

ESCAMOLUX



NAME	OUTPUT	DESCRIPTION
Escamolux 55-55	15.0 kW	Built-in fire
Escamolux 70-55	25.0 kW	Built-in fire
Escamolux 70-65	20.0 kW	Built-in fire
Escamolux 80-65	15.0 kW	Built-in fire
Escamolux 90-45	24.0 kW	Built-in fire
Escamolux 105-45	26.0 kW	Built-in fire



EN -13229



BARBAS WOOD-BURNING BUILT-IN FIRE WITH LIFT DOOR:

ESCAMOLUX 55 - 55

ESCAMOLUX 70 - 55

ESCAMOLUX 70 - 65

ESCAMOLUX 80 - 65

ESCAMOLUX 90 - 45

ESCAMOLUX 105 - 45

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1. INTRODUCTION

1.1. FOREWORD

We would like to congratulate you on your purchase of this modern Barbas built-in wood fire. This quality product will give you years of heating pleasure as you enjoy the play of the flames and the cosy glow of the fire.

This manual contains directions for both positioning the appliance and for its environmentally-friendly use. It also contains technical data for the appliance, parts information and directions in the event of problems. Study this manual carefully before using the stove. We recommend you keep this manual in a safe place for reference purposes.

1.2. SAFETY AND INSTALLATION INSTRUCTIONS

Safety

- Do not place flammable objects within 150 cm of the appliance. Pay special attention to furnishings and ornaments around the fire.
- When you use your fire, the exterior will become hot. Always wear the glove or use the accessories supplied when filling etc. Protect yourself and others (especially children!) from burns. Do not leave children unattended when the fire is burning.
- Watch your clothing. Synthetic clothing in particular can easily catch fire and burn intensely.
- Do not approach the appliance with flammable materials or liquids. Any work with solvents, adhesives etc. in the space heated by the fire can be very dangerous.
- Make sure you know what state your chimney is in. Cracks in the chimney may not only lead to damp, staining of walls and leaking of smoke, they can also impair the carrying off of smoke. Make sure you get proper advice from your Barbas dealer or other specialist company.
- Avoid chimney fires! Have your chimney swept at least once per year - more often if you use your fire a lot. Prevent excessive deposits of soot inside the chimney by not burning freshly-cut wood. Instead, burn clean, dry chopped wood.

- Do not use your built-in fire as a barbecue. This can cause (flammable) fat deposits to be left in the chimney and hastens the chimney becoming clogged. Prevent your chimney being soiled from above (birds' nests etc.) by fitting a suitable cap to the chimney pot.
- Follow the instructions issued by your local fire brigade.
The fire can be taken in operation if national and local regulations are satisfied. The required constructive adaptations should be satisfied as well.

Installation instructions

- Wood and wood briquettes may be stoked in the fire.
Coals can't be burned in the fire.
- **Never** use the appliance to burn rubbish.
- Please read all instructions/stickers on and around the appliance.
- Please also study the directions for use before using the appliance for the first time. When you first fire up your appliance, there are a number of extra points you should take into account. See chapter 6.
- In transit, some parts of the appliance may have moved from their original place. The Escamolux is a built-in fire with lift door. Check that the door opens and closes, the retardant plates (brake plates) are fitted correctly to the brackets at the top of the fire, the interior panels are fixed to the walls and the stones on the bottom have not moved.
- Avoid over-loading (white burning glow), caused, for example, by lengthy burning with a fully open primary air vent (combustion air supply slider all the way to “+”), or by burning too much wood in one go. The fire can then become over-heated.
- The appliance may only be set up if the appliance and location meets the
 - national and local installation regulations;
 - local fire brigade regulations and required architectural provisions.

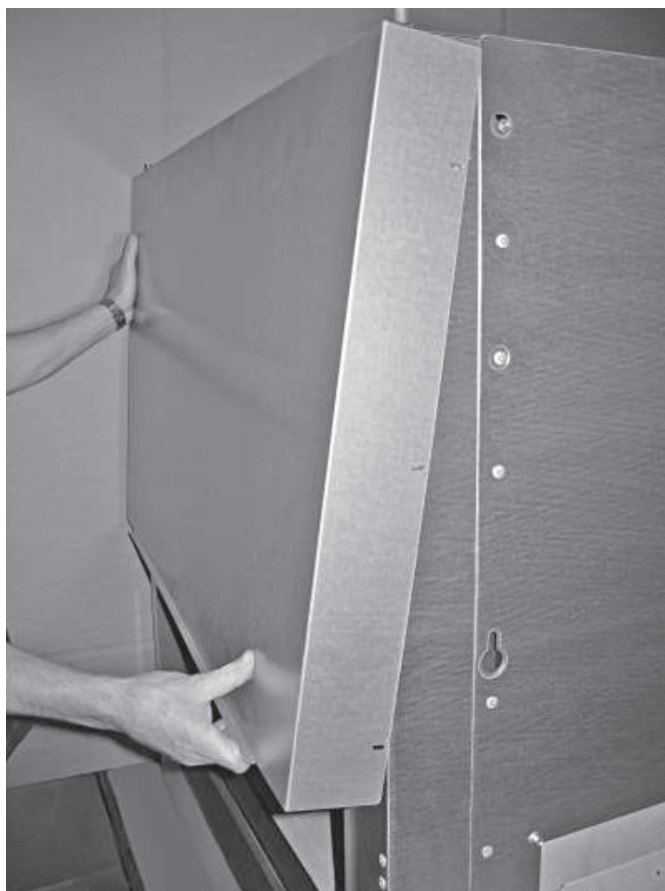
2. PLACING

2.1. INCLUDED

Documentation	• Warranty • Manual
Loose in appliance	• Glove (Heat resistant up to max. 95°C) • Handle

2.2. PREPARATION FOR POSITIONING

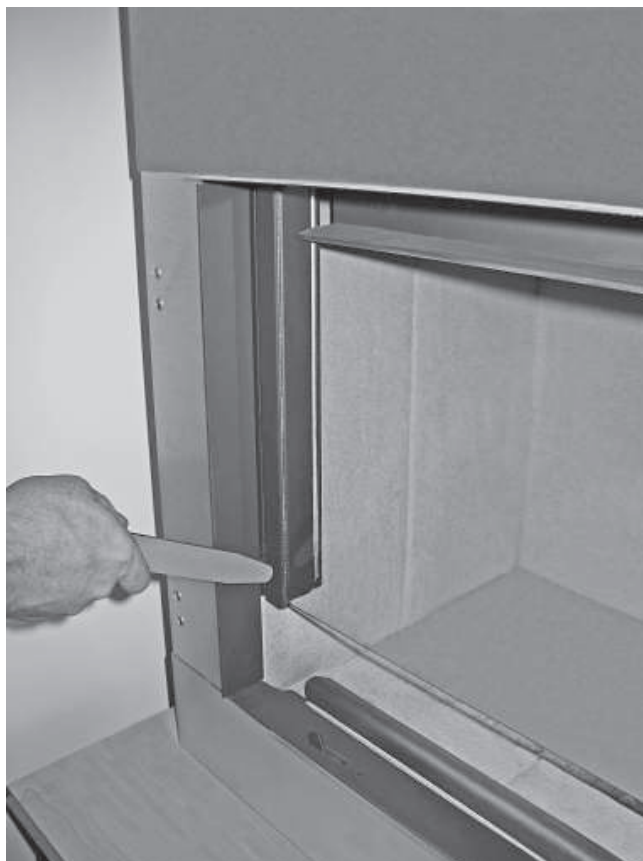
- Dismantle the metal plate on the front (above the fire opening) by unscrewing the screws on the sides and the top (hexagonal 7).



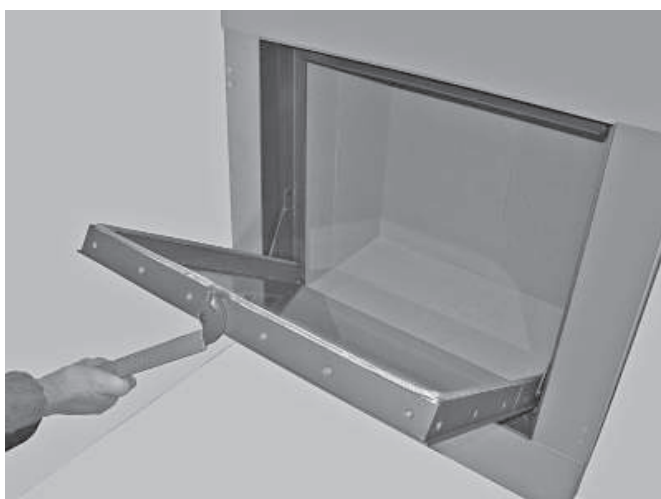
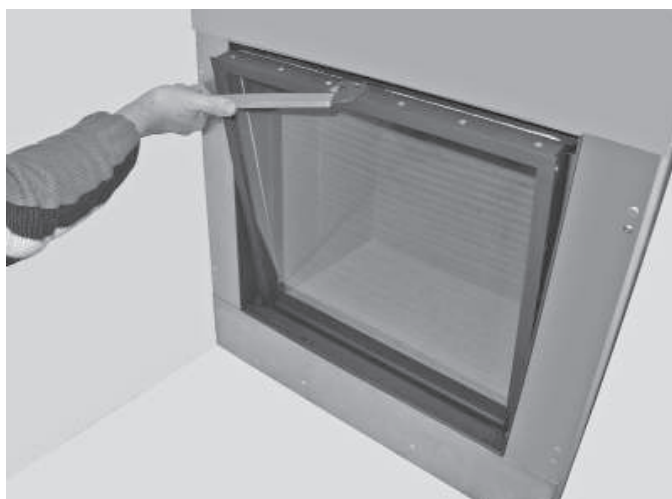
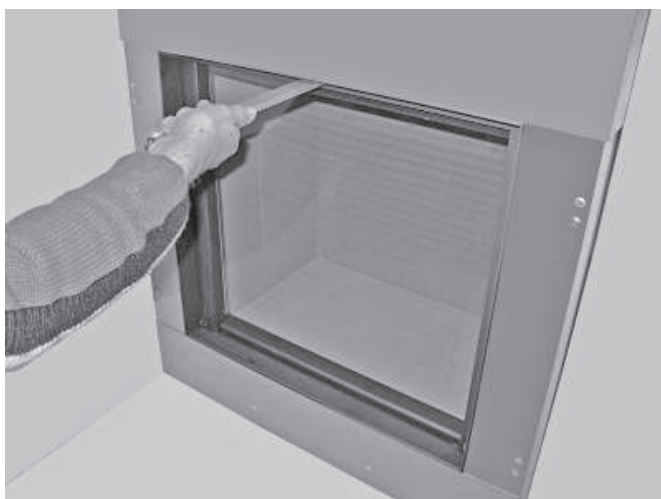
- Remove the plastic tie-wraps with which the chains are secured.



- Ensure that the chains are properly placed on the chain wheels.
- Check whether the lift door is functioning properly.



- If necessary, adjust the lift-door, using the two 'screw thread eyes' (on the top of the lift door).
Ensure that the bottom of the lift door fits horizontally to the sealing strip.
- Reassemble the metal plate to the appliance.
- In addition, check the way the door tilts forward to allow the glass to be cleaned.



- Check the operation of the slider for the regulation of the combustion air intake (bottom left of the window).



- Report any defects immediately to your dealer.
- Remove enclosed documents and components from the built-in fire.
- Fit the fan-set (optional). See Chapter 4.1.
- **Important:** **Using a hammer, open at least two convection openings on the top of the fire !!**
In this way, the discharge of the heat that accumulates in the convection casing is guaranteed.



Ensure that the casing/fireplace has sufficient ventilation openings.
(See Chapter 2.3; The casing/fireplace.)

2.3. ACCESSORIES

The following accessories can be supplied by your dealer:

<u>Part no</u>	<u>Accessorie</u>
323105	<u>Fan set Escamolux:</u> Set, consisting of 2 convection fans (230 VAC / 90 W each) including fan speed controller and assembly material.
312829 302188 310178 309872 309730 304040	<u>Convection set General:</u> (for convection air extraction) Advice: use if appliance is installed <u>with</u> fan-set. • 1x Flexible aluminium pipe Ø125 mm, L= 3 m (max.) • 2x Fitting box 135 x 135 mm • 2x Convection exit grid, white, 145 x 145 mm • 2x Collar adaptor Ø125 mm • 4x Hose clamp Ø125 mm

2.4. BASIC REQUIREMENTS FOR POSITIONING BUILT-IN FIRES

General

The appliance may only be set up in a room in which the location, architectural construction and activity is not endangered by the presence of a fire. The surface on which the appliance is to be placed must be correctly shaped and big enough to accommodate the appliance safely (in compliance with DIN 18895, part 1).

When fitting, all local and/or national safety regulations must be followed closely, particularly in rooms with walls/floors containing flammable material. If in doubt, consult the fire prevention department of your local fire brigade and/or the architectural department of your local authority.

Built-in fires may solely be used in:

- Rooms with at least one outer door or window that can be opened;
- A suite of rooms connected directly or indirectly with each other with a collective supply of air.

In the aforementioned cases, the capacity of the room(s) must be at least 4 m³ per kW of nominal output.

Built-in fires may only be constructed or moved into rooms where at least 360 m³ combustion air per hour and per m² clear fire opening can circulate. If there are any other fire-burning appliances in the same room, at least 540 m³ combustion air per hour and per m² clear fire opening must be in circulation.

Other appliances must have at least 1.6 m³ combustion air per hour, per total nominal output in kW at a calculated pressure difference of 0.04 mbar with the ambient air.

Built-in fires must not be used in:

- Staircases, except in buildings with no more than two apartments.
- Entrances providing general access.
- Rooms in which highly inflammable or explosive substances are processed or manufactured.
- Garages;
- Rooms or apartments with air conditioning or convection heating provided by fans, unless it can be guaranteed that they will not interfere with the working of the fire.

This is under the following conditions:

- the installation merely circulates air around the room;
- the installation has sufficient safety provisions preventing the possibility of spontaneous and automatic underpressure being created in the room in which the fire is situated;
- that the combustion air stream created by the fire and the volume streams of the extraction installations in the room and adjoining rooms connected by de-aeration connections do not create underpressure greater than 0.04 mbar. This must also be guaranteed if easily accessible air-conditioning equipment is moved or removed from the room.

