Razen Cookstove CS1

Installation and Operating Instructions

Please read these instructions before stove use

The Razen Cookstove is listed to UL - 1482 - 11
ULC Standard 5627 - 00

Serial No:
Date of manufacture:

firebelly STOVES

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Woodburning Razen Cookstove CS1

THE RAZEN COOKSTOVE IS WOODBURNING ONLY!! DO NOT BURN COAL IN THIS UNIT

THE AUTHORITY HAVING JURISDICTION MUNICIPAL BUILDING DEPT, FIRE DEPARTMENT, FIRE PREVENTION BUREAU SHALL BE CONSULTED BEFORE INSTALLATION TO DETERMINE THE NEED TO OBTAIN A PERMIT.

DO NOT INSTALL IN A MOBILE HOME.

PLEASE READ THIS ENTIRE MANUAL BEFORE YOU INSTALL AND USE YOUR NEW COOK STOVE.
FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE,
BODILY INJURY OR EVEN DEATH. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

IF THIS APPLIANCE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY,
FOLLOW THE INSTALLATION DIRECTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS
ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

THIS APPLIANCE MUST BE CONNECTED TO A LISTED, HIGH-TEMPERATURE RESIDENTIAL TYPE
AND BUILDING HEATING APPLIANCE CHIMNEY OR AN APPROVED MASONRY
CHIMNEY WITH FLUE LINER, THE CHIMNEY MUST BE SUITABLE FOR SOLID FUEL.
FLUE COLLAR ON THE STOVE IS 6INCHES IN DIAMETER. ALL CHIMNEY + SMOKE PIPE COMPONENTS
SHOULD BE 6INCHES IN DIAMETER INTERNALLY.
DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE!

THE COMPLETE INSTALLATION MUST BE DONE IN ACCORDANCE WITH CURRENT STANDARDS AND
LOCAL CODES. IT SHOULD BE NOTED THAT THE REQUIREMENTS AND THESE PUBLICATIONS MAY
BE SUPERSEDED DURING THE LIFE OF THIS MANUAL.

THIS APPLIANCE IS HOT WHILE IN OPERATION AND RETAINS ITS HEAT FOR A LONG PERIOD OF
TIME AFTER USE. CHILDREN, AGED OR INFIRM PERSONS SHOULD BE SUPERVISED AT ALL TIMES
AND SHOULD NOT BE ALLOWED TO TOUCH THE HOT WORKING SURFACES WHILE IN USE OR UNTIL
THE APPLIANCE HAS THOROUGHLY COOLED.

MANUFACTURED BY: FIREBELLY STOVES,LTD, UNIT B, MARSHALL HALL MILLS, ELLAND, HX5 9DU, UK

FOR YOUR SAFETY

Never use 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.

Stove Location - If the range must be located near a window, avoid using long curtains which could blow over the stove top, causing a fire hazard.

Any openings in the wall behind the stove or in the floor under the range must be sealed.

Do not set unopened glass or metal containers in the oven, or in the warming cabinet, or on the cooking surface.

Striking or slamming shut the cookstove doors may result in breaking the glass.

Never operate the cookstove with broken glass.
Only operate the stove with all doors closed and ensure all seals are in good condition.

We recommend regular cleaning of the glass to save from build up of soot and tar.

Various cleaning products are available although a damp cloth with ash from the stove is also possible as a cleaning material.

Never clean the glass while the stove is hot!

Grease accumulation is the cause of many cooking fires,
Clean the oven compartment regularly.

Do not attempt to extinguish a grease fire with water.
Cover grease fires with a pot lid or baking soda.

Avoid the use of aerosol containers, flamable fluids such as gasoline, naphtha or engine oil near the range.

Do not burn garbage!!

Do not use chemicals or fluids to start the fire.

Never place pans, cookie sheets or roasters directly on the oven bottom but use the oven rack in its lowest position.

Do not connect to or use in conjunction with any air distribution duct work.

FOR YOUR SAFETY cont.....

MINIMIZING CREOSOTE FORMATION

When wood is burned slowly it produces tar and other organic vapours and these combine with expelled moisture to form creosote.

The creosote vapours condense in the relatively cool chimney / flue associated with a slow burning fire, as a result creosote residue accumulates on the flue lining.

When ignited the creosote can result in an extremely hot fire.
Always have a clearly understood plan to handle a chimney fire.

The chimney and the connector should always be inspected during the heating season to determine whether the creosote build up has occured. If a significant amount of creosote has accumulated (0.12 inches or more) it should be removed to reduce the risk of a chimney fire.

To avoid unecessary build up, soot or ash the cook stove should be cleaned frequently both on the outside + inside the smoke paths of the stove.

A hot fire each morning is recommended as a way to deal with creosote generated during overnight burns.

In order to reduce the amount of creosote produce we would recommend burning wood with a moisture content of less than 20%. Wood should be seasoned for atleast six months before being burned.

We would suggest a daily check for creosote build up until experience shows how often you will clean to be safe, the hotter the fire the less creosote is deposited. And weekly cleaning maybe enough in mild weather although monthly cleaning will be required in the winter months.

Assembly / Positioning

Firebelly highly recommends that the stove, smoke pipe + chimney is installed by a proffesional installer, who has his country's wood stove training credentials in Canada Wett Certificate in USA National Fireplace Institute.

1: Remove all packaging from around the Cook Stove Fig (1) and from within the Firebox and oven.

Fig (1)

2: Remove Cookstove from the pallet, using all relevant safe lifting practices, approx weight 440 pounds and place on to a floor pad ensuring that the pad meets relevant specifications / codes.

3: The stove comes with adjustable feet, this allows for small adjustments to be made during installation if required to compensate for uneven surfaces. The feet can be adjusted by removing the inner side panels.

Removal of the inner side panels:

1. Unscrew the two button head bolts which are located at the bottom of the panels.

2. Slide panel down to free it from the locating slots in the underside of the stove.

3. Adjust the feet as required after adjustment ensure nuts are fully tightened!!

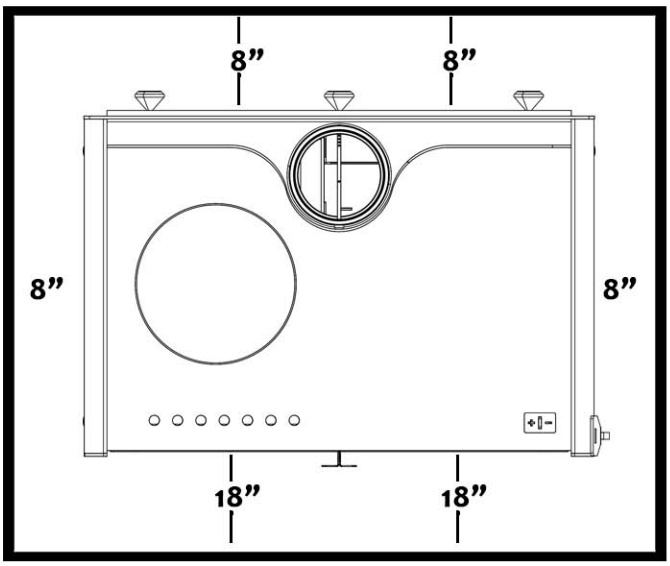
4. Replace panels back into locating slots, refit button head bolts and tighten.

Chimneys and Draft

Floor Protection

When installing your woodstove on a combustible floor, a non-combustible floor protector is required under the stove to protect the floor from hot embers that may fall when reloading. The floor pad must be a continuous, non- combustible pad (floor tile with grouting or a sheet metal pad). A floor pad should not be placed on top of a carpet.
Pad must extend 18" (45.7cm) in front of the stove in Canada and 18" (45.7cm) in front of stove in U.S.
Pad must extend 8" (20.3cm) to the sides and back of the stove.
Pad must extend fully to the wall if using side and back clearances less than these dimensions.
materials: 1/2" (1.27cm) thick minimum with thermal btu/h/F/in).
To determine thickness of equivalent material required use formula ("K" x 0.5) / 0.43 = thickness required ("K" material).

Floor Protection and location



To be used for all installations

The chimney is the most important element of successful stove operation.

