

## Owner's Manual

### Residential and Mobile Home Space Heater

*Operation*

*Maintenance*

*Installation*

# Aurora



Keep these instructions for future use



Dear Customer:

You have purchased a well-designed contemporary wood burning product.

You will find that your ARDENT ENERGY **A U R O R A** will give you comfortable controlled heat in your home for years to come.

It is in your best interest to become familiar with your ARDENT ENERGY heating system. Study your installation manual carefully before attempting to install your heating system. Do not discard your installation manual, as you or others may wish to use it for future reference.

In the event you wish to add optional equipment to your unit at a later date, please inform your ARDENT ENERGY dealer. The serial number of your heater should be included with your order to ensure prompt and accurate service.

We congratulate you on your choice of this heating system from ARDENT ENERGY, and may your home fires keep burning!

Yours truly,

ARDENT ENERGY Inc

J G (Hans) DUERICHEN PEng  
President  
April 1999 (ver 3)

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# SAFETY INSTRUCTIONS

## WARNING!

**THESE OPERATOR SAFETY INSTRUCTIONS  
SHOULD BE READ CAREFULLY!  
DO NOT DESTROY**

**PLEASE RETAIN FOR FUTURE REFERENCE**

1. Fire door must be latched shut at all times when fire is burning. Open only to reload or check fire. **DO NOT OVERFIRE UNIT.**
2. All combustible material, including firewood, must be a minimum of 460mm (18") from unit.
3. Do not hang combustible material above unit.
4. Burn wood only.
5. **NEVER USE GASOLINE, LANTERN FUEL, KEROSENE, NAPHTHA, ENGINE OIL, 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. DO NOT BURN GARBAGE OR COAL.**
6. Do not elevate fire.
7. Route power cord behind unit to power source away from heat.
8. Ensure that there is always enough fresh make-up air to the room in which unit is operating, or install a fresh air duct from outside to the combustion air inlet.
9. Close door gently. If glass breaks it **MUST** be replaced before continuing to use unit (see instructions).

**SAFETY NOTICE: If this space heater is not properly installed, a house fire may result. For your safety, follow the installation instructions.**

## CREOSOTE AND SOOT

Formation and need for removal:

When wood is burned slowly, it produces tar and other organic vapours, which combine with expelled moisture to form creosote. The creosote vapours condense in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, creosote makes an extremely hot fire.

The chimney connector and chimney should be inspected daily

until frequency of cleaning requirements is established.

If creosote has accumulated it should be removed to reduce the risk of a chimney fire.

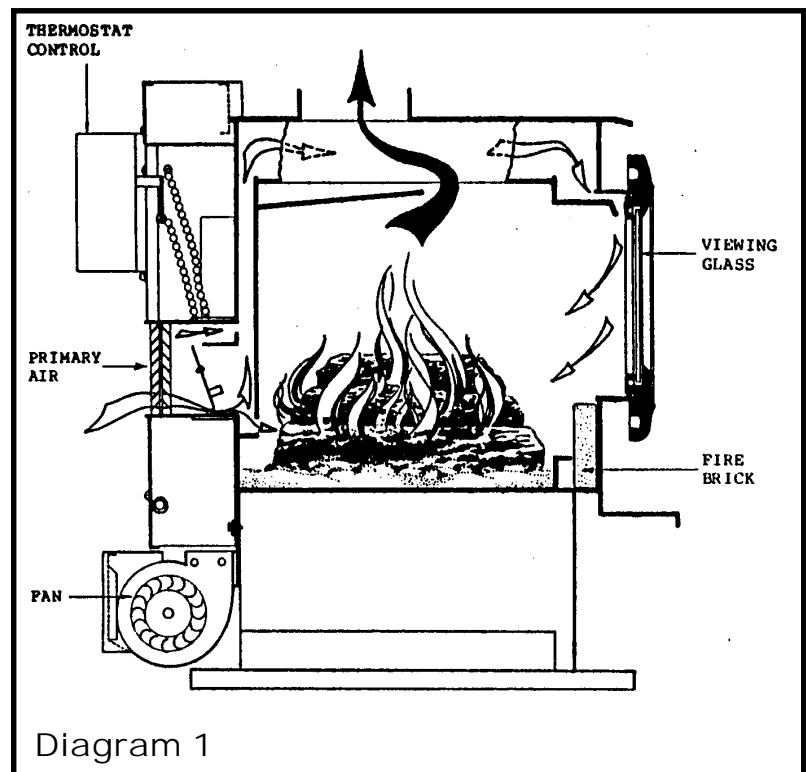
IN CASE OF A CHIMNEY FIRE:

