CARO GAS

INSTALLATION MANUAL (US)

CARO 90 G
CARO 110 G
CARO 130 G

RAIS®

Revision: 0
Dato: 06-05-2024

We reserve the right for any typographical errors.

⚠ WARNING

FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury, death, or property damage.

NOTE! Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in you building.
- Leave the building immediately.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

INSTALLATION AND SERVICE

Installation and service must be performed by a qualified installer, service agency or the gas supplier. We recommend to use a professional certified in the U.S. by the Nation Fireplace Institute (NFI) as gas specialists

INSTALLER: Leave this manual with the appliance.
CONSUMER: Retain this manual for future reference.

TESTED AND LISTED BY

This appliance may be installed in an aftermarket, permanently located, manufactured home (USA only) or mobile home, where not prohibited by local codes.

This appliance is only for use with the type(s) of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified conversion kit is used.

This appliance was listed by Intertek Test Labs to ANSI Z21.88. The listing label is attached to the appliance near the gas control valve.

This is a vented decorative gas appliance: not a source of heat; not for use with solid fuel.

⚠ DANGER!

HOT GLASS WILL CAUSE BURNS

DO NOT TOUCH GLASS UNTIL COOLED

NEVER ALLOW CHILDREN TO TOUCH GLASS

A barrier designed to reduce the risk of burns from the hot viewing glass is provided with this appliance and shall be installed for the protection of children and other at-risk individuals.

⚠ DANGER!

VITRE CHAUDE - RISQUE DE BRÜLURES

NE TOUCHEZ PAS UNE VITRE NON REFROIDIE

NE LAISSEZ JAMAIS UN ENFANT TOUCHER LA VITRE

L´écran pare-étincelles fourni avec ce foyer réduit le risque de brûlure en cas de contact accidental avec la vitre chaude et doit ëtre installé pour la protection des enfants et des personnes à risques.

US

CONTENTS

INTRODUCTION

Introduction to the installation manual 5
The gas fireplace in general 7
Specifications 8
Technical data sheet 9
Safety 10
Delivery packaging 13
Disposal guide 14
Overview of contents 15

INSTALLATION

Installation guide 17
Installation preparations 18
Opening the door 20
Locking the door 21
Installing the burner 22
Arranging ceramic logs 26
Changing flue connection 31
Restrictors 33
Installation of electrical and gas components 34
- Electrical connection 35
- Gas connection 36
- Remote control 37

Balanced flue system 38
- Positioning flue terminals 39

Distance to combustible material 40
Starting the gas fireplace 41
Purging the gas pipe 42
Pressure setting adjustment 43
CO and O_2 measurement 44

MAINTENANCE

Service and maintenance 45
Maintenance log 46
Cleaning 47
Warranty 48
Installation record 49

TROUBLESHOOTING AND ERRORS

Troubleshooting 50
Error codes on the remote control 51
Error sound diagram 52

TECHNICAL INFORMATION

Rating plate 53
Drawings 54

INTRODUCTION TO THE INSTALLATION MANUAL

This gas fireplace must be installed according to this installation manual.

The installation manual covers the following three models:

CARO 90 G
CARO 110 G
CARO 130 G

The manual covers all the customizer options such as color, glass/steel door, top/back flue or top plates.

CARO 90 G

CARO 110 G

CARO 130 G

GENERAL INFORMATION
It is important that the gas fireplace is correctly installed with consideration to the environment and people's safety.

The installation must comply with all local rules and regulations, including those that refer to national and European standards.

REQUIREMENTS

- Learn the structure and content of this manual before installation.
- Pay special attention to the safety chapter and the included manuals.
- Make sure you understand the instructions, otherwise please contact your RAIS dealer.
- Follow the manual completely and in the given structure.

INSTRUCTIONS FOR USING QR CODES
You will find QR codes with links to video guides for different installations in several places within the manual.

For using the QR codes, simply open the camera feature on your phone and point it at the code. You will then get the option to open a link to the video guide.

US

WARNINGS

Please note the symbols below that indicate potentially dangerous situations.

SYMBOL	DESCRIPTION
⚠ CAUTION	Visual sign illustrating an important notice or caution.
⚠ WARNING	Visual sign illustrating a potential hazard.

PRODUCTION NUMBER

The production number is the gas fireplace's identification number and must be used when making any enquiries relating to the fireplace's warranty.

Find the gas fireplace's production number on the bottom rear of the fireplace and write it down in the text box:

Production number

Note: See the drawing for the location of the production number.

Date:	**Dealer:**

Example of production number

THE GAS FIREPLACE IN GENERAL

This RAIS product is a highly efficient gas fireplace with a sealed combustion chamber for a balanced flue system. The fireplace has variable heating power and is fitted with a burner developed using the latest burner technology.

RAIS gas fireplaces are certified for indoor use. They can be used with house ventilation systems and are tested for leak resistance at up to -50 Pa negative pressure. No additional negative pressure monitoring unit or window tilt switch is needed, and there are no specific size or ventilation requirements for the installation room.

GENERAL INFORMATION
The fireplace must not be used if the door glass is split, cracked, removed or if the door is open. Do not use the gas fireplace if the door gasket is broken or worn.

This product is a heating appliance so the surfaces become very hot and should not be touched during use. It is therefore recommended that you use an approved safescreen screen to protect children, older people and persons with reduced mobility in the same area as the fireplace.

Keep curtains, washing, furniture, etc. at a minimum distance of 27" (700 mm) from this gas fireplace. The fireplace must not be used for burning waste.

If the fireplace is extinguished or goes out, do not attempt to turn it back on until a minimum of 3 minutes have passed.

It is recommended that gloves are worn when installing the gas fireplace to avoid fingerprints on glass. The door glass should always be cleaned before the fireplace is turned on and fingerprints wiped as these can be burned into the glass.

GAS CONNECTION
This gas fireplace may only be installed, adjusted, and serviced by an authorized installer. The installation must comply with local and national building and gas regulations, and the instructions in the installation manual must be followed.

Where there is a natural gas connection, the local gas supply conditions should be investigated to ensure that the gas composition and pressure match the fireplaces settings and rating plate. If the fireplace is connected to bottled gas, only gas bottles fitted with a low pressure regulator providing the correct gas pressure may be connected. For this reason, gas bottles without a regulator must not be used.

BEFORE INSTALLATION
All local regulations and provisions must be studied before installation. Always check the national building and gas regulations.

In addition, it should be confirmed that the description on the rating plate relating to gas type and gas pressure is in accordance with the local regulations. The gas supply should be examined to ensure that it can supply the required amount of gas and the required pressure.

Ensure that the chimney terminal is not blocked in any way and is free of vegetation in form of trees, bushes, etc., and that objects are not resting against the chimney terminal or protection around the terminal.

Fill out the installation record form. It can be found on page 49.

KEEP THE MANUALS
The installation manual and user manual are stored by the customer for clarification during use and for, e.g. service.

⚠ WARNING
If you smell gas, immediately switch off the gas supply. Turn off the fireplace at the stopcock and main electrical switch.

Ventilate the room by opening windows and doors. Do not use electrical appliances or switches in the vicinity of the fireplace. The gas supply may not be reconnected until an authorized installer has examined the fireplace and approved it.

⚠ CAUTION
The installed gas regulator must allow for the inlet pressure given on the information label. An authorized installer must size the pipe to ensure the correct gas pressure and flow rate.

US

SPECIFICATIONS

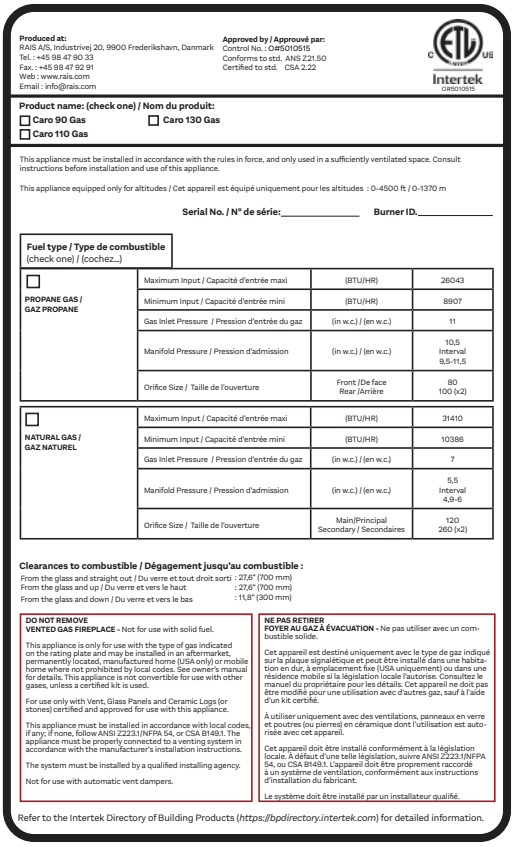
RATING PLATE

All RAIS/ATTIKA gas fireplaces have a rating plate, which states the fireplace's gas type, gas pressure, power, etc.

The rating plate is fixed to the fireplace on delivery. Position the rating plate near the GV60 Combination Valve and receiver for easy access so that the authorized installer can check the information.

The rating plate must be used during installation for setting and checking gas pressure.

There is a larger version of the rating plate on page 53.



Produced at:
RAIS A/S, Industrivej 20, 9900 Frederikshavn, Danmark
Tel. : +45 98 47 90 33
Fax. : +45 98 47 92 91
Web : www.rais.com
Email : info@rais.com

Approved by / Approuvé par:
Control No. : 04501051S
Conforms to std. ANS Z21.50
Certified to std. CSA 2.22

Intertek
04501051S

Product name: (check one) / Nom du produit:
☐ Caro 90 Gas ☐ Caro 130 Gas
☐ Caro 110 Gas

This appliance must be installed in accordance with the rules in force, and only used in a sufficiently ventilated space. Consult instructions before installation and use of this appliance.

This appliance equipped only for altitudes / Cet appareil est équipé uniquement pour les altitudes : 0-4500 ft / 0-1370 m

Serial No. / N° de série:_____ **Burner ID.**_____

Fuel type / Type de combustible (check one) / (cochez_)

☐ **PROPANE GAS / GAZ PROPANE**	Maximum Input / Capacité d'entrée maxi	(BTU/HR)	26043
	Minimum Input / Capacité d'entrée mini	(BTU/HR)	8907
	Gas Inlet Pressure / Pression d'entrée du gaz	(in w.c.) / (en w.c.)	11
	Manifold Pressure / Pression d'admission	(in w.c.) / (en w.c.)	10,5 Interval 9,5-11,5
	Orifice Size / Taille de l'ouverture	Front /De face Rear /Arrière	80 100 (x2)
☐ **NATURAL GAS / GAZ NATUREL**	Maximum Input / Capacité d'entrée maxi	(BTU/HR)	31410
	Minimum Input / Capacité d'entrée mini	(BTU/HR)	10386
	Gas Inlet Pressure / Pression d'entrée du gaz	(in w.c.) / (en w.c.)	7
	Manifold Pressure / Pression d'admission	(in w.c.) / (en w.c.)	5,5 Interval 4,9-6
	Orifice Size / Taille de l'ouverture	Main/Principal Secondary / Secondaires	120 260 (x2)

Clearances to combustible / Dégagement jusqu'au combustible :
From the glass and straight out / Du verre et tout droit sorti : 27,6" (700 mm)
From the glass and up / Du verre et vers le haut : 27,6" (700 mm)
From the glass and down / Du verre et vers le bas : 11,8" (300 mm)

DO NOT REMOVE VENTED GAS FIREPLACE - Not for use with solid fuel.

This appliance is only for use with the type of gas indicated on the rating plate and may be installed in an aftermarket, permanently located, manufactured home (USA only) or mobile home where not prohibited by local codes. See owner's manual for details. This appliance is not convertible for use with other gases, unless a certified kit is used.

For use only with Vent, Glass Panels and Ceramic Logs (or stones) certified and approved for use with this appliance.

This appliance must be installed in accordance with local codes, if any; if none, follow ANSI Z223.1/NFPA 54, or CSA B149.1. The appliance must be properly connected to a venting system in accordance with the manufacturer's installation instructions.

The system must be installed by a qualified installing agency.

Not for use with automatic vent dampers.

NE PAS RETIRER FOYER AU GAZ À ÉVACUATION - Ne pas utiliser avec un combustible solide.

Cet appareil est destiné uniquement avec le type de gaz indiqué sur la plaque signalétique et peut être installé dans une habitation en dur, à emplacement fixe (USA uniquement) ou dans une résidence mobile si la législation locale l'autorise. Consultez le manuel du propriétaire pour les détails. Cet appareil ne doit pas être modifié pour une utilisation avec d'autres gaz, sauf à l'aide d'un kit certifié.

À utiliser uniquement avec des ventilations, panneaux en verre et poutres (ou pierres) en céramique dont l'utilisation est autorisée avec cet appareil.

Cet appareil doit être installé conformément à la législation locale. À défaut d'une telle législation, suivre ANSI Z223.1/NFPA 54, ou CSA B149.1. L'appareil doit être proprement raccordé à un système de ventilation, conformément aux instructions d'installation du fabricant.

Le système doit être installé par un installateur qualifié.

Refer to the Intertek Directory of Building Products (*https://bpdirectory.intertek.com*) for detailed information.

⚠ WARNING

If you smell gas, immediately switch off the gas supply. Turn off the fireplace at the stopcock and main electrical switch.

Ventilate the room by opening windows and doors. Do not use electrical appliances or switches in the vicinity of the fireplace. The gas supply may not be reconnected until an authorized installer has examined the fireplace and approved it.

⚠ CAUTION

For LPG, the installed regulator must allow the inlet pressure given on the rating label. An authorized installer must size the pipe to ensure the correct gas pressure and flow rate.