Performance of your woodburning system depends more on the chimney than any other single component.

The chimney 'drives' the system by producing the draft that draws in combustion air and exhausts smoke and gases to outdoors.

When installing a new woodburning system or upgrading an existing one, give as much attention to the chimney as you do to the appliance that it serves.

The Razen CS1 can be installed in a masonry chimney which is in compliance with the appropriate standard or a prefabricated chimney approved to **ULC Standard S629 in Canada and UL 103HT in the U.S.**

Follow the chimney manufacturer's directions for installation. We recommend that prior to installing your stove into a masonry chimney, you have the chimney inspected by a qualified mason. An unlined masonry chimney should not be used without the installation of a liner.

The chimney and installation will have to be inspected by your local building inspector.

Recommended Chimney Clearances

The chimney must:
• extend at least 14 ft. (4.27m) above the collar of the stove;
• extend at least 3 ft. (92 cm) above the point where it passes through the roof;
• be at least 2 ft. above anything within a 10 ft. (3.048m) radius of the top of the pipe.
Good draft in a cold chimney should be between 0.01" and 0.15" "water column" (your dealer may be able to check this for you).

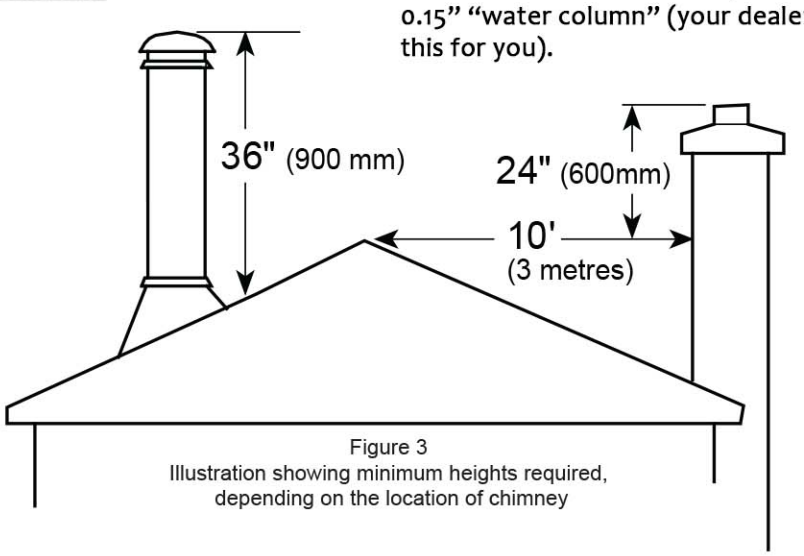
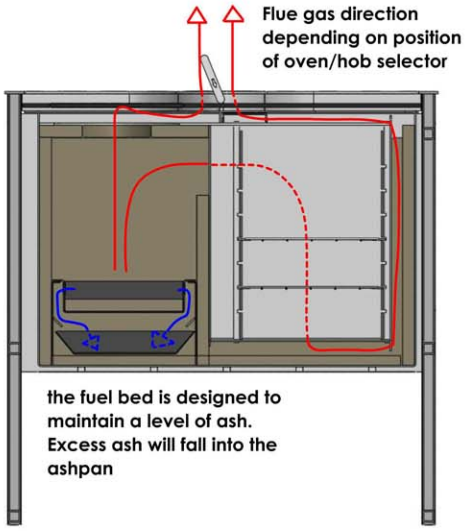


Figure 3
Illustration showing minimum heights required, depending on the location of chimney

Stovepipe Chimney Connection Requirements

1. The Razen is designed + certified to be used exclusively with 6 inch Veta black smoke pipe manufactured by the ICC. Please contact the North American importer, Cookstoves Canada if this smoke pipe is not readily available to you.

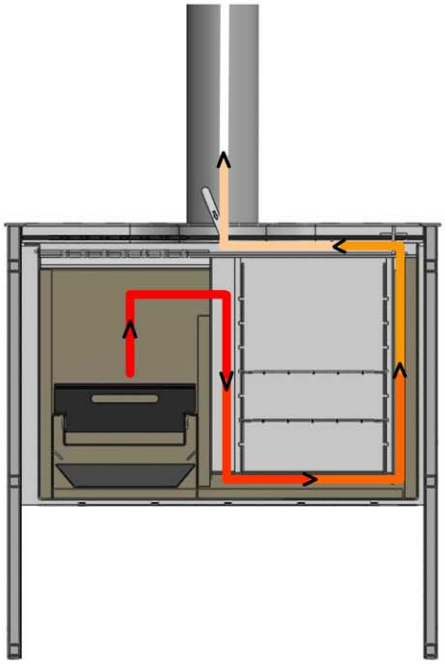
2. The last section of the chimney connector starting from the stove should be screwed to the flue collar of the stove. Individual sections of the chimney connector must be screwed together with at least three self tapping black sheet metal screws.
The last section should be securely attached to the chimney. Be sure there are no “weak links” in the system.



3. The crimped ends of pipe sections should point downward toward the stove so that any soot or creosote that falls from the inside of the pipe will be funnelled into a clean out or fall into the stove.

4. The chimney connector should be above the stove top before a 90 degree turn is installed, with no more than two 90 degree turns.

5. A horizontal run of stovepipe should be no longer than 4 ft (1.22m). A vertical run of stovepipe to a prefabricated metal chimney should be no longer than 8 ft (2.44m).



6. Do not pass the stovepipe chimney connector through a combustible wall if it can be avoided. If this cannot be avoided, follow the recommended in CSA B365 in Canada and NFPA 211 in the U.S., recommendation on Wall Pass-Throughs.

7. Never use single wall on double wall smokepipe as an outside chimney.

8. Never pass stovepipe chimney connector through a combustible ceiling.

9. The whole chimney connector should be exposed and accessible for inspection and cleaning.

10. Galvanized stovepipe must not be used. When exposed to the temperatures reached by smoke and exhaust gases, galvanized pipe may release toxic fumes.

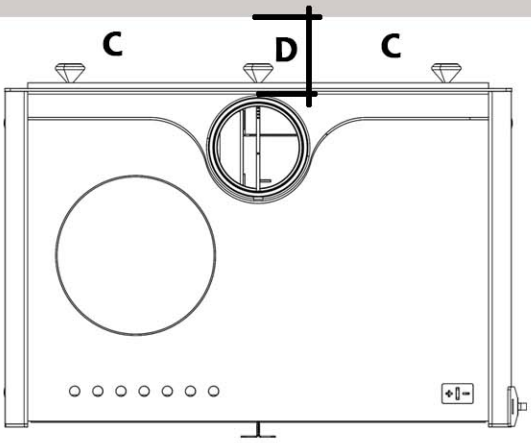
11. Horizontal runs of chimney connector should slope upward 1/4” (6.35 mm) per foot going from the stove toward the chimney.

12. During a chimney fire, the chimney connector may vibrate violently. The connector must be securely attached to the pipe and chimney, and individual sections must be securely attached together.

13. This stove is not to be connected to an air distribution duct.

Installation

When installing, operating and maintaining a solid fuel heater, respect basic standards of fire safety. Read these instructions carefully before commencing the installation. Failure to do so may result in damage to persons and property. Consult your local municipal office, Fire Department and your insurance representative to determine what regulations are in force. These measurements are in effect when ICC 6" Ultra Black smoke pipe is used.

