



## Gigafocus 1500 Néofocus 1500 - 1800

Design Installation & Operating Manual v.6.7 EN  
Tested by OMNI-Test Laboratories, Inc. and approved to  
UL 127-2011 and ULC-S610-M87 (A1998)



OMNI-Test Laboratories, Inc.

Report Number: 304-F-18-2

**US EPA exempt**



this document was packed with the appliance.

**KEEP THESE INSTRUCTIONS FOR FUTURE USE**

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## **1 – INTRODUCTION:**

Please read this entire manual before you install and use your focus fireplace. Failure to follow instruction may result in property damage, bodily injury or even death. When this room heater is not properly installed, a house fire may result. To reduce the risk of fire, follow the installation instructions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.

### **KEEP THIS MANUAL HANDY FOR EASY REFERRAL.**

All **WARNING** and **CAUTION** statements will appear in bold font and upper case letters: **THEY SHOULD BE STRICTLY OBSERVED.**

Thank you for choosing focus fireplaces.

Appliance designation: *gigafocus (1500 or 1700) / néofocus (1500 or 1800)*

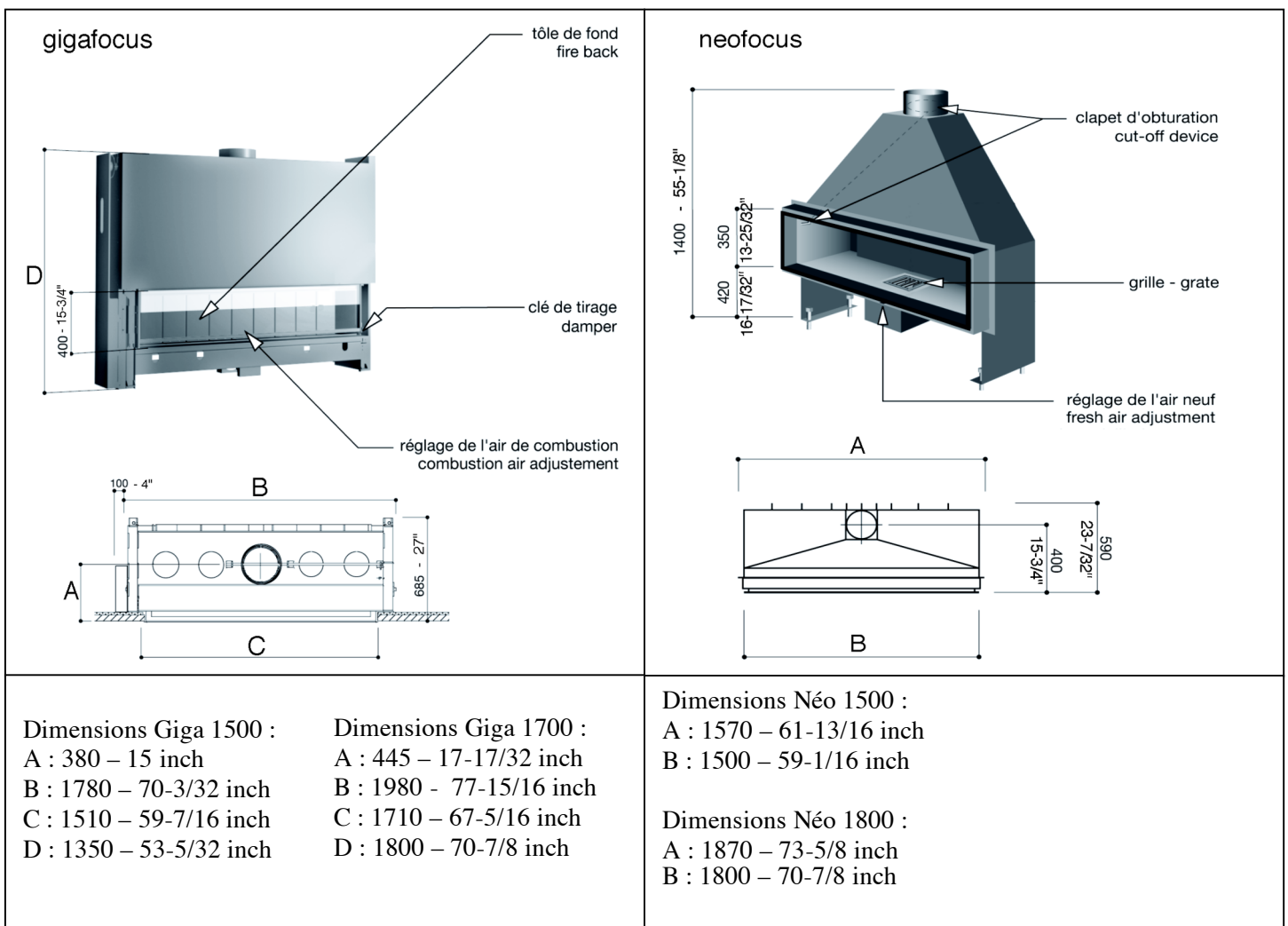
Manufacturer: *atelier dominique imbert - le fort - 34380 viols-le-fort - France.*

## **2 – SPECIFICATIONS:**

- **CAUTION : NOT FOR MOBILE HOME OR EXTERIOR INSTALLATION !**
- **CAUTION : DO NOT INSTALL WITH MASONRY CHIMNEY SYSTEM !**
- **CAUTION : DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM!**
- **WARNING : THIS FIREPLACE HAS NOT BEEN TESTED WITH AN UNVENTED GAS LOG SET. TO REDUCE RISK OF FIRE OR INJURY, DO NOT INSTALL AN UNVENTED GAS LOG SET INTO THIS FIREPLACE.**
- THE AUTHORITY HAVING JURISDICTION (SUCH AS MUNICIPAL BUILDING DEPARTMENT, FIRE DEPARTMENT, FIRE PREVENTION BUREAU, ETC.) SHOULD BE CONSULTED BEFORE INSTALLATION TO DETERMINE THE NEED TO OBTAIN A PERMIT.**
- USING MAKE-SHIFT COMPROMISES DURING INSTALLATION CAN CAUSE DAMAGE . SUCH INSTALLATION IS NOT COVERED UNDER FOCUS LIMITED WARRANTY.**
- WHEN THIS ROOM HEATER IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THE INSTALLATION INSTRUCTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.**

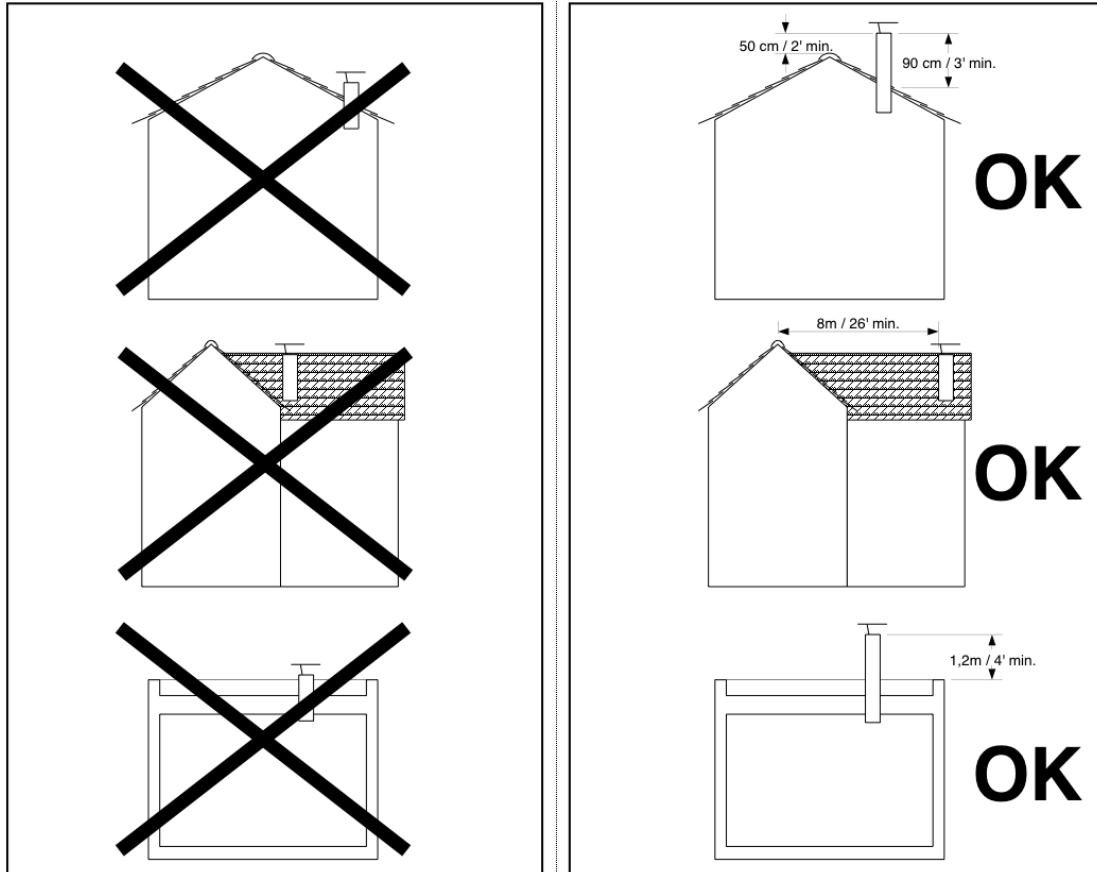
**a) Characteristics:**

- Weight : giga 1500 : 360 kg / 793 lbs, giga 1700 : 410 kg / 903 lbs, néo 1500 : 185 kg / 407 lbs, néo 1800 : 205 kg / 452 lbs.
- Smoke outlet diameter : Ø 308 (12-1/8 inch).
- 3 mm (1/8-inch) thick steel
- Black matt high heat resistant paint





b) Roof outlet requirement:



c) Chimney requirement:

**DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE!**

Giga and Neofocus requirements: the floor to top of chimney length must be 22' minimum (25' for an installation less than 3 miles from the ocean or if a 30° elbow is necessary). Elbows should not be more inclined than 30° (USA) or 45° (Canada) from vertical, and with maximum number of 2. Maximum inside + outside height (without use of a fan) : 30 feet.