TECHNICAL DATA SHEET

CARO GAS							
Brand/Producteur		RAIS					
Model/Modèle		Caro 90 Caro 110 Caro 130					
Gas type/Type de gaz		**Natural Gas**			**Propane (LP)**		
		G21@17.4			G31@27.4		
Input/Entrée							
Inlet Gas Pressure/Pression de gaz d'admission	" w.c.	7			11		
Input Rating/Note d'entrée	Btu/hr	31410			26043		
Min. Input Rating/Note d'entrée minimale	Btu/hr	10386			8907		
Burner Gas Pressure/Pression de gaz du brûleur			Interval			Interval	
Min. Pressure/Pression minimale	" w.c.	2,8	2,5	3,1	6	5,4	6,6
Max. Pressure/Pression maximale	" w.c.	5,5	5,0	6,1	11,6	10,4	12,8
Gas connection/Raccordement gaz		To/pour GV60 - 3/8" G / Ø12 mm					
Normal air setting		Main venturi: Air ½ open Secondary venturis: One closed side / One hole side Venturi principal : Air ½ ouvert Venturis secondaires : Un côté fermé / Un côté trou			Main venturi: Air fully open Secondary venturis: Fully open on both sides Venturi principal : Air complètement ouvert Venturis secondaires : entièrement ouverts des deux côtés		
Snorkel air setting		Main venturi: Air ½ open Secondary venturis: One fully open side / One hole side Venturi principal : Air ½ ouvert Venturis secondaires : Un côté ouvert / Un côté trou					
Orifice-Marking (Main burner)/Marquage d'orifice (brûleur principal)		120			80		
Orifice-Marking (Secondary burners)/Orifice-Marquage (brûleurs secondaires)		260			100		
Pilot marking/Marquage pilote		G30-ZP2-312-31.1			G30-ZP2 271-27.1		

NOTE: The maximum achievable steady state efficiency can vary depending the installation and on how the fireplace is operated.

This appliance is equipped for use with the fuel type indicated on the rating plate.

This appliance has been certified by Intertek, Inc. to ANSI Z21.50 • CSA 2.22 Vented Gas Fireplace Heaters and CGA 2.17-M91 (R2009), Gas-Fired Appliances for Use At High Altitudes.

The appliance is approved for installation at elevations up to 4500 feet (1370 meters) in U.S. and Canada without change. If your installation is at an elevation greater than these, consult with the local authority having jurisdiction for gas product installations to determine their specific requirements for high altitude installations.

SAFETY

It is important that the gas fireplace is correctly installed with consideration to the environment and people's safety. No unauthorized alterations may be made to the fireplace.

The fireplace may not be used if the glass is split, cracked, or removed. Do not use the fireplace if the glass gasket is broken or worn.

This fireplace is designed for a balanced flue system (air intake and extraction in the same chimney). Therefore, there is no need for an extra air supply for combustion.

It is recommended that the air replacement in the room is adjusted to ensure a pleasant indoor environment.

This fireplace can be installed in an airtight building or in a building with mechanical ventilation since the gas fireplace functions in a closed system that does not extract combustion air from the room.

Please be aware that not following the instructions in this manual and the provided manuals can lead to a dangerous or fatal situation.

⚠ WARNING

- The appliance must be positioned and connected as a room sealed system appliance by an authorized installer.
- Before beginning the installation, check that the details on the rating plate correspond to the gas type and supply pressure to which the appliance will be connected.
- Install the appliance in accordance with the following instructions, and the national and local applicable regulations.
- Do not put flammable or organic material in the fireplace.
- After the fireplace has been shut down, the fireplace needs a cooling period of 15 minutes before the glass can be removed or cleaned.
- Make sure that the area around the fireplace is always free of flammable materials. See minimal safe distance on page 40.
- Make sure that the fireplace stays clean from, e.g. dust and moisture during the installation. Blockage of the delayed ignition flaps can lead to a dangerous situation.
- Make sure that the delayed ignition flaps are functional during installation (see page 41).
- Make sure that the balanced flue is correctly installed.
- Make sure that the GV60 Combination Valve, the piping, and the top of the fireplace remain free of cement or other building materials. Otherwise, this can lead to a leak or defective components.
- Do not twist or force the flexible pipes to the GV60 combination valve. Make sure there is no stress on the pipes.
- Make sure not to damage the pipes during installation or placement of the fireplace.
- Make sure that the compression fittings do not come lose during installation.
- After installation, make sure that the pipes, and compressions fittings are gas tight.

IMPORTANT SAFETY INFORMATION
THE INSTALLATION MUST CONFORM WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, TO THE NATIONAL FUEL GAS CODE, ANSI Z223.1/ NFPA 54, OR THE NATURAL GAS AND PROPANE INSTALLATION CODE, CSA B149.1.

A MANUFACTURED HOME (USA ONLY) OR MOBILE HOME OEM INSTALLATION MUST CONFORM WITH THE MANUFACTURED HOME CONSTRUCTION AND SAFETY STANDARD, TITLE 24 CFR, PART 3280 OR WHEN SUCH A STANDARD IS NOT APPLICABLE, THE STANDARD FOR MANUFACTURED HOME INSTALLATIONS, ANSI/ BCSBCS A225.1, OR STANDARD FOR GAS EQUIPPED RECREATIONAL VEHICLES AND MOBILE HOUSING, CSA Z240.4.

THE APPLIANCE AND ITS APPLIANCE MAIN GAS VALVE MUST BE DISCONNECTED FROM THE GAS SUPPLY PIPING SYSTEM DURING ANY PRESSURE TESTING OF THAT SYSTEM AT TEST PRESSURES IN EXCESS OF 1/2 PSI (3.5 KPA).

THE APPLIANCE MUST BE ISOLATED FROM THE GAS SUPPLY PIPING SYSTEM BY CLOSING ITS EQUIPMENT SHUTOFF VALVE DURING ANY PRESSURE TESTING OF THE GAS SUPPLY PIPING SYSTEM AT TEST PRESSURES EQUAL TO OR LESS THAN 1/2 PSI (3.5 KPA).

THE INSTALLATION MUST PROVIDE FOR ADEQUATE VENTILATION AIR TO THE APPLIANCE.

THIS GAS APPLIANCE MUST NOT BE CONNECTED TO A CHIMNEY FLUE SERVING A SEPARATE SOLID-FUEL BURNING APPLIANCE.

THE APPLIANCE, WHEN INSTALLED, MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES, OR, IN THE ABSENCE OF LOCAL CODES, WITH THE NATIONAL ELECTRICAL CODE ANSI/ NFPA 70, OR THE CANADIAN ELECTRICAL CODE, CSA C22. 1.

WHEN THE APPLIANCE IS INSTALLED DIRECTLY ON CARPETING OR NON-CERAMIC TILE OR OTHER COMBUSTIBLE MATERIAL OTHER THAN WOOD FLOORING, THE APPLIANCE SHALL BE INSTALLED ON A METAL OR WOOD PANEL EXTENDING THE FULL WIDTH AND DEPTH OF THE APPLIANCE. A COMMERCIALLY AVAILABLE HEARTH PAD MEETS THIS REQUIREMENT.

THE APPLIANCE AREA MUST BE KEPT CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE AND OTHER FLAMMABLE VAPORS AND LIQUIDS.

THE FLOW OF COMBUSTION AND VENTILATION AIR MUST NOT BE OBSTRUCTED.
DO NOT USE THIS APPLIANCE IF ANY PART HAS BEEN UNDER WATER. IMMEDIATELY CALL A QUALIFIED SERVICE TECHNICIAN TO INSPECT THE APPLIANCE AND TO REPLACE ANY PART OF THE CONTROL SYSTEM AND ANY GAS CONTROL, WHICH HAS BEEN UNDER WATER.

DUE TO HIGH TEMPERATURES, THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC AND AWAY FROM FURNITURE AND DRAPERIES.

CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURES AND SHOULD STAY AWAY TO AVOID BURNS OR CLOTHING IGNITION.

YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE. TODDLERS, YOUNG CHILDREN AND OTHERS MAY BE SUSCEPTIBLE TO ACCIDENTAL CONTACT BURNS. A PHYSICAL BARRIER IS RECOMMENDED IF THERE ARE AT-RISK INDIVIDUALS IN THE HOUSE. TO RESTRICT ACCESS TO A FIREPLACE OR STOVE, INSTALL AN ADJUSTABLE SAFETY GATE TO KEEP TODDLERS, YOUNG CHILDREN AND OTHER AT-RISK INDIVIDUALS OUT OF THE ROOM AND AWAY FROM HOT SURFACES."

CLOTHING OR OTHER FLAMMABLE MATERIAL SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.
ANY SCREEN OR GUARD REMOVED FOR SERVICING AN APPLIANCE MUST BE REPLACED PRIOR TO OPERATING THE APPLIANCE.

INSTALLATION AND REPAIR SHOULD BE DONE BY A QUALIFIED SERVICE PERSON.

THE APPLIANCE SHOULD BE INSPECTED BEFORE USE AND AT LEAST ANNUALLY BY A PROFESSIONAL SERVICE PERSON.

MORE FREQUENT CLEANING MAY BE REQUIRED DUE TO EXCESSIVE LINT FROM CARPETING, BEDDING MATERIAL, ETC. IT IS IMPERATIVE THAT THE CONTROL COMPARTMENTS, BURNERS AND CIRCULATING AIR PASSAGEWAYS OF THE APPLIANCE BE KEPT CLEAN.

A SAFETY SCREEN IS DESIGNED TO REDUCE THE RISK OF BURNS FROM THE HOT VIEWING GLASS IS PROVIDED WITH THIS APPLIANCE AND SHALL BE INSTALLED FOR THE PROTECTION OF CHILDREN AND OTHER AT-RISK INDIVIDUALS.

PROPOSITION 65 WARNING: FUELS USED IN GAS, WOODBURNING OR OIL FIRED APPLIANCES, AND THE PRODUCTS OF COMBUSTION OF SUCH FUELS,
CONTAIN CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.
CALIFORNIA HEALTH & SAFETY CODE SEC. 25249.6

RAIS A/S GRANTS NO WARRANTY, IMPLIED OR STATED, FOR THE INSTALLATION OR MAINTENANCE OF YOUR HEATER, AND ASSUMES NO RESPONSIBILITY OF ANY CONSEQUENTIAL DAMAGE(S).

US

SAFETY DEVICES IN THE FIREPLACE

The gas fireplace has five safety devices:

- **1st thermocouples**
  Our fireplaces are equipped with a 1st thermocouple in the pilot unit. If the pilot flame is not lit, the fireplace will shut down.
  Make sure not to place any decorations around the thermocouple.

- **2nd thermocouple**
  Our fireplaces are fitted with an extra 2ndthermocouple that shuts off the fireplace if the main burner is not lit or is not burning correctly.
  Make sure not to place any decorations around the 2ndthermocouple.

- **Delayed ignition flaps**
  Our fireplaces are fitted with overpressure doors called delayed ignition flaps. If a hard ignition should occur, the delayed ignition flaps will take the pressure so that the glass is not damaged.

- **Pilot flame**
  The system automatically extinguished the pilot flame when the appliance is inactive for 7 days.

- **Safety screen**
  RAIS' gas fireplaces are equipped with a safety screen covering the ceramic glass (see illustration below). The safety screen still becomes hot, but will increase the protection of children and other at-risk individuals.

Safety screen

⚠ WARNING

Only use the items that are supplied or described in this manual or other related documents.

⚠ CAUTION

Due to the risk of fire, be aware of the distance to flammable items, e.g. furniture. See the distance on page 40.

This product is a heating appliance. This means that surfaces become very hot and must not be touched when the fireplace is in use or has just been switched off. It is therefore necessary to protect children, seniors and persons with limited mobility from the fireplace.

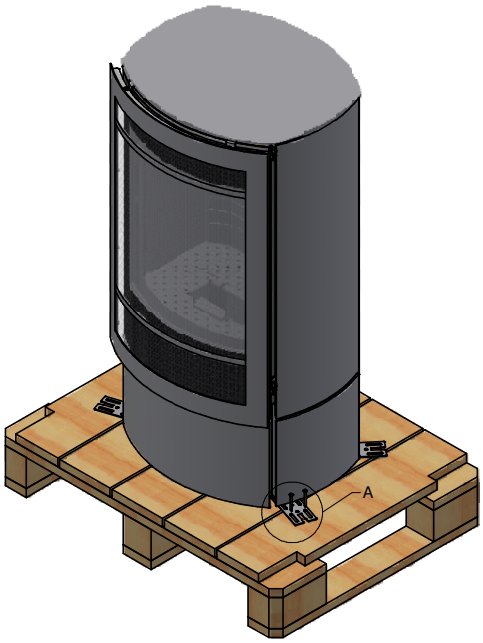
If the fireplace is switched off or the fire goes out, wait at least three minutes before igniting it again.

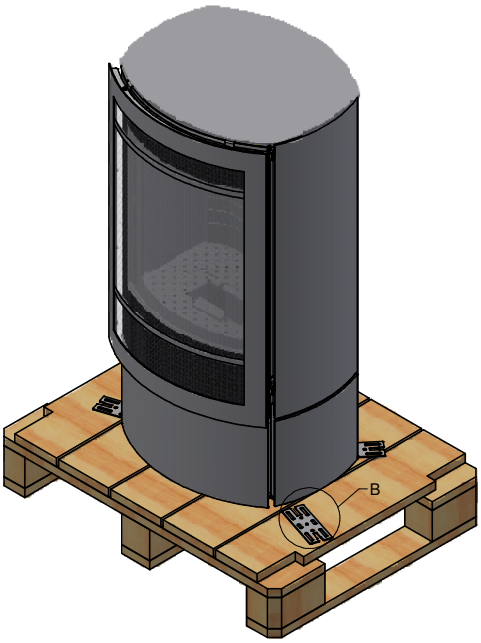
DELIVERY PACKAGING

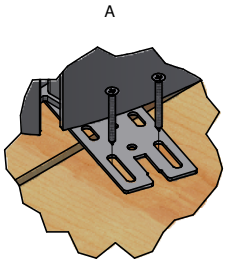
The fireplace is supplied secured to a transport pallet using four transport safety fittings – one in each corner (A). The safety fittings are secured using three screws and these must be removed. The safety fitting can then be removed.

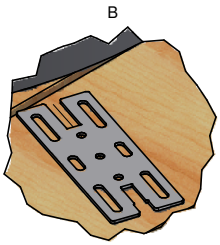
When the fireplace is delivered, please check it for any defects.

The fireplace may not be installed if there is any damage, missing parts, or defects.