Provision of combustion and convection air

The local chimney sweep/authorities must be consulted prior to fitting regarding the suitability and combustion air supply. DIN 18160 (house chimneys) must be observed. DIN 18895 parts 1 and 3 also apply.

The air, which is piped in through a grill in the wall, ensures that the air in the room is refreshed and is also used for the combustion process.

The combustion air is sucked in through the grill in the chimney breast and through the opening underneath the appliance. Because some of this air passes through the chimney breast, it can be referred to as pre-heated combustion air.

The built-in appliance can also be fitted with an air duct (this is compulsory in Germany) which draws the combustion air directly from outside.

The air intake must have a opening of at least Ø125 mm. If required, the air pipe can be fitted with a control damper. In this case, the position of the damper must be visible from the outside. The use of a direct combustion air intake is strongly advised if the appliance is fitted with a convection fan set.

The casing / fireplace

- The casing may not be directly connected to the built-in fire, but must be constructed so that it is self-supporting; a mantle iron or lintel should be used for this. The covering in the area must be of non-flammable materials of flame-retardant material class A1. This includes bricks, cladding, ceramic tiles, metal or plasterwork, Promatec and Nobranda.
- The opening for incoming and outgoing air from the casing must be at least totally 900 cm². At least 200 cm² from the opening for incoming and outgoing air must not be closable.
- The ventilation of the casing/fireplace can be provided by grills, but this can also be achieved by not building the fireplace right up to the ceiling (leaving a gap of 5 cm).

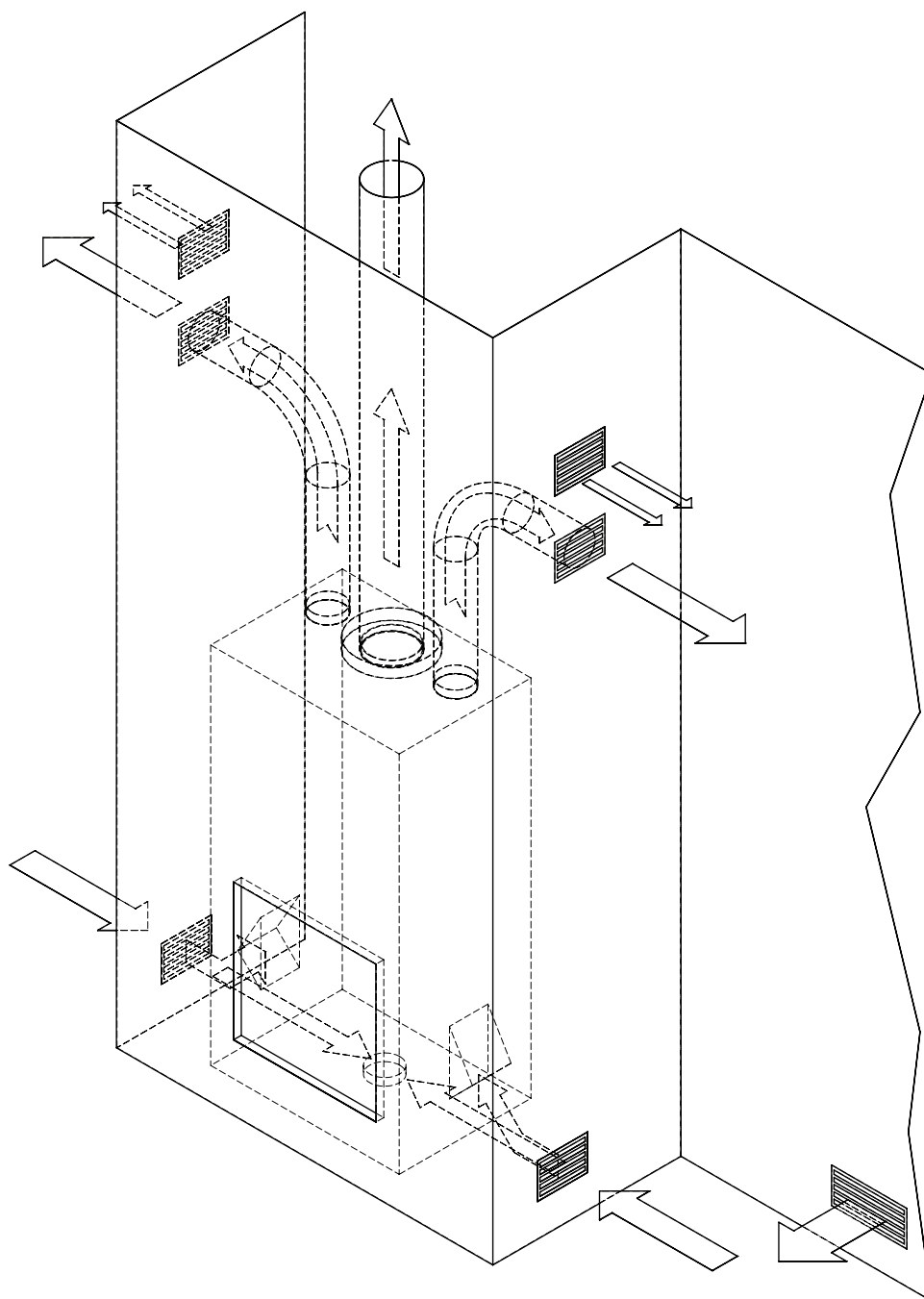
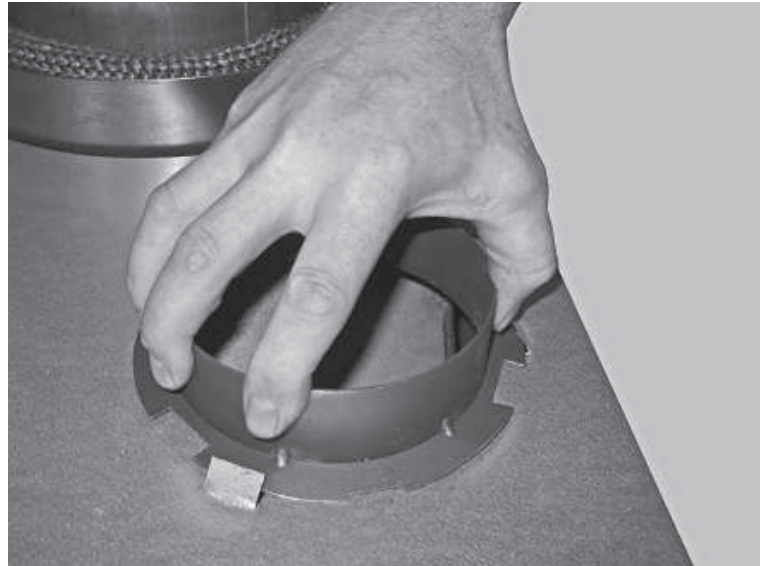
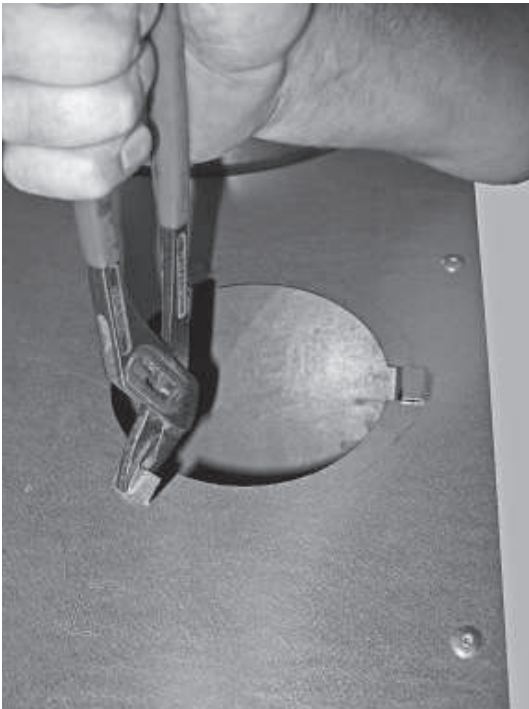


Figure 1: Use of convection set (1x).
Ventilation and combustion air intake via the chimney breast.

- When building in the appliance you can, if you wish, use a convection set (1x or 2x) (option) to connect the convection openings to the warm air exit grills in the chimney breast (See figure 1 and Chapter 4).



- Place the collar rings (2x or 4x) on the convection openings.
- The convection air pipes must be made of non-flammable material which cannot be distorted.
- Within a range of 30 cm either side and 50 cm above the escape opening, there must be no flammable materials (e.g. wooden ceiling, fitted furniture).
- The convection casing of the built-in fire must be covered all around with a 10-cm thick layer of insulation (use of ceramic wool is permitted).

2.5. CONSTRUCTION REQUIREMENTS

Built-in fires must be constructed such that the adapter from the chimney and convection pipes can easily be cleaned.

There must be no electrical cables or gas pipes in the walls surrounding the area of the fireplace.

In accordance with construction regulations (in Germany), combustion air pipes in buildings with more than two inhabited floors containing piping and cabling running through fire walls must be fitted in such a way that fire and smoke cannot escape to other floors or rooms.

2.6. HEAT-INSULATING MATERIALS

The heat-insulating materials to be used must meet specific quality standards. Manufacturers of insulating materials quote an insulation number on the packaging consisting of 10 numbers in accordance with the stipulations of AGI-Q132. Only those insulating materials listed in the adjacent table 1 or alternatives approved (in Germany) by DIBT may be used.

Insulation material		Delevired in ...		Heat conductivity		Max user temperature		Density	
Co-de	Sort	Co-de	Form	Co-de	Can be delivered as	Co-de	°C	Co-de	kg/m³
10	Mineral fibre	01	Strips	01	Mats (1)	20	200	02	20
11	Glass fibre	02	Individual fibres	02	Mats (2)	25	250	03	30
12	Stone fibre	03	Granular fibres			30	300	04	40
13	Cinter fibre	04	Felt			35	350	05	50
		05	Fins mats			40	400	06	60
		06	Mats			45	450	07	70
		07	Plates			50	500	08	80
		08	Bowls			55	550	09	90
		09	Segments			60	600	10	100
		10	Twisted	10	Bowls (1)	65	650	11	110
				11	Bowls (2)	70	700	12	120
						75	750	13	130
						80	800	14	140
						85	850	15	150
				20	Plates (1)	90	900	16	160
				21	Plates (2)			17	170
								18	180
								19	190
								20	200
		99	Other	99	Tailor made	99	Different approval standard	99	Different approval standard

* Table 1: data on heat-insulating materials (permitted heat-insulating materials are those in grey).

Summary of insulation properties:

- Temperature resistance > 700°C
- Density > 80 kg/m³
- Insulation figure as per AGI-Q 132
- Must not end with 99 (see table)

2.7. CHIMNEY

Every fire needs its own chimney. Multiple connections to one main chimney is not permitted. Ensure that any existing chimney is completely air-tight and in good condition. It must be suitable to accommodate the appliance in question. Make sure your chimney has a proper cap to prevent rain getting in and birds nesting on it.

The draught in your chimney determines how your fire will burn. The recommended draught is approx. 15 Pa (0.15 mbar). Your chimney should be at least 4 metres tall from the point at which the chimney connects to the fire. Chimneys which are well-insulated measuring in excess of 8 metres can develop a significant draught if the fire is raging. We therefore advise you to fit a chimney damper or draught diverter between the fire and the chimney.

2.7.1. Chimneys Escamolux series

Ensure that any existing chimney is completely air-tight and in good condition. The diameter of the entire chimney, including the chimney pot on the roof must have a diameter at least equal to the diameter of the flue gas outlet of the appliance. See chapter 13.

If there is no suitable chimney immediately available, we advise you to use double-walled insulated stainless steel pipe sections. A chimney must be compliant with the prevailing building regulations. Have a specialist carry out the building. When purchasing such pipe sections, we advise you to find out whether some form of casing of the pipes is required.

A few points for your attention:

- chimneys must be free-standing, i.e. they must not rest on the appliance itself.
- all connections between the appliance and the chimney must be properly insulated.
- flammable material must be kept clear (outside the casing/insulation zone) of all through-feeds in the floor or wall (remember the roof decking).

Do not make any horizontal connections. Deposits and soot will collect here (unless it is a short horizontal connection directly behind the built-in fire).

The chimney calculation, as in Germany, is made according to DIN 4705 parts 1 and 2 with each of the following measured values:

- mass flow of the flue gasses;
- temperature of the flue outlet on the fire;
- chimney draught;
- nominal power output.

3. INSTALLATION INSTRUCTIONS

3.1. REQUIREMENTS RELATING TO THE USE OF EXISTING CHIMNEYS

The adapter material for the connection with the chimney must be made of at least 2 mm thick sheet steel and must be insulated with a heat-resistant material 3 cm in thickness. Connect the pipes to the existing chimney using a sliding sleeve in the ceiling (niche pipe). Check all connections for air-tightness. If the smoke outlet leads through parts containing flammable material, such as walls, the adapter must be encased in at least 20 cm of a mineral substance (such as aerated concrete).

Protection of the basic surface (surface)

When fitting a built-in fire on a surface containing flammable material, the surface must be fitted with a covering layer of a non-flammable material such as concrete with a thickness of 6 cm. The concrete plate must be of sufficient dimensions to act as a bearing surface. The concrete plate must then be covered with at least 3 cm of heat insulation.

If a concrete pedestal is not immediately available, a pedestal should be built on the creeping space. Parquet or wooden flooring must not extend to within the chimney breast.

Protection of the floor, in front of the built-in fire/fireplace

The floor, in front of the built-in fire/fireplace must be made of non-flammable material.

The minimum dimensions of these non-flammable surfaces must be as follows.

- At the front, the dimensions are determined by the height of the heating area measured from the bottom plate (h) plus 30 cm (h+30 cm), however no less than 50 cm.
- At the sides, the dimensions are determined by the height of the heating area measured from the bottom plate (h) plus 20 cm (h+20 cm), however no less than 30 cm.

Construction parts containing flammable substances or material and fitted furniture within the radiation area of the fitted fireplace

Any flammable materials should be kept outside an imaginary circle with an 150 cm radius centred on the built-in fire.

Ceiling above the built-in fire/fireplace

If the hollow space above the fire reaches as high as the ceiling, it must be protected if it contains any flammable material and/or if it is a bearing structure. Such protection should be in the form of a 10-cm thick heat-insulating layer.