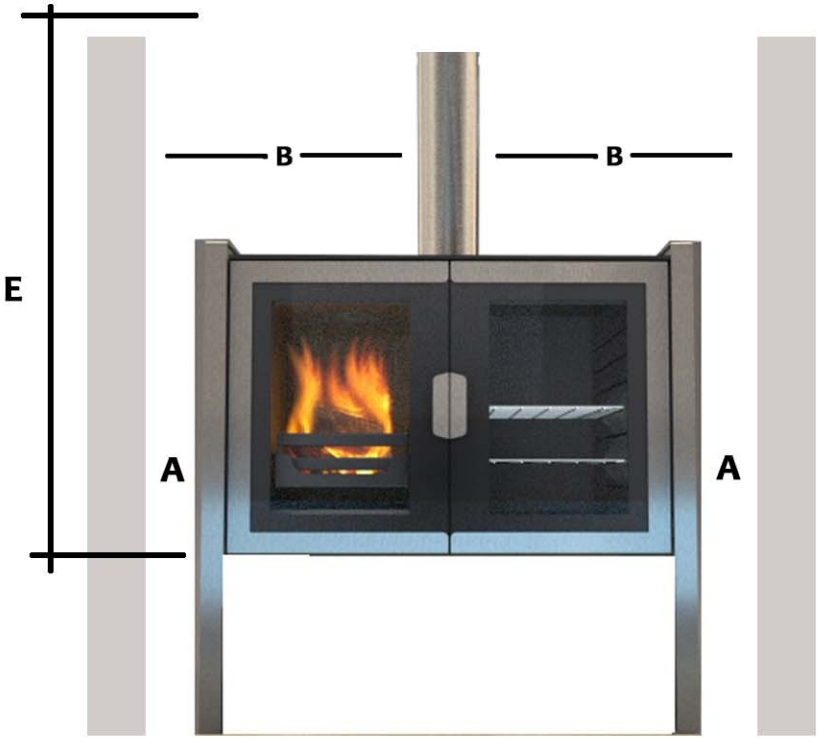


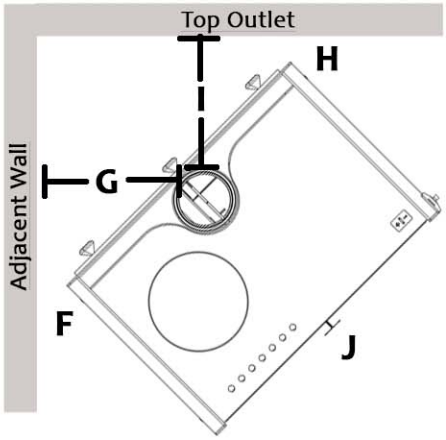
INSTALLATION CLEARANCES TO COMBUSTIBLES

A Side wall to unit.....5 inches
B Side wall to pipe.....19.5 inches
C Back wall to unit.....5.5 inches
D Back wall to pipe.....6 inches
E Ceiling to bottom of unit.....96 inches

INSTALLATION CLEARANCES TO COMBUSTIBLES, CORNER INSTALLATION

F Firebox wall to unit.....6 inches
G Firebox wall to pipe.....18.75 inches
H Oven box to unit.....4 inches
I Oven box pipe to wall.....16.5 inches
J Ceiling to bottom of unit as E.....96 inches





ALL DISTANCES SHOWN ARE BASED ON THE USE OF ICC ULTRA BLACK 6 INCH DOUBLE WALL FLUE PIPE

INSTALLATION REGULATIONS

Installation of the product and auxiliary equipment in relation to the heating system must comply with all current Standards and Regulations and to those envisioned by the law.
The installation and the relating to the connections of the system, the commissioning and the check of the correct functioning must be carried out in compliance with the regulations in force by authorised professional personnel with the requisites required by the law, being national, regional, provincial or town council present in the country within which the appliance is installed, besides these present instructions.

Installation must be carried out by authorised personnel who must provide the buyer with a system declaration of conformity and will assume full responsibility for final installation and as a consequence the correct functioning of the installed product.

The product, assembled and ready for the installation, must be connected to a suitable flue system.

We recommend the use of a regulatory approved carbon monoxide detector, this should be located as instructed by the local regulatory body.

Clearances may only be reduced by means approved by the regulatory authority.

Installation cont...

CHIMNEY

The Firebelly Stove must be connected to a Factory-Built Chimney, installed in accordance with the manufacturer's instructions, or a code approved masonary chimney with a flue liner.
An existing masonry chimney should be inspected and if necessary repaired by a competent mason and always be relined using an approved relining system.

THE CHIMNEY SERVING THE RAZEN COOKSTOVE WOODBURNING RANGE SHOULD NOT SERVE ANY OTHER APPLIANCES. If you intend to use a fireplace chimney, the fireplace opening must be sealed. The overall height of the chimney, measured from the floor on which the Range is installed must be at least 4.572 meters (15ft). Do not use more than two elbows.

CHIMNEY TYPES USA

The Residential Type Chimney may be:

(a) FACTORY-BUILT U.L. Listed Residential Type HT and Building Heating Appliance chimney (ANSI/UL103) and acceptable to the local building core or,

(b) MASONRY, Constructed in accordance with NFPA 211 code.

CHIMNEY TYPE CANADA

This Firebelly Cookstove must be connected to an Underwriters Laboratories of Canada Labelled factory Built 650oC Chimney, installed in accordance with the manufacturer's instructions or a lined masonry chimney acceptable to the authority having jurisdiction.

SMOKE PIPE

Please ensure you have used the smoke pipe infomation as per Pg9 thoroughly.

CHIMNEY CONNECTOR USA ONLY

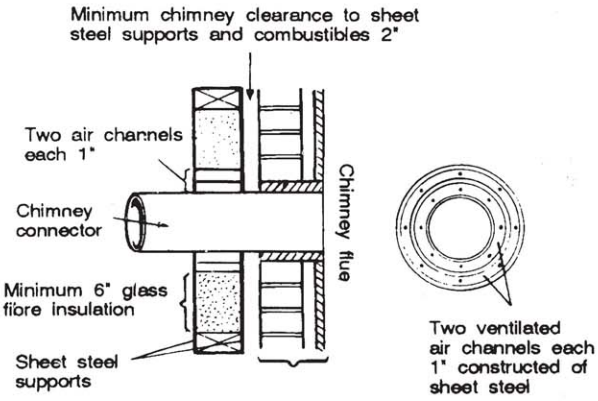
Connectors should maintain a pitch or rise of at least 1/4" (6mm) to the foot from this cook stove to the chimney. It should be installed so as to avoid sharp turns or other construction features that would create excessive resistance to the flow of flue gasses.
It should be securely supported with joints fastened with sheet-metal screws, rivets or other approved means. The entire length of a connector should be readily accessible for inspection, cleaning and replacement.

The connector may pass through walls or partitions constructed of combustible materials provided the connector is either listed for wall pass-through or is routed through a device listed for a wall passthrough and is installed in accordance with the conditions of the listing. Any unexposed metal that is used as part of a wall pass-through system is exposed to flue gasses shall be constructed of stainless or other equivalent material that will resist corrosion, softening, or cracking from flue gas at temperatures up to 9820 C.

Where passage through a wall, or partition of combustible construction is desired, the installation shall conform to CAN/CSA - B 365, Installation Code for Solid Fuel Burning Appliance & Equipment.

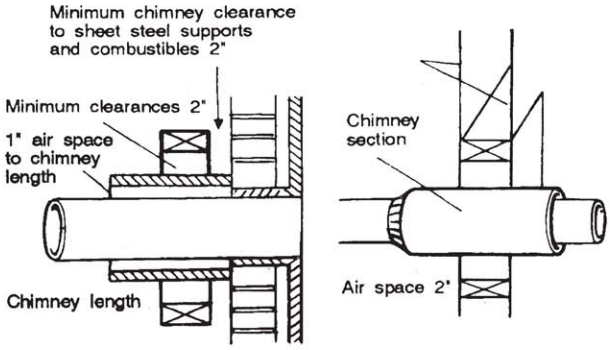
Installation cont...

3. Sheet steel chimney connector, min. 24 gauge in thickness, with a ventilated thimble, min. 24 gauge in thickness, having two 1" (25mm) air channels, separated from combustibles by a min. of 6" (150mm) of glass fibre insulation. Opening should be covered and thimble supported with a sheet steel support, min. 24 gauge in thickness. Supports should be securely fastened to wall surfaces on all sides and should be sized to fit and hold chimney section. Fasteners used to secure chimney sections should not penetrate chimney flue liner.