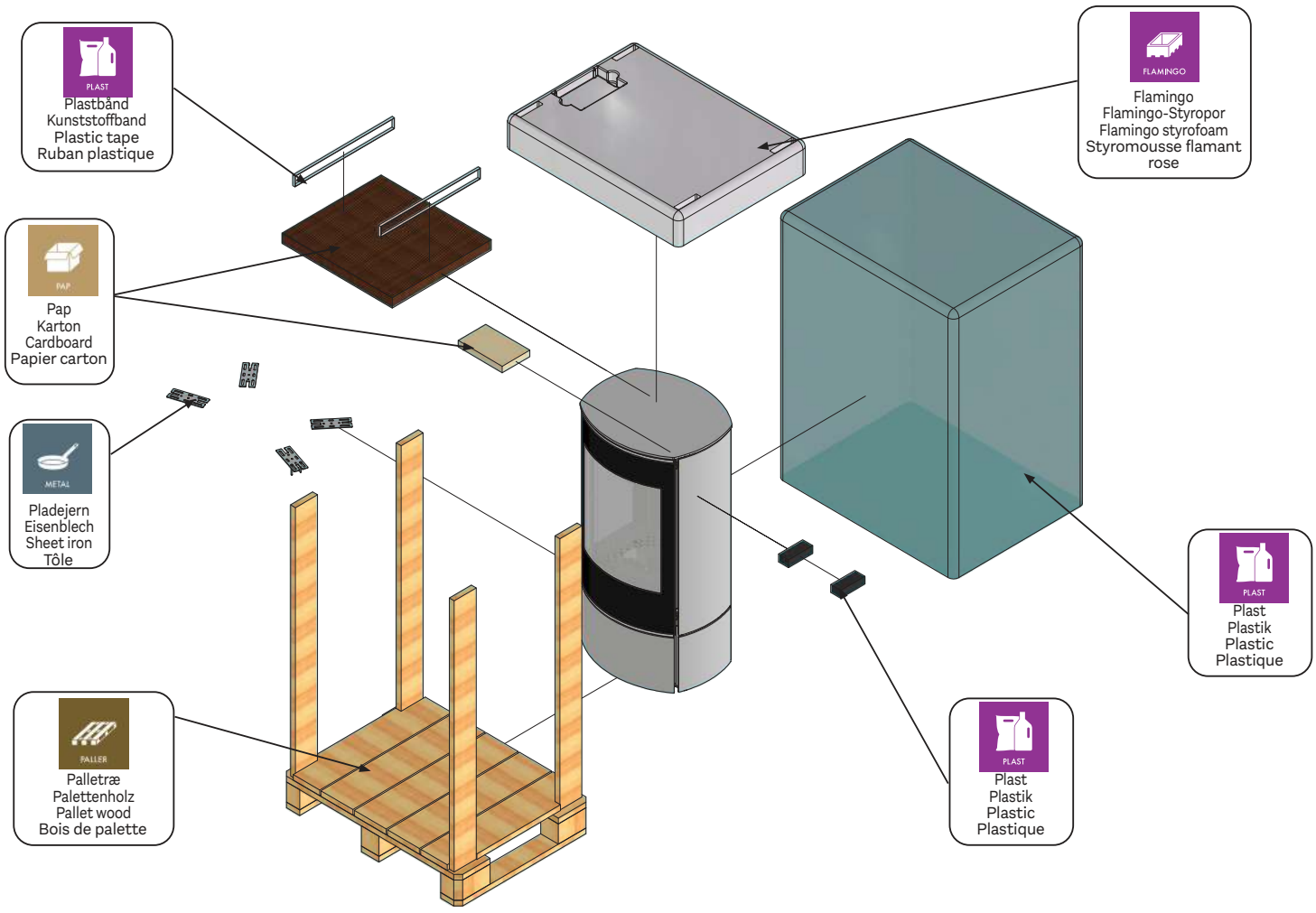
US

DISPOSAL GUIDE

DISPOSAL OF PACKAGING

The fireplace is shipped in packaging that can be recycled. This packaging must be disposed of in accordance with national regulations relating to the disposal of waste.

Here's an overview of the materials:



OVERVIEW OF CONTENT

The following elements are included for decoration of the combustion chamber and fine tuning of airflow and the flame image:

1

2

3

4

5

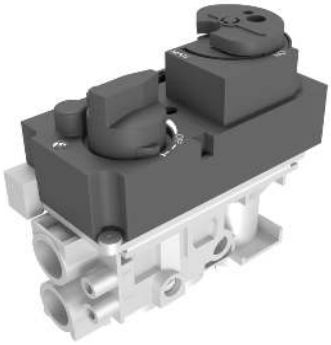
6

CONTENTS

1. Logs (qty. 8)
2. Filaments (1 bag)
3. Secondary burners (qty. 2)
4. Restrictors (qty. 2)
5. Ember layer: (2 bags)
6. Door key (qty. 1)

US

OVERVIEW OF ELECTRONIC COMPONENTS



GV60 combination valve

Receiver

Power supply
and adapter 6V
(optional)

OVERVIEW OF REMOTE OPTIONS

Remote control

PUCK
(optional)

INSTALLATION GUIDE

Below is an overview of the following pages regarding installing Caro 90 G, Caro 110 G and Caro 130 G.

INSTALLATION PREPARATIONS
Follow the recommended instructions on page 18 before starting to install the gas fireplace.

OPENING THE DOOR
Follow the instructions on page 20 to learn how the door is opened.

LOCKING THE DOOR
Follow the instructions on page 21 to learn how the door is locked.

INSTALLING THE BURNER
Follow the instructions on page 22 to install the burner.

INSTALLING OPTIONAL SOLUTIONS
Please follow the separate user manual for installing optional solutions.

ARRANGING THE CERAMIC LOGS
Follow the instructions on page 26 to arrange the ceramic logs

CHANGING FLUE CONNECTION
Follow the instructions on page 31 to change from top outlet to rear outlet.

RESTRICTORS
Follow the instructions on page 33 for the overview and description.

INSTALLATION OF ELECTRICAL AND GAS COMPONENTS
Follow the instructions from page 34 for installing electrical and gas components – including a guide for synchronization of the remote control and receiver.

BALANCED FLUE SYSTEM
Read an introduction to the balanced flue system on page 38. For a more detailed description and installation, please follow the separate manual for installation manual for the balanced flue system.

DISTANCE TO COMBUSTIBLE MATERIAL
Follow the instruction on page 40 for placement requirements and distance to combustible material.

STARTING THE GAS FIREPLACE
Follow the instruction on page 41 when igniting the fireplace for the first time.

PURGING THE GAS PIPE
Follow the instructions on page 42 for a functional test to check the function for starting the gas fireplace.

PRESSURE SETTING ADJUSTMENT
Follow the instructions on page 43 for a pressure test.

CO AND O_2 MEASUREMENT
Follow the instructions on page 44.

INSTALLATION PREPARATIONS

On this page, we have listed points to be aware of before starting the installation of the gas fireplace.

⚠ CAUTION

Placement and installation preparations

- Install the fireplace on a solid floor that can hold the weight of the fireplace.
- Comply to the fireproof distances stated in this manual. See the exact distances on page 40.
- When the fireplace has been placed, make sure it is level and straight.
- The glass on the fireplace needs to be cleaned before using it the first time, otherwise fingerprints, etc., can burn to the glass.

Preparations for electrical and gas supply

- The gas supply and electrical supply should be located near the bottom of the fire; please make sure to plan the process before installation. We recommend installing the gas supply with a flexible approved system the last 20 inches (500 mm) of the installation for easy connection to the fireplace.
- Make sure to calculate the right diameter for the gas supply for correct function of the fireplace.

MASSACHUSETTS REQUIREMENTS

The gas fireplace is shipped with a 3/8" NPT female connection. The gas supply piping should have a separate gas shutoff valve and a 1/8" NPT plugged tapping upstream of the valve. The stove and its main control valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa). The stove must be isolated from the gas supply piping system by closing the main control valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 psi (3.5 kPa). After the gas supply has been connected, use a commercial gas leak detector or apply a soapy water solution to all the fittings to check for gas leaks. Never use a flame to test for leaks.

REQUIREMENTS FOR THE COMMONWEALTH OF MASSACHUSETTS

This product must be installed by a licensed plumber or gas fitter when installed within the Commonwealth of Massachusetts. If this appliance is installed in a dwelling, building or structure used in whole or in part for residential purposes and the installation includes a horizontal vent termination that is less than seven (7) feet above the finished grade in the area of the venting, including but not limited to decks and porches, a hard-wired carbon monoxide detector with an alarm and battery back-up must be installed on the floor level of the dwelling, building or structure where the appliance is to be installed.

Additionally, a hard-wired or battery operated carbon monoxide detector with an alarm must be installed on each additional level of the dwelling, building or structure served by the appliance. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard-wired carbon monoxide detectors.

In the event that the horizontally vented appliance is installed in a crawl space or attic, the hardwired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.

In the event that this requirement cannot be met at the time of completion of the installation of the appliance, the owner shall have a period of thirty (30) days to comply with the requirement. However, during said thirty (30) day period, a battery operated carbon monoxide detector with alarm must be installed.

Each carbon monoxide detector as required in accordance with the above provisions must comply with NFPA 720 and be ANSI/UL 2034 and IAS certified. In addition, when the stove is horizontally vented and the vent termination is less than seven (7) feet above finished grade a metal or plastic identification plate must be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal. The sign shall read, in print size no less than one-half (1/2) inch in size, "GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS".

A COPY OF THESE INSTRUCTIONS PLUS ALL VENTING INSTRUCTIONS, WHICH INCLUDE PARTS LISTS, AND/OR ALL VENTING DESIGN INSTRUCTIONS, MUST REMAIN WITH THE STOVE AT THE COMPLETION OF THE INSTALLATION.

ATTENTION INSTALLERS

Mark below which venting system was used in the installation. These instructions must remain with the Installation and User Manual.

VENTING

This gas stove has been tested and listed for installation with 4" X 6 5/8" Simpson DuraVent GS®, AmeriVent Direct®, Selkirk DT®, BDM Pro-Form DVS®, ICC EXCEL Direct® and OLYMPIA CHIMNEY SUPPLY Ventis® direct venting components. For specific installation requirements, follow the installation instructions included by the venting manufacturer with the venting system components you have chosen. The total horizontal vent length may not exceed 50 feet (15 m). The vent lengths are measured from the stove, not the floor. The minimum vertical vent rise when using a vertical vent termination is 2 feet (600 mm). The minimum vertical rise required when using a horizontal vent termination is 2 feet (600 mm).

For venting system installation details, refer to the instructions provided with the venting system you have chosen. Each brand has specific installation requirements that must be followed to insure a safe and functional venting system.

The draft hood must be installed so as to be in the same atmospheric pressure zone as the combustion air inlet to the appliance and shall be located so that the relief opening is accessible for checking vent operation.

MARK VENTING SYSTEM

☐ Simpson DuraVent GS ☐ AmeriVent Direct ☐ Selkirk DT

☐ BDM Pro-Form DVS ☐ ICC EXCEL Direct ☐ Olympia Chimney Supply Ventis

US

OPENING THE DOOR

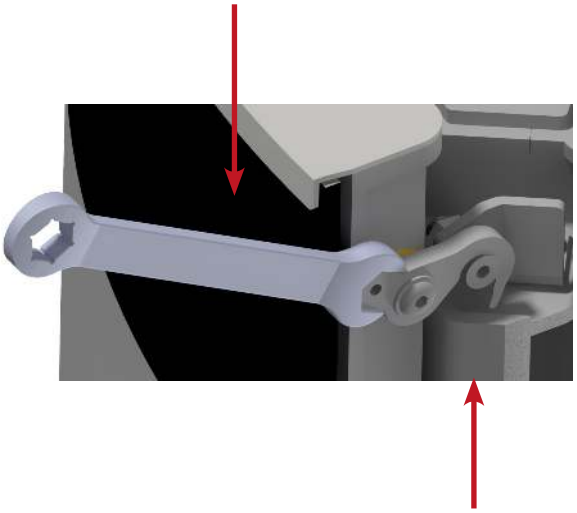
The gas fireplace comes with the door locked. The door must be opened to install the fireplace burner.

⚠ CAUTION

The door key is constructed from metal and requires careful handling to prevent scratches on the fireplace paint.

The fireplace comes with a unique door key that is essential for opening and accessing the fireplace.

The door is equipped with both upper and lower locks. To unlock the door, simply insert the key into the respective lock and press down firmly. This will grant you access to the fireplace.



⚠ DANGER!

HOT GLASS WILL CAUSE BURNS

DO NOT TOUCH GLASS UNTIL COOLED

NEVER ALLOW CHILDREN TO TOUCH GLASS

A barrier designed to reduce the risk of burns from the hot viewing glass is provided with this appliance and shall be installed for the protection of children and other at-risk individuals.

⚠ DANGER!

VITRE CHAUDE - RISQUE DE BRÜLURES

NE TOUCHEZ PAS UNE VITRE NON REFROIDIE

NE LAISSEZ JAMAIS UN ENFANT TOUCHER LA VITRE

L´écran pare-étincelles fourni avec ce foyer réduit le risque de brûlure en cas de contact accidental avec la vitre chaude et doit ëtre installé pour la protection des enfants et des personnes à risques.

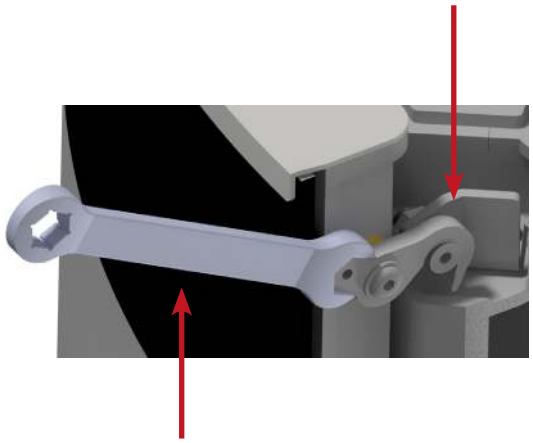
LOCKING THE DOOR

To securely lock the door to the burning chamber, firmly hold the door in place and use the provided door key to engage both the upper and lower locks.

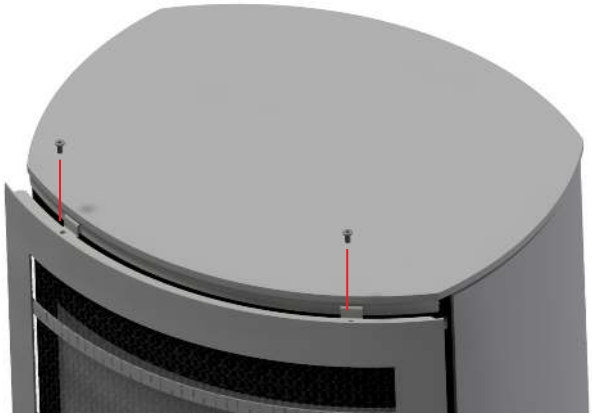
Ensure that the key is pushed upwards to activate the locks fully. Before starting the fire, make certain that the burning chamber is completely sealed to ensure safety and optimal performance.