Construction parts containing flammable substances or material and fitted furniture outside the radiation area of the fitted fireplace

There must be a distance of at least 5 cm between the outside surfaces of the chimney breast/casing/fireplace into which the fire is built and the construction parts of inflammable building material and inflammable components, such as integrated furniture.

Expansion seams

Between the fire and its casing/fireplace, an expansion seam must be factored in to calculations. This may be filled in with ceramic sealing tape.

The casing/fireplace must also be covered on the inside with a layer of insulation material. It is not necessary to insulate the casing if the fitted fireplace is designed so that the free surfaces thereof cannot get hotter than 85°C.

4. FITTING THE FIREPLACE

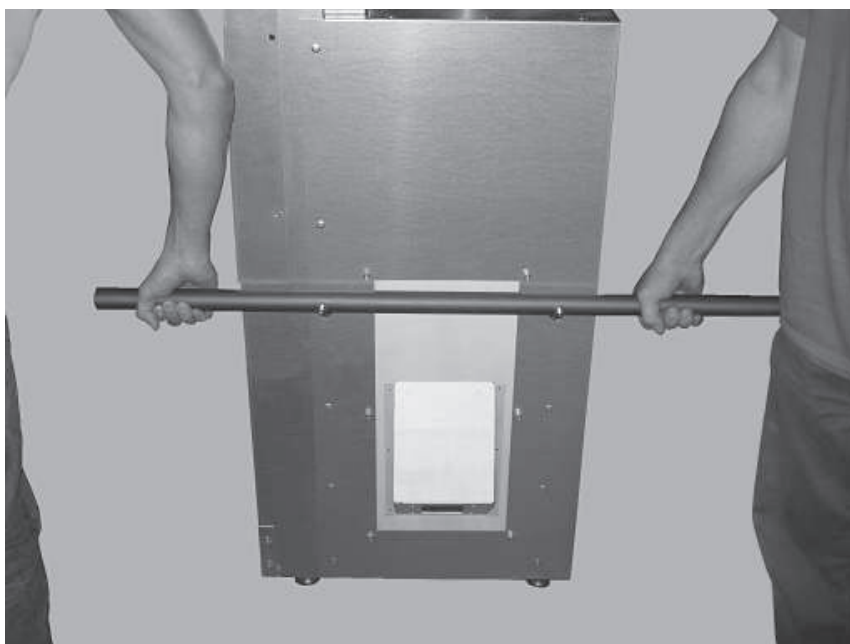
4.1. PREPARATION / INSPECTION OF FUNCTION

- Remove the transport security, see chapter 2.2.
- Check the function of the lift door.
- Check the operation of the combustion air supply slider.
- Check the position of the retardant plates (brake plates).
- Check whether the convection holes Ø125 mm (2x or 4x) on the top side are open.
- Check that the fan, once fitted, is in working order.

Positioning of the fireplace

The fire must be positioned on a concrete surface. If such a surface is not immediately available, a pedestal must be built from the creeping space.

The appliance can be placed in position using the carrying brackets supplied.



The space between the fireplace (hearth surround/brick work) and the fire itself should be left completely open so that there is an empty space.

At least 25 cm of free space should be left on both sides of the fire. Then a later installation of a fan set is always possible. Ventilate the fireplace, by placing ventilation openings at the top and bottom of the chimney breast.

The total ventilation openings should be at least 450 cm² at the bottom of the chimney breast and also at least 450 cm² at the top of the chimney breast.

(Total ventilation openings: 900 cm².)

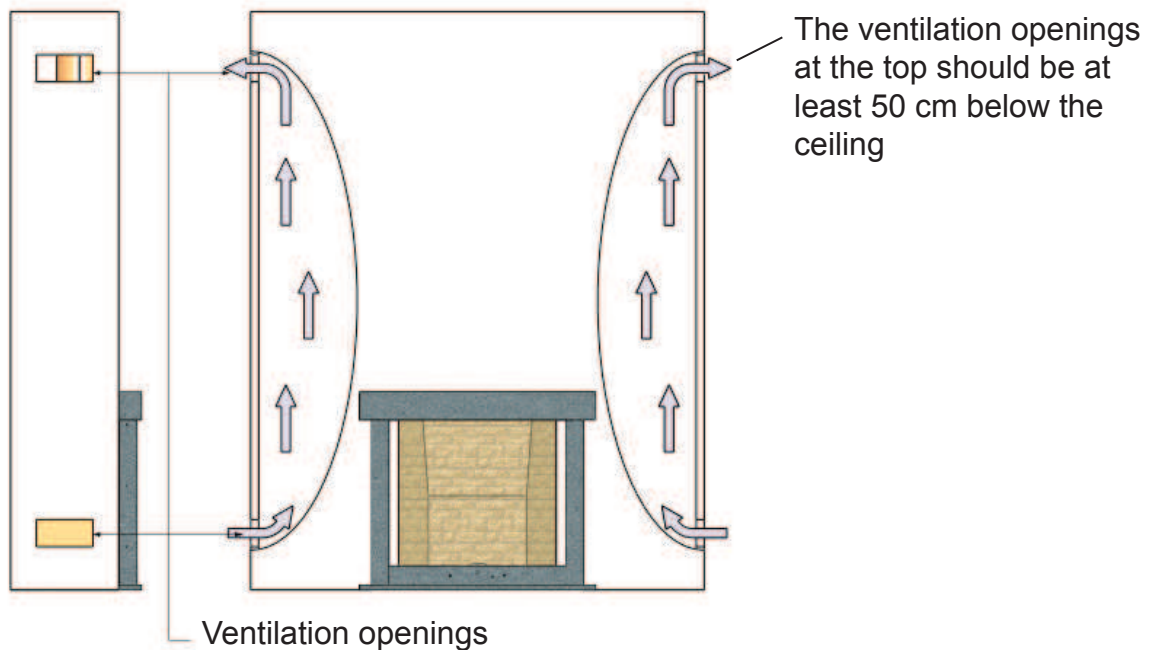


Figure 2: Use of ventilation of fireplace

Positioning the fan set (option)

The convection fan system (2 fans) is connected to both sides of the fire without making use of flexible connection hoses. It is necessary to leave additional space at the sides of the fire for this as described above.

The fan set consists of:

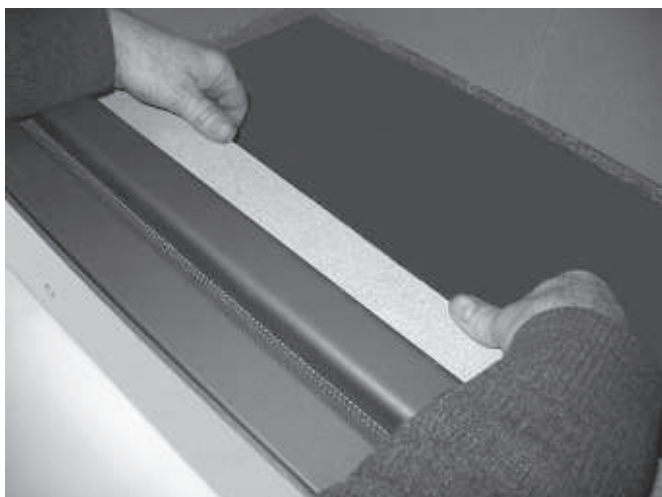
- 2 fans
- gaskets
- 1 fanspeed controller with built-in box
- 1 junction box/wiring
- assembly material

Fitting the fan set:

- Remove the 5-pronged plug from each fan.
- The fan set can be fully assembled from inside the fire.
 - Carefully remove the bottom plates, left and right, from the fire. Use a wide and flat screwdriver for this. Make sure no pieces are broken off.



- Remove the bottom plate (strip) at the front.
This will cause the ventilation panel (strip with slot openings) to drop downwards.



- Remove the ventilation panel that is now resting on the metal bottom.



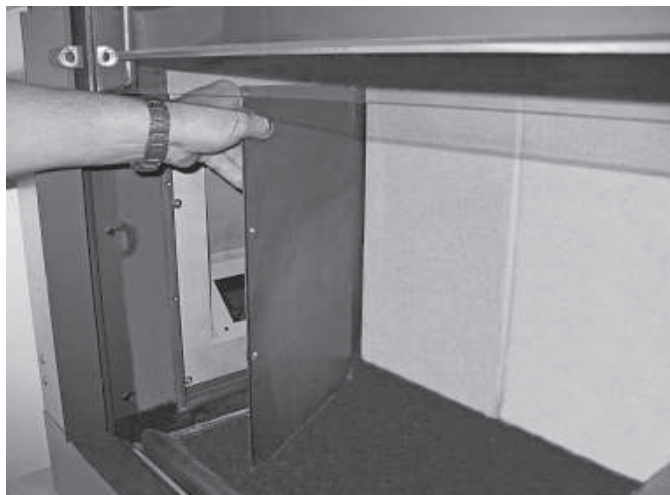
- Remove the rear side panels (left and right) carefully, using a wide, flat screwdriver.



- Slide the front side panels to the back and remove them.



- The inner metal panels (left and right) can now be unscrewed (8 x cross-headed).

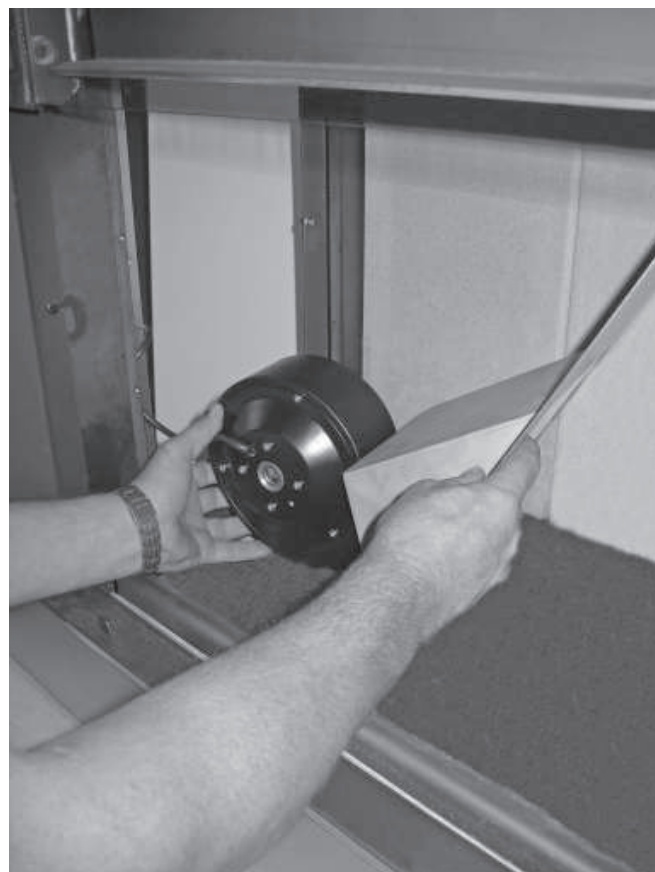
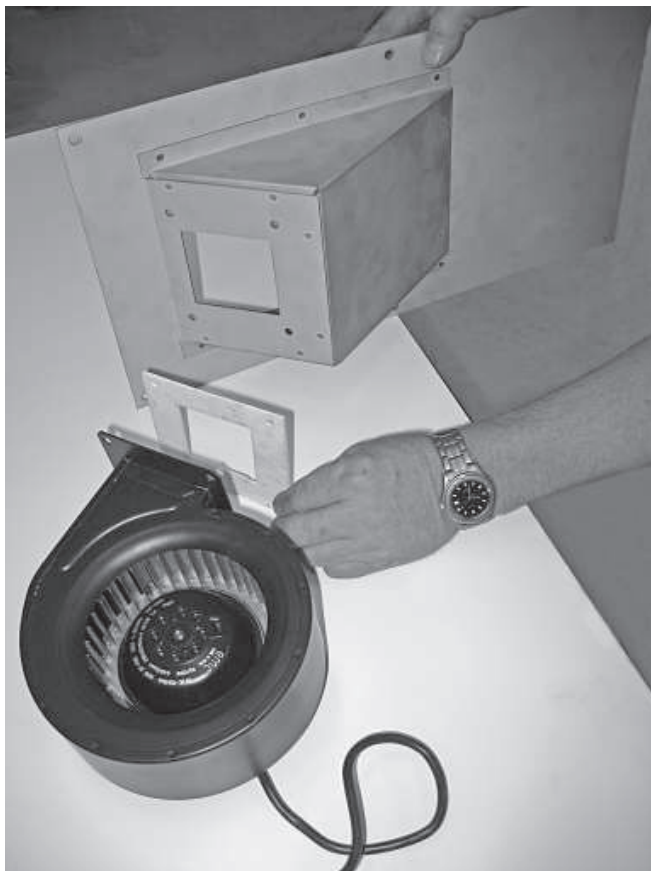


- Unscrew the outer metal panel (left and right).

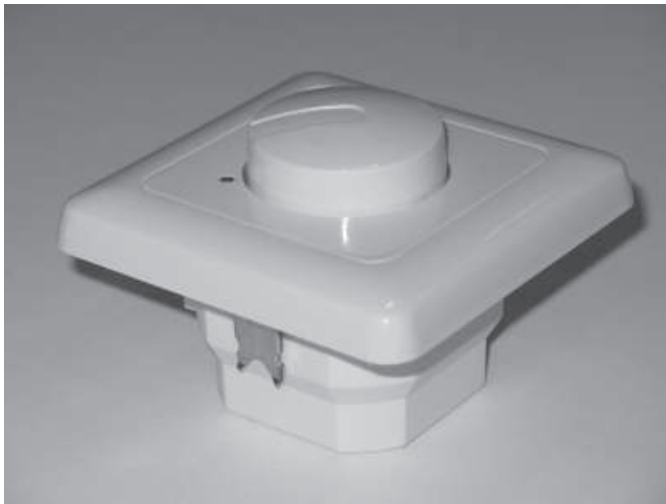


The fan can now be fitted to this using 4 nuts and bolts.

Note ! : Place gaskets between fan and outer plate.



- Connect the plug (five-pronged) to the cable tree
- Place the cable tree, if possible, under the fire!
- Place the built-in box no more than 1 metre from the fire or near the fireplace.
- Fit the fanspeed controller into the built-in box.