These fireplaces must be connected to a chimney complying with the requirements for Type HT chimneys in the standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance, UL 103 / ULC S629. For example, a class A insulated stainless steel flue chimney system with a 12" minimum inside diameter.

d) Structural requirement:

**CAUTION: THE SUPPORT OF THIS UNIT (FLOOR) MUST BE SIZED IN CONGRUENCE WITH THE FIREPLACE STATIC AND DYNAMIC CHARGES (WEIGHT). THE SIZE CALCULATION FOR THE SUPPORT IS NOT THE RESPONSIBILITY OF FOCUS OR ITS AFFILIATES. IT IS YOUR RESPONSIBILITY TO CONSULT WITH AN ENGINEER OR ARCHITECT FOR YOUR PROJECT.**

e) Connectors:

Connectors are all non-insulated chimney parts, including the chimney manufacturer single wall slip adaptor and eventually the flue liner. To avoid heat traps the chimney connector shall not pass through an attic or roof space, closet or similar concealed space, or a floor, or ceiling.

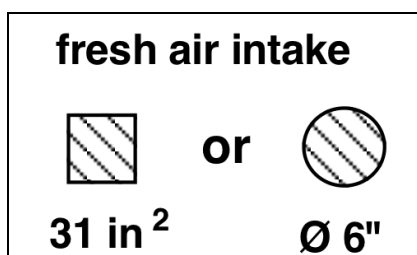
Passage through an attic, roof frame floor, or ceiling must be done using an insulated chimney respecting all chimney manufacturer clearances. For Canada the installation should conform to CAN/CSA-B365.

**CAUTION: PASSAGE THROUGH A WALL OR PARTITION OF COMBUSTIBLE CONSTRUCTION IS NOT AN APPROPRIATE INSTALLATION FOR THIS FOCUS FIREPLACE.**

Refractory compound must be used to seal each connection. Connectors should always be in good condition and kept clean. Minimum thickness : 1/32" (1 mm). Please refer to installation details in this manual.

f) Fresh air intake:

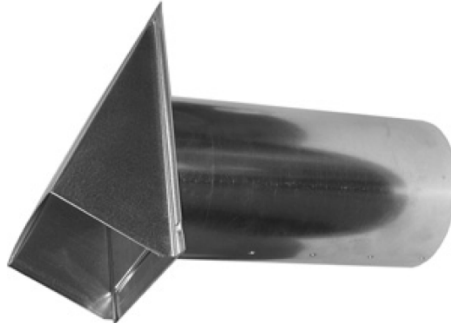
To balance room air pressure with outdoors air pressure, we recommends a fresh air intake in the room (ideally emerging under of the pedestal). Fresh air intake shall only take combustion air from outdoors and not terminate in attic spaces. We recommend Ø6" deflect-O ID0625 UL listed 181 class 1 insulated air duct. Minimum fresh air intake size:



Important: this fresh air intake is compulsory when operating venting appliances such as kitchen hoods, permanent air extractors or any appliances creating an air depression in the habitation. Fresh air intake must remain unrestricted while appliance is in use to prevent room air starvation, which can cause smoke spillage and an inability to maintain a fire. A lack of air intake may alarm smoke detectors. Duct maximum length : 30 feet.

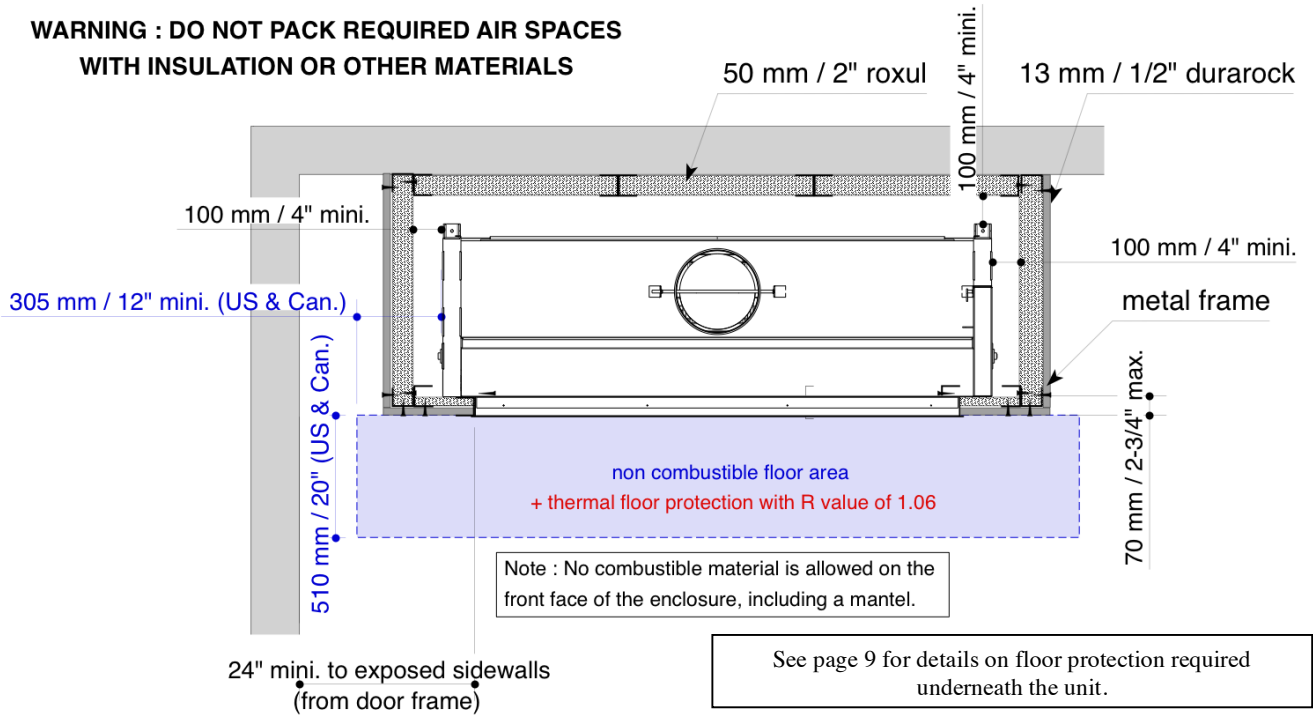
Guidance on how to seal at the penetration of the building envelope :

Installation of the combustion air inlet system will require a 6" diameter penetration through the wall and then insert the passive air vent with pipe extension through this opening. Take note that proper caulking is to be used between the vent and exterior wall to insure no air leaks in or out of building envelope. For in depth detail refer to your local building code having jurisdiction. For vertical external façade building termination, we recommend Deflect-O fresh air intake galvanized hood and pipe with screen ref. GFAI6 (see image hereunder and technical specs at the end of this manual).



**g) Clearances to combustibles:**

**WARNING : DO NOT PACK REQUIRED AIR SPACES WITH INSULATION OR OTHER MATERIALS**



**CLEARANCES MAY ONLY BE REDUCED BY MEANS APPROVED BY THE REGULATORY AUTHORITY.**

**MINIMUM FLOOR TO CEILING HEIGHT: 8 feet.**

**FIREPLACE MUST BE INSERTED IN AN INSULATED CHAMBER. A COMPULSORY MINIMUM OF 4" AIRSPACE MUST SURROUND THE FIREBOX INSIDE THE CHAMBER. PROPERTY DAMAGE OR DEATH CAN OCCUR IF THIS CLEARANCE IS NOT MAINTAINED.**

**THE INSIDE OF THE CHAMBER MUST BE LINED WITH MINIMUM 2" ROXUL INSULATION OR EQUIVALENT (insert Ref : RHF 80 RFF, see Roxul specifications in the appendix at the end of this manual). RECOMMENDED INSTALLATION: BUILD A CHAMBER USING METAL STUDS, 2" ROXUL INSULATION COMBINED WITH 1/2" CEMENT BOARD PANELS.**

**ABSOLUTLY NO COMBUSTIBLE MATERIAL IS ALLOWED INSIDE THE INSULATED CHAMBER.**

**DRYWALL PRODUCTS LINED WITH PAPER SUCH AS SHEETROCK ARE COMBUSTIBLE. THESE MATERIAL ARE NOT PERMITTED FOR CONSTRUCTION OF THE CHAMBER.**