1. CLOSE COMBUSTION AIR INLET.
2. CALL FIRE DEPARTMENT.
3. WATCH FOR OVERHEATING AROUND CHIMNEY UNTIL IT COOLS.
4. INSPECT CHIMNEY AFTER IT COOLS.

## GENERAL SPECIFICATIONS

TYPE OF FUEL	— Wood, any species
TEMPERATURE CONTROL	— Integral bimetallic thermostat with optional electric wall thermostat
BODY	— 3.5 mm & 4.7 mm (10 GA & 3/16" Steel)
DOOR	— Cast iron, with ceramic glass, sealed with fiberglass rope seal
OPTIONS	— Electric wall thermostat 180 CFM blower

CERTIFIED FOR USE IN MOBILE HOMES.



RATING	2,000—14,000 watt/hr (7,000—50,000 BTU/hr)
SIZE	570 mm x 725 mm x 760 mm High (22" x 20" x 30" H)
WEIGHT	130 kg (285 lb)
FUEL CAPACITY	85 litres (3 cu ft)
MAX. FUEL SIZE	200 mm dia 400 mm lg (6" dia x 17" lg)
FLUE OUTLET	152 mm dia (6" dia)

Combustible floor must be protected by non-combustible material extending beneath the heater and to the front and sides as indicated: G—460 mm (18"); H—150 mm (6"); I—150 mm (6"). The space beneath the heater must not be obstructed.

Smoke detectors must be located a minimum of 4.5 M (15 ft) away from heating unit to avoid accidentally setting off the smoke detector.

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

This unit is not to be connected to any air distribution system.

## INSTALLATION

### LOCATION AND CLEARANCES:

Locate unit as central as possible within the home or space to be heated. Do not locate near exit way. Do not connect space heater to any air distribution duct.

#### MINIMUM CLEARANCE TO COMBUSTIBLE MATERIALS:

##### STANDARD HOME (With 24 ga single wall connector)

(Measured from heater)

Sidewall	(A)	255 mm (10")
Backwall	(B)	255 mm (10")
Corner	(C)	150 mm (6")

(Measured from Connector)

Sidewall	(D)	460 mm (18")
Backwall	(E)	460 mm (18")
Corner	(F)	460 mm (18")

##### MOBILE HOME (with double walled connector to unit)

(Measured from heater)

Sidewall	(A)	255 mm (10")
Backwall	(B)	180 mm (7")
Corner	(C)	130 mm (5")

(Measured from Connector)

Sidewall	(D)	460 mm (18")
Backwall	(E)	380 mm (15")
Corner	(F)	430 mm (17")

### CONNECTION TO CHIMNEY:

(Standard homes only -- for mobile homes: see "MOBILE HOME INSTALLATION")

The unit must be connected to the chimney using 6" dia connector pipe with min wall thickness of 24 GA. Unit flue opening is designed for the connector to go into the opening.

Unit must be connected to the chimney using a minimum of elbows and horizontal pipe. All horizontal pipe must slope toward heater and be installed with seam up. Unit flue opening is designed for the connector to go into the opening.

All connections must be such that any condensation in the flue runs back into the unit and not onto the floor. Ensure any single wall connecting pipe is spaced at least 460 mm (18") from unprotected combustible material. Do not pass a chimney connector through a floor, ceiling, wall, partition or any concealed space. Secure each joint with 3 sheet metal screws equally spaced.