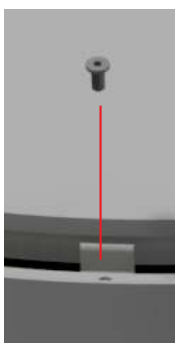
⚠ CAUTION

Please ensure that both the top and bottom locks securely grip the door and create a tight seal for the burning chamber.



REMOVAL OF SAFETY SCREEN





US

INSTALLING THE BURNER

Please follow these steps to fit the burner.

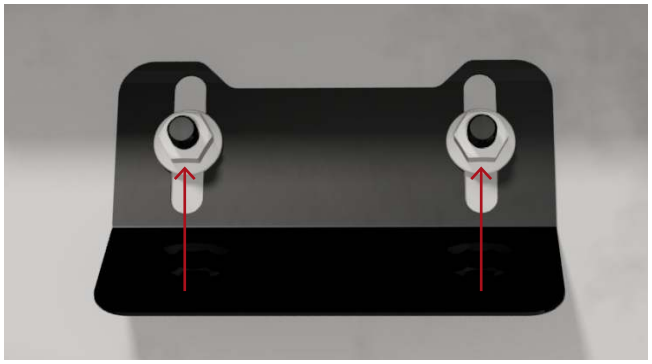
Make sure that the burner fits the required gas type. The gas type for the burner is described on the side of the box which it arrives in. Check that the injectors correspond to gas type and that the air settings are correct.

The air settings for the burners varies between the gas types. Make sure that the correct air settings have been made, if not, please make the necessary adjustments.

Follow the guide below for air setting Natural gas or LPG.

AIR SETTINGS FOR NATURAL GAS

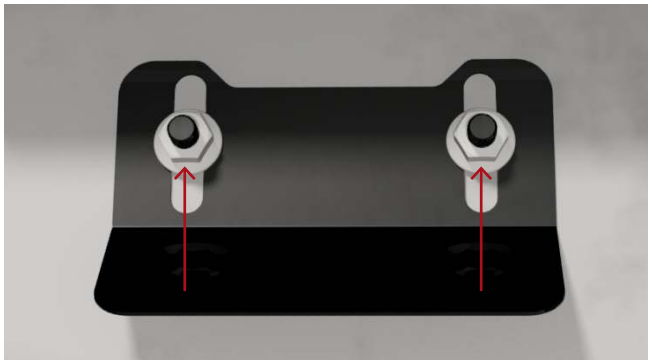
The airplate for the main burner needs to be set on half (see the arrow).



For Natural Gas the air on the venturis should be adjusted to only show one large hole.

AIR SETTINGS FOR NATURAL GAS & SNORKEL FLUE

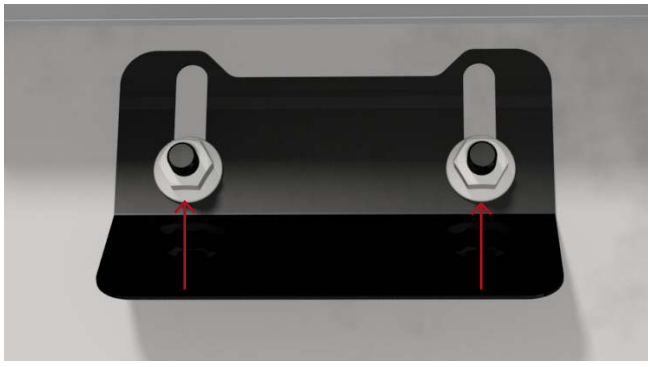
The airplate for the main burner needs to be set on half (see the arrow).



For Natural Gas the air on the venturis should be adjusted to only show one large hole.

AIR SETTINGS FOR LPG

The airplate for the main burner needs to be set on fully open (see the arrows).

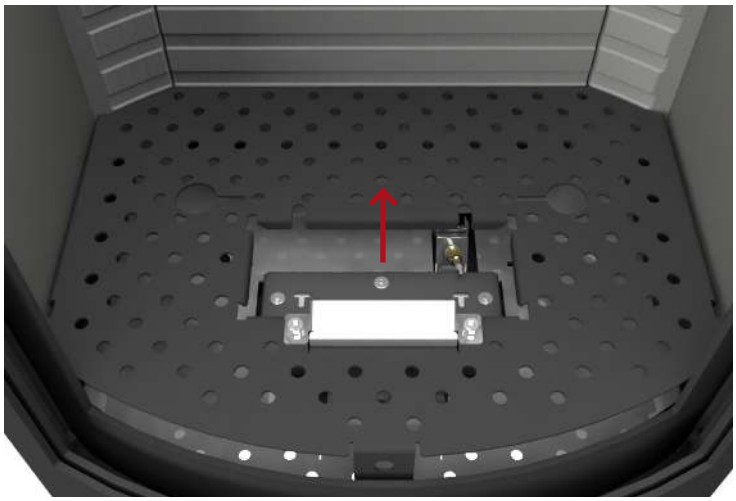


For LPG the air on the venturis should be adjusted to show both two holes.

PROCEDURE FOR INSTALLING BURNER

1. Remove the bottom grill, exercise caution to avoid damaging the fireplace's paint.

   Handle the process delicately and use gentle movements to prevent any harm to the paintwork.



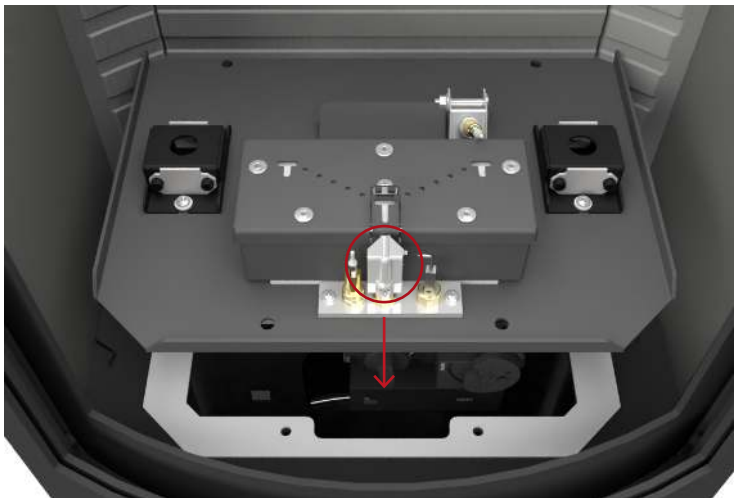
2. At the bottom, you will notice four bolts essential for fixing the burner to the fireplace.

   Carefully remove these bolts and remember to store them safely for future use.

3. Unpack your burner. Take your time to carefully lower it into the hole in the burning chamber.

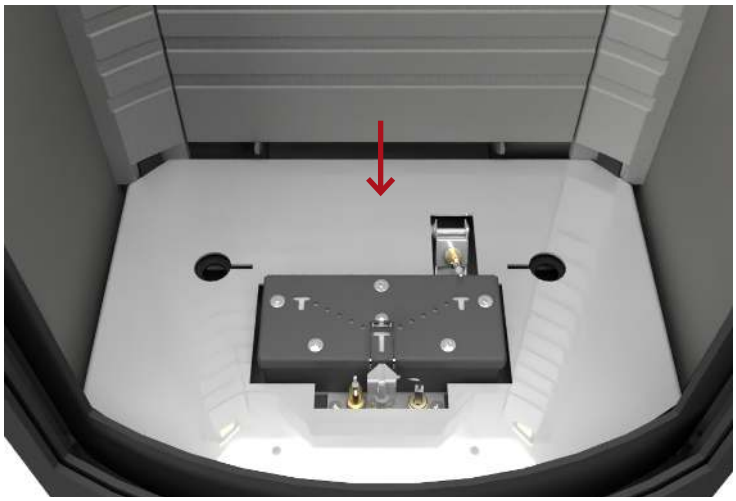
4. Exercise caution to avoid damaging the white gasket positioned at the bottom of the fireplace. You may need to gently tilt the burner to help it fit into the hole properly.

   Ensure that the pilot unit is positioned in front of the fireplace, while the two secondary burners are placed at the back.



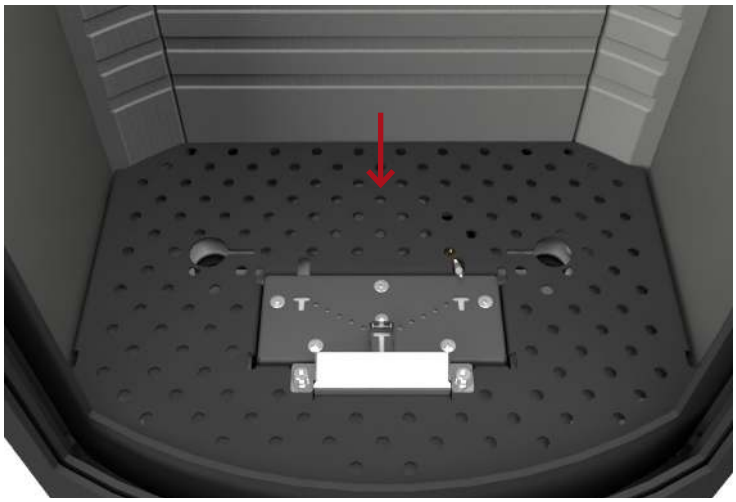
5. After installing the burner, securely position the heat shield above it.

   This essential step will provide vital protection to the sensitive electronics located underneath, ensuring their safety and proper functioning.



6. After placing the heat shield above the burner and ensuring the electronics are well-protected, carefully reinstall the black bottom grill on top.

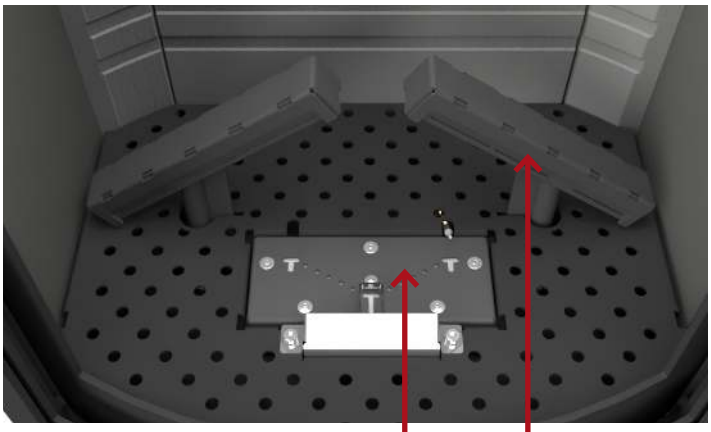
   This step guarantees that the burner and the heat shield are securely enclosed, maintaining a tidy and safe setup for your fireplace and ensuring the correct airflow for the combustion.

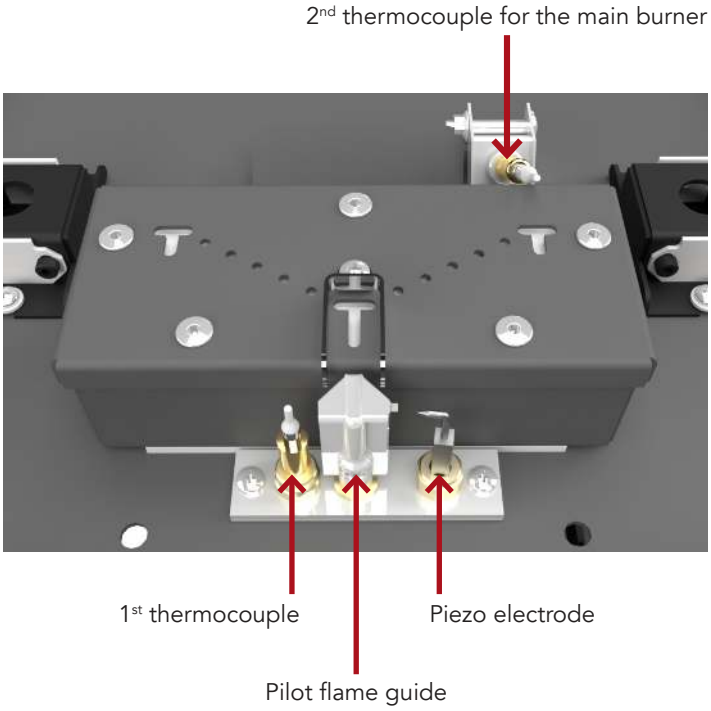


⚠ WARNING

Incorrect installation can cause a dangerous situation. Make sure that the bottom bolts are tightened and that the burner is pressed against the bottom combustion chamber gasket.

OVERVIEW OF THE BURNERS



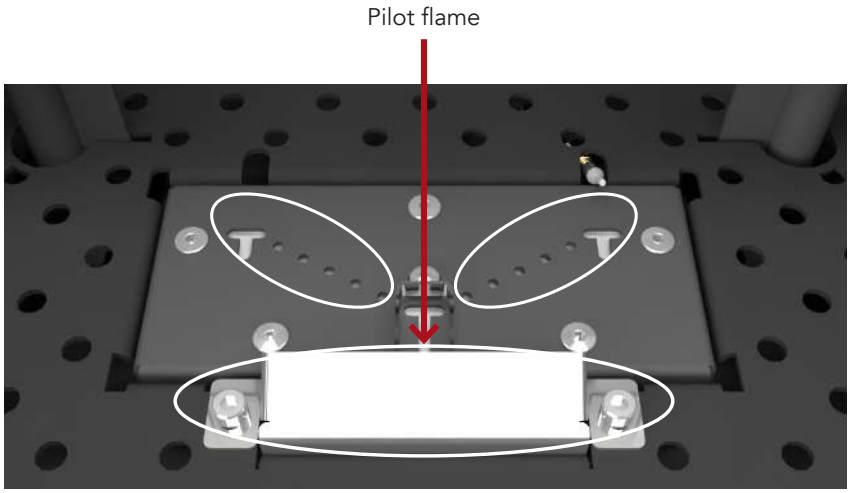


ARRANGING THE CERAMIC LOGS

When arranging the logs and the embers layer in the combustion chamber, it is important that they do not cover the pilot flame and its thermocouple, and ember material must not be placed under the pilot guard.

Both thermocouples must be kept free of the embers layer. Do not cover the holes in the main burner (see the circles).

When commissioning or servicing the fireplace, it must be ensured that the cross ignition (from the pilot flame to the main burner) functions, and that ignition occurs easily with the secondary burners.



⚠ WARNING

It is very important that you follow this manual when positioning the logs and the embers layer in the fireplace. Failure to carry this out correctly will result in a flame profile that is less than optimal. Incorrect placement of the logs can lead to a dangerous situation.