4. Solid insulated listed factory-built chimney length with an inside diameter 2" (50mm) larger than the chimney connector and having 1" (25mm) or more of insulation, serving as a pass-through for a single wall sheet steel chimney connector of min. 24 gauge thickness, with a min. 2" (50mm) air space between the outer wall of chimney section and combustibles. Min. length of chimney section shall be 12" (305mm). Chimney section concentric with and spaced 1" (25mm) away from connector by means of sheet steel support plates on both ends of chimney section. Opening shall be covered and chimney section supported on both sides with sheet steel supports of min. 24 gauge thickness.

Supports should be securely fastened to wall surfaces on all sides and shall be sized to fit and hold chimney section. Fasteners used to secure chimney sections should not penetrate chimney flue liner.



MASONRY FIREPLACE

Before the installation the entire fireplace system should be inspected for condition and code compliance prior to connecting to the fireplace chimney. Older fireplaces and chimneys may not have been constructed to current-day codes.

The fireplace and chimney should be in, or brought up to, acceptable conditions and proper clearances should be met before connecting to the fireplace chimney.

A relining system must be installed by a proffesional installer using an approved relining system.

Installation cont...

CONNECTING TO MASONRY CHIMNEY

The connector to a masonry chimney must extend through the wall to the inner face or liner but not beyond, and must be firmly cemented to masonry.

The connector may pass through walls or partitions constructed of combustible material to a masonry chimney provided the connector system selected is installed in accordance with the proper clearances and conditions.

THIMBLES

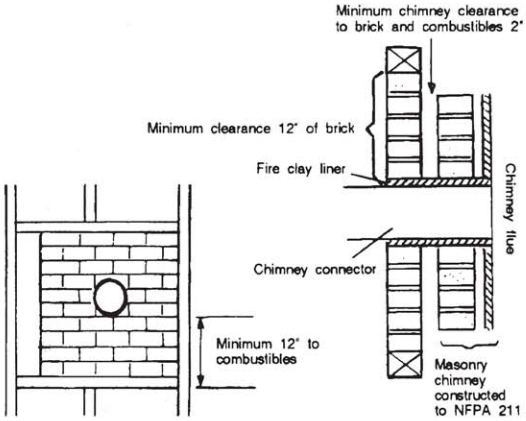
Thimbles for chimneys or vent connectors should be of fire clay (ASTM C 315, specifications for Clay Flue Linings), galvanised steel of minimum thickness of 24 gauge, or material of equivalent durability. Thimbles should be installed without damage to the liner. The thimble should extend through the wall to, but not beyond, the inner face of the liner and should be firmly cemented to masonry.

Thimbles should be located to provide adequate pitch or rise of chimney or vent connectors and, where the ceiling above the appliance is constructed of combustible material, the location of the thimble should provide minimum clearance required for the connector as specified in section under Minimum Clearances to Combustibles.

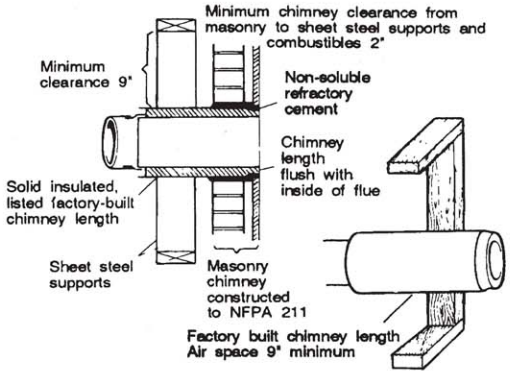
Insulation material used as part of wall pass-through system should be of non-combustible material and should have a thermal conductivity of 1.0 Btu. in./ft.F (4.88kg.cal/hr.m.c) or less. All clearances and thicknesses are minimums; larger clearances and thicknesses are acceptable. Any material used to close up the opening for the connector should be of noncombustible material. A connector to a masonry chimney, except for System 2 (under heading Chimney Connector System, Thimbles and Clearances), shall extend to piece through the wall pass-through system and the chimney wall to the inner face of the flue liner, but not beyond.

CHIMNEY CONNECTOR SYSTEMS, THIMBLES AND CLEARANCES FROM COMBUSTIBLE WALLS

1. Minimum 3 1/2" (90mm) thick brick masonry wall framed into combustible wall with a min. of 12" (305mm) brick separation from clay liner to combustibles. Fire clay liner (ASTM C315 or equivalent) min. 5/8" (16mm) wall thickness, should run from outer surface of brick wall to, but not beyond, the inner surface of chimney flue liner and should be firmly cemented in place.



2. Solid insulated listed factory-built chimney length of the same inside diameter as the chimney connector preferably 6 inches and having 1" (25mm) or more of insulation with a min. 9" (230mm) air space between the outer wall of the chimney length and combustibles. The inner end of the chimney length shall be flush with the inside of the masonry chimney flue and shall be sealed to the flue and to the brick masonry penetration with non water-soluble refractory cement. Supports should be securely fastened to wall surfaces on all sides. Fasteners between sup ports and the chimney length shall not penetrate the chimney liner.



Installation cont...

Connection to a masonry chimney may be done by breaching into the chimney from the front of the fireplace, no less than 8" (200mm) above the bottom of the first flue tile, by installing a stainless steel or other listed chimney connector from the appliances flue outlet up through the fireplace damper and smoke chamber, terminating at the first flue tile and connected to a stainless steel or other listed relining system from the flue outlet up the entire length of the chimney.

VENTILATION & COMBUSTION AIR REQUIREMENTS

Provision for outside combustion air may be necessary to ensure that fuel-burning appliances do not discharge products of combustion into the house. Guidelines to determine the need for additional combustion air may not be adequate for every situation. If in doubt, it is advisable to provide additional air.

Outside combustion air may be required if:

1. The solid-fuel-fired appliance does not draw steadily, smoke rollout occurs, fuels burns poorly, or back drafts occur whether or not there is combustion present.
2. Existing fuel-fired equipment in the house, such as fireplaces or other heating appliances, smell, do not operate properly, suffer smoke roll-out when opened, or back-draft whether or not there is combustion present.
3. Opening a window slightly on a calm (windless) day alleviates any of the above symptoms.
4. The house is equipped with a well-sealed vapour barrier and tight fitting windows and/or has any powered devices that exhaust house air.
5. There is excessive condensation on windows in the winter.
6. A ventilation system is installed in the house.

If these or other indications suggest that infiltration air is inadequate, additional combustion air should be provided from the outdoors. Outside combustion air can be provided to the appliance by the following means:

1. Indirect method: for an appliance not certified for direct connection of outside combustion air, the outside air is ducted to a point no closer than (12") 300mm from the appliance, to void affect ing the performance of the appliance.
2. A mechanical ventilation system: if the house has a ventilation system (air change or heat recovery):
   a. The ventilation system may be able to provide sufficient combustion make-up air for the solid-fuel-fired appliance.
   b. The householder should be informed that the ventilation system might need to be re-balanced by a ventilation technician after installation of the appliance.

SPILLAGE TEST

In all installations a spillage test should be carried out to ensure there is sufficient combustion air and the flue system is:

1. Light/burn appliance under normal conditions in accordance with this installation manual.
2. Close all doors and windows.
3. Operate all appliances requiring air at full rate (eg. extraction hoods, tumble dryers etc).
4. Check for spillage.

General guide notes

All local regulations, including those referring to national and European standards needs to be complied with when installing this appliance.
Check all parts are fitted correctly including firebricks and hotplate.
Before leaving the installer should demonstrate the operation of the appliance to the user. Explain all controls and access to the flue ways for cleaning.

Ventilation

The appliance requires free air ventilation equivalent to 30cm? air vent
Any air inlet grilles should be positioned so that they are not liable to blockage.
An air extraction device shall not be used in the same room as the appliance unless adequate additional ventilation is provided.
Other heating appliances requiring air for combustion shall not be used in the same room as the appliance unless ddequate additional ventilation is provided.