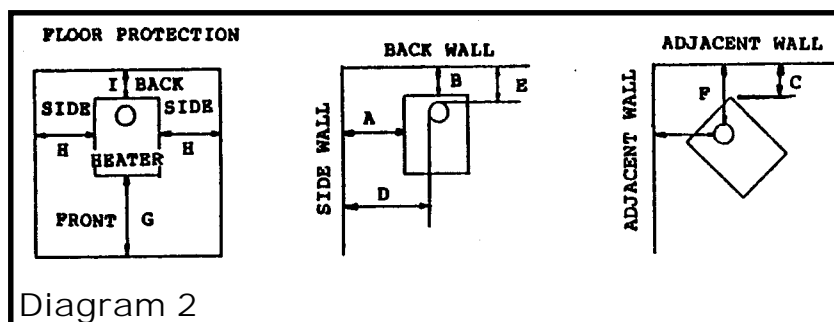
**CAUTION: UNDER NO CIRCUMSTANCES MUST ANY TYPE OF DAMPER OR RESTRICTION BE INSTALLED IN THE CHIMNEY OR CONNECTING STOVEPIPE.**

### CHIMNEY:

Chimney size: — 150 mm (6") dia; or 150 mm x 150 mm (6" x 6") inside measure masonry chimney.

Metal chimneys must be suitable for wood burning appliances and masonry chimneys must be lined with an approved liner.

ARDENT ENERGY heating units burn very efficiently, resulting in lower than usual flue gas temperatures. As a consequence, outside installation of the chimney is not recommended since certain weather conditions will cool the chimney below room temperature and



cause a back draft and/or promote creosote formation.

If an existing chimney is to be used, it must be inspected carefully for soundness and to assure that it meets the above specifications.

**NOTE:** On initial operation of the heating unit, should a draft problem be suspected (i.e. smoking of the heating unit), the draft should be measured to ascertain that the minimum draft is 10 PA (0.04") of H<sub>2</sub>O (water pressure).

## CHIMNEY TERMINATION:

Chimneys are required to extend at least 915 mm (3 ft) above the highest point where they pass through the roof of the building and at least 610mm (2 ft) higher than any portion within ten feet. In some cases the chimney must be higher than minimum for enough draft due to unfavourable geometry of the surroundings.

## MOBILE HOME INSTALLATION:

(Requirement for mobile or air tight homes)

The process of combustion requires air. In mobile homes and air tight homes there may be insufficient air infiltration to meet the heating unit's demand. Improper installation may cause carbon monoxide to be emitted from unit causing risk of carbon monoxide poisoning.

**FOLLOW THESE INSTALLATION INSTRUCTIONS CAREFULLY:**

**WARNING: DO NOT INSTALL UNIT IN A SLEEPING ROOM OF A MOBILE HOME.**

**NOTE:** ONLY PARTS OF A TYPE, MODEL AND SIZE RECOMMENDED BY THE MANUFACTURER SHOULD BE USED IN INSTALLING THE HEATING UNIT.

1. Make sure the ARDENT ENERGY heating unit's proposed location complies with all clearances as specified in Diagram 2.
2. Ensure there are no obstructions where chimney AND air inlet hole is to be located. (Joists, ducting, pipes, electrical cable etc.).
3. Put floor shield in place.
4. Cut the required air inlet hole with a 133 mm (5 1/4") diameter

hole saw through floor.

5. Position the heater on floor shield over hole. Fasten air inlet pipe to elbow with silicone sealant. Caulk space in floor around pipe to make an airtight seal. If basement or crawl-space is sealed, the air inlet pipe must be ducted outside as per diagram 3 and must be high enough to clear all snow accumulations..
6. Determine the flue location on ceiling using a plumb bob. Cut hole in ceiling and roof. Install ceiling joist shield assembly and fasten using 12—63 mm (2 1/2") nails or screws. Install roof support etc per manufacturers' instructions.
7. Fasten heater with two 2 1/2" lag screws to floor through floor shield using holes in base.
8. Install chimney to roof support as per diagram 3.

