



# **REVERSO-MANUFACTURING INC.**

MANUFACTURERS OF

FIREPLACE EQUIPMENT AND ACCESSORIES

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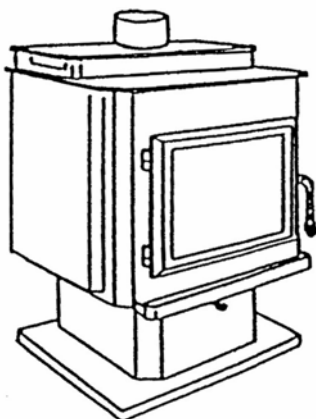
## **INSTALLATION AND OPERATING INSTRUCTIONS**

**A NEW GENERATION OF CLEAN BURN HIGH TECH STOVES**

**FREESTANDING WOOD STOVE APPROVED FOR**

**RESIDENTIAL AND MOBILE HOME USE**

**CHALLENGER MODEL: MMX**



### **IMPORTANT**

"READ ALL INSTRUCTIONS  
THOROUGHLY BEFORE  
INSTALLING AND OPERATING  
THIS APPLIANCE"  
"SAVE THESE INSTRUCTIONS FOR  
CONSULTATION IN THE FUTURE"

### **FOR YOUR SAFETY**

IF THIS STOVE 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

**MADE IN CANADA**

**Rev. September 2005**

## INTRODUCTION

Thank you for selecting a Reverso Challenger MMX wood stove for your home. Your new Reverso stove is a quality product made in Canada utilizing the finest workmanship and materials. The engineering personal at Reverso have gone to great lengths to design a stove with durability, performance, and efficiency.

Please read this manual carefully before attempting the installation of this unit.

We suggest that you contact your local building inspection department or Fire Marshall's office regarding local building code requirements in your area.

It is advisable that your residential insurance company be notified of the intended installation of a wood stove in your home.

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SPECIFICATIONS

Dimensions:	Width – 26 <sup>1/2</sup> (673mm) Depth - 23" (584mm) Height- 31 <sup>3/4</sup> (806mm)
Flue Size:	6" (152.4mm) Diameter
Maximum Log Length	20" (508mm)
Maximum Heat Output"	52,900 BTU's
Heating Capacity"	1700 sq. ft.
Emissions as tested in an independent laboratory"	2.635 gm/hr (With blower in operation)
Blower Capacity (Option)	165 C.F.M.
Maximum Burn Time"	Approximately 8-10 hours
Weight	345 lbs.

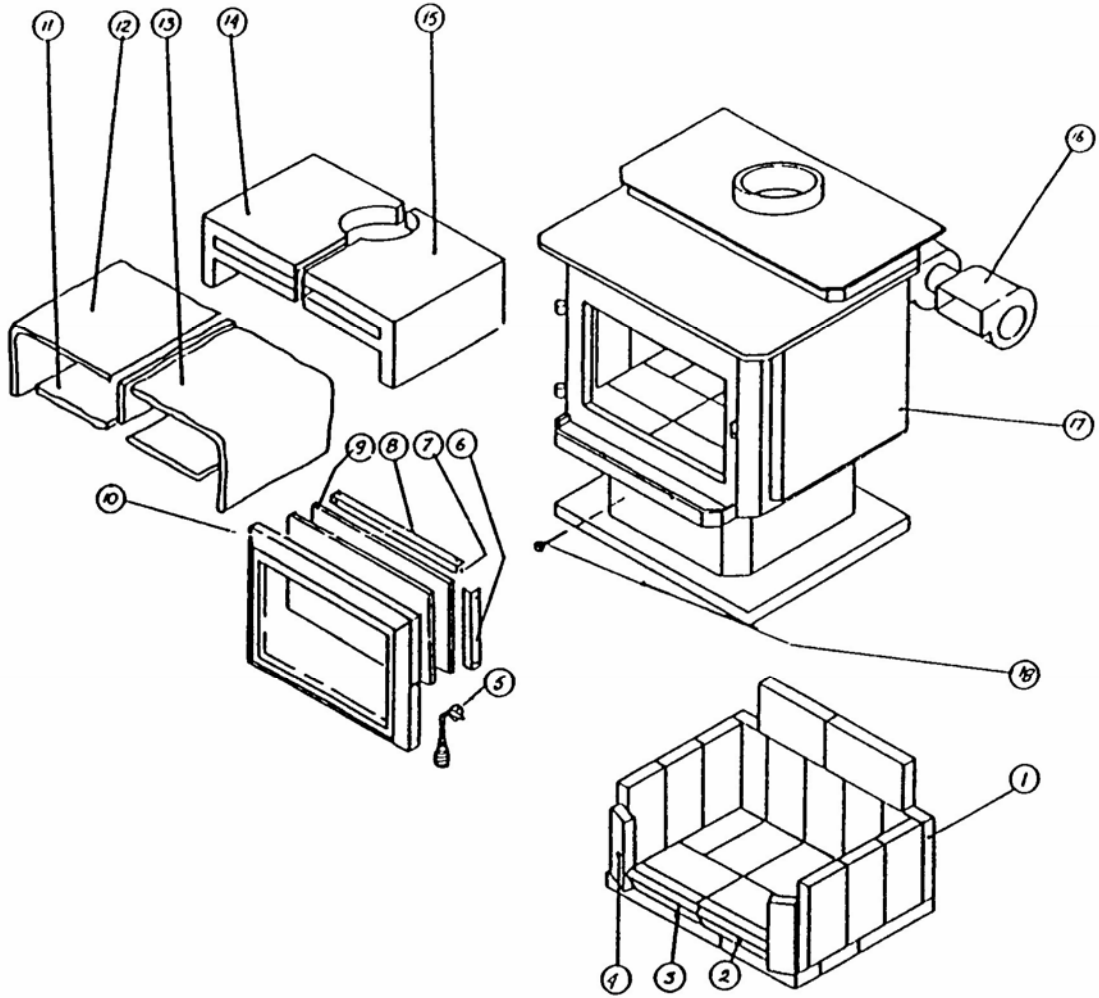
\* It should be noted that heat output, heating capacity and burn duration tests are done with seasoned hardwood. Your results may be different than those shown here depending upon chimney characteristics; fuel, atmospheric conditions, air tightness and insulation of the structure being heated.