Fanspeed controller with integrated
ON - OFF switch.
For installation in built-in box.



Built-in box for Fanspeed controller.

- Check the operation of the fan set.
Note ! : The fan set should be connected to an earthed wall socket.
 This socket must remain accessible at all times.
 The electrical connection must be undertaken by a qualified professional.
- Fit/place all components back in the appliance in the reverse order to above.

The fans are at all times accessible via the fire for service purposes.

By means of the hollow area and the openings at the front or on both sides of the chimney breast, the fan system will extract sufficient air from the room to be heated for the convection box of the fire.

The combustion air supply

The combustion air supply connection is located on the under side of the appliance.



Air supply connection
on the under side of
the appliance



Always ensure that there is sufficient open space under the appliance for the combustion air supply.

Connecting direct air supply connection

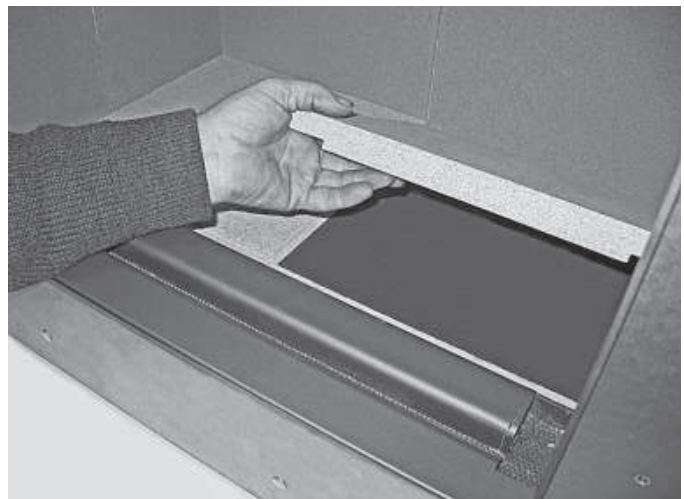
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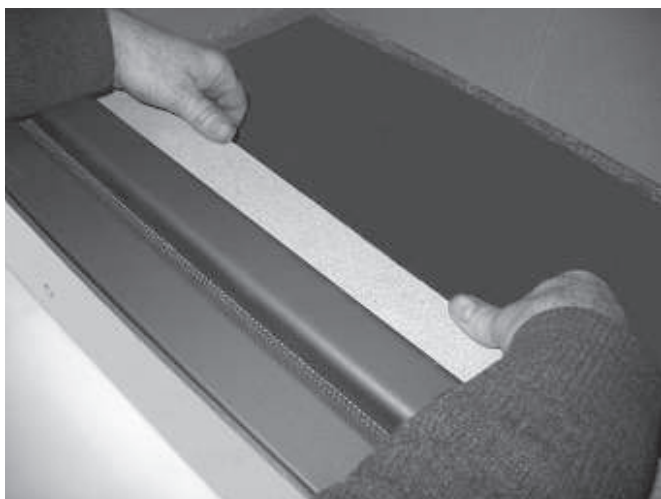
The complete interior of the appliance, including the retardant plates (brake plates) are made of a heat-resistant material that is very fragile.

1. Dismantling interior of appliance:

- First, carefully remove the bottom plates, left and right, from the fire. Use a wide, flat screwdriver for this. Make sure no pieces are broken off.



- Remove the bottom plate (strip) at the front.
This will cause the ventilation panel (strip with slot openings) to drop downwards.



- Remove the ventilation panel (strip with slot openings) that is now resting on the metal bottom.



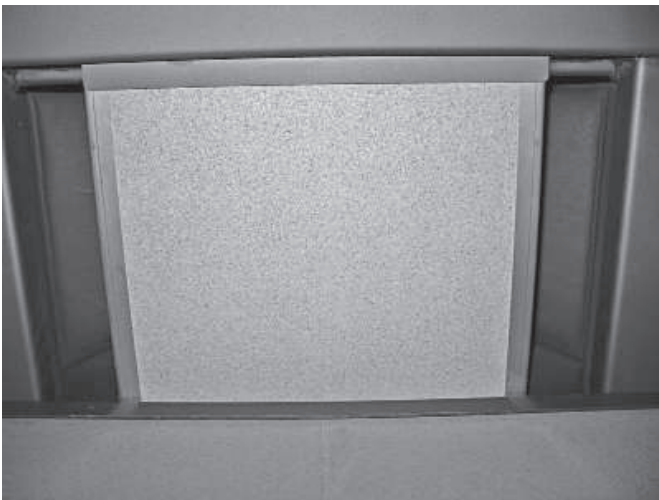
- Remove the rear side panels (left and right) carefully, using a wide, flat screwdriver.



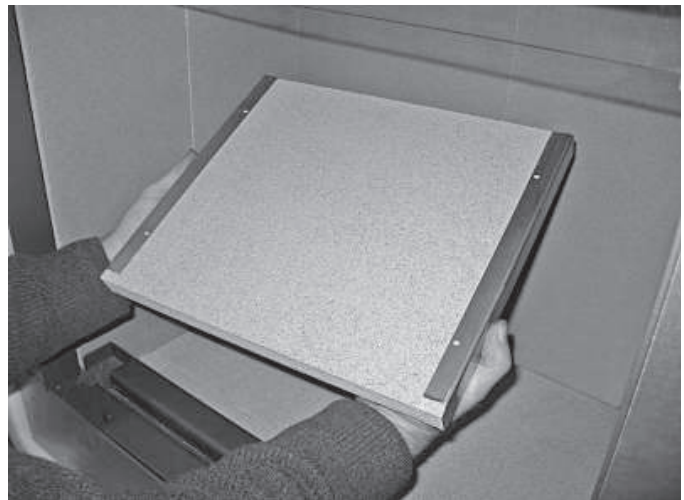
- Slide the front side panels (left and right) to the back and remove them.



- If you wish, you may also remove the two retardant plates (brake plates).
 - Lower retardant plate:

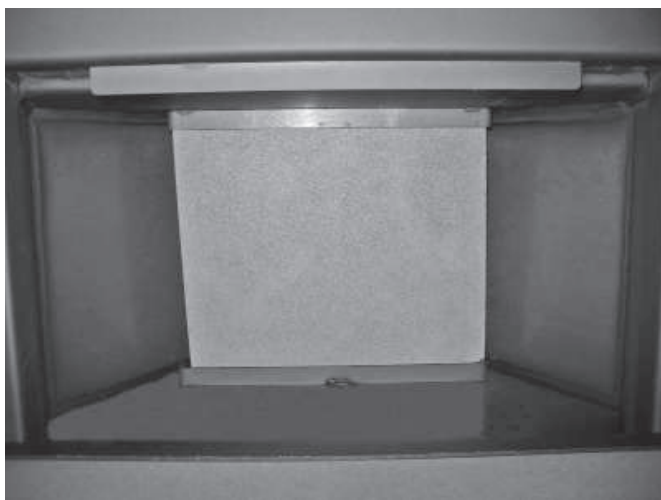


Position of lower retardant plate.
View; seen from below
from the combustion chamber.



Lower retardant plate.
Remove this by tilting it upwards,
tipping it forwards and removing it.

- Upper retardant plate:



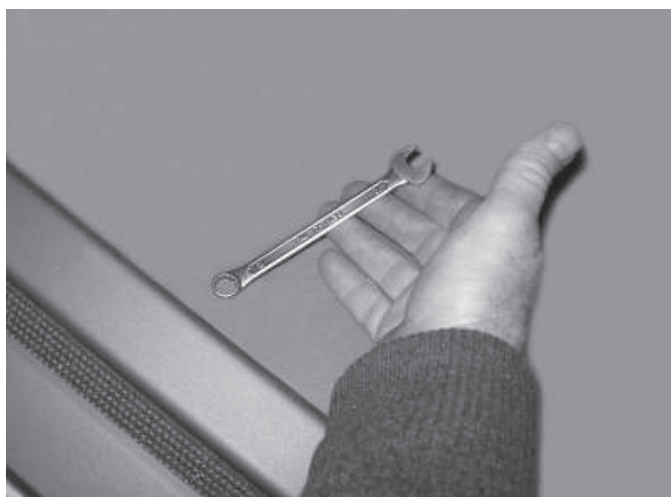
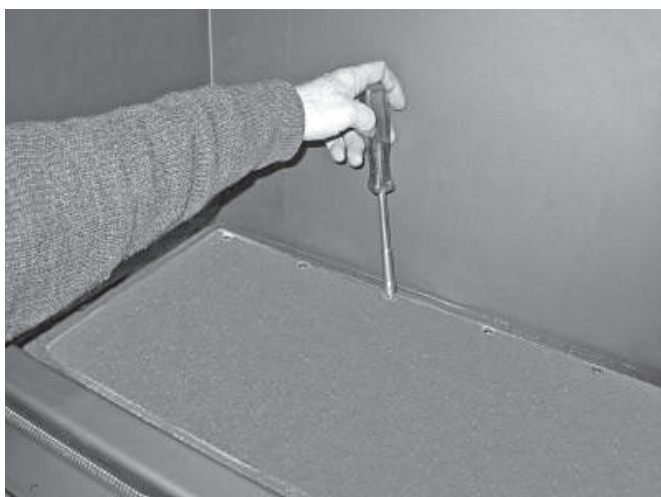
Position upper retardant plate.
View; seen from below
from the combustion chamber.
(The lower retardant plate is
already removed.)



Upper retardant plate.
Remove this by tilting it upwards,
tipping it forwards and removing it.

2. Dismantling metal bottom plate appliance:

- Dismantle the upper metal bottom plate by unscrewing the bolts



- Remove the upper metal bottom plate using a screwdriver.



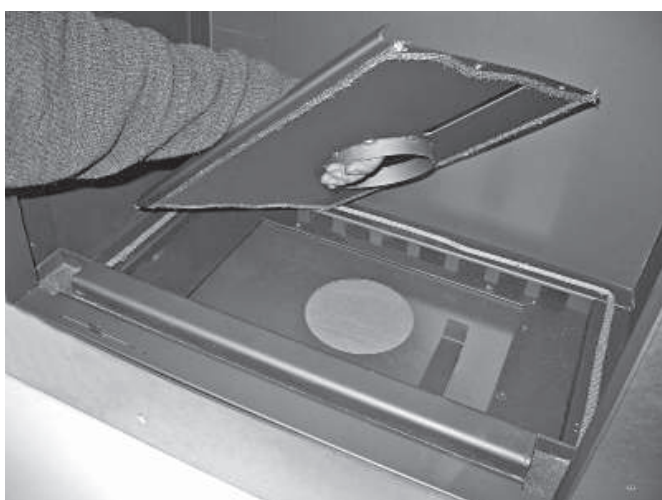
- Remove the air slider.



- Dismantle the lower metal bottom plate by unscrewing the bolts.



- Remove the lower metal bottom plate.

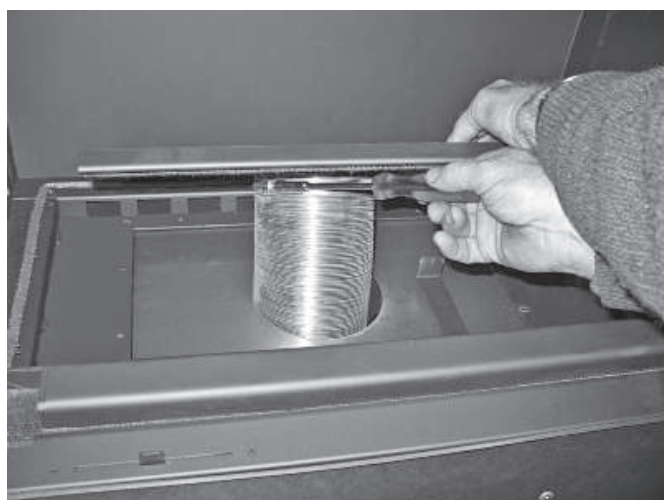


3. Fitting combustion air supply tube/pipe Ø125 mm:

- Insert the metal (flexible) pipe under the appliance through the opening in the bottom.



- Fix the tube to the lower metal bottom plate using a tube clamp or parker screws.



- Insert a piece of pipe (Ø125 mm) between the pipe and the external air supply opening in the wall with, if required, a movable damper, in such a way that the pipe with operating lever is fitted so that the damper can be opened and shut from the living area.
Check that everything works correctly.
- Fit a grill to the outside wall.

4. Assembly of the interior and bottom plates takes place in the reverse order.

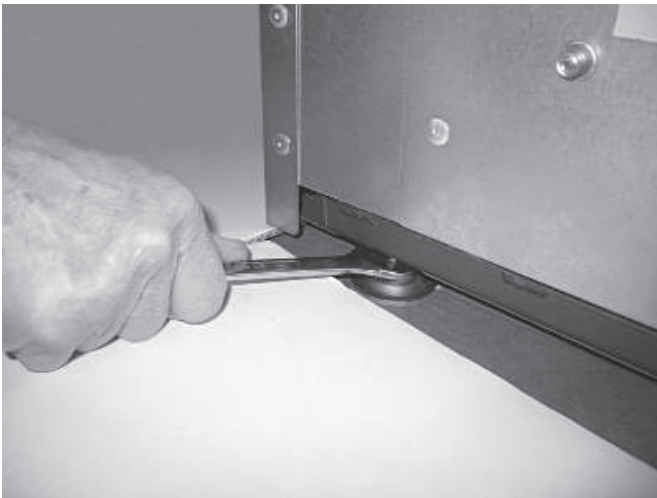
The appliance can be built in using brickwork or by means of fire-resistant plates that are screwed to a metal frame. You can, if you like, erect a natural stone mantelpiece in front of this.

Note ! : Ensure that there is a clearance of 2 mm between the brick work/fireproof plate in connection with the appliance expanding when hot.

Convection set (1x or 2x) (option!)

- If required, a convection set can be added when installing the appliance.
- Use convection set:
The function of the convection set (option) is to improve the convection through the appliance, resulting in efficiency improvement and preventing high temperatures in the chimney breast.
The set consists of:
 - 3 m aluflex
 - 2 exit grids (white)
 - 2 collar adaptors Ø125 mm
 - 4 hose clamps
- Assembly convection set:
 - Secure the collar adaptors (2x or 4x) to the appliance.
 - Now connect the flexible hoses to the collar adaptors (Ø125 mm) on the top of the fire and to the metal fitting box on the air exit grids that are being used (do not forget to fit hose clamps).
 - Ensure that the flexible hose connections are gastight.