LOG PLACEMENT – CARO 90, CARO 110 AND CARO 130

The following ceramic logs must be used.

1. Place log no. 1 as shown in the image.

2. Place the left secondary burner.

3. Place log no. 2 on the left burner.

4. Place ceramic log no. 3 on the other secondary burner before placing it in the burning chamber.

5. Then place the secondary burner and ceramic log.

6. Place log no. 4 as shown in the image.

7. Place log no. 5 so that it rests on log no. 4.

8. Place log no. 6 so that it rests on log no. 4.

9. Place log no. 7 so that it rests on log no. 4.

10. Place log no. 8 in the front right corner - Optional.

11. Sprinkle 1 bag of the ember chips in the front of the burning chambe. Ensure that you do not cover the pilot area and the holes there. Half of the second bag can be used behind the burner (optional).

⚠ WARNING
Be aware that the main burner and pilot flame are kept free of all ornaments.

12. Place the filament on the main burner for an extra glowing effect (circel). The filament must not get in contact with the thermocouples – use the chips to secure the filament.

CHANGING FLUE CONNECTION

The fireplace is supplied ready for connection to the top outlet, but can be changed to use the rear outlet by following steps 1-6:

STEP 1
Begin by tapping out the cover located behind the fireplace using a hammer. Apply gentle, controlled knocks to the cover. Make sure to exercise care and only strike the cover to avoid any potential damage.

The cover is fixed at four points. To make the process easier, use a chisel to direct the force while tapping. This will allow for more precise and effective removal.

STEP 2
Begin by loosening the three screws located on the outer flange at the top of the fireplace.
Once the screws are sufficiently loosened, carefully remove the outer flange.

Loosen the three screws on the inner flange at the top of the combustion chamber. Carefully remove it.

STEP 3
Unscrew the top cover plate behind the fireplace and install it to the top of the fireplace.

STEP 4
Inside the fireplace, remove the small side panels by removing the lock at the top of the plates. To do this, push the lock up. Next, remove the side pieces.
The rear plate can now be removed carefully.

STEP 5
The inner cover plate can now be removed and installed at the top of the combustion chamber.

STEP 6
Now fit the outer flange behind the fireplace and the inner flange to the rear of the combustion chamber.

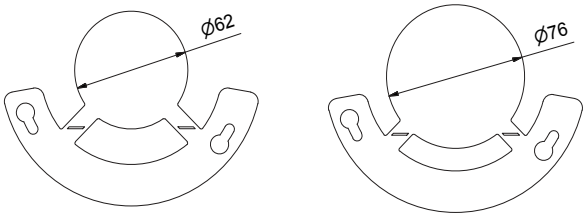
⚠ CAUTION
Handle the inner side and back plates with care, since they are easy to damage. Doing the shift, make sure that the gaskets are in good condition. If not, they must be replaced.

RESTRICTORS

Two different restrictors are included for the gas fireplace. The restrictors are used to create the correct flow in the balanced flue.

It is important to see and assess from the flame picture whether the correct restrictor is fitted.
The flames should be blue/yellow at start-up, after 20 minutes the flames should be a clear yellow. If the desired combustion is not achieved, another restrictor can be installed.

The restrictors come in two different sizes.

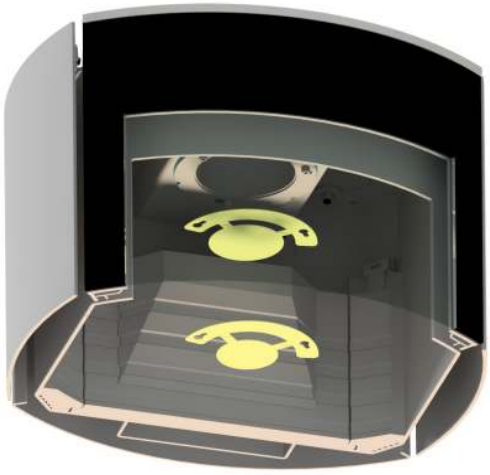


Restrictor A
Ø62

Restrictor B
Ø76

RESTRICTORS	
Vertical height up to 3 feet (1 m)	No restrictor
Vertical height up to 3-6 feet (1-2 m)	Restrictor A
Vertical height up to 6-26 feet (2-8 m)	Restrictor B
Vertical height up to 26-49 feet (8-15 m)	No restrictor

FOLLOW THESE STEPS TO MOUNT THE RESTRICTORS



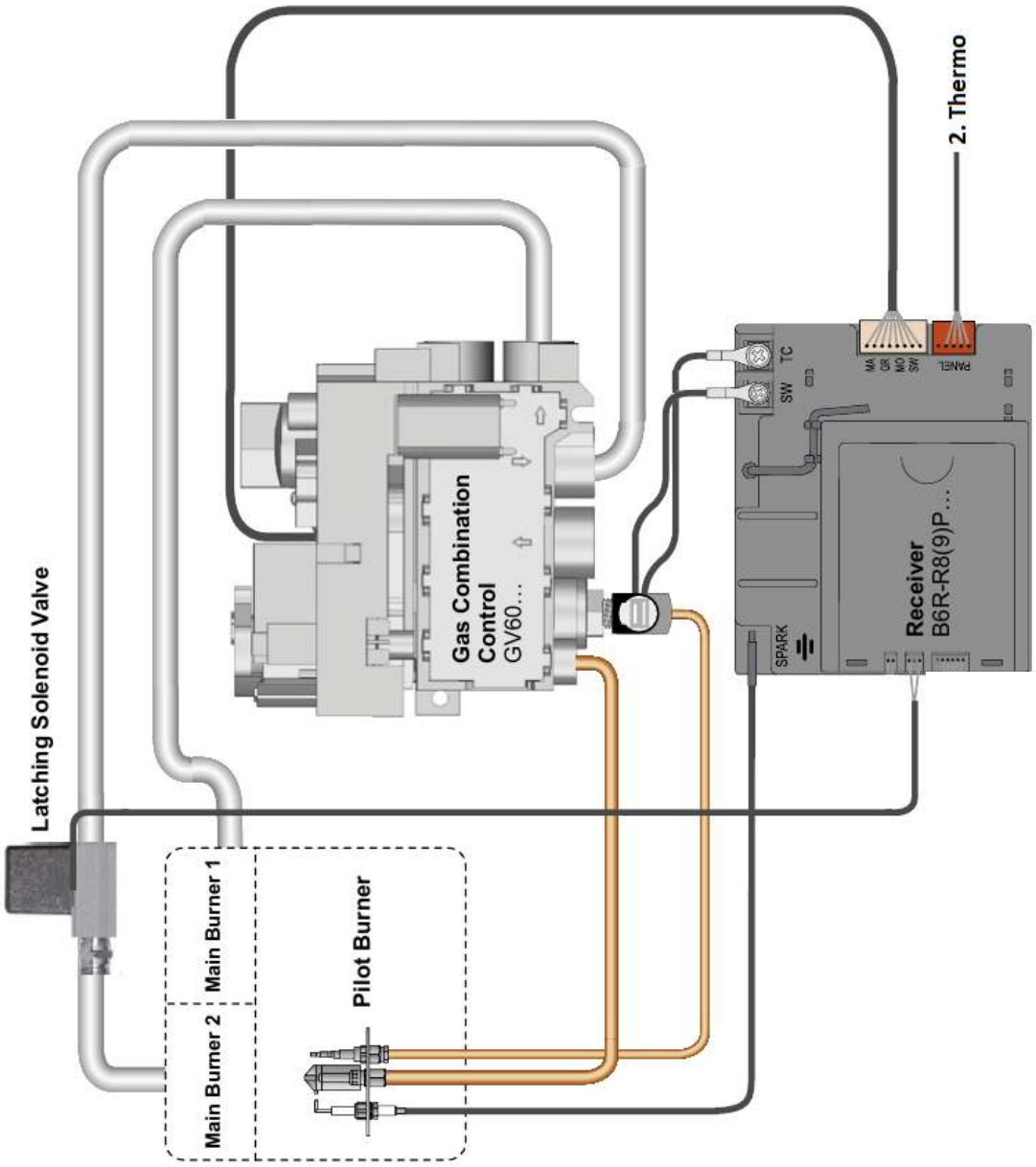
1. Loosen two of the bolts.

2. Mount the restrictor according to the form, and then tighten the two bolts.

INSTALLATION OF ELECTRICAL AND GAS COMPONENTS

CONNECTION DIAGRAM

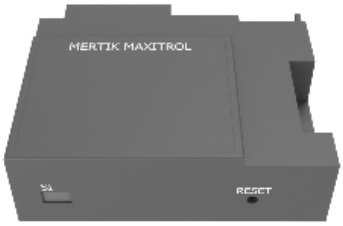
Use the diagram to get an overview of the individual electrical and gas components. Pictures of the parts will be provided on the following pages.



ELECTRICAL CONNECTION

The fireplace includes the receiver unit and a remote control. The package also contains batteries for both the receiver and the remote control. Alternatively, a power supply can be purchased to replace the battery-operated system.

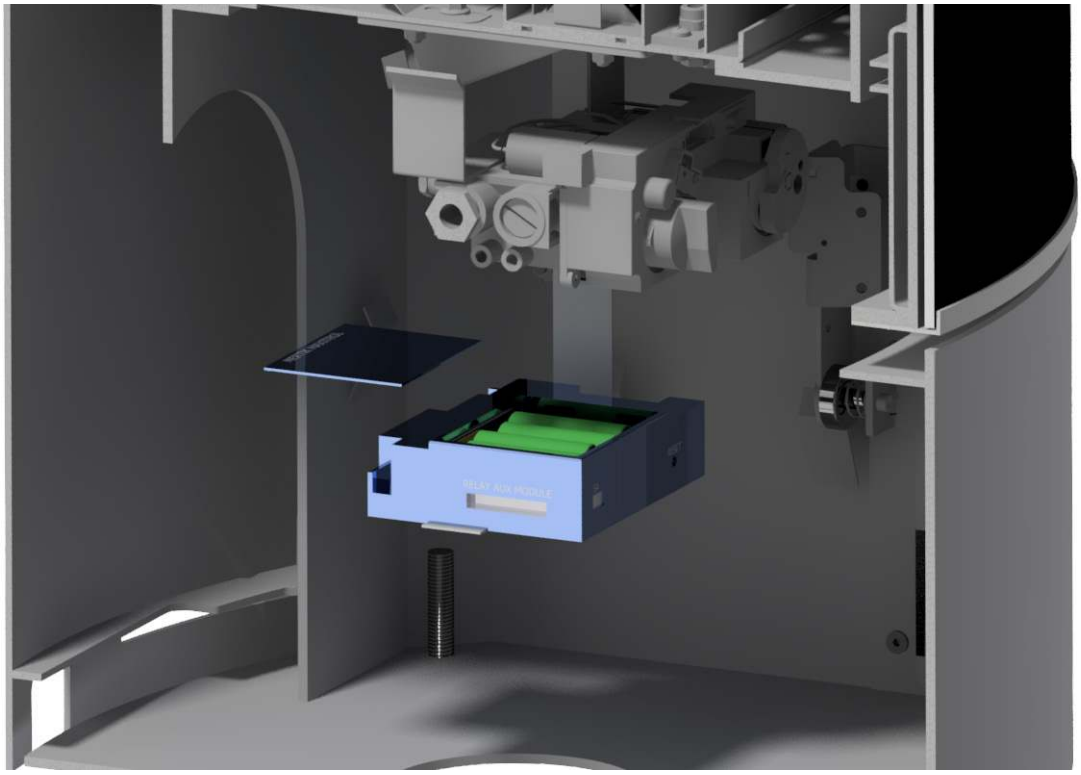
Power supply and adapter 230 VAC / 50 Hz
6V adapter



Receiver

⚠ WARNING

If batteries are used in the receiver, replace the batteries at the beginning of each heating season.
Remove the lower panel of the fireplace to access the receiver. Slide the top lid of the receiver to the left to access the batteries.



GAS CONNECTION

PROCEDURE

Connect your gas supply to the GV60 Combination Valve. The thread on the GV60 Combination Valve is 12 mm 3/8".

Secure against leaks in all gasconnections made. Make sure that the gas is correctly connected.

Always install a stopcock and a measuring stud before the GV60 Combination Valve. The stopcock should be placed closest to the GV60 Combination Valve.

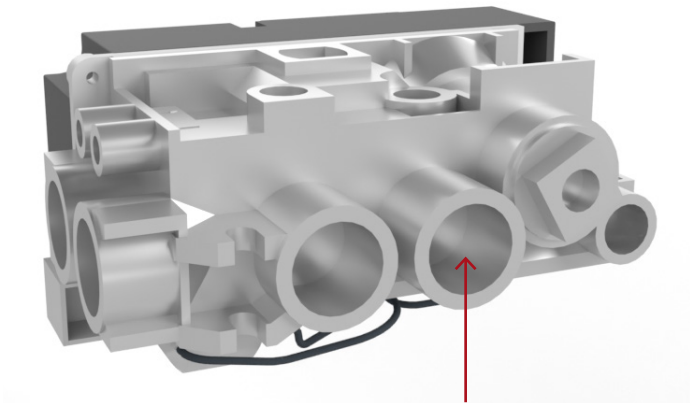
The inlet regulator and main burner valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5kPa). The appliance must be isolated from the gas supply piping system by closing the main control valve during any pressure testing of the gas supply system at test pressures equal to or less than 1/2 psi (3.5kPa). After the gas supply has been connected, use a commercial gas leak detector or apply a soapy water solution to all the fittings to check for gas leaks. Never use a flame to test for leaks.

ROUTING OF GAS LINE

Correctly size and route the gas supply line from the supply regulator to the area where the appliance is to be installed as per requirements outlined in the latest edition of the National Fuel Gas Code, NFPA 54 (USA) or CAN/CSA-B1491 (Canada).

Never use galvanized or plastic pipe, unless specified specifically for use with gas. Gas lines must be routed, constructed and made of materials that are in strict accordance with local codes and regulations. A qualified individual such as a plumber or gas fitter should be hired to correctly size and route the gas supply line to the appliance.

Installing a gas supply line from the fuel supply to the appliance involves numerous considerations of materials, protection, sizing, locations, controls, pressure sediment, and other criteria. Sizing and/or installing of gas piping should only be performed by a qualified individual.



Ø12 mm 3/8" gas inlet

⚠ WARNING

Do not twist or hard bend the flexible gas lines from the GV60 Combination Valve. Make sure that the flexible gas lines are not stressed, and not to damage the gas lines or couplings on the GV60 Combination Valve.