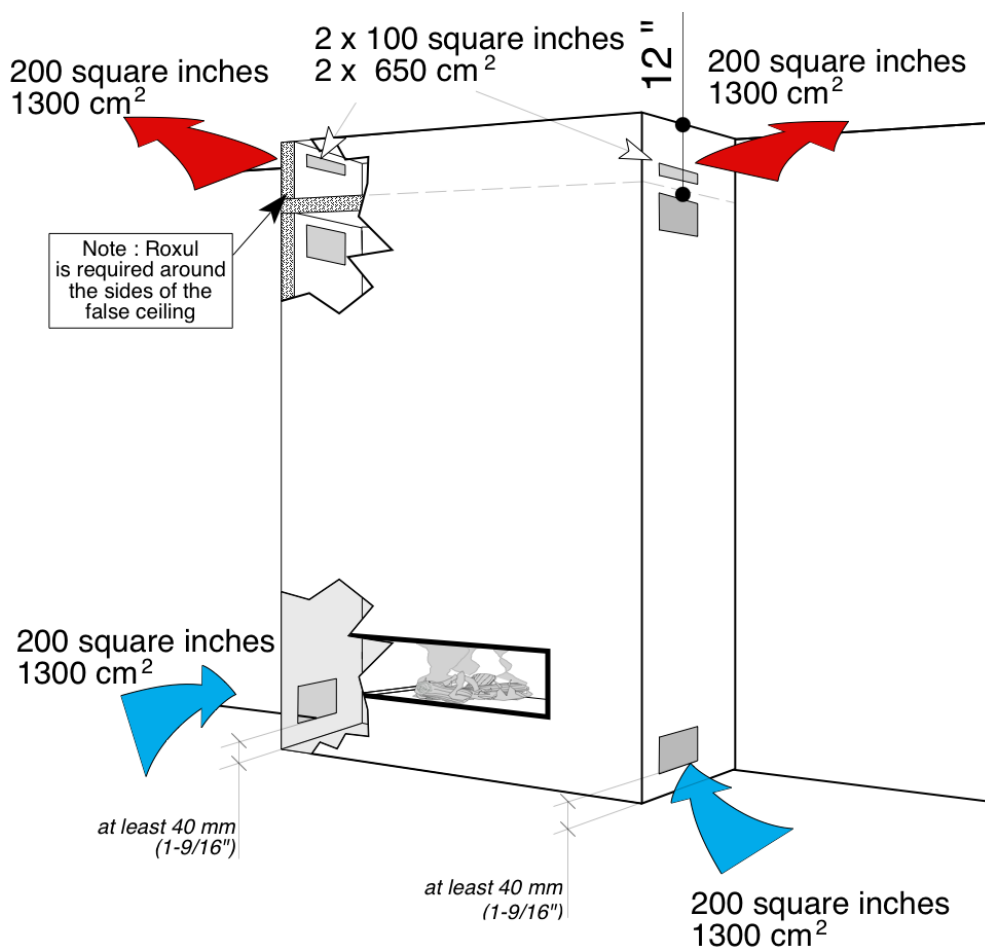
Important - manufacturer specifications:

- To avoid premature aging of your painted walls, only use mineral or acrylic paints. With other paints, above clearances apply.
- Fire clearance from window glass or combustible frame (vinyl for eg.) : refer to window technical specifications.

• Clearance to floor:

**FLOOR BENEATH THE UNIT AND INSIDE THE CHAMBER IS REQUIRED TO BE LINED WITH MINIMUM 1.5" MILLBOARD PANELS with R factor = 3.2 OR GREATER SUCH AS 2" ROXUL INSULATION (for use of alternate materials and how to calculate equivalent thickness, see appendix at the end of this manual). TAKE NECESSARY PRECAUTIONS TO AVOID BOARDS FROM CRUSHING UNDER WEIGHT OF FIREPLACE. SUBFLOOR CAN BE MADE OF PLYWOOD. NON COMBUSTIBLE FLOORS SUCH AS CONCRETE ARE MOST RECOMMENDED.**

• Ventilation grids : **4 x 200 square inches side grids:**



**CAUTION:**

**NEVER INSTALL THIS FIREPLACE WITHOUT VENTILATING THE CHAMBER.**

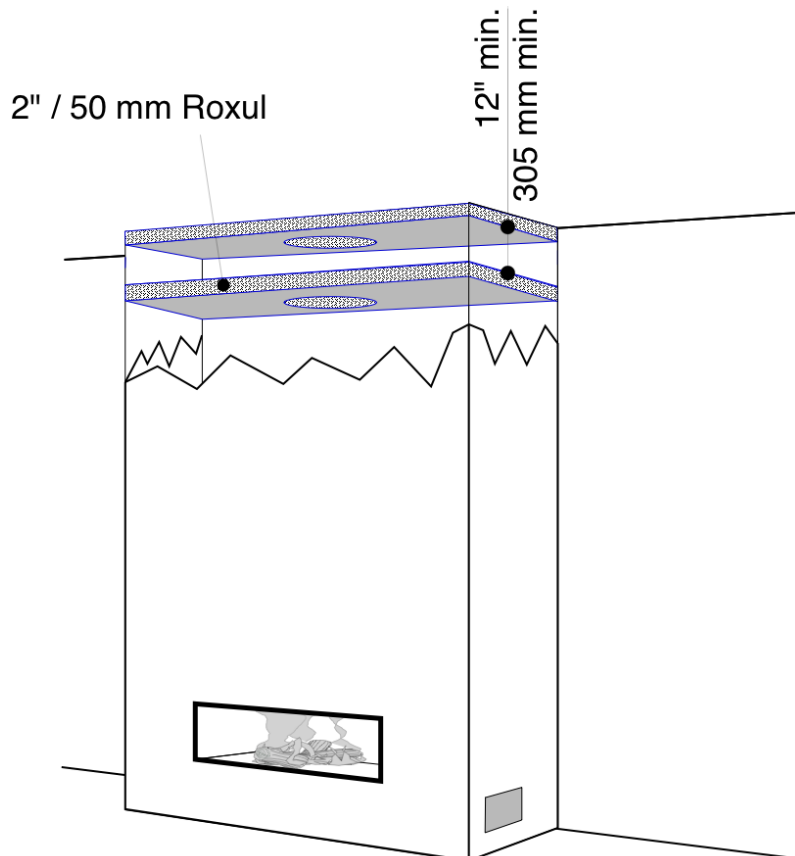
**TOTAL UPPER AND LOWER VENTILATION GRIDS ARE REQUIRED.**

**DO NOT USE A FIREPLACE INSERT OR OTHER PRODUCTS NOT SPECIFIED FOR USE WITH THIS FIREPLACE.**

**FALSE CEILING SEPARATION MUST BE LOCATED AT LEAST 1' BELOW CEILING.**

In case of combustible ceiling:

A 12" minimum airspace is required between the finished room ceiling and a 2" roxul internal false ceiling insulation panel. Roxul insulation must be tight up against the pipe. Refer to hereunder detail drawing:



**DAMAGES CAUSED FROM NON-OBSERVANCE OF THIS CAUTION IS NOT COVERED UNDER FOCUS LIMITED WARRANTY.**

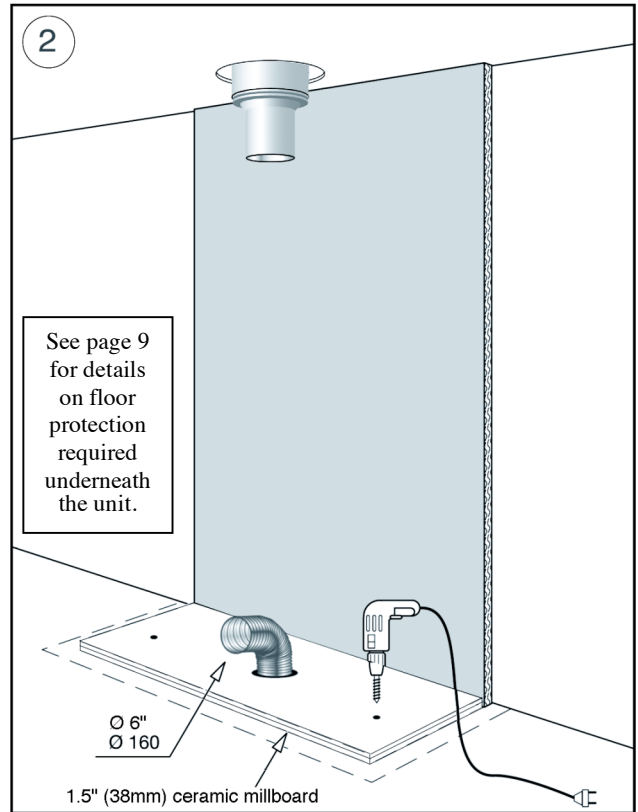
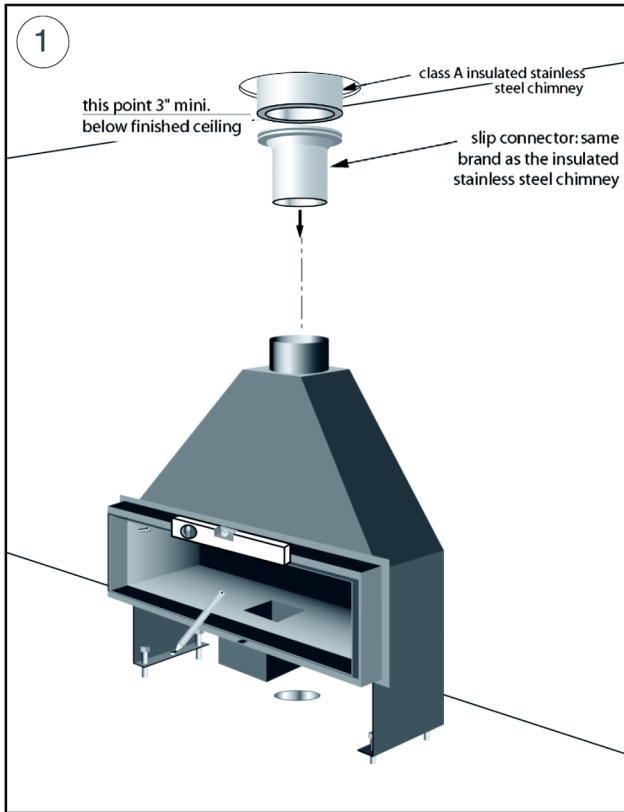