Chimney

Inspect the chimney and pipe prior to installation. Remedy any cracks, voids and obstructions, and sweep as necessary.
The single wall flue pipe used to connect the appliance to the chimney is 6" (1 50rnm) in diameter.
The chimney shouid have an internal cross section of no less than 6 inches.
If a flue liner is used, it should be 6" diameter and be made of suitable material for burning wood.
If the appliance is installed as a freestanding appliance, it should not support any part of the chimney.
The chimney should not be shared with any other appliances.
External flues must be insulated to prevent heat loss.
The installation must provide access for chimney sweeping, flue cleaning, and inspection of the flue ways.
Avoid using bends greater than 45° to the vertical. All flue pipe sections should be as close to the vertical as possible.
All joints in the flue system must be effectively sealed and sockets must face upwards.

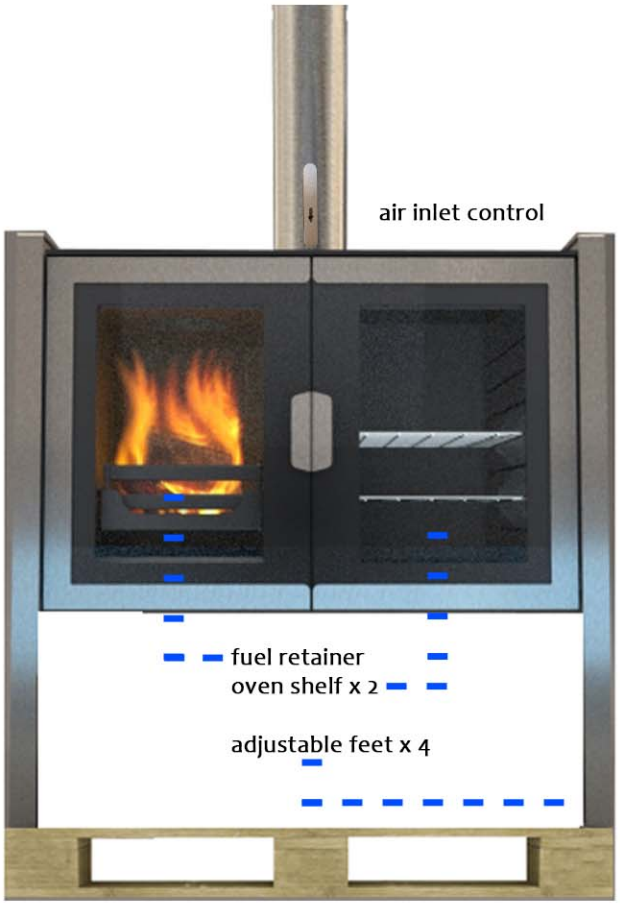
Flue Draught

The-minimum flue draught required for nominal total heat output is 12 Pascals (0.05 wg).
Excessive flue draught can be remedied by fitting a flue draught stabiliser.

THE RAZEN COOKSTOVE IS EXCLUSIVELY DESIGNED FOR THE BURNING OF FIRE WOOD ON THE CLAY BRICK BASE THEREFORE, DO NOT USE GRATES, IRONS OR OTHER MEANS OF SUPPORTING THE FUEL.

Controls

When installing, operating and maintaining a solid fuel heater, respect basic standards of fire safety. Read these instructions carefully before commencing the installation. Failure to do so may result in damage to persons and property. Consult your local municipal office, Fire Department and your insurance representative to determine what regulations are in force.



Clearances from combustible materials

Any adjacent combustibie material should be far enough away from the cooking stove so as not to further heat above the room temperature when the cooking stove is in operation.
The minimum required clearance to combustible material is:

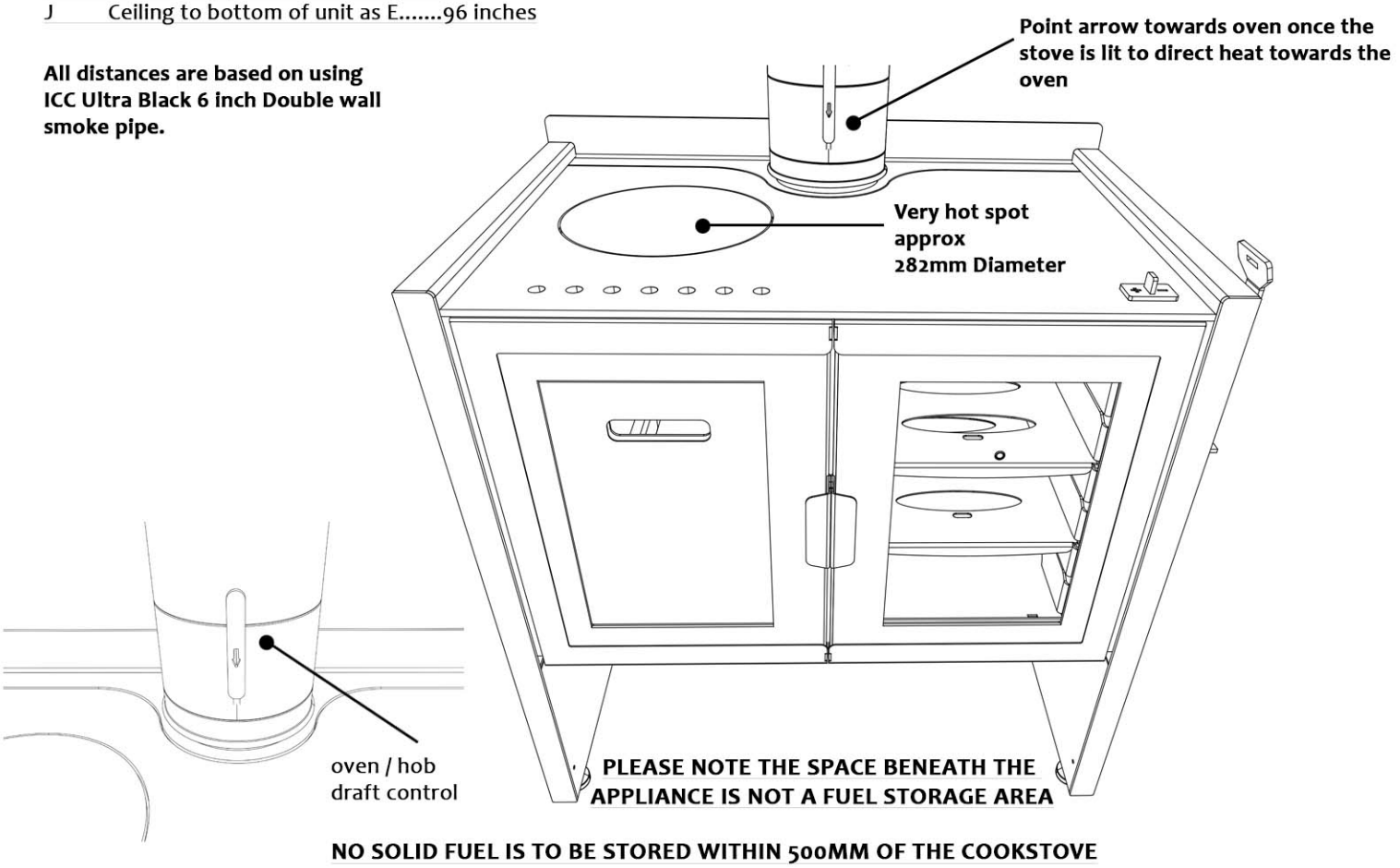
INSTALLATION CLEARANCES TO COMBUSTIBLES

A Side wall to unit.....5 inches
B Side wall to pipe.....19.5 inches
C Back wall to unit.....5.5 inches
D Back wall to pipe.....6 inches
E Ceiling to bottom of unit.....96 inches

INSTALLATION CLEARANCES TO COMBUSTIBLES, CORNER INSTALLATION

F Firebox wall to unit.....6 inches
G Firebox wall to pipe.....18.75 inches
H Oven box to unit.....4 inches
I Oven box pipe to wall.....16.5 inches
J Ceiling to bottom of unit as E.....96 inches

All distances are based on using ICC Ultra Black 6 inch Double wall smoke pipe.