REMOTE CONTROL

In this section you can learn how to set up the remote control for the gas fireplace.

The remote control uses 2 x AAA 1.5V batteries.

Never use pointed tools to remove the batteries from the receiver and remote control.

The signal range between the remote control and the gas fireplace must not exceed 32 feet (10 meter).

SYNCHRONIZE THE REMOTE CONTROL
Scan the QR code to watch a how-to-video

⚠ CAUTION
Once a year you should replace the batteries in the remote to ensure optimal operation. Replace all the batteries at the same time and use only good quality alkaline batteries.

SYNCHRONIZATION OF THE REMOTE CONTROL AND THE RECEIVER

1. Press and hold the receiver's "reset" button until you hear a short 'beep' followed by a long 'beep' (see the arrow).
2. After the second beep, release the reset button. You now have 20 seconds to press the "down arrow" button on the remote control. Hold the button in, until you see the word "conn" on the remote control. Then release the button.
3. The remote will then count to 8 and two short beeps will sound from the receiver. The receiver and remote control are now synchronized and the fireplace can be lit.

Remote control

Receiver

See the separate User Manual for remote control options and a guide for *the PUCK*.

USER MANUAL
Scan the QR code to see the user manual

BALANCED FLUE SYSTEM

The flue system is what makes the fireplace function. The fireplace will not function optimally if it does not have the correct and necessary flow in the flue system.

Please consult national/local regulations before installing the flue system. It must be ensured that the flue terminal's position is in accordance with national building regulations.

This fireplace may be installed with either a roof terminal (C31), a wall terminal/Snorkel (C11), or a flexible system through an existing chimney (C91). The fireplace may only be installed using a balanced flue (also known as balanced flue system) in the way stated by RAIS. The RAIS fireplace is approved with the Exodraft fan system.

The flue pipes recommended by RAIS have been approved together with the fireplace and the fireplace may only be installed using these.

The fireplace must be fitted using a flue of the brand:
- 4"X 6 5/8" Simpson DuraVent GS®
- AmeriVent Direct®
- Selkirk DT®
- BDM Pro-Form DVS®
- ICC EXCEL Direct®
- OLYMPIA CHIMNEY SUPPLY Ventis®

The joints on the flue pipes must be sealed and secured against separation using hose clips or screws.

The fireplace is supplied with a spigot prepared for the interior fitting of a flue pipe with a diameter of Ø 4/6" (100/150 mm).

The safety distance from the flue pipe to flammable materials must be at least 2" (50 mm). Follow the instructions from the flue supplier.

When using a wall outlet, always go straight up 1.8 feet (0.5 meter) before introducing a 90 degrees bend. Please follow the instructions in the balanced flue manual.

In addition to the requirements listed here and in the separate manual for installation of the balanced flue, follow the requirements provided with the purchased vent and local laws.

Scan the QR code at the top of the page to read the manual online.

BALANCED FLUE SYSTEM
Scan the QR code to see a guide online

If your specific venting configuration is over 15 feet (4.5 m), you must use one of the approved direct vent venting systems that utilizes a stainless steel inner liner. This requirement is part of the ANSI standards and is based on testing conducted to determine where the exhaust gas temperature drops to the point where condensation might occur in the vent pipe. The standards require the use of corrosion resistant liner materials if that specific total vent length is exceeded.

Many factors may negatively influence the draft of the appliance. RAIS will not be responsible for improper draft due to factors such as trees, hills, buildings, obstructions, excessive wind, extreme hot or cold outdoor temperatures, restrictive vent terminations, or influence from mechanical systems.

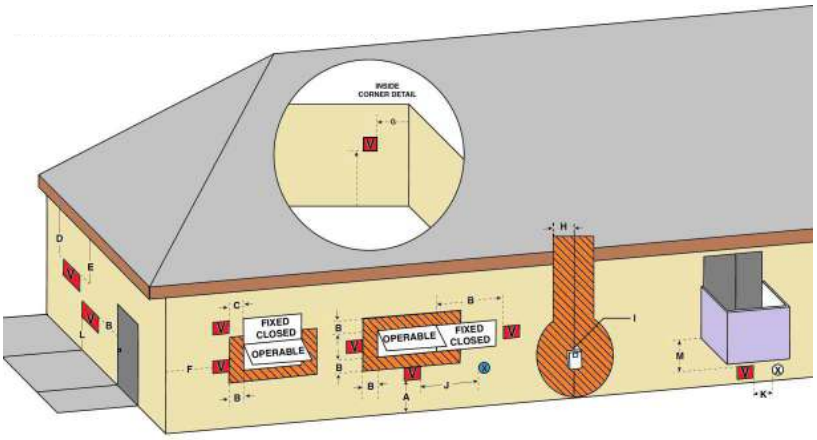
POSITIONING FLUE TERMINALS

The table below shows how different flue terminals can be positioned in the house and how large the safety distances must be.

⚠ CAUTION

Be aware that the safety distances below are guides. Please follow local regulatory requirements.

Venting terminals may not be recessed into a wall or siding.



DIMEN-SIONS	TERMINAL POSITION	CANADIAN INSTALLATIONS[1]	U.S. INSTALLATIONS[2]
A	Clearance above grade, porch, deck or balcony	12 inches (300 mm)	12 inches (300 mm)
B	Clearance to window or door that may be opened	12 inches (300 mm)	9 inches (230 mm)
C	Clearance to a permanently closed window	See footnotes 5 and 6	See footnote 5
D	Vertical clearance to a ventilated soffit located above the terminal within a horizontal distance of 2 feet (61cm) from the centerline of the terminal	See footnotes 5 and 6	See footnote 5
E	Clearance to unventilated soffit	See footnotes 5 and 6	See footnote 5
F	Clearance to outside corner	See footnotes 5 and 6	See footnote 5
G	Clearance to inside corner	See footnotes 5 and 6	See footnote 5
H	Clearance to each side of centerline extended above meter/ regulator assembly	3 feet (91 cm) within a height of 15 feet (4.5 m) above the regulator / meter assembly	See footnote 5
I	Clearance to service regulator vent outlet	3 feet (91 cm)	See footnote 5
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance	12 inches (300 cm)	9 inches (230 cm)
K	Clearance to a mechanical air supply inlet	6 feet (1.83 m)	3 feet (91 cm) above if within 10 feet (3 m) horizontally
L	Clearance above paved sidewalk or paved driveway located on public property	7 feet (2.12 m)	See footnote 5
M	Clearance under porch, deck or balcony	12 inches (300 cm) See footnote 4	See footnote 5

[1] In accordance with the current CSA B419.1, Natural Gas and Propane Installation Code
[2] In accordance with the current ANSI Z223.1 / NFPA 54, National Fuel Gas Code
[3] A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
[4] Permitted only if porch, deck or balcony is fully open on a minimum of two sides below the floor.
[5] Clearance in accordance with local installation codes and the requirements of the gas supplier.
[6] Dégagement conforme aux codes d'installation locaux et aux exigences du fournisseur de gaz.

US

DISTANCE TO COMBUSTIBLE MATERIAL

The Caro 90 G model is used to show the installation distances to combustibles. The distance measurements apply to all model variants (Caro 90 G, Caro 110 G and Caro 130 G) regardless of height.

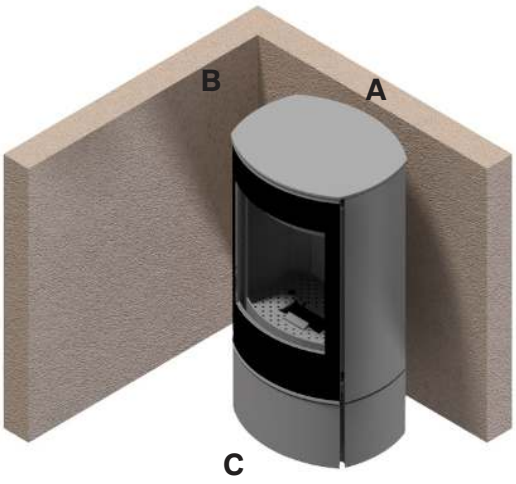
The distance measures are based on a front or corner installation.

The distance to non flammable material should always be at least 2 inches (50 mm) for air circulation.

CARO GAS

Right-angled setup - combustible wall model.

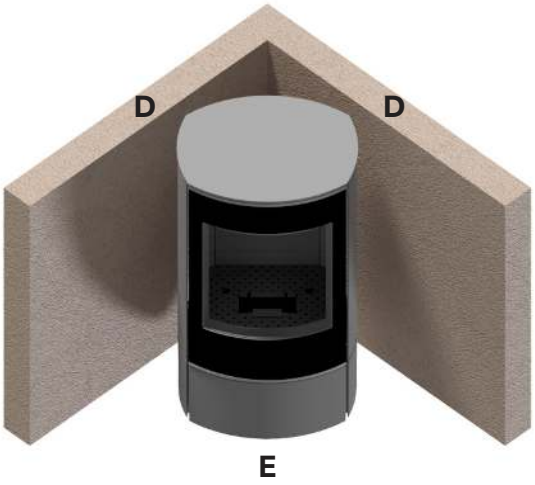
A Back 2 inches (50 mm)
B Side wall 9.8 inches (250 mm)
C Furnishing 27 inches (700 mm)



Front installation

Corner setup - combustible wall

D: Back/side 2 inches (50 mm)
E Furnishing 27 inches (700 mm)



Corner installation

CARO GAS FROM TOP PLATE TO CEILING

A Top plate to combustible ceiling 40 inches (1000 mm)

STARTING THE GAS FIREPLACE

Before igniting the fire for the first time, ensure that all the packaging, labels, etc., are removed from the fireplace and the glass is cleaned.

Read more about cleaning the gas fireplace on page 47.

PROCEDURE

1. Check that the delayed ignition flap can be easily lifted inside the fireplace roof (see the photos below).
   Make sure that the gaskets are placed correctly and are not damaged.

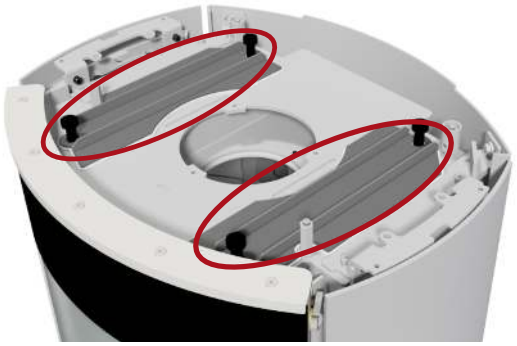
2. Allow the fireplace to burn at a high heat for a couple of hours to allow the paint to cure.

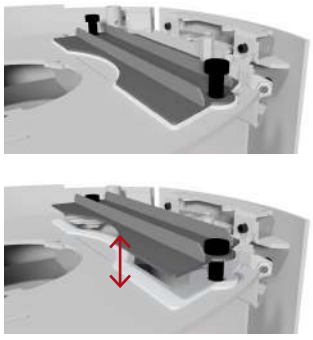
SOUNDS

The fireplace can emit a "clicking" sound when it is heating up and cooling down. This is due to the large temperature differences the material is exposed to.

DEW AND CONDENSATION

The fireplace can form dew on the fireplace glass at start-up. When the glass is cold and the appliance is lit, it may cause condensation and fog the glass. This condensation is normal and will disappear within 10-15 minutes as the glass and flue heats up.





Delayed ignition flaps

⚠ CAUTION

Ventilate the room when you ignite the fireplace for the very first time. The fireplace may emit a little smoke and a slight odour when it is lit for the first time.

Ensure that the room is well ventilated during this time. Children and pets should be kept away from the fireplace during this process. Please exercise caution during this process: do not touch visible surfaces/glass, as these will become very hot.

⚠ WARNING

Do not turn off the fireplace before all dew on the glass is gone!
If the fireplace is turned-off before the dew is gone, the water particles can damage the fireplace.

MANUAL EXTINGUISHING OF THE FIRE

To extinguish the gas fireplace manually (e.g. if you cannot find the remote control or the remote control has no batteries) shut off the gas supply and electrical supply.

If the fireplace has not been used for a longer period, follow the procedure for starting the gas fireplace above.

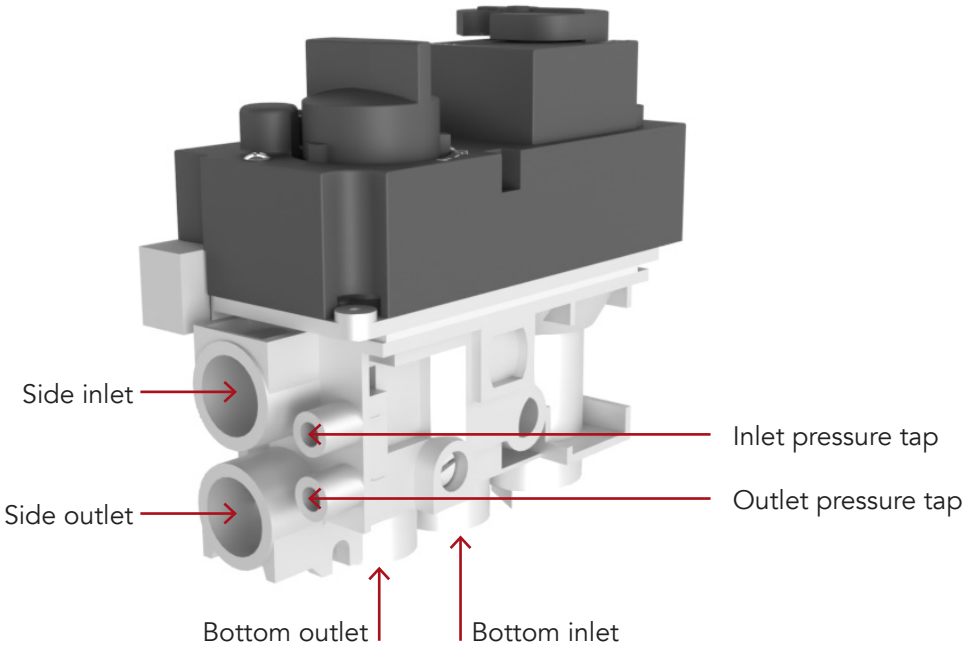
US

PURGING THE GAS PIPE

When the gas supply is connected for the first time, the supply lines will be filled with air. The gas supply can then be purged by unscrewing the inlet pressure tap on the side of the burner.

PURGING THE GAS PIPE
Scan the QR code
to watch a how-to-video

⚠ CAUTION
When the purging is complete, retighten the "pressure tap" screws. Check the system for gas leaks.