### **3 – INSTALLATION:**

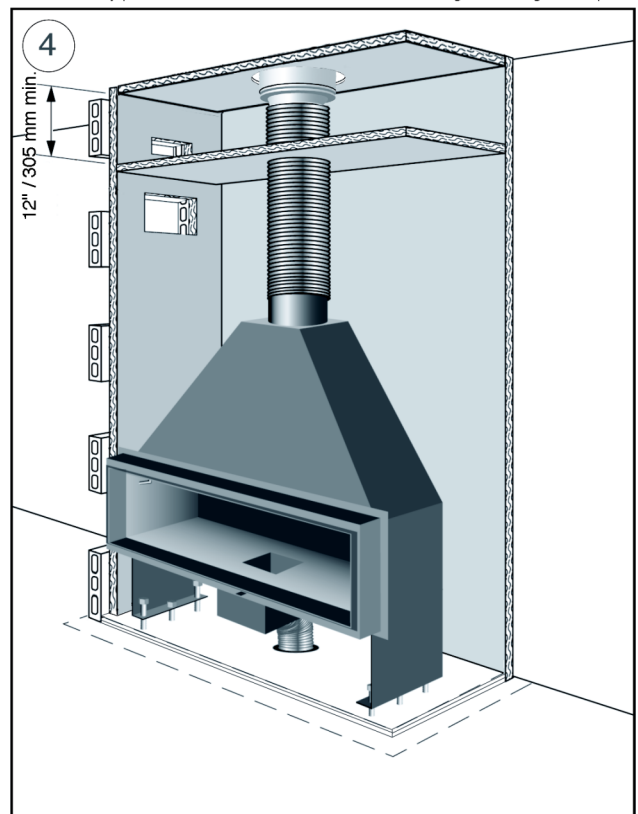
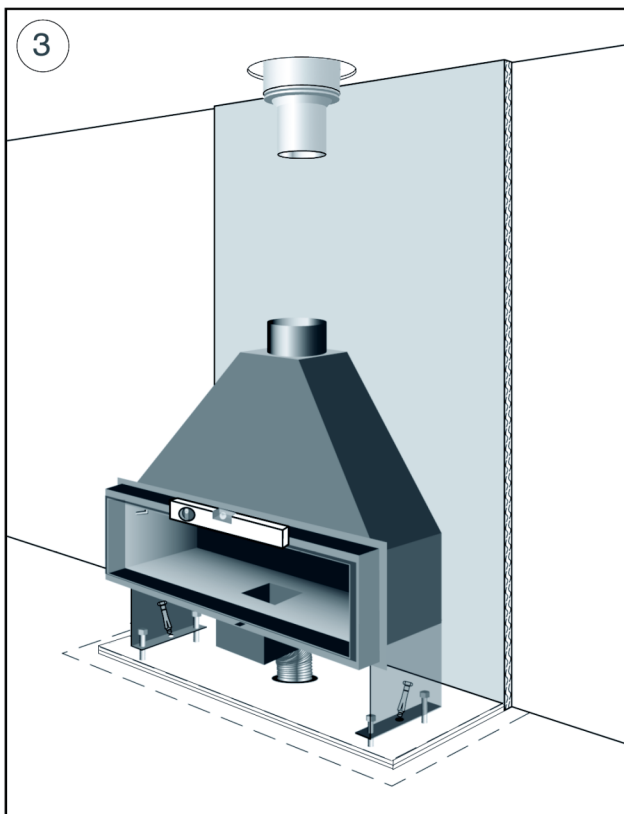
#### **a) Included parts, materials and required tools for installation:**

- Appliance and designated parts are : firebox, grate (neofocus), integral grate (gigafocus) ash drawer (néofocus), fire back protection, spark-guard, separable handle, 12 inch adaptor, baffle and focus kit (heat protective glove, mounting gloves, touch-up paint can, manual).
- Required tools: drill, M8 allen key, level, screwdrivers, M12 key, scaffolding (up to underceiling height), refractory compound.
- 2 persons are required for Neofocus installation. Gigafocus : 4 persons.

## b) Assembly details Neofocus 1/3:

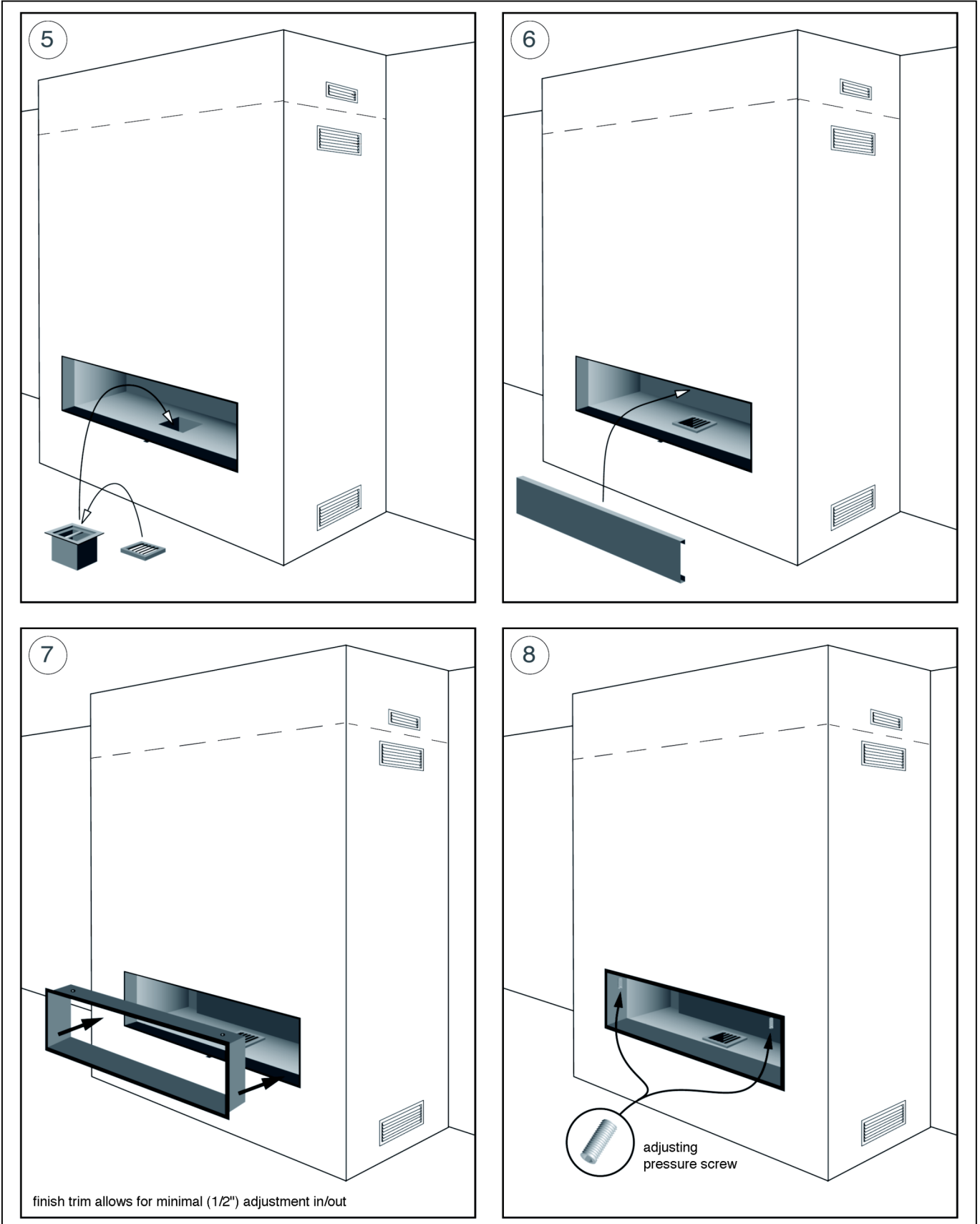


Take necessary precautions to avoid ceramic board from crushing under weight of fireplace.