NO SOLID FUEL IS TO BE STORED WITHIN 500MM OF THE COOKSTOVE

Technical Data

Model	CS1
Nominal heat output btu	10.6
Air vent size cm	30
Weight in pounds	440
Mean flue gas temperature °F	575
Flue gas mass flow g/s	9.4
Total efficiency %	75.2
Maximum log length mm	500
Test Standards USA	UL - 1482 - 11
Canada	ULC - 5627 - 00

INSTALLATION CLEARANCES TO COMBUSTIBLES

A Side wall to unit.....5 inches
B Side wall to pipe.....19.5 inches
C Back wall to unit.....5.5 inches
D Back wall to pipe.....6 inches
E Ceiling to bottom of unit.....96 inches

INSTALLATION CLEARANCES TO COMBUSTIBLES, CORNER INSTALLATION

F Firebox wall to unit.....6 inches
G Firebox wall to pipe.....18.75 inches
H Oven box to unit.....4 inches
I Oven box pipe to wall.....16.5 inches
J Ceiling to bottom of unit as E.....96 inches

Stove must be used with ICC 6 inch Ultra Black double wall smoke pipe.

Requirements to maintain nominal heat output of 10.6kw:

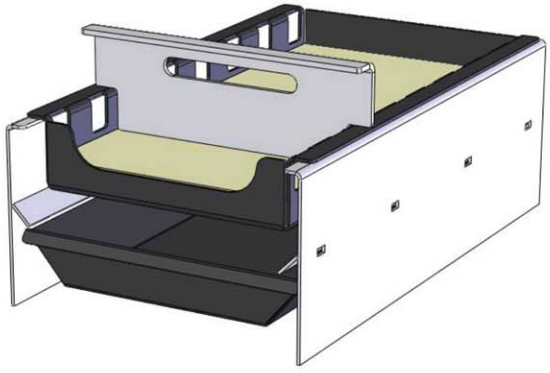
Refuelling period hrs	1
Mass of wood per refuel (test fuel beech) pounds	7.5
Flue draught Pascals	12

Lighting and operation

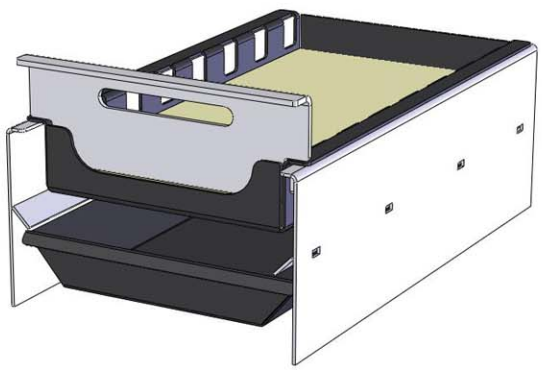
Open the air inlet control fully and move the selector switch to point directly down (vertical). Open the fire door and light a small fire at the back of the firebox using paper and kindling and close the door. As the fire takes hold add more wood gradually. Once the fire is hot the air inlet control can be reduced so that the fire burns at a steady rate. When refuelling it is best to add a small amount of fuel at regular intervals rather than large amounts in one go.
Always take care opening the firebox door + open it slowly.
Do not refuel above the level at the top of the right side firebrick.
To increase heat to the oven move the selector switch to point to the oven.
With the selector switch pointed at the hotspot the hot fluegases will bypass the oven.
The hotspot will always be hot provided the fire is lit and its temperature is directly linked to the heat of the fire. The controls may become hot, use the glove provided.

Note: Take care when the cookstove is lit as the external surfaces will become hot.

Adjustable fuel bar position
to change the fire bed size



Adjustable fuel bar position
to change the fire bed size



Maintenance.

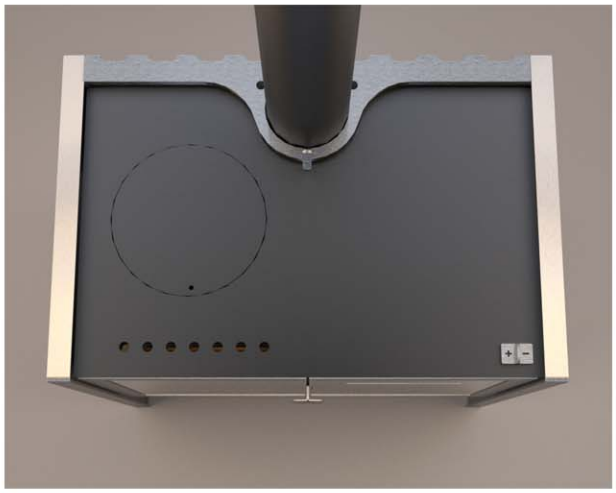
Firebox Ashpan

It is advised that a competent person inspects and cleans the ash from around the cooker box on a regular basis. This is accessed from the underside of the cooker box. To do this release the 4 wing nuts holding the access plate in position, do not remove these fully only enough to access the handle of the ashpan which is positioned above the plate.
Use the handle to remove and empty the ashpan. Fully removing the access panel allows easy access to the underside and sides of the oven to ensure there is not build up of soot.
Once checked and if nessesary cleaned re-attach the access plate loosely and slide the ash pan back into position, replace the access panel and fully tighten the wing nuts before re-lighting your Razen cookstove.

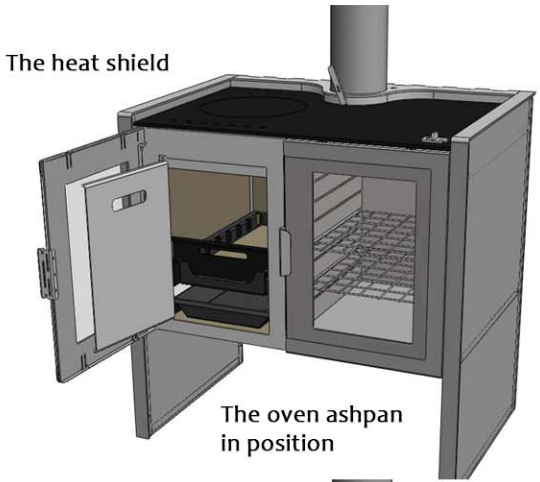
Disposal of Ashes

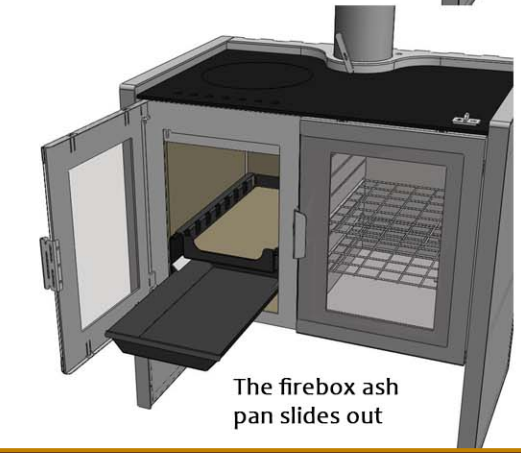
Ashes should be placed in a metal container with a tight fitting lid.
The closed container of ashes should be placed on a non combustible floor or on the ground, well away from all combustible materials, pending final disposal.
If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

Oven and Hotplate



The figure shows the heat gradient across the hotplate.
The hotspot is used for fast boiling and frying and the other areas for simmering and warming. Solid flat bottom pans work best on the hot plate. The oven also has a temperature gradient, the top of the oven being warmer than the bottom. Use an open shelf thermometer when cooking to determine the temperature and a particular point inside the oven.
The temperature of the oven can be controlled by regulating the amount of fuel added and by adjusting the oven hob/selector switch and Inlet control.
Each installation will be a little different and variables such as the Wood fuel used and the draft of the chimney will affect how to cook stove functions. The best settings and the control of the cookstove will be learnt with practice.





Cleaning.

The hot plate should be wiped down with cooking oil before each time it is used for the first few times. This will help to season the hot plate and prevent any food spillages sticking. Cooking oil will also prevent rust forming on the hot plate if it is not used for a long period. The hot plate will darken as it is used with the effects of heat and the metal seasoning. This is normal and it should not be cleaned with oven cleaners.
The stainless steel parts of the cookstove can be wiped down with proprietary stainless steel cleaner.
When clean, the stainless steel parts can be oiled (Baby oil works well) to help prevent marks. Always wipe stainless steel parts in the direction of the grain. The oven shelves and shelf supports can be removed for easy cleaning. The glass in both doors can be cleaned with a proprietary glass cleaner.
Gentle use of nylon scourers (Scotchbrite) Will work on top marks. Light scratches in the stainless steel can also be removed using a scotch Brite pad - Be sure to rub it in the direction of the grain.
Never clean the cook stove while still hot!!