\* The Challenger MMX is scheduled for E. P. A. testing and certification.

Tested and Listed to CSA B336.2/ULC S627/UL1482 by Warnock Hersey Professional Services Ltd.

PARTS & LIST NUMBERS

ITEM	PART #	DESCRIPTION	QUANTITY
1	MMX 001	Insulated Firebrick 4 <sup>1/2</sup> " x 9" x 1 <sup>3/16</sup> "	20
2	MMX 002	Insulated Firebrick 3 <sup>1/2</sup> " x 9" x 1 <sup>3/16</sup> "	4
3	MMX 003	Insulated Firebrick 3 <sup>1/2</sup> " x 4 <sup>1/2</sup> " x 1 <sup>3/16</sup> "	1
4	MMX 004	Insulated Firebrick 4 <sup>1/2</sup> " x 4 <sup>1/2</sup> " x 1 <sup>3/16</sup> "	1
5	MMX 005	Handle	1
6	MMX 006	Glass Retainer (Small)	2
7	MMX 007	Glass Retainer Screws	8
8	MMX 008	Glass Retainer (Large)	2
9	MMX 009	Robax Glass (High Temp. Ceramic)	2
10	MMX 010	Door Frame	1
11	MMX 011	Ceramic Insulation	2
12	MMX 012	Left Ceramic Insulation	1
13	MMX 013	Right Ceramic Insulation	1
14	MMX 014	Left Secondary Chamber - Exchanger	1
15	MMX 015	Right Secondary Chamber - Exchanger	1
16	MMX 016	Optional Twin 165 C.F.M. Blower	1
17	MMX 017	Heat Shield	1
18	MMX 018	Damper Control	1

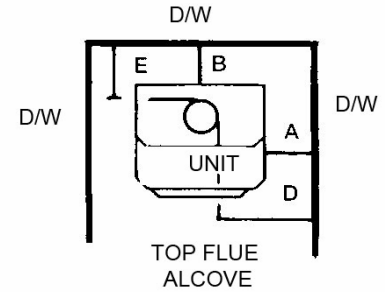
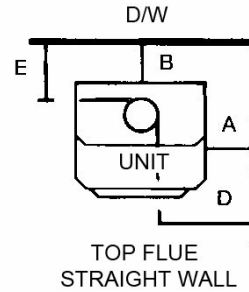
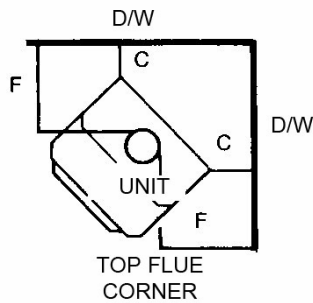


CHALLENGER MMX PARTS BREAKDOWN

CLEARANCE

CONTACT LOCAL OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTIONS IN YOUR AREA

MINIMUM CLEARANCE TO  
COMBUSTIBLE MATERIALS  
IN INCHES (MILLIMETER)



FROM HEATER

RESIDENTIAL

MOBILE HOME

SINGLE WALL CHIMNEY  
CONNECTOR

DOUBLE WALL CHIMNEY  
CONNECTOR

"DOUBLE WALL CHIMNEY  
CONNECTOR

A	B	C
18"	18"	16"
457mm	457mm	406mm

A	B	C
12"	15"	8"
305mm	381mm	203mm

A	B	C
12"	15"	8"
305mm	381mm	203mm

FROM CHIMNEY

D	E	F
28"	21 <sup>1/2</sup> "	27"
711mm	546mm	686mm

D	E	F
22"	18 <sup>1/2</sup> "	19"
559mm	470mm	483mm

D	E	F
22"	18 <sup>1/2</sup> "	19"
559mm	470mm	483mm

ALCOVE INSTALLATION

TABLE #1

## PREVENT HOUSE FIRES

Install and use only in accordance with the manufacturer's instructions and local building codes.