Non-combustible framing material or blocks to be used

Assembly details Neofocus 2/3:

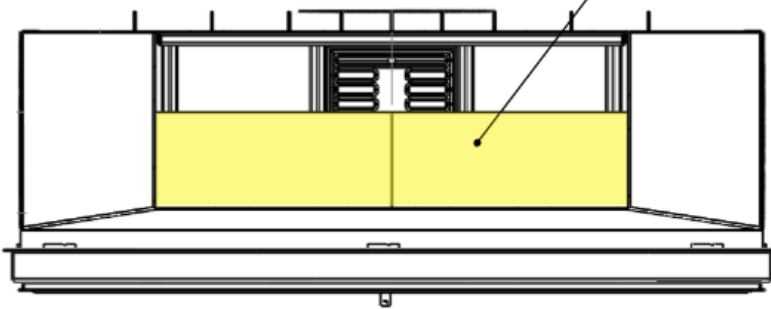


Assembly details Neofocus 3/3: guidance for placement of the baffle :

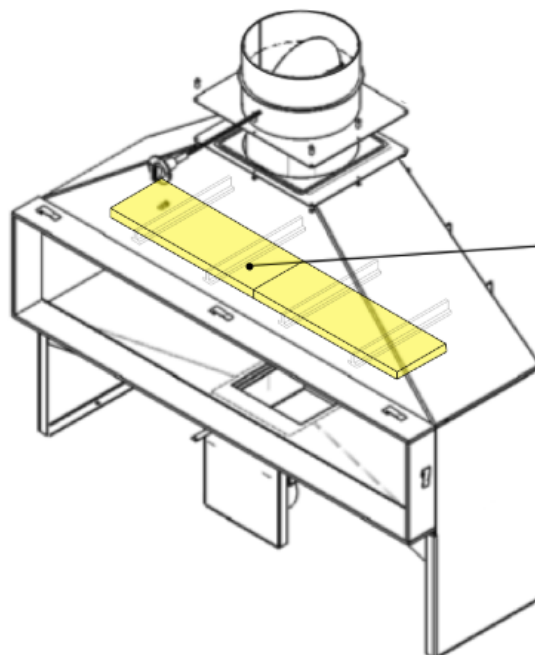
**CAUTION:**

**NEVER OPERATE THE NEOFOCUS WITHOUT THE BAFFLE IN PLACE, BROKEN OR NOT WELL POSITIONED. DAMAGES CAUSED FROM NON-OBSERVANCE OF THIS CAUTION IS NOT COVERED UNDER FOCUS LIMITED WARRANTY.**

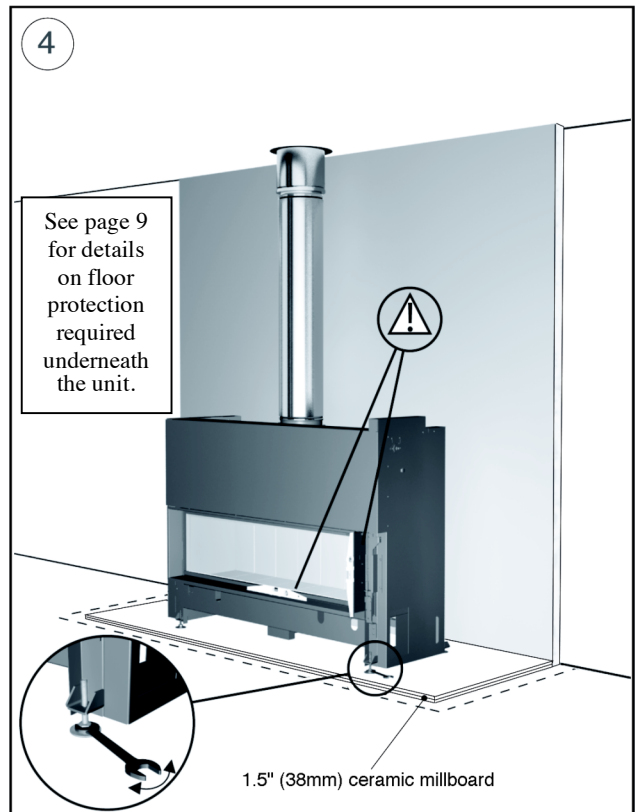
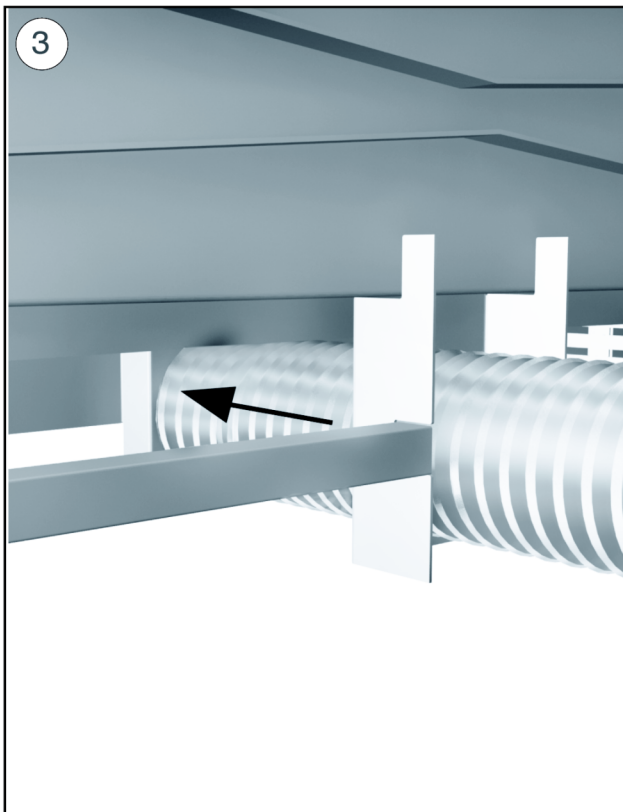
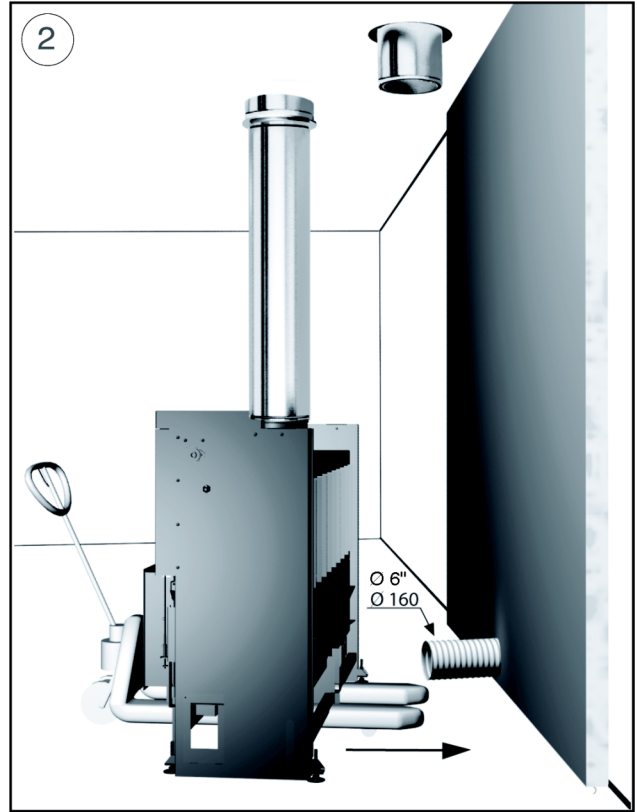
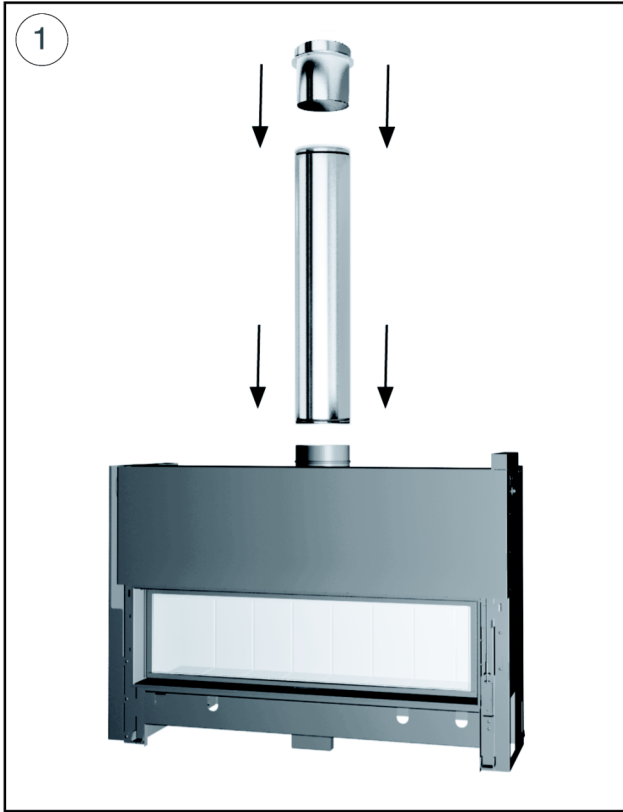
2 x Vermiculite panels positioned against the front face of the unit, on the canopy internal bars.  
*2 panneaux de Vermiculite, posés sur les barres intérieures à l'avaloir, coté face avant.*