- If desired, insulate the flexible pipes with heat-insulating material that is resistant to temperatures in excess of 700°C.
- The air exit grids cannot be fitted until a few days later, once the masonry has been pointed and allowed to dry. If one or more channels are connected leading to other rooms, these rooms must be fitted with closable grids. These are available from your dealer, as well as the flexible hoses and clamps required.
- Within a range of 30 cm either side and 50 cm above the escape opening (exit grids), there must be no flammable materials (e.g. wooden ceiling, fitted furniture).
- Cover the top, side and rear of the appliance to the front edge with c. 10 cm thick insulating material ($T \geq 700^{\circ}\text{C}$) (Class A1 according to DIN 4102 (= EN 13501)). Leave a few centimetres clearance between the front of the chimney breast and the appliance.
- Ensure the appliance is level by adjusting the feet to the correct height. Use a no.17 spanner for this.



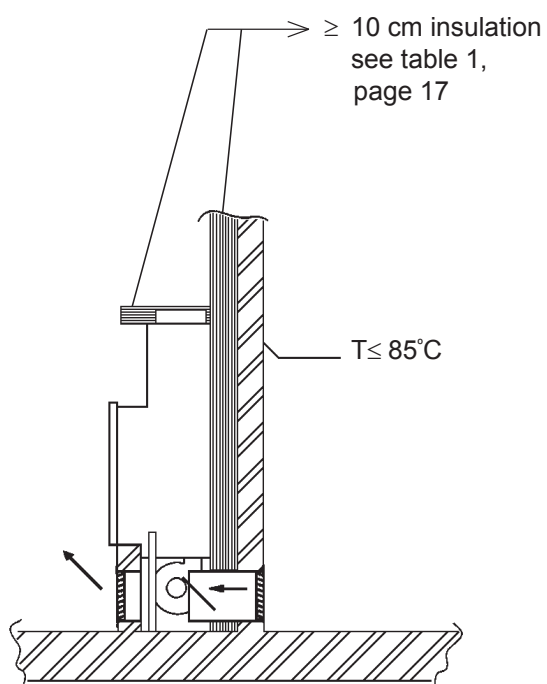
- Make a good seal between the flue outlet from the appliance to the chimney. See also 2.7.
Ensure that the entire flue is gas-tight.
- Ventilate the chimney, by placing ventilation openings at the top and bottom of the chimney breast.
- Close up the front.

Available grids (option) for ventilating the fireplace:

COLOUR	DIMENSION (cm)	CLEAR OPENING (cm²)
White (incl. fitting box)	13.5 x 13.5	75
White (incl. fitting box)	27.0 x 13.5	150
White	43.0 x 22.0	550

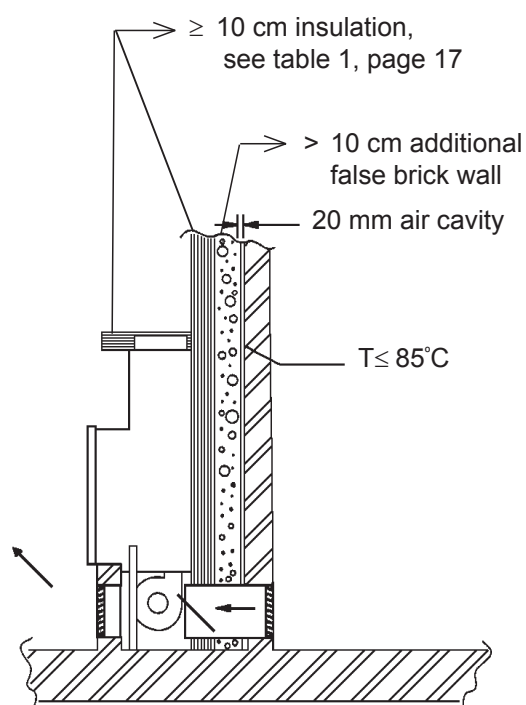
- If the fire is to be placed against a bearing wall or against a wall containing flammable material, an air gap of at least 20 mm should first be created. Before it a false wall, 100 mm thick, must be built of masonry or aerated concrete.
- If the fire is not placed against a bearing wall or a wall containing flammable material, no false wall is necessary. Layers of insulation of at least 100 mm thickness will then be sufficient (class A1, DIN 4102 (= EN 13501) - compliant).
- After four weeks, your fire will be ready for use.

Mounting a Escamolux-fire against a fireproof wall



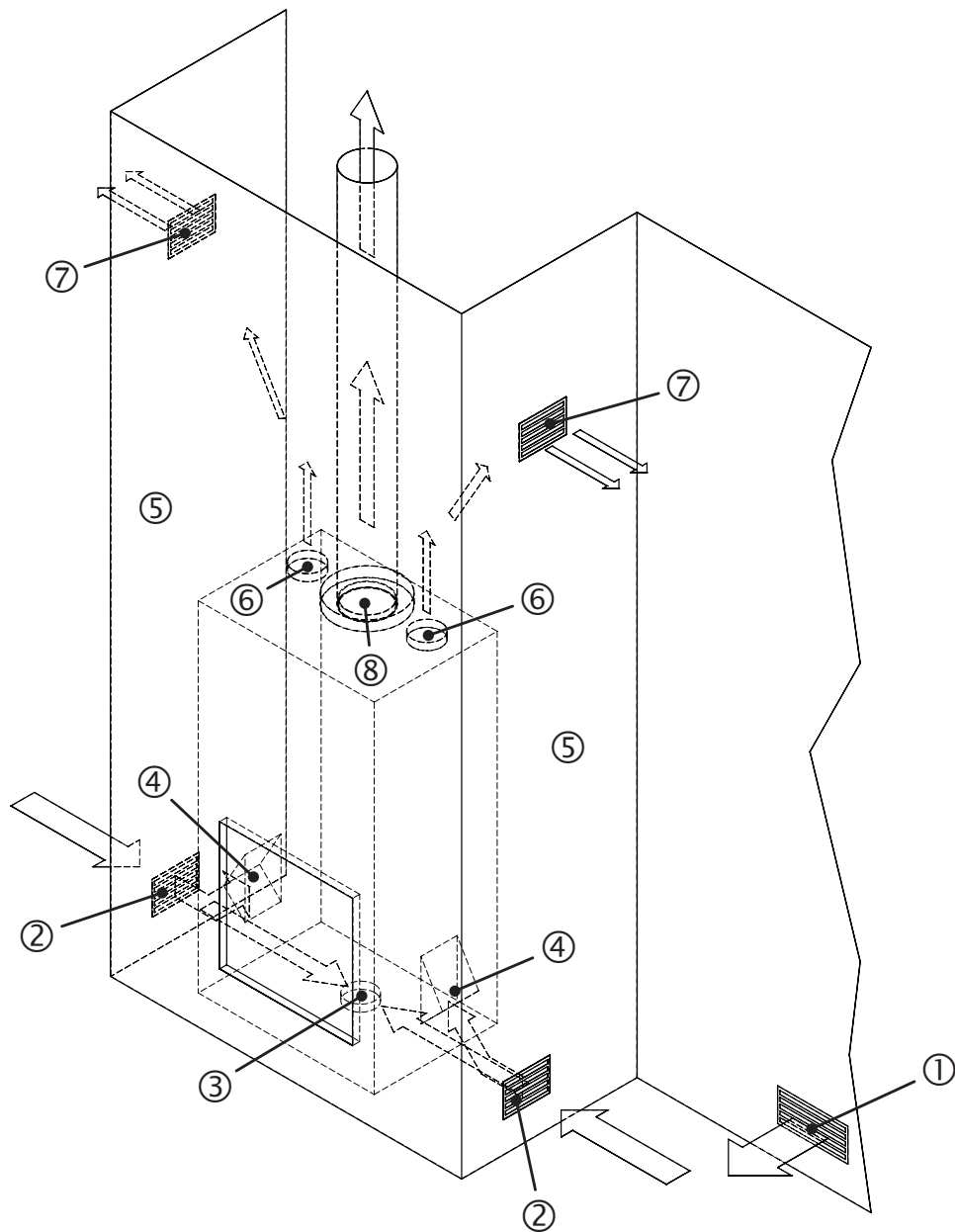
Fire against a non-bearing and non-flammable wall

Fitting an Escamolux-fire against a wall with flammable material



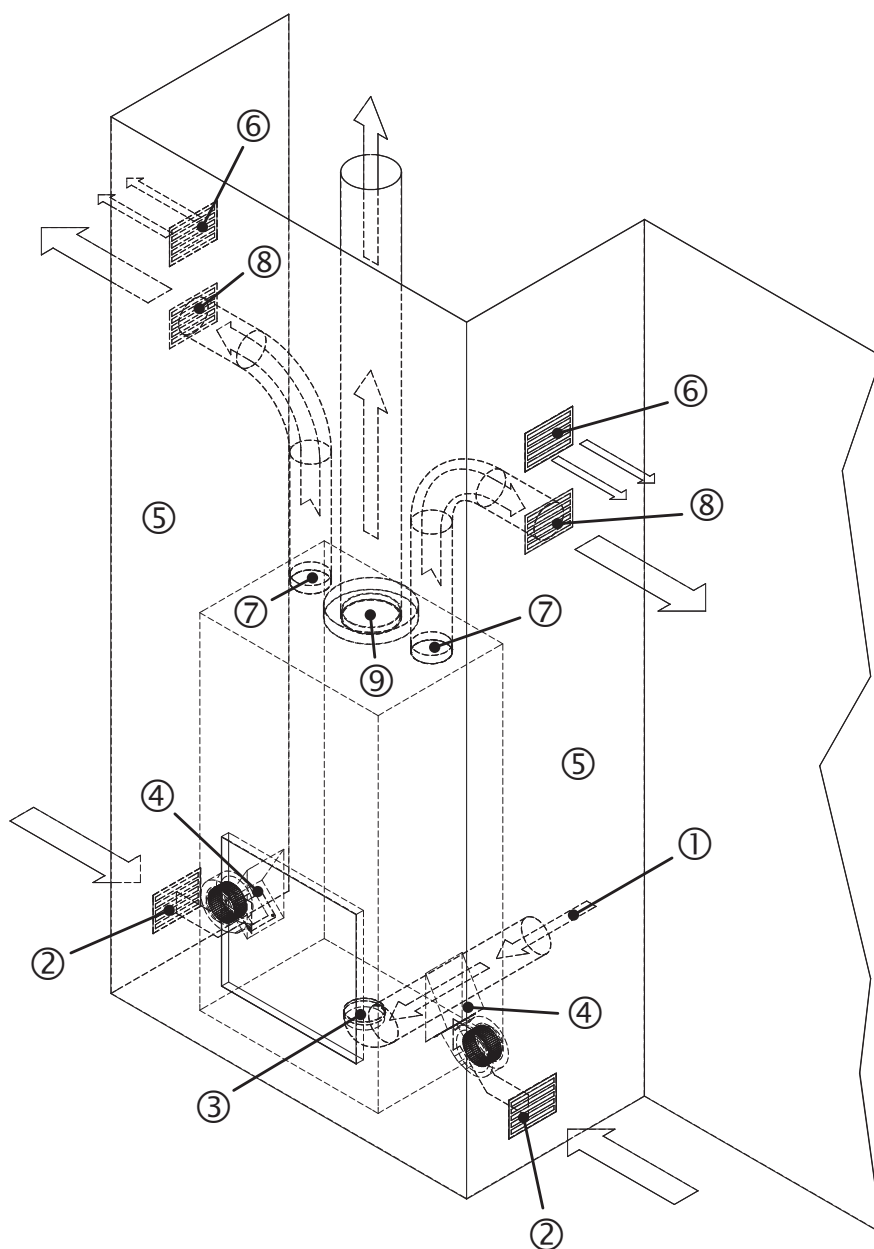
Fire against a bearing wall or wall with flammable material

Escamolux built into chimney breast



- 1 Combustion air supply via grate in outside wall
- 2 Inlet opening (grate) (chimney breast) combustion and convection air
- 3 Inlet opening (appliance) combustion air
- 4 Inlet opening (appliance) convection air
- 5 Natural convection in the chimney breast
- 6 Outlet opening (appliance) convection air (2x or 4x)
- 7 Outlet opening (grate) (chimney breast) convection air (2x or 4x)
- 8 Flue gas outlet appliance

Escamolux with fan set (option) and convection set (option) built into chimney breast
Combustion air supply directly from outside



- 1 Combustion air supply via grate in outside wall
- 2 Inlet opening (grate) (chimney breast) convection air
- 3 Inlet opening (appliance) combustion air
- 4 Inlet opening (appliance) convection air / fan set
- 5 Natural convection in the chimney breast
- 6 Outlet opening (grate) (chimney breast) natural convection air
- 7 Outlet opening (appliance) convection air/connection convection set (2x or 4x)
- 8 Outlet opening (grill convection set) (chimney breast) convection air (2x or 4x)
- 9 Flue gas outlet appliance