FUNCTIONAL TEST

Read these steps to check the function of the start-up of the gas fireplace.

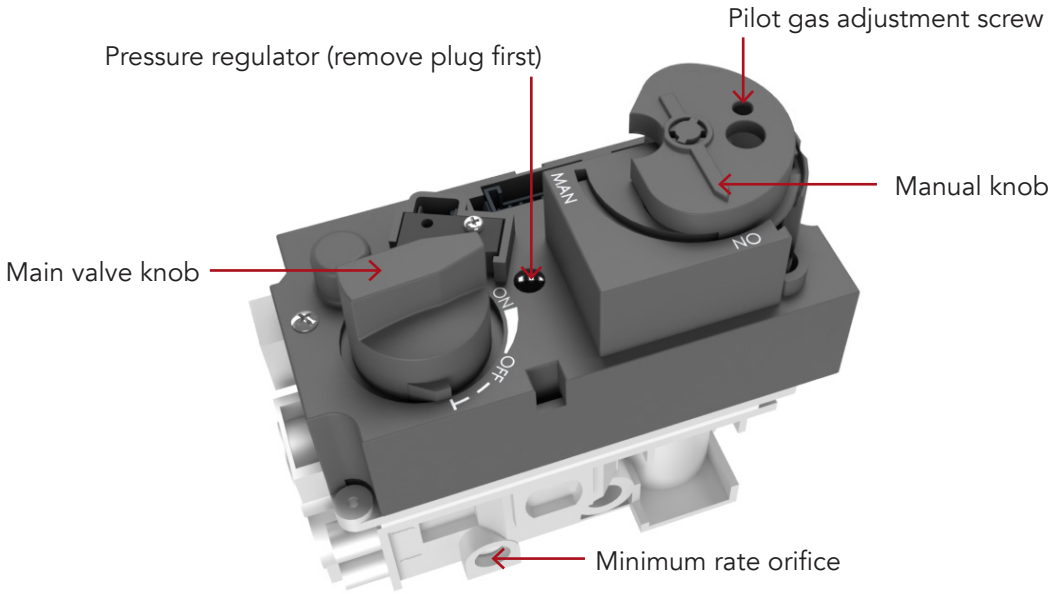
1. Ignite the fireplace.
2. Check that the pilot flame ignites.
3. Check the pilot flame remains ignited.
4. Check that the main burner ignites easily within 20 sec.
5. Check that the main burner flame is in contact with the second thermocouple.
6. Check that the cross ignition from the pilot flame to the main burner occurs easily and that the main burner and pilot flame remain lit.
7. Check that the secondary burners remain ignited.
8. Switch off the fireplace completely. The fireplace may only be ignited again after the thermocouple has cooled down. This will take about 1-2 minutes.

PRESSURE SETTING ADJUSTMENT

The fireplace should be pressure adjusted according to the rating plate (see page 52). "Inlet pressure" (supply pressure to the GV60 Combination Valve) and "Burner pressure" (nozzle pressure) must ALWAYS be measured and, if necessary, corrected by an authorized installer.

1. Loosen the screw to the "Outlet pressure tap" on the gas valve and connect a gas manometer.
2. Turn on the fireplace at maximum load – and let it burn for 45 minutes before measuring.
3. Check that the measured pressure agrees with the pressure stated on the information label.
4. The main burner pressure can be adjusted by removing the plug for the "pressure regulator".
5. Turn off the fireplace to minimum load.
6. The minimum burner pressure can be adjusted by the screw "minimum rate orifice".
7. After the pressure test is completed, retighten the "pressure tap" screws. Check the system for gas leaks.

The measured values must be within ± 10% of the stated pressure. If this is not the case, contact the supplier.



⚠ WARNING

The pressure test and adjustment may only be performed by an authorized installer.

After the pressure test is completed and the gas manometer has been removed, re-tighten the "pressure tap" screws. Check the system for gas leaks.

CO AND O_2 MEASUREMENT

In certain countries, a measurement pipe is required to accurately document the CO level and the flue temperature of the fireplace. The design of the pipe may vary depending on the manufacturer of the flue.

There are two points: the top one for CO measurements and the bottom one for O_2 measurements.

CO measurements are done when the fireplace has been running at full load for 45 minutes, The value must not exceed the level of national requirements. Wait 25 minutes between the measurements below.

CO levels must not exceed 1000 ppm. O_2 measurement in the outer pipe has to be minimum 19%.

CO measurement on maximum load

1. Put the fireplace in maximum load by pressing ▲ twice quickly on the remote control.

CO measurement on minimum load

1. Push the ↯ until the secondary burners are shut off.
2. Put the fireplace in minimum load by pressing ▼ twice quickly on the remote control.

⚠ CAUTION

During the initial startup of the fireplace, it is possible for carbon monoxide (CO) levels to be elevated as the paint, oils, and other components settle.

SERVICE AND MAINTENANCE

We recommend a yearly service check of the fireplace to ensure a long and lasting fireplace with a beautiful flame picture.

SERVICE PROCEDURE

The fireplace must be inspected by an authorized gas installer or other professional in accordance with national law. The inspection must ensure the product's operation and safety.

Switch off the fireplace and shut off the gas supply. Make sure the fireplace is completely cold before you begin. RAIS cannot be held liable for injuries that result from touching a hot fireplace.

The steps below can be used as a guideline.

RECOMMENDED SERVICE GUIDELINE

1. Protect the floor by laying out a blanket or other covering.
2. Cut of the gas supply and electrical supply.
3. Open the door and carefully remove the ceramic logs and embers layer.
4. Use a vacuum cleaner to clean the burner and the perforated plate.
5. Raise and remove the secondary burners. Remove the perforated plate.
6. Vacuum the entire burner.
7. If needed, soot on the logs can be removed by a soft brush.
   Clean the pilot burner assembly using a soft brush and a vacuum cleaner. Do not bend or straighten the thermocouple. If the thermocouple is worn down, we recommend exchanging it doing service.
8. Check that the pilot burner gaskets (green) are in good condition. We recommend to always exchange the gaskets doing service.
9. Refit the perforated plate.
10. Check the flue gas system and the flue terminal and ensure that they are not blocked.
11. Put back the embers layer and ceramic logs. Follow the manual, the logs and ember should be placed in a very certain way – See the manual for placing the logs in the correct way.
    Check that the gaskets for the glass are in good condition.
12. Clean and lock the door.
13. Switch on the gas and electrical supply and check for leaks. Check the burners and pilot unit to ensure that they are in good working condition.
    Ignite the fireplace and check the pressure setting.
14. Ensure that the fireplace is safe to use.
15. Worn out parts should be replaced with new original parts.
16. Be sure to dispose the replaced parts in the appropriate waste containers.

⚠ CAUTION

The fireplace must be inspected by an authorized gas installer or other professional in accordance with national law.

MAINTENANCE LOG

US

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

MAINTENANCE LOG

DATE OF SERVICE _____
SERVICED BY _____
SERVICE PERFORMED:
- ☐ Inspect Venting
- ☐ Clean Burner, Logs & Firebox
- ☐ Clean Control Area
- ☐ Clean Convection Air System
- ☐ Leak Test Gas Connections
- ☐ Other _____

CLEANING

The fireplace should be cleaned of dust and foreign objects when you use it for the first time in the year, and especially if the fireplace has not been used for a longer period.

You could do this using a soft brush and a vacuum cleaner or by using a damp cloth with a non-abrasive cleaning agent. Never use corrosive or abrasive substances to clean this fireplace. The fireplace must be cold before you clean it.

If the glass has a layer of soot, clean the glass using a glass cleaner. Clean the outside of the fireplace using a dry cloth.

Before using the fireplace for the first time in the year, the flue system and flue gas connection must always be checked for blockages.

Check the outside and inside of the fireplace for any damage and pay particular attention to gaskets. Only original RAIS spare parts may be used.

CLEANING THE CERAMIC LOGS

1. Remove the ceramic logs as described in steps 1-3 in "Recommended Service Guideline" on page 45.
2. Clean carefully the ceramic logs using a soft brush and a vacuum cleaner. Damaged parts may only be replaced by original RAIS specified parts.
3. The scrapped ceramic parts should be dispose of in the correct municipal disposal centres. It is recommended that you use a vacuum cleaner with a HEPA filter system.
4. Put back the embers layer and fit the glass. Ensure that the fireplace functions correctly and is safe to use.

WARRANTY

RAIS offers a 2-year warranty on all gas fireplaces. The warranty period begins upon delivery of the product.

The warranty – provided by RAIS – is a supplement to national guarantee requirements applicable in the country where the fireplace was purchased.

GENERAL INFORMATION
- Renewal or replacement of components does not extend the warranty period.
- The warranty is only valid if the gas fireplace is sold through an official RAIS dealer.

MAINTENANCE OF YOUR GAS FIREPLACE
We recommend having your gas fireplace inspected by a professional once a year to ensure the product's operation and safety. Read more on page 45.

THE WARRANTY COVERS:
- Documented malfunctions due to faulty workmanship.
- Documented faulty material.
- The gas fireplace cabinet, which is backed by a 5-year warranty.

THE WARRANTY DOES NOT COVER:
- Stainless steel surfaces' appearance, color changes and patina.
- Thermal expansion noises.

THE WARRANTY BECOMES VOID:
- If installation or repair does not comply with national or local law.
- In the event of damage due to external influences and the use of unsuitable fuels.
- If the gas fireplace has not been installed according to the installation instructions or used according to the user manual.
- In case of failure to comply with statutory or recommended installation regulations and in the event of any owner-made changes to the fireplace.
- In case of lacking maintenance (see section in the Installation Manual regarding Service and Maintenance).
- When using non-original components that do not have the same specifications as the original.
- In case of damage caused by external factors (such as shock, lightning, impact, flooding or overheating of the fireplace) during transport, storage or installation.
- In case of defects owing to neglect, misuse and/or gross negligence.

IN CASE OF DAMAGE, CONTACT YOUR DEALER
In the event of damage to your gas fireplace, please contact the retailer where the product was purchased and provide the serial number.

In the event of a warranty claim, RAIS determines the way in which the damage will be repaired. In the event of repair, we will ensure professional execution.

For warranty claims on parts that have been replaced or repaired, please refer to national/EU laws and regulations on renewed warranty periods.

The warranty provisions in effect at any time may be obtained from RAIS.

INSTALLATION RECORD

The installer should complete the form below that describes the details of the installation.

Having this written record of installation information available will greatly expedite trouble-shooting should any problem arise with your stove. The installer should keep a duplicate of this form for their records.

INSTALLATION INFORMATION

Date purchased _____

Dealer _____

Installer _____

Serial number _____

Date installed _____

Fuel: ☐ **Natural gas** ☐ **LPG**

Inlet pressure measured after installation: _____

Manifold pressure measured after installation:
High fire _____ in. WC
Low fire _____ in. WC

Venting brand _____

Vent configuration:
Vertical rise _____ ft
Horizontal run _____ ft

Number of elbows ☐ 0 ☐ 1 ☐ 2 ☐ 3

Termination type: ☐ Vertical ☐ Horizontal ☐ Snorkel

Other installation notes _____
_____
_____

TROUBLESHOOTING

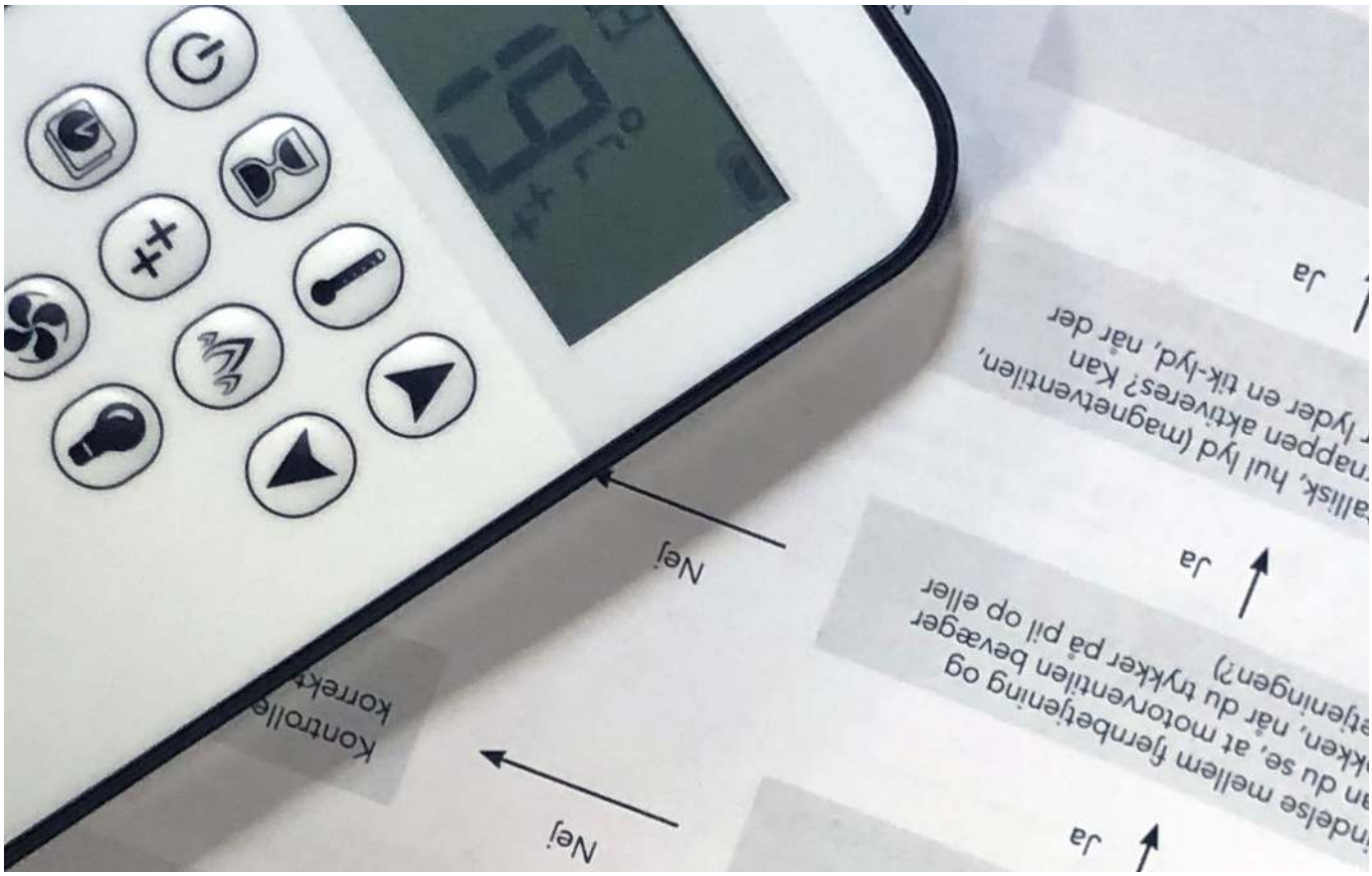
If you against all expectation should experience issues with your fireplace, please try the following steps. If the issues persist, please contact your RAIS dealer and state in which step the problem occurred.