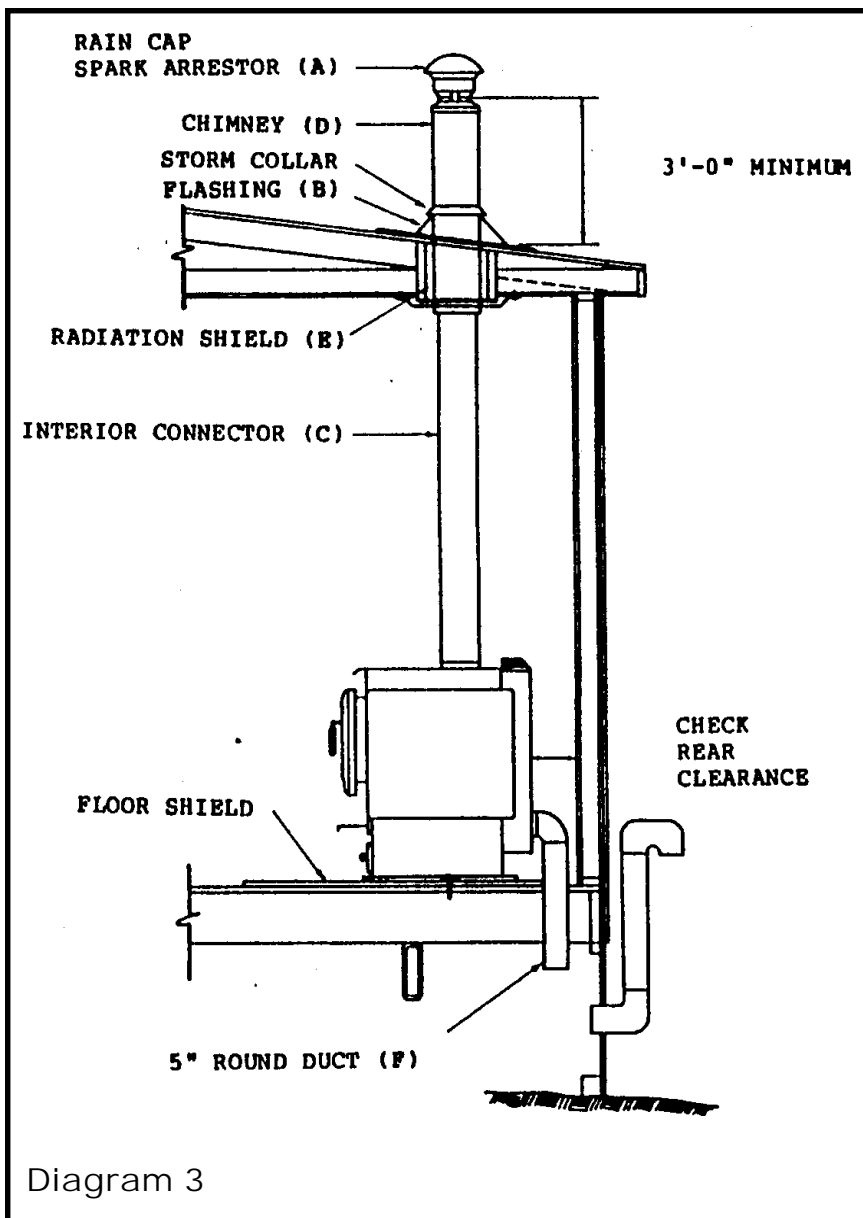


Diagram 3

9. Install interior connector, making airtight fit to stove and chimney.
10. Ensure that the minimum clearance between the roofing material and the chimney, as recommended by the chimney manufacturer, is maintained.
11. Ensure that the trim collar fits well, so as to maintain an effective vapour barrier at the ceiling level.

NOTE: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED.

## CHIMNEY PART NUMBERS:

Choose one of the following systems (see diagram 3)

CHIMNEY PARTS	ENERGY VENT	SECURITY
Spark Arrestor	6RCSA	6XCPE
Roof Flashing	6RFO & SC	6XF
Interior Chimney	EV6ADJ / EV636	6DL42A
Exterior Chimney	6SL	S2100 6XP
Roof Radiation Shield	6CSB	6XST, 6XSF, 6XRST
Air Inlet	5" Elbow and Pipe	5" Elbow and Pipe

## OPERATION INSTRUCTIONS

ARDENT ENERGY units are especially designed for controllability. With the optional thermostat kit, your house will be heated to within 1 degree Celsius of your thermostat setting.