4.2. BUILDING-IN A FIRE IN GERMANY AND SWITZERLAND

Building-in the fire against a wall in a casing/fireplace/chimney breast

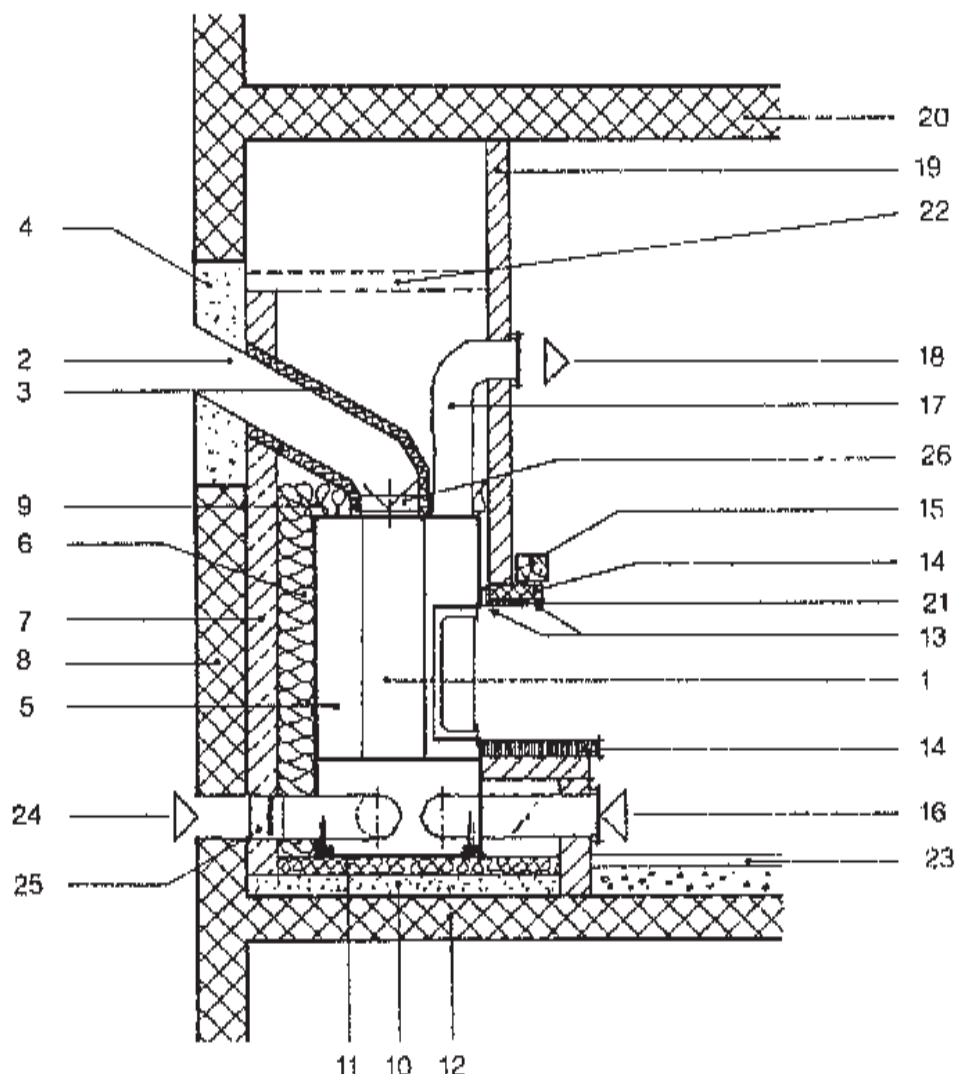
False wall **is** mandatory

- A false wall is mandatory in the case of protective walls/walls with flammable material. The recommended thickness of the false wall is at least 10 cm.
- The false wall must be of mineral construction, e.g. aerated concrete.
- The false wall must in turn be covered with minimal 10 cm of insulation (see table 1).
- The false wall must at least be built up to the place at which the chimney leaves the convection area.

False wall **not** mandatory

- If the existing wall is at least 10 cm thick.
- If the existing wall does not contain flammable material.
- If the existing wall is not a bearing concrete or reinforced concrete wall and is at least 10 cm thick. In that case, a minimal 10 cm thick layer of insulation must be used and the insulation must be closed tightly, and overlapping at the sides.

Fitting a built-in fire against a wall with flammable material in Germany



- | | | | |
|----|--|----|--|
| 1 | Fire | 13 | Expansion seam |
| 2 | Adapter | 14 | Covering |
| 3 | Insulation material for adapter | 15 | Decorative frame |
| 4 | Mineral masonry | 16 | Inlet opening convection air |
| 5 | Convection area | 17 | Hot-air flexible hose/pipe |
| 6 | Layer of insulation material
(≥ 10 cm, $T \geq 700^{\circ}\text{C}$) | 18 | Hot-air escape grid |
| 7 | False wall * | 19 | Mantelpiece |
| 8 | Wall to be protected | 20 | Ceiling |
| 9 | Layer of insulation material
(≥ 10 cm, $T \geq 700^{\circ}\text{C}$) | 21 | Mantle iron or lintel |
| 10 | Concrete plate | 22 | Layer of insulation material
(≥ 10 cm, $T \geq 700^{\circ}\text{C}$) |
| 11 | Layer of insulation material
(≥ 10 cm, $T \geq 700^{\circ}\text{C}$) | 23 | Floor in front of the fire |
| 12 | Pedestal | 24 | Inlet opening ambient air |
| | | 25 | Air-admission damper |
| | | 26 | Flue damper (Smoke flap) |

* in the case of walls with flammable material only

5. OPERATION OF THE BUILT-IN FIRE

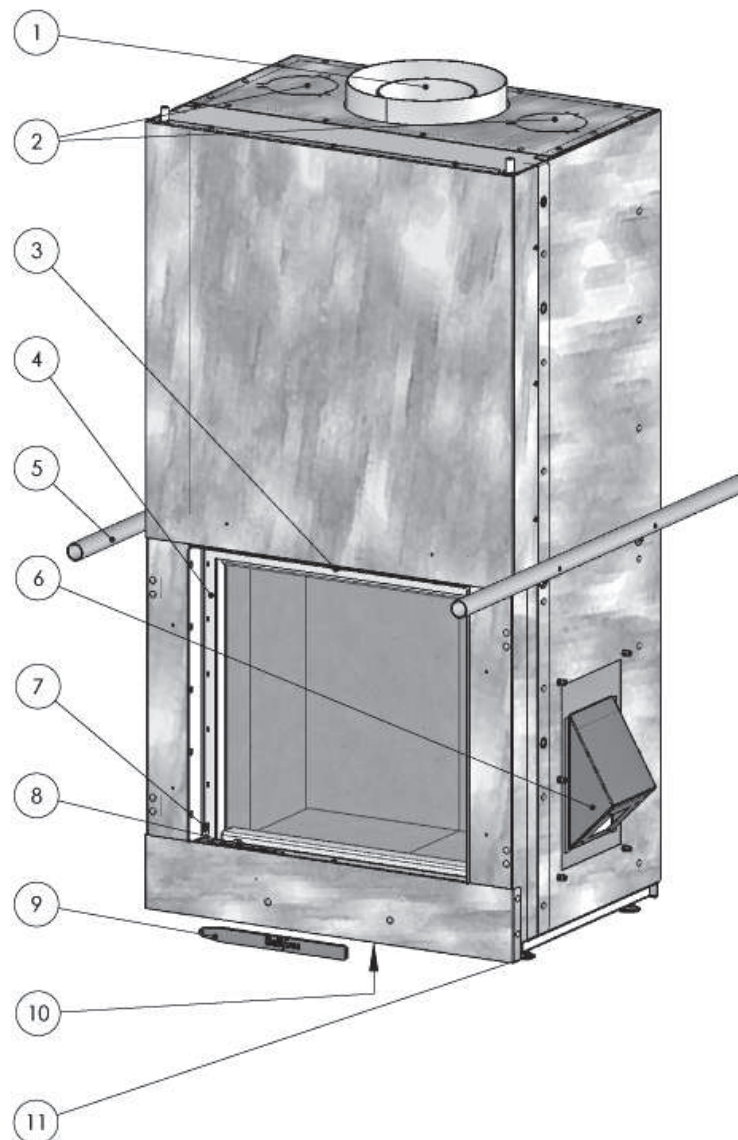


Figure 3: Operation

- | | |
|---|---|
| 1 Flue outlet | 7 Latching bracket (left and right) for operating the lift door with the handle |
| 2 Convection air escape opening (2x or 4x) | 8 Combustion air-supply slider (Combined operation for the primary and secondary combustion air-supply) |
| 3 Latch for tilting the door forward
Operated with the handle | 9 Handle |
| 4 Lift / tilting door | 10 Combustion air supply connection; underneath |
| 5 Carrying bracket (can be dismounted) (2x) | 11 Adjustable feet (4x) |
| 6 Convection air supply. In addition, connection possibility for fan (2x) | |

6. STOKING UP FOR THE FIRST TIME

If you have had your chimney breast modified or newly built, first allow your home to dry properly. Walls which have not been allowed to dry properly are a magnet for dust such as any smoke particles created when stoking up the fitted fire or suddenly opening the door. Even scorched dust can easily be retained by damp walls. Think also of dust on the outside of the appliance or on hot radiators etc.

Check that all packaging, stickers etc. and/or all dust and waste has been cleaned up after the installation work (to avoid it getting scorched/causing a bad smell).

Check again that all moving parts are in order and that loose parts such as the retardant plates (brake plates), interior panels, bottom stones etc. are in the correct position. They may have moved during installation.

The built-in fire has a heat-proof finish. It only hardens at high temperatures. When unpacked, it is therefore not fully hardened. It can easily be damaged at this time.

Begin stoking up the fire with a low flame (see chapter 7). Increase the heat gradually for approx. 2 hours until you reach the correct output. Keep it at this level for another 2 - 3 hours. The finish will now be properly hardened and can be touched without damaging. The hardening process creates a nasty, though harmless, smell/vapour.

Adequate ventilation is of the utmost importance.

7. USE

7.1. VENTILATION

Air is a vital component of the combustion process. Ensure that there is a sufficient supply of fresh air. For each kilo of wood that you put on the fire (door closed), 10 - 15 m³ of extra air is needed. That means 50 m³ per hour! As you can see, a plentiful supply of air is essential. Fresh air supply opening: minimal Ø125 mm.

7.2. GETTING THE FIRE GOING (Figure 3)

When you start the fire, the chimney is still cold and there is little draught. This means that the chimney's capacity to draw in air is limited. Consequently the air supply has to be helped by opening the door and regulating slider.

Use dry, fine wood and some scrunched-up paper or firelighters to start the fire.

Leave the lift door ajar for 10 minutes. Do not fully open the door, as the window will then remain cold. If the door is then shut, smoke will condense on the glass and form soot.

Open the primary air by moving the air supply slider to the right side (+).



When the tinder material is burning well, place approximately 2 pieces of wood, each around 1 kilo, on the fire and leave the sliding door ajar for the moment. After circa 3 minutes, you can close the door completely. If the fuel has caught fire properly, you can move the air supply slider to the left. Adjust the air regulator (slider) in the middle position of the range.

It is recommended to burn the wood on a thick ash layer (about 3 cm).

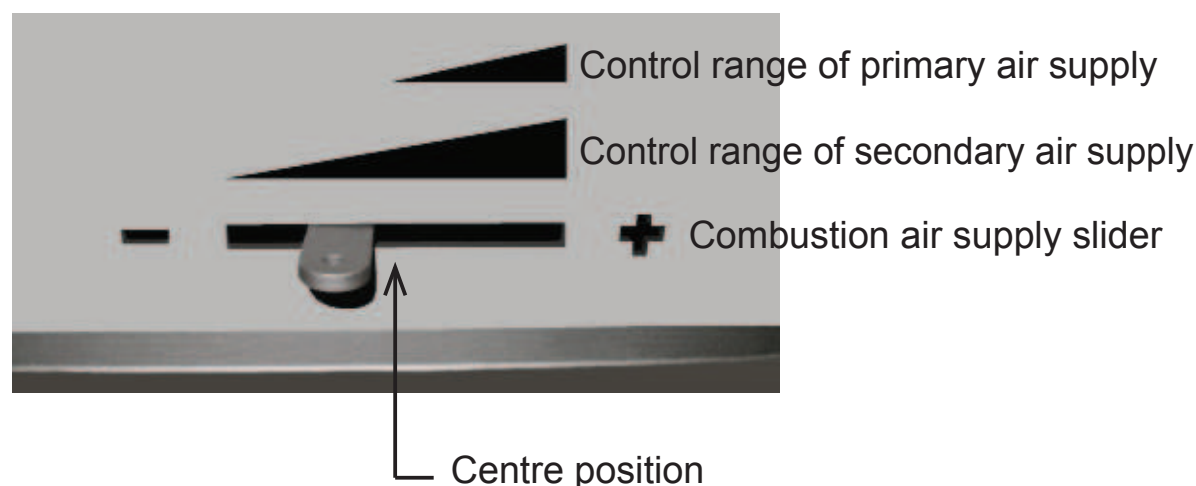
Prevent white glow and over-firing.

7.3. INSTRUCTIONS WHILE STOKING

After approx. 10 minutes, the fire will be burning fiercely. You can now top it up with a few larger blocks of wood. Close the door when the new wood catches fire.

Using the air supply slider you can now adjust the air supply for further combustion. Make sure the fire burns quietly.

Note: Once you have got the fire going, leave the air supply slider in the centre position for optimal combustion. Your fire will then be much cleaner and more efficient (more heat, less topping up).



We recommend that you maintain a substantial layer of ash (2 - 3 cm). This not only forms a protective layer for the base of the appliance but also significantly reduces consumption of fuel and allows new wood to catch light easier.

When loading the fire with fuel, mostly two blocks measuring 30 cm long and 30 cm in outline is sufficient. Do not add more fuel until the previous fuel has burned down to the charcoal stage. The flames are then almost no longer visible. Do not leave the door open longer than necessary.

Weather conditions

In order to reduce pollution and any other inconvenience, we advise not firing up the fire when there is no wind, or in foggy/misty conditions.

Smoke development

Your fire has been designed to be used with the load/observation door closed. Should you use it with the door open, under certain circumstances (presence of mechanical ventilation, draught, differences in barometric pressure) smoke may enter the room in which fire is situated.

Use of the stove

Your fire is suitable for periodic use.

The fire may only be positioned in a place where the location, construction and activity in the room can accommodate it without danger.

Ventilation

When using the fire, ensure a good supply of fresh air, particularly if the combustion air is drawn from the room itself. Turn on the flue gas fan if the flue is fitted with one.

Spare parts

Any replacement parts must be new, original parts. Use of non-original/reconditioned parts will invalidate your warranty.

Modification

Do not make modifications to your fire. Any alteration to your fire, of whatever nature, will also invalidate your warranty.

Continuous stoking with the primary air supply open (combustion air supply slider is fully over to the “ + “ position) (air via rear of wood rack, with outlet just above the vermiculite bottom plate) causes a fiercely white-hot fire that can damage parts of the fireplace.

7.4. HEATING ECONOMICALLY

The most environmentally-friendly and economic way of heating with wood is to have your fire hot but calm. The ash should appear to glow a soft red-orange and should not glow like a blacksmith's fire. Fires like that burn quickly and intensely, leaving little time for complete combustion.