panels in position.  
*panneaux positionnés.*

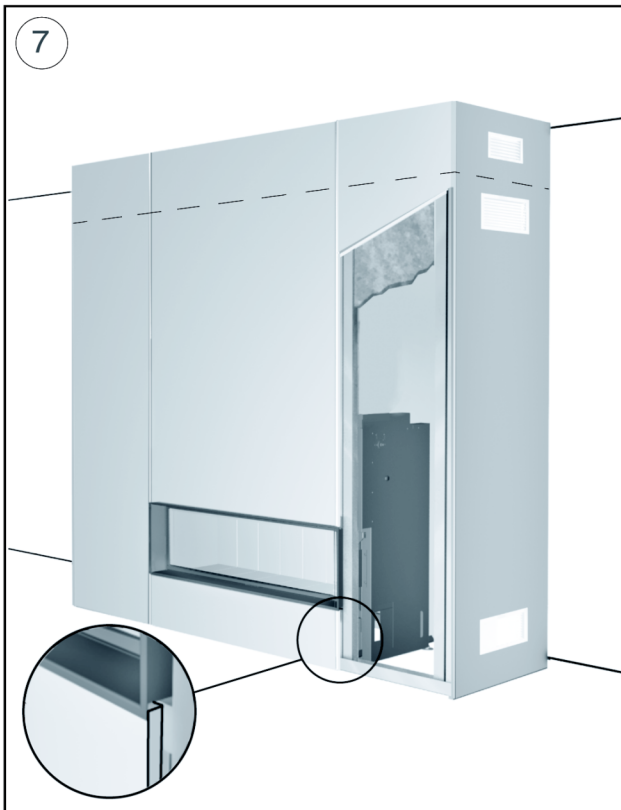
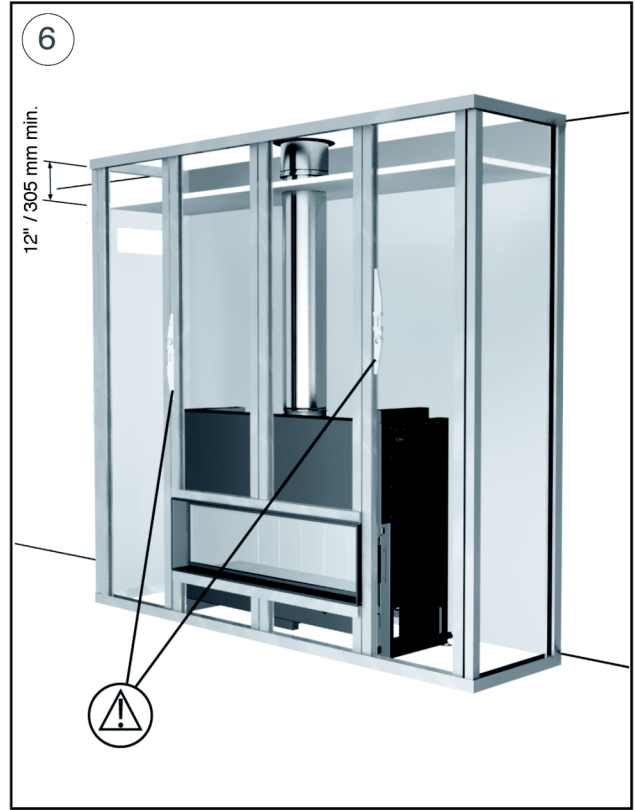
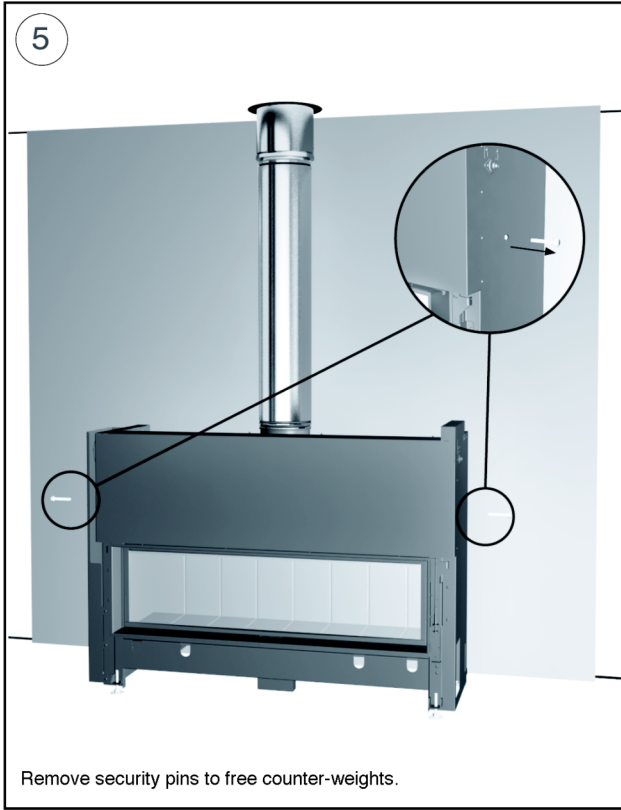


c) Assembly details Gigafocus 1/3:



Take necessary precautions to avoid ceramic board from crushing under weight of fireplace.

Assembly details Gigafocus 2/3:

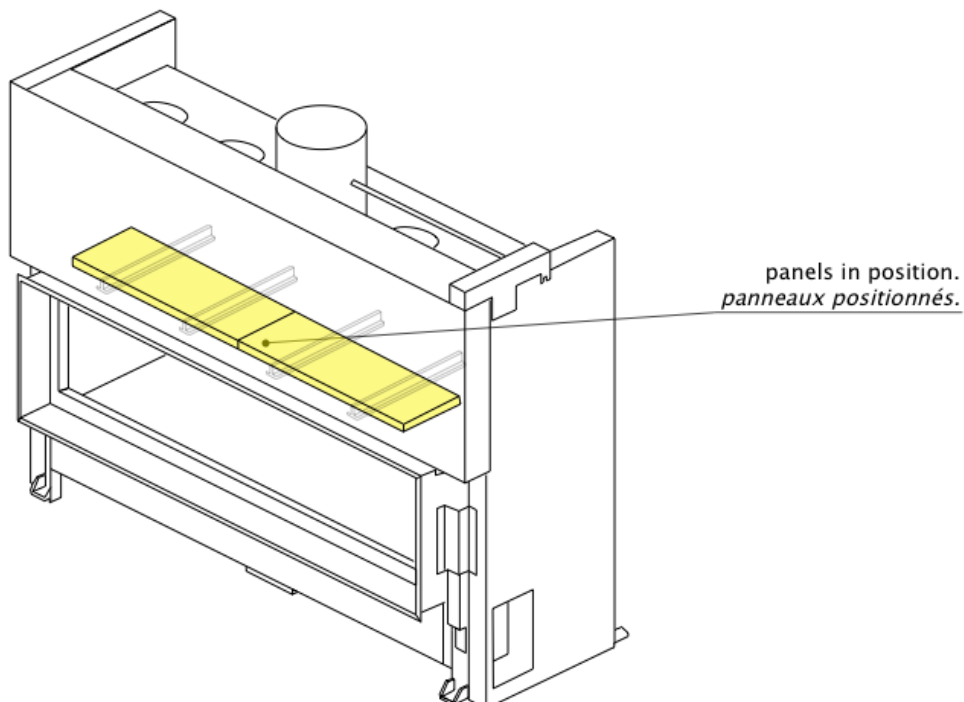
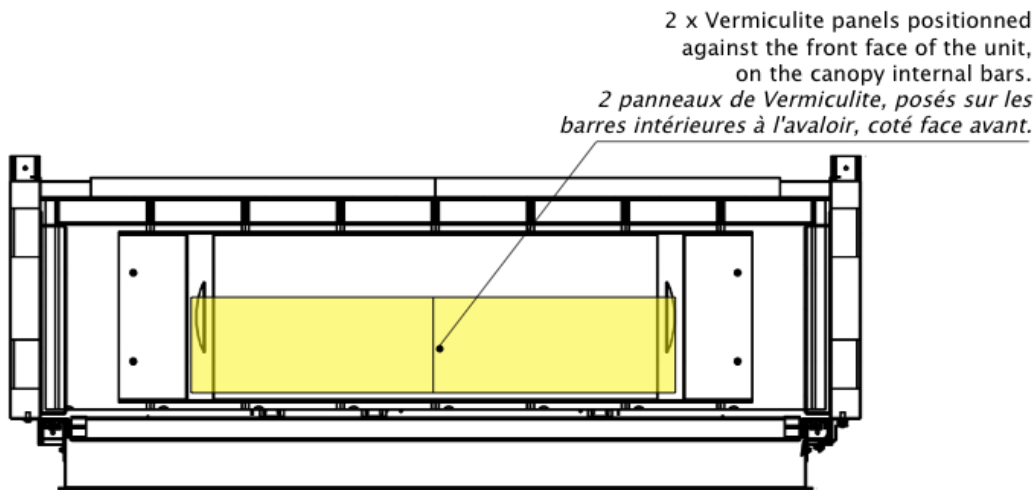




Assembly details Gigafocus 3/3: guidance for placement of the baffle :

**CAUTION:**

**NEVER OPERATE THE GIGAFOCUS WITHOUT THE BAFFLE IN PLACE, BROKEN OR NOT WELL POSITIONED. DAMAGES CAUSED FROM NON-OBSERVANCE OF THIS CAUTION IS NOT COVERED UNDER FOCUS LIMITED WARRANTY.**



## **4 – OPERATING INSTRUCTIONS:**

**CAUTION: HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.**

**a) Storage/use of flammable liquids:**

Never use chemicals or fluids, gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or « freshen up » a fire in this heater. Keep all such liquids well away from the heater while it is in use.

**b) Ashes:**

**DISPOSAL OF ASHES – ASHES SHOULD BE PLACED IN A METAL CONTAINER WITH A TIGHT FITTING LID. THE CLOSED CONTAINER OF ASHES SHOULD BE IMMEDIATELY PLACED OUTDOORS ON A NON-COMBUSTIBLE FLOOR OR ON THE GROUND, WELL AWAY FROM ALL COMBUSTIBLE MATERIALS, PENDING FINAL DISPOSAL. IF THE ASHES ARE DISPOSED OF BY BURIAL IN SOIL OR OTHERWISE LOCALLY DISPERSED, THEY SHOULD BE RETAINED IN THE CLOSED CONTAINER UNTIL ALL CINDERS HAVE THOROUGHLY COOLED.**

**c) Fuel:**

**CAUTION: DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPHTHA OR ENGINE OIL. DO NOT STORE THE FUEL WITHIN THE SPACE HEATER INSTALLATION CLEARANCES OR WITHIN THE SPACE REQUIRED FOR CHARGING AND ASH REMOVAL.**

Only burn dry, natural, untreated well-seasoned wood. Wood moisture content should not be more than 20%. We recommend using 2 year dry stored wood. For the best efficiency use a covered storage. Hazards may occur with some fuels (e.g., charcoal). Such fuels may generate dangerous gas like carbon monoxide.