The following operating instruction **MUST BE FOLLOWED CAREFULLY** for satisfactory operation.

### FUEL:

Do not burn any fuel but wood.

Do not burn driftwood. Salt corrosion is not covered under warranty.

Do not use grate or elevate fire.

Wood should be dry. However, green wood can be burned. It should be noted when using green wood:

1. The amount of wood that you need is increased by approximately 20% when using green compared to dry wood.
2. The wood has to be in smaller pieces.
3. More frequent fuelling is necessary.
4. Creosote formation may increase.
5. The fire has to be started with dry wood until a good bed of coals is formed.
6. Heat output will be considerably lower.

REMEMBER: A small hot fire leaves a cleaner chimney than a large smouldering one.

### LIGHTING:

Light the unit through the door, leaving the door ajar for a few minutes to allow kindling to ignite.

### MANUAL CONTROL:

The chain control incorporates a bimetallic coil beside the air inlet to limit maximum temperature and to give even heat output.

Pull chain all the way out until unit warms up, then let in enough to adjust temperature to suit.

### WALL THERMOSTAT CONTROL:

(If unit is installed with an FC-HC2 kit)

Set the thermostat at the temperature desired. When warming up a cold room there will be an initial temperature overrun, then the temperature will stabilise.

### RELOADING:

1. Have fuel on hand to load firebox.
3. Open the door **SLOWLY**. Allow the chimney to draw off smoke.
4. Load fuel and fill to capacity.
5. Close door.

NOTE: Do not over-fire unit by leaving door open. Operation with door ajar voids warranty. Any attempted adjustment to controls to increase heat output above maximum also voids warranty.



## MAINTENANCE

### DAILY:

Check chimney and pipe for creosote build-up until experience shows how often cleaning is necessary. Periodically run unit at maximum for 30 minutes to bake any creosote in the chimney and pipes. This should greatly reduce frequency of cleaning.

### AS NEEDED:

Any creosote build-up in chimney and pipe over 6 mm (1/4") should be removed mechanically.

### ASH REMOVAL:

Ashes should be removed when they reach a depth of about 4". Let the stove cool down as much as possible and lift out the ash plug with the end of a poker. Push the ashes through the hole into the ash drawer **BEFORE PULLING OUT THE DRAWER**. Replace the plug and then shake the drawer a little before pulling out to settle the ash. Slowly pull it out and close the cover before carrying the ash away. Any container used to dump the ashes into **MUST BE NON-COMBUSTIBLE**. The ash container should be placed outside on a non-combustible surface, or on the ground, well away from all combustible materials, pending final disposal. Other wastes shall not be placed in this container. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all the cinders have thoroughly cooled.

### DOOR:

Periodically check the fiberglass rope door seal for condition and tightness of door fit. Replace door seal, if it shows signs of leakage. Attach it with stove door gasket cement.

### DRAFT CONTROL:

Check that it opens and closes freely.

### PAINT:

The high temperature paint is designed to withstand temperatures to 650 deg C (1200F). However, should paint discoloration happen, the affected areas can be retouched with "FORREST" "metallic black" spray paint from your dealer. When first using the unit, the paint may smoke for 1/2 hour to 1 hour. This is normal and is part of the curing process.

### YOUR GLASS DOOR:

#### CARE OF GLASS:

Under normal use, the glass door system should stay clean for extended periods. Use of wet wood or a very low firing rate will cause condensation on the glass. A good hot fire will usually clean this. Otherwise a razor blade scraper together with a **NON-ABRASIVE** cleaner will do the job. Do not clean with a cleaner while hot.

Check that screws holding glass retainer remain tight.