Never us abrasive cleaning products.

Directions for glass replacement

The glass should be replaced by a competent person.

Warning

Never attempt to remove or replace your stove glass whilst the stove is hot or still burning.
Only use genuine fire belly stove glass.
Take extra care whilst removing broken glass.

To remove the glass.

1. Remove the door handle.

2. Unscrew the two screws which secure the handle to the door.

3. Unscrew the four retaining screws from the inside of the door, this will reveal six retaining tabs.

4. Very carefully lift the tabs to allow removal of the damaged glass from the inner and outer skin of the door.
   If the glass is broken take extra care whilst performing this operation and ensure all broken pieces are removed and disposed of safely.

Replacement of the glass

1. For replacement of your new glass ensure that there has been no damage to the cushioning gasket between the inner and outer skin, replace if necessary.

2. Slide the new glass between the inner and outer skin, ensuring that the black border is facing inwards the narrower edge of the border to the centre of the stove.

3. Once the glass is correctly positioned push the tabs back into place and finishing securing by replacing the four screws and tightened fully.

4. Replace the door handle with two screws and ensure that the door closes securely.

5. Only replace using 4mm thick Ceramic glass.

Finally check that the door seals fully before re-lighting the stove.

Fault finding

Symptom:
Low flue draft. Cookstove is difficult to light and smoke comes into the room.

Possible cause	Solution
Obstruction in the stove or chimney	Clear the chimney and smoke pipe, check possible position of fire-bricks Insulate or line the chimney
Cold chimney	Extend the chimney
Chimney too short	Re-locate the chimney terminal or fit an anti down draught cowl
Down draught	Check air vents are clear and for competing draughts
Shortage of supply air for combustion	

Symptom:
High flue draft. Cookstove is difficult to control and it to hot, wood burns to fast.

Possible cause	Solution
Chimney and terminal too effective	Change the terminal or fit a flue draught stabliser
Fire door not sealing	Check door catch and door rope seal
Air inlet control not closing	Check air control is fitted correctly and moves freely

Symptom:
Poor combustion, dirty fire and little heat

Possible cause	Solution
Low flue draught	See above for low flue draught solutions
Wet fuel	Check wood is thoroughly seasoned
Air inlet control not open	Check air control moves freely and opens fully

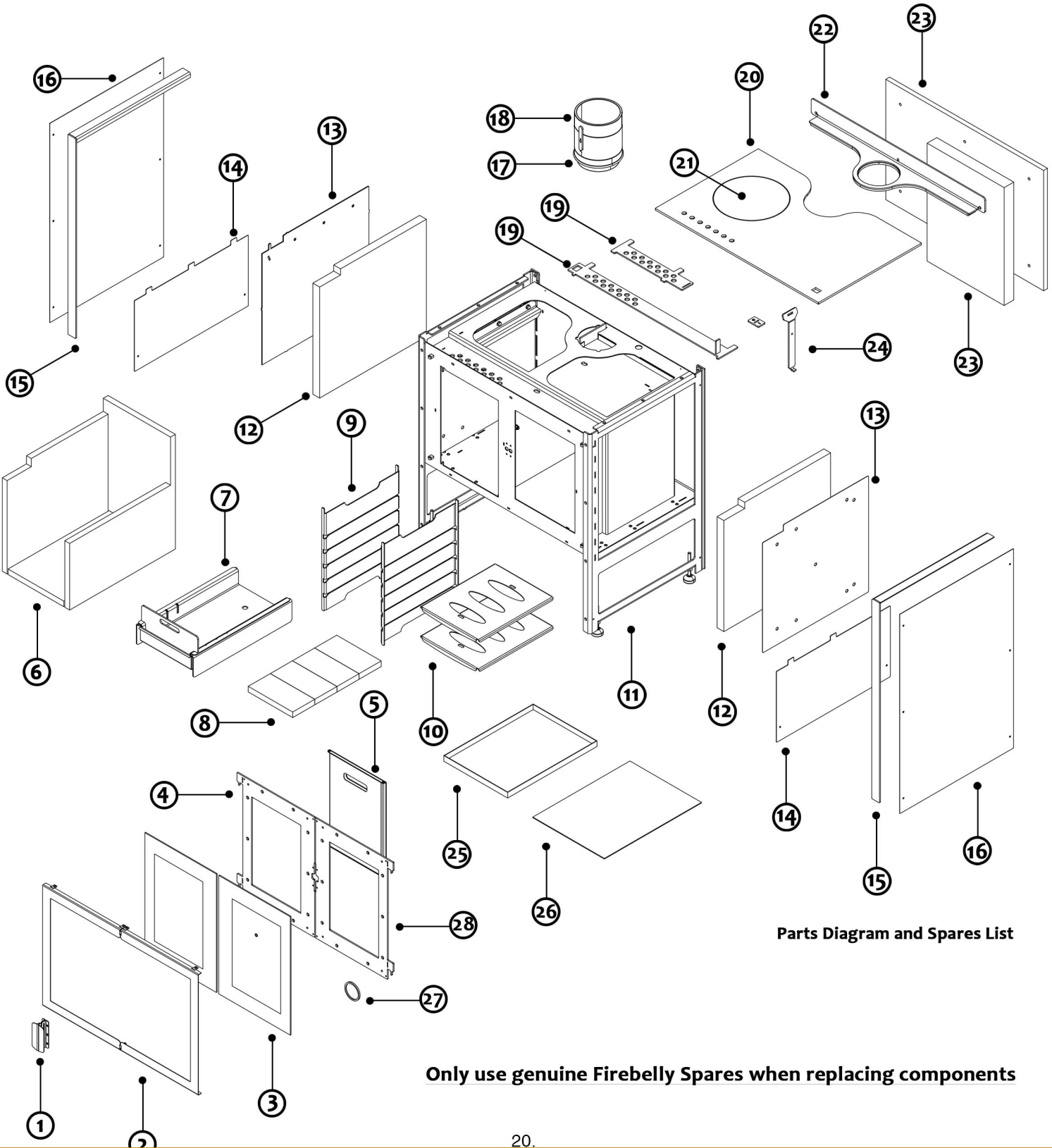
Adverse conditions.
High winds may cause excessive drafts in some chimney systems and cause increased combustion.
To prevent overheating close the air inlet control and point the selector switch to the oven. Do not add further fuel until conditions improve.

Chimney fire.
In the event of a chimney fire call the Fire Brigade. Close the air inlet control and point the selector switch to the oven. Move any combustible materials such as furniture away from the stove and chimney breast. Do not open the firebox door. Do not throw water on the stove.

Woodburning Razen Cookstove CS1

Spare Parts

1. Door Handle x 2
2. Outer Door Frame x 2
3. Ceramic Glass window x 2
4. Inner Door Frame
5. Removable Heat Shield
6. Fire Box Linings
7. Fire Box Ash Pan
8. Dense Fire Bricks
9. Oven Shelf Supports
10. Oven Shelves
11. Stove Body
12. Side Panel Insulation
13. Insulation Cover plate
14. Inner side panel
15. Stainless Edging plate
16. Outer Side panel
17. Double wall Flue Pipe connector
18. Double Wall Flue Gas Control
19. Air Control
20. Top Plate
21. Hot Plate
22. Flue Locator Plate
23. Rear Insulation
24. Multi Purpose Vent Tool
25. Oven Maintenance Ash Pan
26. Maintenance Ash Pan Cover
27. Oven Temperature Gauge
28. Black spring gasket door seal



Parts Diagram and Spares List

Only use genuine Firebelly Spares when replacing components

WARRANTY

This stove has a Two Year manufacturer's warranty covering any defects arising from faulty workmanship during normal use of the stove. The guarantee does not cover parts deemed replaceable in the normal usage of the stove. These include but are not limited to:

Glass, Glass & Door Rope Seals & Fire Brick Linings

The Warranty will be invalid if the stove has been used in any way other than in accordance with the instructions and maintenance guidance

IMPORTANT NOTE: Should you experience problems with your Stove any claim must be submitted first to the Retailer from where the stove was purchased, your Retailer will either be able to offer immediate assistance or make contact with Firebelly Stoves on your behalf.