Your fire is at its most economical when:

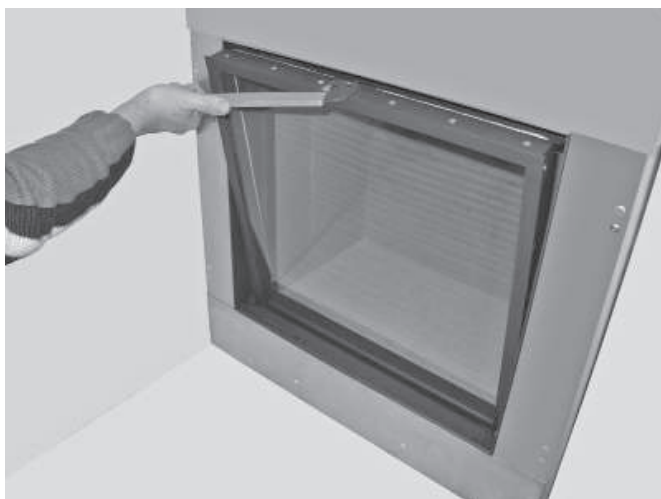
- Burning with the door closed. This makes the fire hotter and improves combustion.
- Using dry and clean wood (as described further in section 9).
- Always ensure even combustion. Stoke with the primary air regulator closed. To do this, place the combustion air supply slider in the centre position.
- The bed of the fire should be homogeneous, and the fire must have easy access to air. Position the blocks of wood (loosely and evenly) horizontally on the bed of ash, so that they are separate and several centimetres away from the walls.

Note ! : Keep the bottom at the front as free of ash as possible.
 Every 2 or 3 times you replenish the fire, push the ash at the front several centimetres towards the back. In this way, the fire will be well aerated as it burns.

7.5. CLEANING THE WINDOW

After several burning hours, a light deposit may form on the inner side of the window. Once the fire has cooled down, this deposit can be removed using glass cleaner or ceramic hob cleaner.

To allow easy cleaning of the window, it can be tilted forward using the handle.



8. GENERAL HINTS

8.1. TIPS

- Burn dry wood only. Damp wood not only burns poorly, it causes more pollution in the appliance (window), the chimney, your room (when opening the door of the appliance, for instance) and the environment. Wood can only be classified as dry if it has been stored under a Dutch barn for at least two years (not covered with plastic). Never use painted or impregnated wood. The gases emitted when burning painted or impregnated wood are aggressive and will affect the appliance, the environment and your health.
- Ensure that your fire burns well. The smoke generated should be translucent or white and the windows of the fire will remain clean. We recommend that you do not 'pinch off' your fire (by closing all air openings). Doing so will hinder combustion which, apart from polluting the atmosphere, will lead to deposits of soot and tar in your chimney (which, unchecked, will increase the risk of chimney fire).
- Keep the door shut when the fire is burning. Doing so improves the performance of your fire 8 - 10 times, benefiting the environment and the heat in your home (less topping up, see section 8.2). You will also prevent fire damage from any particles the fire 'spits' out (this is a particular problem with softwood from conifers). If your floor contains flammable material, an extra floor plate is required.
- Avoid lighting a fire in misty or still conditions. If the wind is still, there is hardly any draught in the cold chimney. As smoke is heavier than air, there is a chance that smoke will enter the room. If there is mist in the air, smoke coming out of your chimney will cool quickly and fall, causing problems in your area.
- Do not extinguish your fire with water - let it burn out. The part of the inner lining that is in direct contact with the fire is clad with fire-resistant material. Sudden changes in temperature may lead to it deforming or cracks appearing.

- Chimney fire.

If, despite all the precautions, a fire should occur in the chimney (you generally notice that because of a roaring sound in the chimney), do the following:

- Immediately shut the chimney flap (if fitted).
- Immediately shut the air supply to the fire.
- Call the fire brigade (☎ 112).
- Quickly quench the fire in the appliance with sand or soda in order to prevent smoke in your house.
- Never use water to put out the fire.
- Ventilate.
- If there has been a fire in the chimney, have it swept and inspected for damage and leakage.

8.2. OUTPUT

In practice, combustion is all about loss. This entails:

- Loss through excess heat leaving the chimney, rather than going into the room.
- Loss through insufficient combustion, such as CO (carbon monoxide) and soot particles.
- Loss through excessive unburnt fuel in the ash.

The rate at which fuel can burn completely is called the output. A well-stoked fitted fire achieves output of 70% and thus falls into the category of high-output/ low emissions built-in fires. This means that you benefit directly by using less wood to achieve the same level of heat. The environment benefits as well: a well-stoked, high-output appliance means less pollution and fewer odours.

Adverse effects on the output are:

- Burning the fire with the door open. A warm chimney works in the same way as an extractor. When the door is open, the chimney draws in much more air than is necessary for combustion. This relatively cool air cools down the fire.
- Excessive chimney draught. The combustion air does not reach the fuel, but leaves the appliance via the chimney. The fire cools and the combustion quality decreases.

- Using too much wood. This is a problem if your built-in fire is too small. In that case, it becomes overloaded and burns more wood than heat emitted. In this case too the fuel cannot burn completely. More to the point, there is not enough air to mix with the flames. This has an extra impact on the environment.
- Admitting too much air under the fuel (combustion air supply slider is fully over to the “ + ” position).
Combustion is raised to high intensity (like a blacksmith’s fire). Combustion really needs time. If combustion is too intense, there is insufficient time for the built-in fire to radiate all the heat. The chimney will become excessively hot and the same will be true of the escaping smoke. This heat is thus lost.

9. FUELS

9.1. WOOD

Suitable fuels are:

- All sorts of clean wood (forested). The wood must have been dried for at least two years. Well-dried wood has a humidity percentage between 10 and 20%.
Recommended dimensions: length: ca. 30 cm
outline: ca. 30 cm Δ
- Compressed wood blocks without binder (see wood dimensions).
- Hard woods burn slowly and easily form charcoal; for example hornbeam, oak, ash, beech, elm and birch.
Softwood burns with more flame, but forms less charcoal and radiates less heat. Examples are spruce, pine, poplar and linden.

Unsuitable fuels are:

- Painted, bonded (chipboard, MDF etc.) or impregnated wood, plastic and other flammable waste. Stoking a fire with this is completely forbidden. The combustion gases released by these materials are aggressive and will attack your fireplace insert and the environment.
- Paraffin-containing open fire lighters are not suitable for a closed fire. A closed fire generates more heat than an open fire, thus the paraffin will melt out of the blocks prematurely.
- Damp wood burns poorly, is unsuitable and produces too much smoke (including in the room when you are topping up the wood), dirties the glass, leaves deposits in the chimney and delivers about half the heat output of dried wood.

Do not burn coal in the hearth. The fire is not designed for this.

10. AMOUNT OF FUEL

10.1. AMOUNT OF FUEL

Each appliance is constructed for a certain maximum amount of fuel. Remember that the more fuel you put into your fire, the hotter it will become and overheating may even occur. If this happens, there is a risk of fire. It may also damage your appliance and chimney. BARBAS will not assume liability for damage caused by overheating.

Burning one layer of wood can lead to varying outputs. When used correctly, one load will burn in around 45 minutes. Putting in too much wood at once can lead to the appliance being overloaded.

Escamolux 55-55 / Escamolux 80-65:

	Per filling: (= for 45 minutes)	Calculated per hour:
Wood:	4 blocks, each around 1.0 kg	5 blocks, each around 1.0 kg
Briquettes:	6 briquettes, each around 0.5 kg	8 briquettes, each around 0.5 kg
Dimensions wood block: c. 30 cm long and 30 cm perimeter Δ ($\approx$ 1.0 kg). The maximum burning load is based on a nominal capacity of 15 kW and a efficiency of 75-76%.		

Escamolux 70-55 / Escamolux 90-45:

	Per filling: (= for 45 minutes)	Calculated per hour:
Wood:	6 blocks, each around 1.0 kg	8 blocks, each around 1.0 kg
Briquettes:	9 briquettes, each around 0.5 kg	12 briquettes, each around 0.5 kg
Dimensions wood block: c. 30 cm long and 30 cm perimeter Δ ($\approx$ 1.0 kg). The maximum burning load is based on a nominal capacity of 24-25 kW and a efficiency of 71%.		

Escamolux 70-65:

	Per filling: (= for 45 minutes)	Calculated per hour:
Wood:	5 blocks, each around 1.0 kg	6 blocks, each around 1.0 kg
Briquettes:	7 briquettes, each around 0.5 kg	9 briquettes, each around 0.5 kg
Dimensions wood block: c. 30 cm long and 30 cm perimeter Δ ($\approx$ 1.0 kg). The maximum burning load is based on a nominal capacity of 20 kW and a efficiency of 73%.		

Escamolux 105-45:

	Per filling: (= for 45 minutes)	Calculated per hour:
Wood:	7 blocks, each around 1.0 kg	9 blocks, each around 1.0 kg
Briquettes:	10 briquettes, each around 0.5 kg	14 briquettes, each around 0.5 kg
Dimensions wood block: c. 30 cm long and 30 cm perimeter Δ ($\approx$ 1.0 kg). The maximum burning load is based on a nominal capacity of 26 kW and a efficiency of 74%.		

10.2. HEAT RADIATION

The table below shows the temperatures which can theoretically be achieved by burning wood.

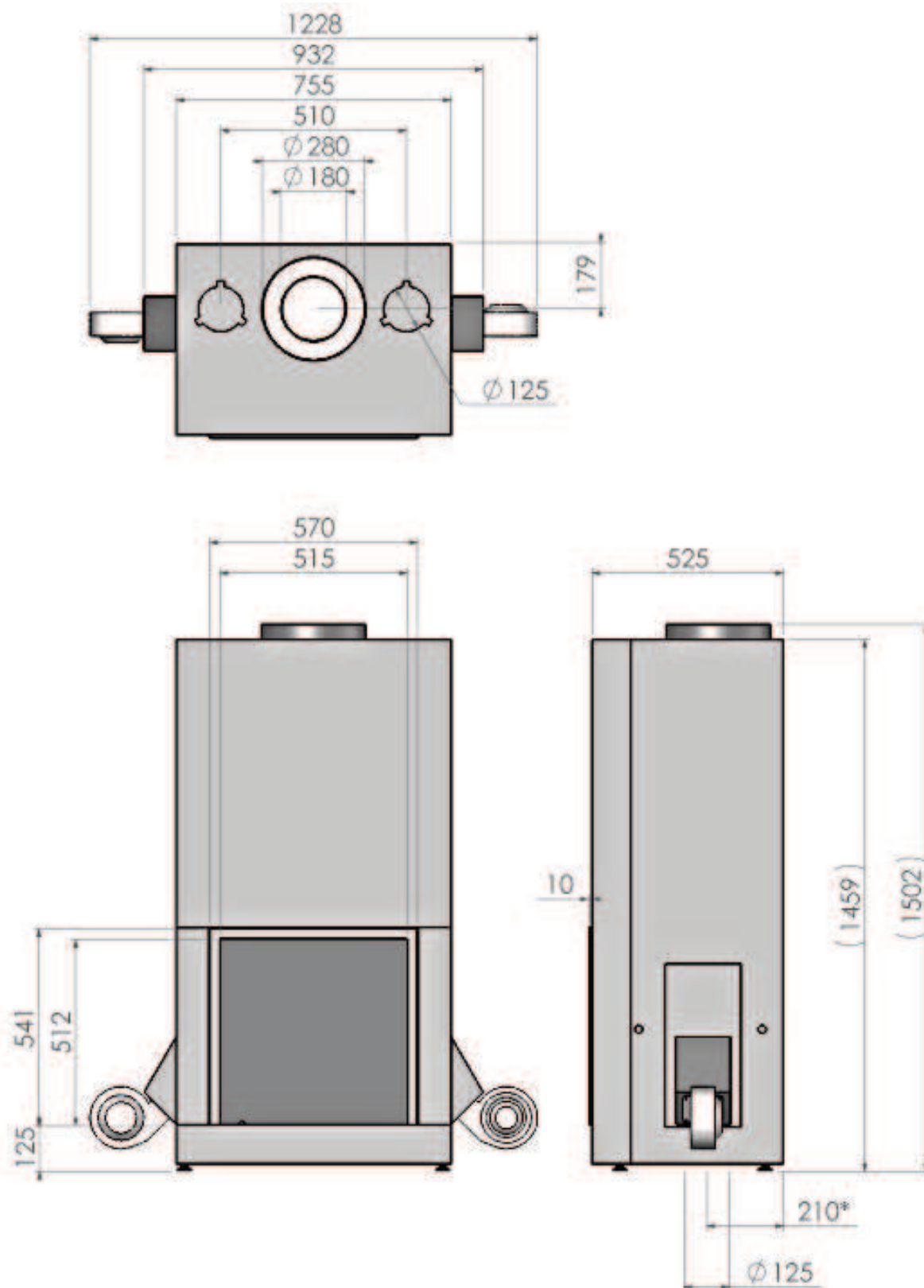
Heat radiation	
Sort of fuel	kWh/kg
Dry wood (average)	4.3

The heating value of wood (18.7 MJ/kg at 0% humidity) is not affected by the sort of wood. What does make a difference is the relative humidity of the wood (15.6 MJ/kg at 15% humidity).