#### SHOULD YOUR GLASS BREAK:

1. Remove all broken parts by unscrewing retainer and gently lifting out gasket material.
2. Replace with 5 mm thick ceramic glass 229 mm x 330 mm (9" x 13"). **(DO NOT USE TEMPERED GLASS)** The gasket must be in perfect condition, otherwise it should be replaced with fiberglass "window channel" self-stick gasket. Any other kind may cause breakage or leakage.
3. Remount glass retainer using **ALL** screws. Replace any lost or broken ones.
4. Check installation by trying to move glass back and forth. It should feel snug but move slightly without too much effort.

## OPTIONS

1. Thermostat Kit (part # FC-HC2)
2. Blower (part # FC-HB4)

### WALL THERMOSTAT KIT (Model FC-HC2)

The control system consists of an electric damper control unit and a wall thermostat.

Installation:

1. Remove rear heat shield by unscrewing 4 screws.
2. Remove the 32 mm (1 ¼") knockout at top left of rear heat shield. Insert the arm through hole and screw the damper control unit into the pre-drilled holes.

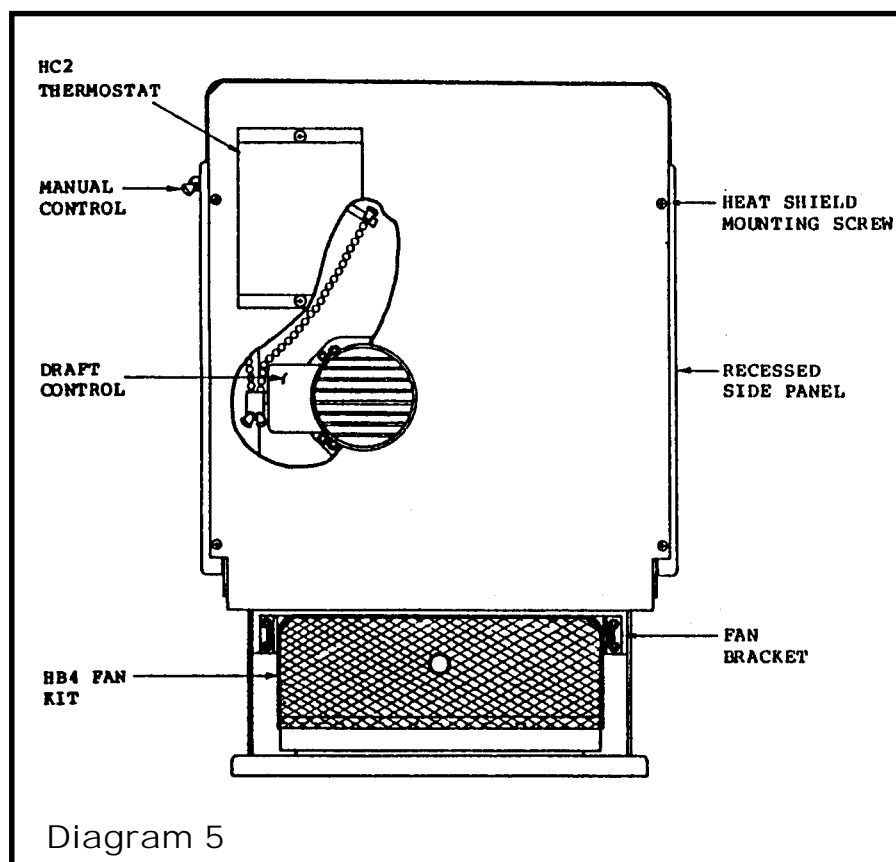
3. Attach one end of ball chain to damper control arm.
4. Attach the remaining end through hole in air intake assembly. (There should be a slight slack in the chain when heat shield is replaced.)

5. Replace rear heat shield.

6. Locate thermostat some distance from heater (3 M – 6 M (10 ft – 20 ft) but not in another room unless direct venting is provided for hot air.

7. The thermostat should be set on an interior wall. Follow manufacturers' instructions.

8. The thermostat heat anticipator setting should be 0.6 amps.



### BLOWER OPTION (Model FC-HB4)

The blower mounts underneath the rear heat shield (see diagram). This option increases airflow up the back and over the top of the heater.