**WARNING :**

- **THE GIGAFOCUS HAS BEEN TESTED FOR USE WITH DOOR FULLY OPEN OR FULLY CLOSED. IF DOOR IS LEFT PARTLY OPEN, GAS AND FLAME MAY BE DRAWN OUT OF THE FIREPLACE OPENING, CREATING RISKS FROM BOTH FIRE AND SMOKE. TO REDUCE THE RISK OF FIRE INJURY, DO NOT INTEND TO REMOVE THE DOOR!**
- **THE NEOFOCUS HAS BEEN TESTED WITH THE FIRE SCREEN IN PLACE. IT HAS NOT BEEN TESTED FOR USE WITH DOORS, TO REDUCE THE RISK OF FIRE INJURY, DO NOT INSTALL DOORS IN THE NEOFOCUS.**
- **WHEN PROCESSED SOLID FUEL FIREPLOGS ARE USED : DO NOT POKE OR STIR THE LOGS WHILE THEY ARE BURNING. USE ONLY FIRELOGS THAT HAVE BEEN EVALUATED FOR THE APPLICATION IN FIREPLACE AND REFER TO FIRELOG WARNINGS AND CAUTION MARKINGS ON PACKAGING PRIOR TO USE.**

d) Before lighting your first fire:

**CAUTION : DO NOT BUILD A FIRE TOO CLOSE TO THE GLASS (GIGAFOCUS).**

For all focus models it is necessary to clean off (with a damp sponge and/or a dry cloth) any dirt collected during transport or installation.

The first fire should be a modest one; do not use packing material or pallet wood for fuel.

The paint finish we use, oven baked at 250°C for 30 minutes, is thermo-plastic. Because of the very gradual polymerisation of the components, the unit may give off a light smoke the first few times the fire is lit. The painted surfaces nearest the fire may, while hot, acquire a certain viscosity, or slight stickiness perceptible to the touch.

We advise therefore:

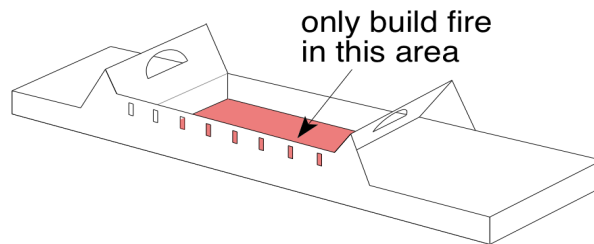
- not to be alarmed at possible smoking or residual odors. This is normal on the first fires and will rapidly subside.
- not to touch, rub or try to clean the fireplace while it is still hot.

To avoid thermal shocks, we strongly advise against throwing buckets of water on a very vigorous fire to try to put it out.

e) Building, starting and maintaining the fire :

**DO NOT OVERLOAD YOUR FOCUS FIREPLACE TO AVOID OVER-FIRING.  
DO NOT BUILD A FIRE OUTSIDE THE GRATE.**

Build the fire without elevating it, directly on the hearth, in the center area of the integrale grate (gigafocus only).



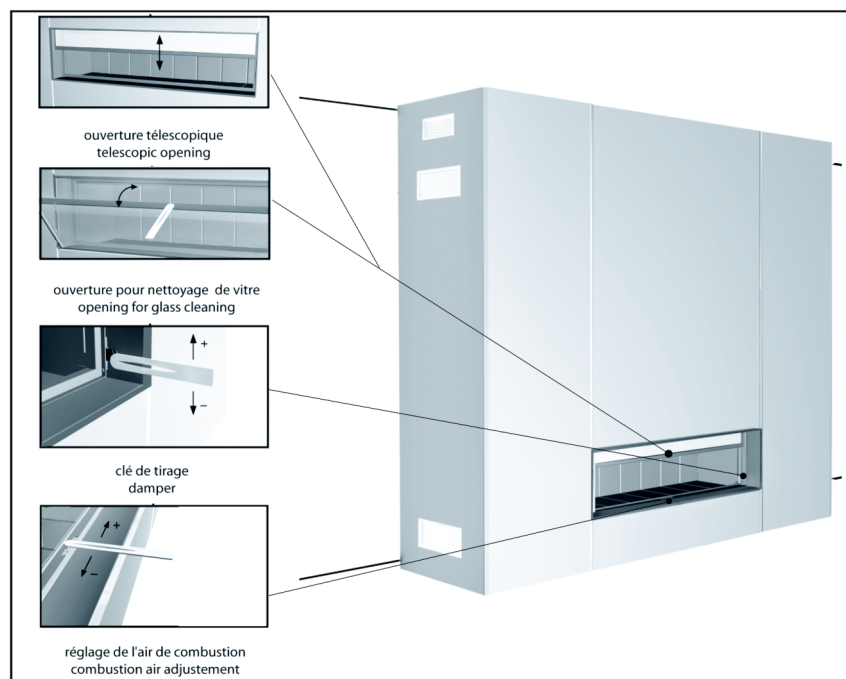
For starting the fire, we recommend using a small amount of fire starter with enough kindling (small logs or mill ends) to establish a primary fire. Fresh air intake into ash drawer must be fully open (rotate contrary to clockwise).

After a few minutes, and making sure the primary fire is well started, add larger wood (between 3 and 7 pieces, depending on their size), directly on top, making sure not to smother the fire. Leave some spaces between the logs for air intake. Adapt the air intake position in order to avoid spillage.

To maintain or refuel your fire, add when needed (see note), a few larger logs.

*Note: For the same weight of fuel, 10 logs will burn more intensely (and faster) than 3 logs, but you will get the same heat power at the end. The log size you buy will determine the heating and refueling time.*

f) Gigafocus set up :



g) Protective glove and separable handle :

The use of the focus special protective glove supplied with our models is required upon handling the separable handle, damper, fresh air controls, etc. The separable handle must be hung to the hearth edge.

## 5 – MAINTENANCE:

a) Taking out the ashes:

**CAUTION: BE SURE THE FIRE IS OUT AND THE FIREPLACE BODY COLD BEFORE REMOVING ASHES!**

To remove ashes we recommend to use a brush and a shovel (gigafocus). Dispose of ashes in an appropriate ash container (not supplied). After cleaning, be sure to secure the fireplace properly!

**CAUTION : DO NOT LIGHT A FIRE WITH ASH DRAWER OR DRAWER GRATE (NEOFOCUS) REMOVED, AS THIS WILL PRODUCE OVER-FIRING OR HOUSE FIRE. DAMAGE CAUSED FROM NON-OBSERVANCE OF THIS CAUTION IS NOT COVERED UNDER FOCUS LIMITED WARRANTY.**

b) Inspection, maintenance and cleaning of the chimney:

**CAUTION: CHEMICAL SWEEP NOT PERMITTED: ONLY MECHANICAL SWEEP ALLOWED!**

Referring to flue liner and connector : it must absolutely be swept with a nylon brush. Never use metal brushes! Damage caused from non-observance of this caution is not covered under the focus limited warranty.

Referring to insulated chimney pipe : Creosote formation and need for removal:

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire. The chimney and chimney connector should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred.

If a significant layer of creosote has accumulated (3mm or more) it should be removed to reduce the risk of a chimney fire.

In that case, call a professional chimney sweeper or buy a brush at your local focus retailer and clean the chimney this way :

Remove rain cap, use appropriately sized brush and sweep the entire system to remove all debris or refer to chimney manufacturer recommendations.

Communicate with the authorities (municipal, regional or provincial fire protection agency) to obtain all instructions concerning the measures to be taken when or before there is a risk of chimney fire.

Keep firing and de-ashing doors closed and maintain all seals in good condition.

c) Surfaces:

**CAUTION: DO NOT SCRUB!**

The outer surfaces can be wiped with a soft, dry rag (making sure the metal is cool).

For continued use of the touch-up paint can following its initial usage, invert the focus can (spray head down) and spray into a balled up newspaper until the can sprays clear. Clean the spray can bottom with a dry rag and store out of the reach of children.

d) Directions and reasons for cleaning glass (Gigafocus) :

**DO NOT CLEAN THE GLASS WHEN HOT.**

**GLASS DOOR SHOULD NOT BE STRUCK, SLAMMING SHUT OR BANGED.**

The outer surfaces can be wiped with a soft, dry rag and a standard glass cleaner product (making sure the glass is cool). Do not use abrasive cleaners.

The inner surfaces can be cleaned with a special insert glass product. If glass panel is cracked or broken, do not continue to use your unit until glass has been replaced.