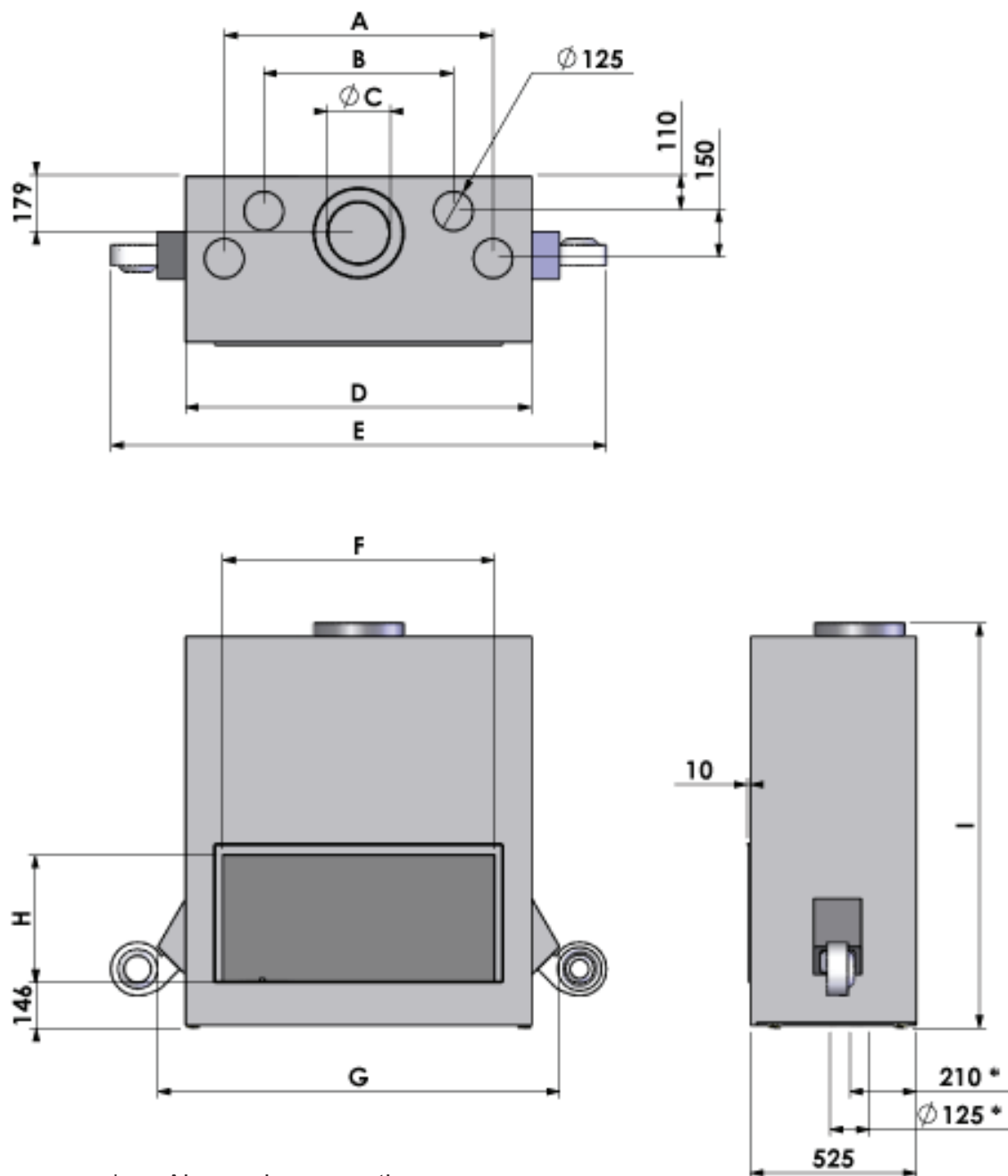
11. REGULAR MAINTENANCE

- Remove the ash on the burning floor : Weekly, 48 hours after last heating
- Cleaning the glass : As required
- Door seals : Check annually before heating is resumed. Replace as necessary
- Sweep and inspect chimney : Annually before heating is resumed
- Fire hearth interior panels : Check annually
 - * Clean interior panels as necessary with hand brush
 - * Replace panels as necessary
- Sliders/dampers : Check function annually
- Convection channels : Clean annually
- Paint : Annually, if necessary touch up with BARBAS heat-resistant paint (do **not** paint when the fire is in use!)
- Parts : Individual parts for replacement/accessories are available from your BARBAS dealer
Use only original parts
- Modifications : Introduced modifications to the appliance are not permitted

12.1. ESCAMOLUX 55-55



12.2. ESCAMOLUX 70-55 / 70-65 / 80-65 / 90-45 / 105-45



Appliance	A	B	C	D	E	F	G	H	I
Escamolux 70-55	650	450	200	865	1335	630	1044	512	1502
Escamolux 70-65	650	450	200	865	1335	630	1044	612	1667
Escamolux 80-65	750	500	250	975	1445	739	1154	612	1667
Escamolux 90-45	850	600	200	1095	1565	860	1274	402	1282
Escamolux 105-45	950	600	250	1235	1705	1000	1414	402	1282

13. TECHNICAL DATA

	ESCAMOLUX 55-55	ESCAMOLUX 70-55	ESCAMOLUX 70-65
Combustion:			
Measured in compliance with	EN 13229 : 2001 and EN 13229 - A2 : 2004		
Fuel	Wood	Wood	Wood
Output; min. - max.	10 - 20 kW	10 - 25 kW	10 - 25 kW
Nominal output	15 kW	25 kW	20 kW
Efficiency	75%	71%	73%
PM10 Dust emissions	57 mg/m ³ _n	91 mg/m ³ _n	65 mg/m ³ _n
Flue gas mass flow	13.3 g/s	19.3 g/s	17.1 g/s
Flue temperature	292°C	404°C	341°C
Chimney draught	0.12 mbar	0.12 mbar	0.12 mbar
Flue gas connection	Ø180 mm (Ø178 mm ext.)	Ø200 mm (Ø198 mm ext.)	Ø200 mm (Ø198 mm ext.)
Combustion air <u>supply</u> connection (via the under side of the appliance!)	Ø125 mm (Ø123 mm ext.)	Ø125 mm (Ø123 mm ext.)	Ø125 mm (Ø123 mm ext.)
Convection air <u>supply</u> connection (= connection for convection fans (option))	2x ▯65x70 mm (= 91 cm ²)	2x ▯65x70 mm (= 91 cm ²)	2x ▯65x70 mm (= 91 cm ²)
Convection air <u>outlet</u> connection	2x Ø125 mm (≈ 245 cm ²)	4x Ø125 mm (≈ 490 cm ²)	4x Ø125 mm (≈ 490 cm ²)
Weight	225 kg	243 kg	264 kg
Inside:			
Dimensions			
- surface area (b x d)	0.62 x 0.36 = 0.22 m ²	0.73 x 0.4 = 0.29 m ²	0.73 x 0.4 = 0.29 m ²
- clear fire opening (h x b)	450 x 570 mm	545 x 680 mm	643 x 680 mm
Interior panels	Vermiculite insulation plates 700 kg/m ² , 1100°C		
Bottom	Vermiculite insulation plates 700 kg/m ² , 1100°C		
Inner lining	Steel (heat-resistant and rust-proof)		
Retardant plates (brake plates) (2x)	Vermiculite insulation plates 700 kg/m ² , 1100°C		

	ESCAMOLUX 80-65	ESCAMOLUX 90-45	ESCAMOLUX 105-45
Combustion:			
Measured in compliance with	EN 13229 : 2001 and EN 13229 - A2 : 2004		
Fuel	Wood	Wood	Wood
Output; min. - max.	10 - 20 kW	10 - 25 kW	10 - 30 kW
Nominal output	15 kW	24 kW	26 kW
Efficiency	76%	71%	74%
PM10 Dust emissions	39 mg/m ³ _n	74 mg/m ³ _n	38 mg/m ³ _n
Flue gas mass flow	14.9 g/s	19.3 g/s	16.7 g/s
Flue temperature	277°C	392°C	409°C
Chimney draught	0.12 mbar	0.12 mbar	0.12 mbar
Flue gas connection	Ø250 mm (Ø248 mm ext.)	Ø200 mm (Ø198 mm ext.)	Ø250 mm (Ø248 mm ext.)
Combustion air <u>supply</u> connection (via the under side of the appliance!)	Ø125 mm (Ø123 mm ext.)	Ø125 mm (Ø123 mm ext.)	Ø125 mm (Ø123 mm ext.)
Convection air <u>supply</u> connection (= connection for convection fans (option))	2x ▯65x70 mm (= 91 cm ²)	2x ▯65x70 mm (= 91 cm ²)	2x ▯65x70 mm (= 91 cm ²)
Convection air <u>outlet</u> connection	4x Ø125 mm (≈ 490 cm ²)	4x Ø125 mm (≈ 490 cm ²)	4x Ø125 mm (≈ 490 cm ²)
Weight	285 kg	262 kg	285 kg
Inside:			
Dimensions			
- surface area (b x d)	0.85 x 0.4 = 0.34 m ²	0.96 x 0.4 = 0.38 m ²	1.10 x 0.4 = 0.44 m ²
- clear fire opening (h x b)	643 x 794 mm	425 x 910 mm	425 x 1050 mm
Interior panels	Vermiculite insulation plates 700 kg/m ² , 1100°C		
Bottom	Vermiculite insulation plates 700 kg/m ² , 1100°C		
Inner lining	Steel (heat-resistant and rust-proof)		
Retardant plates (brake plates) (2x)	Vermiculite insulation plates 700 kg/m ² , 1100°C		

**ESCAMOLUX 55-55 / ESCAMOLUX 70-55 / ESCAMOLUX 70-65
ESCAMOLUX 80-65 / ESCAMOLUX 90-45 / ESCAMOLUX 105-45**

Outside:

Construction

Sheet-steel casing.

Doors

Lift door.

Door tilted forwards to allow window to be cleaned.

Operation:

- Handle for sliding the door upwards and downwards.
- Handle for tilting the door forwards.
- Combustion air supply slider.
Single combined slide for controlling the primary and secondary air supply.

Ash collection:

Base stones

Options:

Fan set Escamolux: 2 convection fans (230 V / 90 W a piece) for transport of heating air. Rev control by built-in fanspeed controller.

Convection set (1x or 2x)

14. FREQUENTLY ASKED QUESTIONS

How often should I have my chimney swept?

At least once a year. If you use your fire more than three times a week on average, have your chimney swept more often. Have the chimney swept by a recognised company. Your fire insurance policy may make this a condition and ask for proof.

Does a built-in fire have better output than an open fire?

Yes, a built-in fire has between 7 and 8 times the efficiency of an open fire. (See also sections 7.2 and 7.3.)

What is the difference between nominal heat output, nominal heat input and efficiency?

Nominal heat output represents the net amount of heat that the appliance generates.

The total heat content of the fuel is the so called nominal heat input.

Efficiency is the percentage of fuel converted into useful heat. It is the ratio of nominal heat output and heat input.

How can I keep the glass clean?

By making a point of using dry, clean wood in the fire. Wood that is too damp immediately gives off lots of ash.

Make sure the seals are in good working order. Any air seeping out around the glass part of the door will cool the air, resulting in the fire not burning cleanly.

Can a wood-burning stove/built-in fire be connected to a central heating installation?

The Barbas range does not have any stoves/fires that can be connected to central heating installations. We do not advise attempting it !!

At what temperature does/do the convection fan(s) start up?

If the fire is fitted with convection fans, these are regulated using a built-in fanspeed controller and there is no automatic temperature adjustment present. The on-off switch is integrated in the fanspeed controller.

How do I know if I'm heating correctly?

Follow the instructions in this manual.

The flames should play softly across the wood and the wood should burn evenly.

Once the fire has been burning for a short time, the smoke from the chimney should be almost translucent.

What is wrong with a smoking chimney?

A seriously smoking chimney means that combustion is less than optimum. There may be a number of reasons for this. If the fire has only just caught on, or has recently been topped up, some smoke is normal. By opening the door(s) for a short period, the wood will catch fire quicker and the smoky period will be shorter.

If you leave the fire door open, and especially if you burn damp wood, the result will be a lot of smoke. In both cases, the combustion temperature is too low. This leaves numerous dangerous compounds intact, which means more deposits in your chimney and more waste into the environment.

What should I do if the wood does not catch fire?

This probably means that the wood is damp. Remove the wood and replace it with dry wood. If necessary, make a fire with wood briquettes. They are always dry (they have a moisture content of <10%).

The wood burns up too quickly. What should I do?

Ensure that air cannot get in underneath the fuel. Move the combustion air supply slider towards the “ - ” position. (The primary air supply is now closed.) Under these conditions, the layer of ash should no longer burn bright orange/white but red.

If there is a draught (due to strong wind), air intended as secondary air for above the fuel may enter through the openings above the door and flow straight down beneath the wood. Also slide the combustion air supply slider tighter shut.

There may be too much of a draught in your chimney, particularly if it is very high (in excess of 8 m). Ask your supplier to fit a check flue valve or flue damper. This may not be possible in all cases.

Can I leave my fire unattended?

Only do this when the appliance is burning quietly, with just a little wood, with a closed door and with the combustion air supply slider in the centre position between “+” and “-”. In this position, the primary air supply is closed and the secondary air supply is open.

- Primary air is supplied through the rear of the wood rack, just above the bottom plate (burning floor).
- Secondary air is supplied through the opening behind the glass, on the upper side of the combustion chamber.

Do not leave children unattended while the fire is burning.

Do I have to take any extra measures if the room I am heating has an extractor fan (mechanical ventilation)?

If the combustion air comes from the living-room:

A flue gas fan is required for permanent extraction of the area in which the fireplace is placed.

The type of flue gas fan depends on the capacity of the extractor system. Always consult your installation engineer about this.

If the combustion air comes directly from outside via a direct connection:

If there is constant extraction of the room in which the fire is located, no additional provisions are necessary.

What is creosote?

Creosote is a tar-like deposit which is left in the chimney. It is formed in poor combustion conditions when burning wood (damp wood, pinching off the air supply to the fire or burning impregnated or painted wood for example). Creosote ignites at approx. 500°C. This temperature can easily be reached if the fire is raging. This means that deposits of creosote in your chimney could cause a chimney fire.

What happens when wood is burnt?

The combustion process.

The combustion of wood involves the following steps.

Drying

The first step is that the fuel (wood) dries out. Even at low temperatures ($<100^{\circ}\text{C}$), any moisture still in the wood will evaporate. This drying procedure implies a significant loss of energy if wood which is 'too' damp is burnt. The right degree of moisture is achieved after 1.5 - 2 years of drying. The moisture content is then 15 - 17%.

Decomposition

At moderate - high temperatures (150°C - 350°C), the decomposition process can be discerned. This is when the chemical structure of the fuel breaks down. This process involves the creation of volatile compounds such as carbon monoxide (CO), water vapour (H_2O) and methane (CH_4). In addition, substances which are volatile at decomposition temperature but condense at lower temperatures are often released. These are the tar-like components (this by-product is also known as creosote, which is deposited in the chimney and cold parts of the fire in poor burning conditions).

Combustion of the products of decomposition

The volatile compounds burn in the gas phase if O_2 (air) is added. The ignition temperature of these volatile compounds is approx. 550°C .

Combustion of solid hydrocarbons

The solid component that remains consists of pure hydrocarbons, which will burn at approx. 800°C if O_2 (air) is added.



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