The most seen problem is lost connection between remote control and receiver due to lack of power. Therefore, we recommend changing the batteries in your remote/receiver and resetting the connection once a year. Please follow the guide on page 37.

Does the remote control light up when you press the buttons?	**NO** →	Please check that the batteries are working and mounted correctly.
YES ↓		
Are the remote control and receiver connected? (Can you see the motor valve move on the GV60 Combination Valve when you press the arrow up or down on the remote control?).	**NO** →	Please check the batteries and the power supply. Try connecting receiver and remote control again.
YES ↓		
Can you hear a metallic, hollow sound (the magnetic valve opening), when turning the gas fireplace on? Can you hear/see a spark? (You can hear a ticking sound when a spark is generated).	**NO** →	The magnetic valve can get stuck. Try the starting sequence again. Check that the ignition cable between receiver and burner electrode is connected.
YES ↓		
Is the pilot flame on?	**NO** →	Please check the gas supply and that the tubes have been vented.
YES ↓		
Is the pilot flame burning for more than 30 seconds, before it turns off?	**NO** →	1st thermocouple might not function correctly. Check the thermocouple with an ohmmeter. = 4-6 mV drop. Check that the button on the GV60 Combination Valve is set to ON.
YES ↓		
Are the main and secondary burners burning for more than 30 seconds before they turn off? (Is there a flame by the ceramic logs?)	**NO** →	2nd thermocouple is interrupted. Check that the 2nd thermo is not covered in any way and that the flame is touching the thermo sensor. Check the wire to the 2nd thermocouple.
YES ↓		
Are there flames for more than two minutes after the main and secondary burners are turned on?	**NO** →	Check the flame by the 2 thermocouples. Check that the logs and the ember layer are placed correctly in accordance with the installation manual.
YES ↓		
Is the gas fireplace working after burning for two or more minutes?	**NO** →	Check the gas supply.

ERROR CODES ON THE REMOTE CONTROL

ERROR CODE	SYMPTOM	POSSIBLE CAUSE
F04	• No pilot within 30 sec. • Note: After 3 failed ignition sequences F06 is shown.	• No gas supply • Air in pilot supply line • No spark • Reversed polarity in 1st thermocouple wiring
F06	• 3 failed ignition sequences within 5 minutes • Fire is not responding, no pilot flame	• No gas supply • Air in pilot supply line • No spark • Reversed polarity in 1st thermocouple wiring • Incorrect pilot orifice if valve has been converted from LPG to NG or vice versa.
F09	• Fire is not responding • No electric control of fire	• The arrow down button was not pushed during paring • Receiver and handset are not synced
F40	• Battery icon flashes on handset display	• Low battery in handset
F46	• Fire is not responding • Intermittent response • No electronic control of fire	• No or bad connection between receiver and handset • No power at receiver • Low communication range (Main adapter faulty, handset not communicating with receiver)



ERROR SOUND DIAGRAM

Ignition sequence (US)	
Failure: Micro switch defect, ON/OFF Switch open, Wiring not completed, Learn function failed, no 2nd Thermocouple connected to 2nd Thermocouple version (Receiver: yellow lable), Ignition failed because 2nd Thermocouple has not cooled down	
Low Battery (during the motor turns)	
Reset (also new Batteries or Power ON)	
Learning function	

RATING PLATE

This gas fireplace is tested and certified for use in several countries. The gas fireplace has been tested for use with natural gas, LPG and biogas.

Produced at:
RAIS A/S, Industrivej 20, 9900 Frederikshavn, Danmark
Tel. : +45 98 47 90 33
Fax. : +45 98 47 92 91
Web : www.rais.com
Email : info@rais.com

Approved by / Approuvé par:
Control No. : O#5010515
Conforms to std. ANS Z21.50
Certified to std. CSA 2.22

Intertek
O#5010515

Product name: (check one) / Nom du produit:

☐ **Caro 90 Gas** ☐ **Caro 130 Gas**
☐ **Caro 110 Gas**

This appliance must be installed in accordance with the rules in force, and only used in a sufficiently ventilated space. Consult instructions before installation and use of this appliance.

This appliance equipped only for altitudes / Cet appareil est équipé uniquement pour les altitudes : 0-4500 ft / 0-1370 m

Serial No. / N° de série:_____ **Burner ID.**_____

Fuel type / Type de combustible
(check one) / (cochez...)

☐ **PROPANE GAS / GAZ PROPANE**	Maximum Input / Capacité d'entrée maxi	(BTU/HR)	26043
	Minimum Input / Capacité d'entrée mini	(BTU/HR)	8907
	Gas Inlet Pressure / Pression d'entrée du gaz	(in w.c.) / (en w.c.)	11
	Manifold Pressure / Pression d'admission	(in w.c.) / (en w.c.)	10,5 Interval 9,5-11,5
	Orifice Size / Taille de l'ouverture	Front /De face Rear /Arrière	80 100 (x2)
☐ **NATURAL GAS / GAZ NATUREL**	Maximum Input / Capacité d'entrée maxi	(BTU/HR)	31410
	Minimum Input / Capacité d'entrée mini	(BTU/HR)	10386
	Gas Inlet Pressure / Pression d'entrée du gaz	(in w.c.) / (en w.c.)	7
	Manifold Pressure / Pression d'admission	(in w.c.) / (en w.c.)	5,5 Interval 4,9-6
	Orifice Size / Taille de l'ouverture	Main/Principal Secondary / Secondaires	120 260 (x2)

Clearances to combustible / Dégagement jusqu'au combustible :

From the glass and straight out / Du verre et tout droit sorti : 27,6" (700 mm)
From the glass and up / Du verre et vers le haut : 27,6" (700 mm)
From the glass and down / Du verre et vers le bas : 11,8" (300 mm)

DO NOT REMOVE
VENTED GAS FIREPLACE - Not for use with solid fuel.

This appliance is only for use with the type of gas indicated on the rating plate and may be installed in an aftermarket, permanently located, manufactured home (USA only) or mobile home where not prohibited by local codes. See owner's manual for details. This appliance is not convertible for use with other gases, unless a certified kit is used.

For use only with Vent, Glass Panels and Ceramic Logs (or stones) certified and approved for use with this appliance.

This appliance must be installed in accordance with local codes, if any; if none, follow ANSI Z223.1/NFPA 54, or CSA B149.1. The appliance must be properly connected to a venting system in accordance with the manufacturer's installation instructions.

The system must be installed by a qualified installing agency.

Not for use with automatic vent dampers.

NE PAS RETIRER
FOYER AU GAZ À ÉVACUATION - Ne pas utiliser avec un combustible solide.

Cet appareil est destiné uniquement avec le type de gaz indiqué sur la plaque signalétique et peut être installé dans une habitation en dur, à emplacement fixe (USA uniquement) ou dans une résidence mobile si la législation locale l'autorise. Consultez le manuel du propriétaire pour les détails. Cet appareil ne doit pas être modifié pour une utilisation avec d'autres gaz, sauf à l'aide d'un kit certifié.

À utiliser uniquement avec des ventilations, panneaux en verre et poutres (ou pierres) en céramique dont l'utilisation est autorisée avec cet appareil.

Cet appareil doit être installé conformément à la législation locale. À défaut d'une telle législation, suivre ANSI Z223.1/NFPA 54, ou CSA B149.1. L'appareil doit être proprement raccordé à un système de ventilation, conformément aux instructions d'installation du fabricant.

Le système doit être installé par un installateur qualifié.

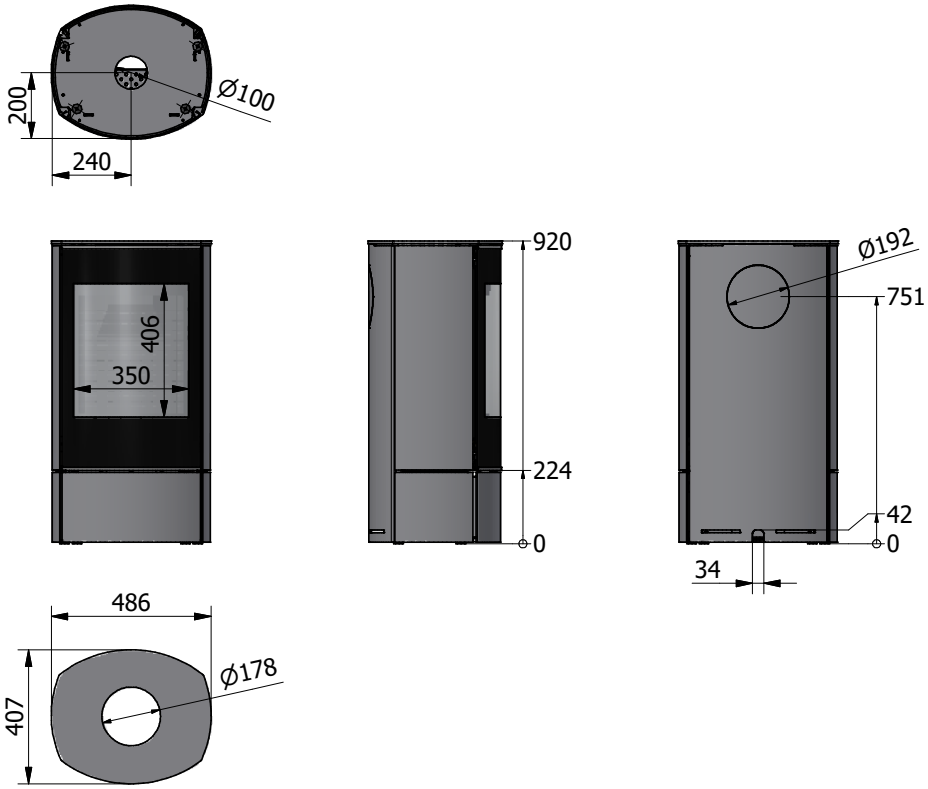
Refer to the Intertek Directory of Building Products (*https://bpdirectory.intertek.com*) for detailed information.

US

CARO 90 G

NOTE! The measurements are given in millimeters.

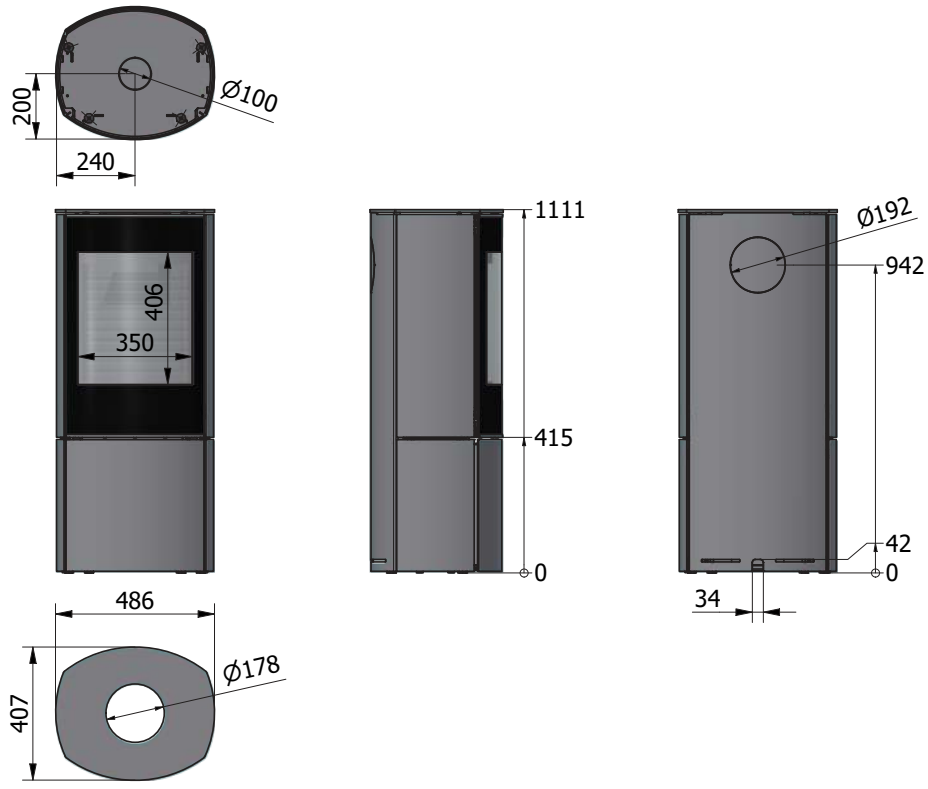
Without side glass
(glass door)



CARO 110 G

NOTE! The measurements are given in millimeters.

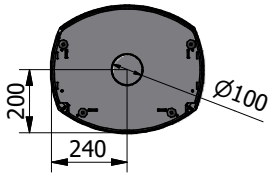
Without side glass
(glass door)

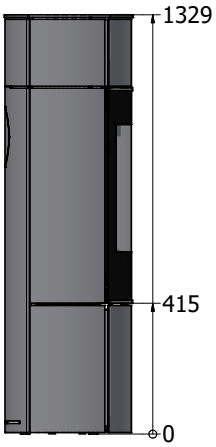


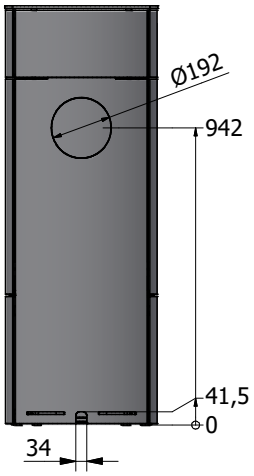
CARO 130 G

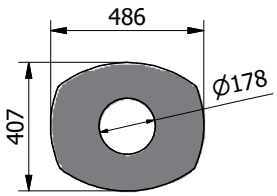
NOTE! The measurements are given in millimeters.

Without side glass
(glass door)









Article number: 14-6510US-CA

5 708252 402744

RAIS®

RAIS A/S
Industrivej 20
DK-9900 Frederikshavn
Denmark
www.rais.com