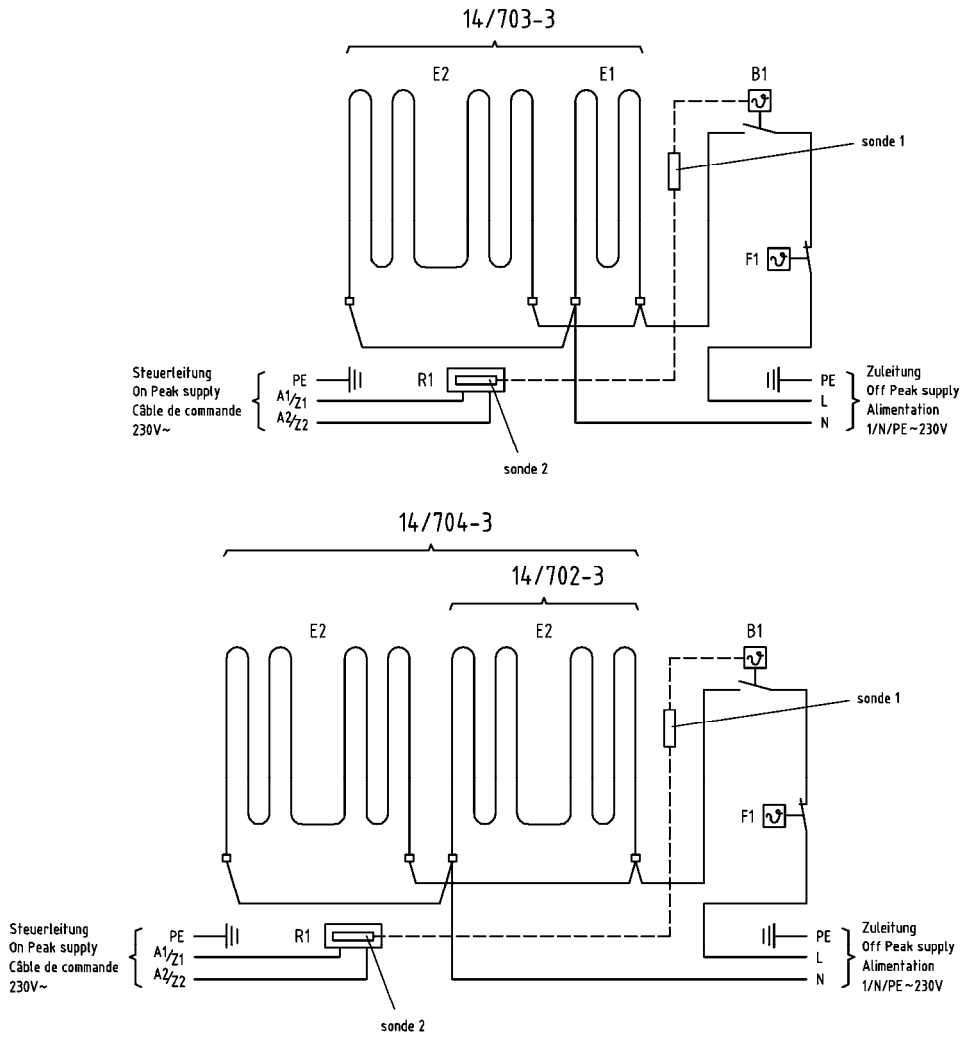
F1 Temperaturbegrenzer manuell
Manual reset cut-out
Thermostat de sécurité manuel







- **intelligent: 14/702-3, 14/703-3, 14/704-3** **1) 78/4514.7023**



E2 Speicherheizkörper 1.700 Watt
Storage heating element 1.700 Watt
Elément chauffant 1.700 Watt

B1 Aufladeregler
Charge control regulator
Thermostat de charge

F1 Temperaturbegrenzer manuell
Manual reset cut-out
Thermostat de sécurité manuel

E1 Speicherheizkörper 850 Watt
Storage heating element 850 Watt
Elément chauffant 850 Watt

R1 Steuerwiderstand
Charge control resistor
Résistance chauffage automatique

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