Glass replacement (Gigafocus) :

Allow the fireplace to cool before removing or replacing glass. Open the door and remove the glass retainer (frame). Use caution when removing broken glass to prevent injury. When placing the replacement glass in the door frame, make sure that the glass gasketing will properly seal the unit. Replace the retainer and tighten securely, but do not wrench down on the glass as this may cause breakage.



d) Replacement parts:

**DO NOT USE SUBSTITUTE MATERIALS.**

**For ordering replacement parts, please contact the focus North American exclusive importer :**

## European Home

30 Log Bridge Road  
Building 300 – Suite 303  
Middleton, MA 01949  
T: 781-324-8383

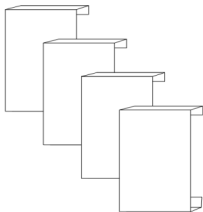
- Separable handle :



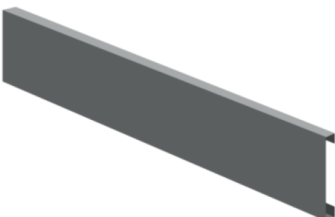
- Touch-up can :



- Gigafocus Fire back protections :



- Neofocus Fire back protection :





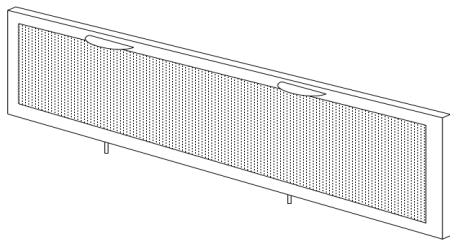
- Neofocus removable ash drawer :



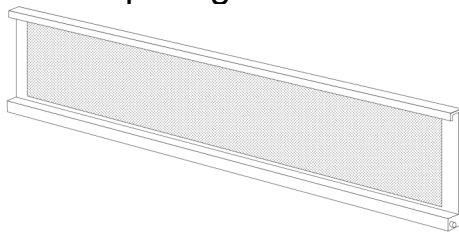
- Neofocus ash drawer cast iron grate :



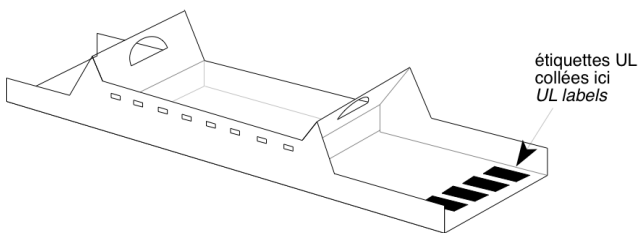
- Gigafocus Spark-guard:



- Néofocus Spark-guard :



- Gigafocus integral grate :



- Gigafocus screen printed glass panel :

Giga 1500 pyroceramic glass:

Thickness 5/32" (4 mm)

Length: 58-5/32" - 1477 mm

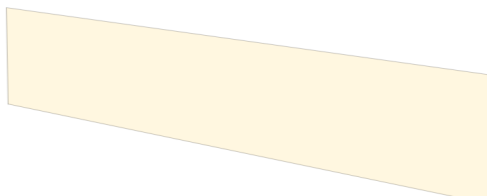
Height : 15-9/16" - 395 mm

Giga 1700 pyroceramic glass:

Thickness 5/32" (4 mm)

Length: 66-1/32" - 1677 mm

Height : 15-9/16" - 395 mm



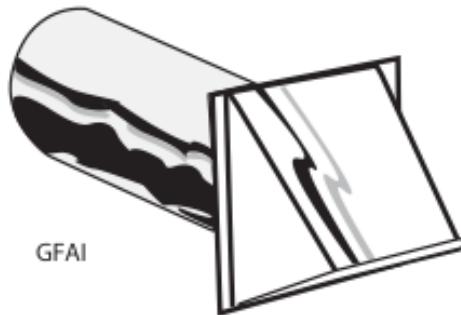


## **6 – WARRANTY:**

All of our focus models are guaranteed against any defect in design, construction, or manufacture, and guaranteed to function properly for 5 years from date of order. Our product guarantees are applicable only when our fireplaces have been installed with respect to all local building codes and with strict attention to the technical details outlined in our Plan Study as well as our installation, maintenance, and user's manuals. Our guarantees exclude accidental damages such as those occurring during transport without written notification upon receipt, damages incurred during installation, and damages resulting from improper use.

## Fresh Air Intake Technical Product Specification

### Fresh Air Intake – Galvanized Hood and Pipe with Screen



Model	Description	Screen Size
GFAI4	4" hood, pipe & screen	1/4"x1/4" mesh
GFAI5	5" hood, pipe & screen	1/4"x1/4" mesh
GFAI6	6" hood, pipe & screen	1/4"x1/4" mesh
GFAI7	7" hood, pipe & screen	1/4"x1/4" mesh
GFAI8	8" hood, pipe & screen	1/4"x1/4" mesh

#### Performance Data

For Fresh Air Intake Hoods

##### HOOD

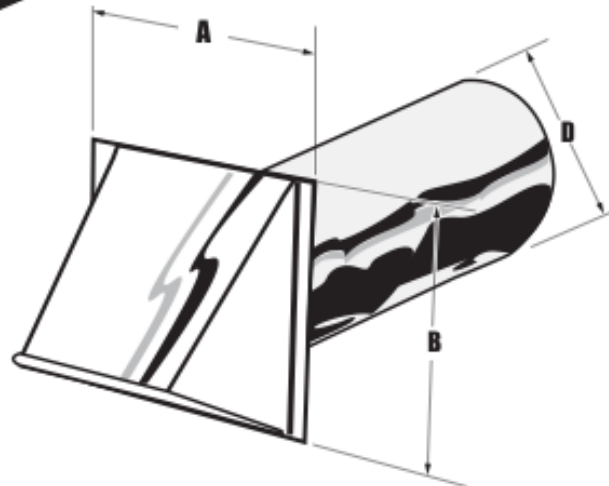
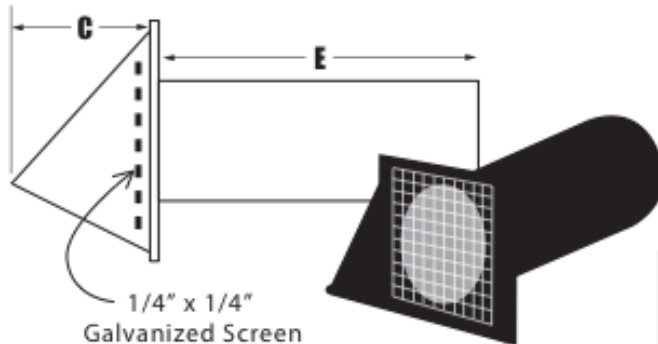
- Galvanized metal
- Galvanized metal 1/4"x1/4" screen

##### PIPE

- Galvanized

#### General Information

- 4" - 8" (10-20 cm) wide mouth vent design
- Screen keeps out unwanted animals
- Galvanized metal screen protects against rust



Model	A	B	C	D	E
GFAI4	6"	6"	3 1/2"	4" dia.	12"
GFAI5	8"	9 3/8"	4 1/2"	5" dia.	12"
GFAI6	8"	9 3/8"	4 1/2"	6" dia.	12"
GFAI7	10"	11 7/8"	5 3/4"	7" dia.	12"
GFAI8	10"	11 7/8"	5 3/4"	8" dia.	12"

5/09

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Deflecto's policy is one of continual product improvement in design and manufacturing wherever possible, therefore all specifications and designs are subject to change without notice and without incurring obligations.

GFAItps-A

Appendix.

**How to determine if alternate floor protection materials are acceptable.**

All floor protection must be non-combustible (i.e., metals, brick, stone, mineral fiber boards, etc.). Any organic materials (i.e., plastics, wood paper products, etc.) are combustible and must not be used. The floor protection specified includes some form of thermal designation such as R-value (thermal resistance) or k-factor (thermal conductivity).

PROCEDURE:

1. Convert specification to R-value:

- i. R-value given - no conversion needed.
- ii. k-factor is given with a required thickness (T) in inches:

$$R = \frac{1}{k} \times T$$

- iii. K-factor is given with a required thickness (T) in inches:

$$R = \frac{1}{K \times 12} \times T$$

- iv. r-factor is given with a required thickness (T) in inches:

$$R = r \times T$$

2. Determine the R-value of the proposed alternate floor protector.

- i. Use the formula in step (1) to convert values not expressed as “R”.
- ii. For multiple layers, add R-values of each layer to determine overall R-value.

3. If the overall R-value of the system is greater than the R-value of the specified floor protector, the alternate is acceptable.

EXAMPLE: The specified floor protector should be 3/4-inch thick material with a k-factor of 0.84. The proposed alternate is 4” brick with an r-factor of 0.2 over 1/8” mineral board with a k-factor of 0.29.

Step (a): Use formula above to convert specification to R-value.

$$R = \frac{1}{k} \times T = \frac{1}{0.84} \times 0.75 = 0.893$$

Step (b): Calculate R of proposed system.

4” brick of r = 0.2, therefore:

$$R_{\text{brick}} = 0.2 \times 4 = 0.431$$

1/8” mineral board of k = 0.29, therefore

$$R_{\text{mineral board}} = \frac{1}{0.29} \times 0.125 = 0.431$$

$$R_{\text{total}} = R_{\text{brick}} + R_{\text{mineral board}} = 0.8 + 0.431 = 1.231$$

Step (c): Compare proposed system  $R_{\text{total}}$  of 1.231 to specified R of 0.893. Since proposed system  $R_{\text{total}}$  is greater than required, the system is acceptable.

DEFINITIONS:

$$R = \frac{(\text{ft}^2)(\text{hr})(^\circ\text{F})}{\text{Btu}} \quad k = \frac{(\text{Btu})(\text{in})}{(\text{ft}^2)(\text{hr})(^\circ\text{F})} = K \times 12 \quad K = \frac{(\text{Btu})(\text{ft})}{(\text{ft}^2)(\text{hr})(^\circ\text{F})} \quad r = \frac{(\text{ft}^2)(\text{hr})(^\circ\text{F})}{(\text{Btu})(\text{in})} = \frac{1}{k}$$