Our stoves are fully UL + ULC tested and approved to the highest possible quality and safety standards. It is vital our stoves are installed correctly to ensure they provide you with years of enjoyment. The stove must be installed with ICC 6 inch double wall Ultra Black smoke pipe.

As such your warranty is only valid if the stove has been installed or signed off by a professional installer who provides an installation certificate. To validate your warranty please complete the enclosed registration form within one month of the installation of the stove and return in the pre-paid envelope provided or by email to warranty@firebellystoves.com.
You will receive confirmation when the warranty is received.

British Designed,
British Manufactured

Firebelly Stoves Ltd, Unit B Marshall Hall Mills, Elland HX5 9DU, UK

sales@firebellystoves.com 01422 375582

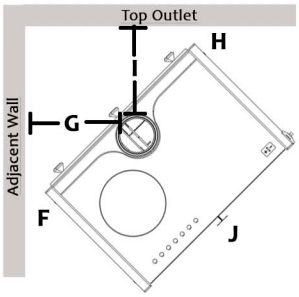
firebelly STOVES

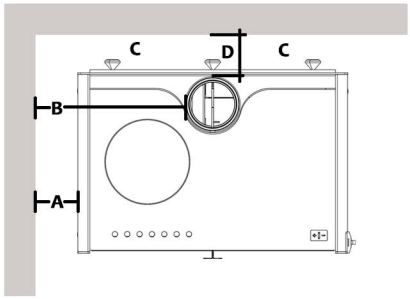
Model: **Razen CS1**
Solid Fuel Cook Stove

Conforms to UL Std. 1482
Certified to Std. ULC S627-00

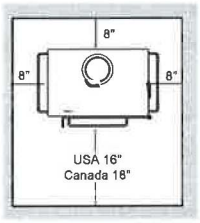
For Use With Solid Wood Fuel Only

Model / Modèle	Razen CS1	Date of manufacture / Date of fabrication	Month / Mois		Year / Année		Control no. / N° Control	





FLOOR PROTECTOR



INSTALLATION CLEARANCES TO COMBUSTIBLES, CORNER INSTALLATION

A	Side wall to unit.....5 inches
B	Side wall to pipe.....19.5 inches
C	Back wall to unit.....5.5 inches
D	Back wall to pipe.....6 inches
E	Ceiling to bottom of unit.....96 inches
F	Firebox wall to unit.....6 inches
G	Firebox wall to pipe.....18.75 inches
H	Oven box to unit.....4 inches
I	Oven box pipe to wall.....16.5 inches
J	Ceiling to bottom of unit as E.....96 inches

ALL DISTANCES SHOWN ARE BASED ON THE USE OF ICC ULTRA BLACK 6 INCH DOUBLE WALL FLUE PIPE

A	Mur Lateral - Appareil.....5 inches
B	Mur arriere - Appareil.....19.5 inches
C	Mur de coin - Appareil.....5.5 inches
D	Mur Lateral - Conduit.....6 inches
E	Mur arriere - Conduit.....96 inches
F	Mur de coin - Conduit.....6 inches
G	Distance au mur avant fournissant.....18.75 inches
H	Boite de four a l'unite.....4 inches
I	Tuyau de four au mur.....16.5 inches
J	Plafond au bas de l'unité comme E.....96 inches

Floor protection for Canada 18" (45 cm)from unit to front of floor protector - and 8" (20 cm) to the sides. Floor Protector must be under connector pipe and 2" (5 cm) to the side for a through the wall configuration.

Floor protection must be non-combustible material extending beneath the stove, and to the front and sides from door opening and to the rear as indicated.

La protection de sol doit étre au matèriel non combustible placè sous teloyer s'élendant vers l'avant, les côtés les ouvertures et l'arriére comme induqué.

TO PREVENT HOUSE FIRES

Contact local Building or Fire officials about restrictions and installation in your area.
Install and use only in accordance with manufacturer's installation and operating instructions and local codes.In absence of any local codes,installation must meet minimum requirements of NFPA 211 in USA, and B365 in Canada. Refer to manufacturer's instructions and local codes for precautions required for passing chimney through a combustible wall or ceiling.Inspect and clean chimney system frequently in accordance with manufacturer's instruction.

Do not connect this stove to a chimney flue serving another appliance.
Do not use grate or elevate fire. Build wood fire directly on hearth.

Smoke pipe must be ICC 6 inch double wall Ultra Black smoke pipe
Flue connector pipe must be 6 inch diameter.
Chimney must be factory built 6" diameter Class 'A' 103 HT,
(in Canada ULC S629), or masonry.

Replace with only ceramic glass (ULC S627 requirements).

TO PREVENT CRESOTE FIRES Inspect and clean chimney frequently - Under certain conditions of use,creosote buildup may occur rapidly.
For use with solid wood fuel only

CAUTION: Fully open combustion air control before opening the fuel feed door.
CAUTION: Only operate the wood heater with the door closed.

POUR EVITER LES INCENDIES DOMESTIQUES

Contactez les Autorités des Bâtiments et des pompiers concermant les restrictions et inspections dans votre région
Installez et utilisez cet appareil uniquement en respactant les instructions d'onstallation et d'utilisation du fabriquant. Respectez aussi les réglementations locales.En l'absence de réglementations locales, l'installation doit respecter les normes minimums de NFPA 211 aux USA et B365 au Canada. Référez-vous aux instructions du fabricant et réglement locaux concerant les précautions nécessaires á prendre pour le passage de la cheminée á travers une paroi ou un plafond combustible.

Le tuyau de connexion au conduit doit avoir un diamètre de 6 inch,
La cheminée doit être une fabrication de 6" de diametre Class 'A' 103 HT,
(Canada ULC S629), ou en maconnerie.
Remplacez avec seulement le verre en céramique (Conditions d'ULC S627).

POUR EVITER LES FEUX DE CREOSOTE
Inspectez et nettoyez la cheminée régulierement - sous certaines condition d'emploi, la crésote peut s'accumuler rapidement.
Ne pas utiliser d'autres combustibles que le bois.

AVIS: Ouvrez complétement le contrôle d'air de combustion avant d'ouvrir la porte du foyer.
AVIS: Seulement se servir du poêle avec la porte fermée

CAUTION

HOT WHILE IN OPERATION - DO NOT TOUCH
KEEP CHILDREN AND CLOTHING AWAY - CONTACT MAY CAUSE SKIN BURNS , SEE NAMEPLATE AND INSTRUCTIONS . KEEP FURNISHINGS AND OTHER COMBUSTIBLE MATERIALS A CONSIDERABLE DISTANCE AWAY FROM THE APPLIANCE .
DO NOT OVERFIRE - IF HEATER OR CHIMNEY CONNECTOR GLOWS , YOU ARE OVERFIRING .

ATTENTION

CHAUD PENDANT LE FONCTIONNEMENT - NE PAS TOUCHER ECARTEZ LES ENFANTS ET LES VETEMENTS - LE CONTACT PEU CAUSER DES BRULURES.
CONSULTEZ LA PLAQUE ET LES INSTRUCTIONS .
TENIR LES MEUBLES ET AUTRES MATIERES COMBUSTIBLES A GRANDE DISTANCE DE LAPPAREIL.
ÉVITEZ DE SURSHAUFFER -SI LE FEU OU LA CHEMINÉE ROUGEOIE , VOIS SURCHAUFFEZ .

DO NOT REMOVE THIS LABEL / NE PAS ENLEVER CETTE ÉTIQUETTE

Firebelly Stoves, Unit B Marshall Hall Mills, Elland, HX5 9DU, UK
tel: 0044 1422 375582 email: sales@firebellystoves.com web: www.firebellystoves.com