**FLOOR PROTECTION:** Unit must be placed on a 3/8" (9.5 mm) min. board or equivalent extending 18" (457 mm) in front and 8" (203 mm) to the back of the unit.

**RESIDENTIAL CHIMNEY CONNECTOR:** (As applicable) 6" (152 mm) diameter minimum 24 gauge minimum distance from connector pipe to ceiling: 18" (457 mm).

**RESIDENTIAL CHIMNEY:** (As applicable) 6" (152 mm) diameter approved residential type. Do not construct space under heater.

Special methods are required when passing through a wall or ceiling.

See instructions and burning codes.

Do not connect this unit to a chimney flue serving another appliance.

**MOBILE HOME:** Use only the following Chimney and Mobile Home Kits in Canada.

<u>MANUFACTURER</u>	<u>DOUBLE WALL CONNECTOR PIPE</u>	<u>HIGH TEMPERATURE PIPE</u>
SELKIRK METALBESTOS	MODEL DS	MODEL SENTINEL CF-3
SECURITY	MODEL DC-2100	MODEL S - 2100
OLIVER MACLEOD	MODEL PRO - VENT	MODEL HT - 3000
RYDER	MODEL "E" VENT	MODEL COMMANDER 5000
GSW	MODEL SUPER PIPE 6	MODEL SUPER CHIMNEY 21

Use only the following Chimney and Mobile Home Kit in U.S.A.

<u>MANUFACTURER</u>	<u>DOUBLE WALL CONNECTOR PIPE</u>	<u>HIGH TEMPERATURE PIPE</u>
SELKIRK METALBESTOS	MODEL D. S.	MODEL SS-II-HT
SECURITY	MODEL DC - 2100	MODEL AS-HT
OLIVER MACLEOD	MODEL PROVENT	MODEL HT-3103
AMERICAN METAL PRODUCTS	MODEL DBSP	MODEL HS
SIMPSON DURA VENT	MODEL DVL	MODEL DURA PLUS HT-2100
GSW	MODEL SUPER PIPE 6	MODEL SUPER CHIMNEY 21

Trim Collar must be used with this system. The high temperature chimney must not extend to the heater. Do not obstruct combustion air openings.

For safe operation, install in accordance with manufacturer's instructions. Keep door closed while in operation.

Special methods are required when passing through a wall or ceiling. See instructions and building codes.

Do not connect this unit to chimney serving another appliance.

**GLASS:** Replace only with ceramic glass

**DO NOT OVERFIRE:** If heater or chimney connector glows, you are overfiring. Inspect and clean chimney frequently. Under certain conditions of use creosote buildup may occur rapidly.

### **OPTIONAL BLOWER**

Electrohome Model 2868

120 volts

Freq. 60HZ 0.7 amps

**FUEL:** For use with wood only. Do not elevate fire. Build fire directly on hearth.

## MOBILE HOME INSTALLATION

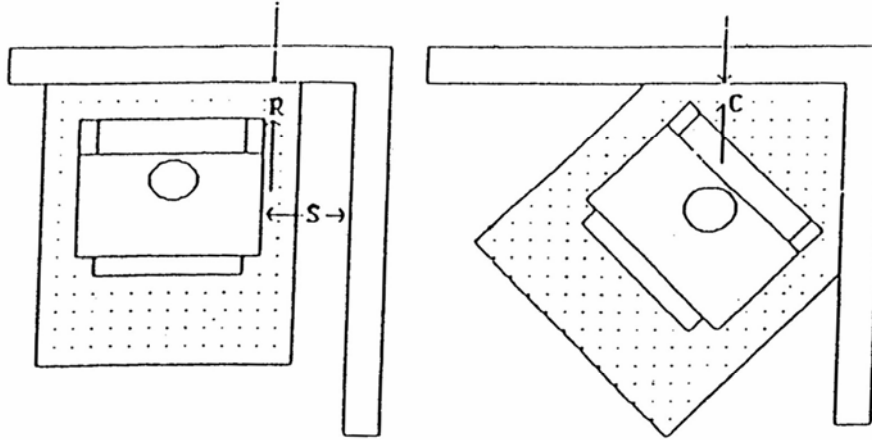
**WARNING:** Under no circumstances is this heater to be installed in a makeshift or "temporary" manner. This unit may be fired only after the following conditions have been met.

- DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.
- DO NOT INSTALL IN SLEEPING ROOM.
- It is strongly recommended that this appliance be installed by a competent installer.
- Exceed or maintain minimum clearance as outlined in Table #1 Page 5.
- Obtain a building permit if required in your locality.
- Have your installation inspected when completed by building inspector where required.
- The unit must be placed on a 3/8" (9.5mm) min. non-combustible board or equivalent extending 18" (457mm) in-front and 8" (203mm) to the sides and back of the unit. See Diagram #1 Page 9.
- Make-up air must be supplied to unit in a mobile home installation. See section titled "Make-up Air Kit Installation".
- The wood stove should be securely anchored to the floor of the mobile home using two 2" x 1/4" lag screws as in Diagram #2 Page 9.
- The floor load limit should not exceed 40 lbs. per sq. ft. (1.9 KN per sq. meter).
- It is important that the vapour barrier be retained where the chimney and the make-up air duct go through. Use tape to seal these two areas.
- Make sure that the overall height of Mobile Home Wood Stove and its chimney is more than 10' (3M) and less than 20' (6M).

**WARNING:** Do not cut any ceiling or floor joists or rafters as this would severely weaken the structure.

- It is important to check the location of rafters, floor and ceiling joists.

TYPICAL MOBILE HOME INSTALLATION



Measure from stove body

Non-combustible covering. Extends 18" in front and 8" to sides.

DIAGRAM #1

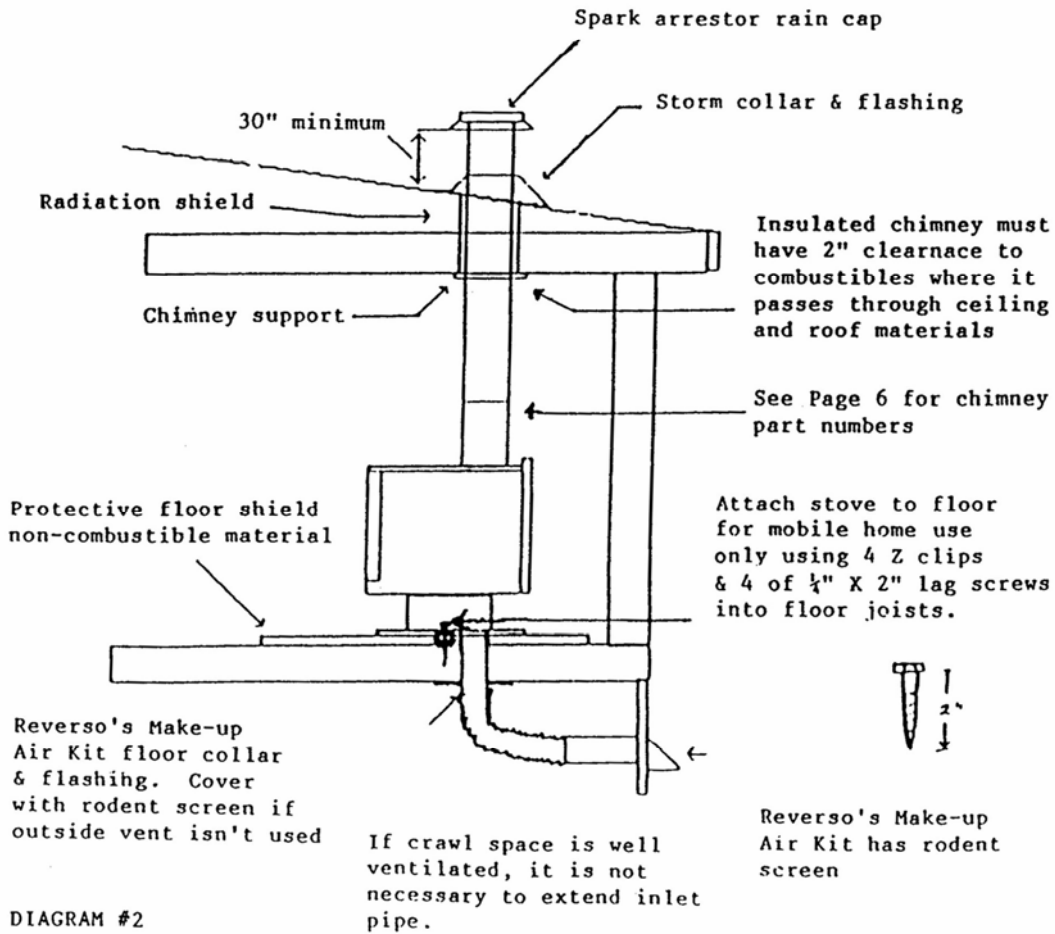
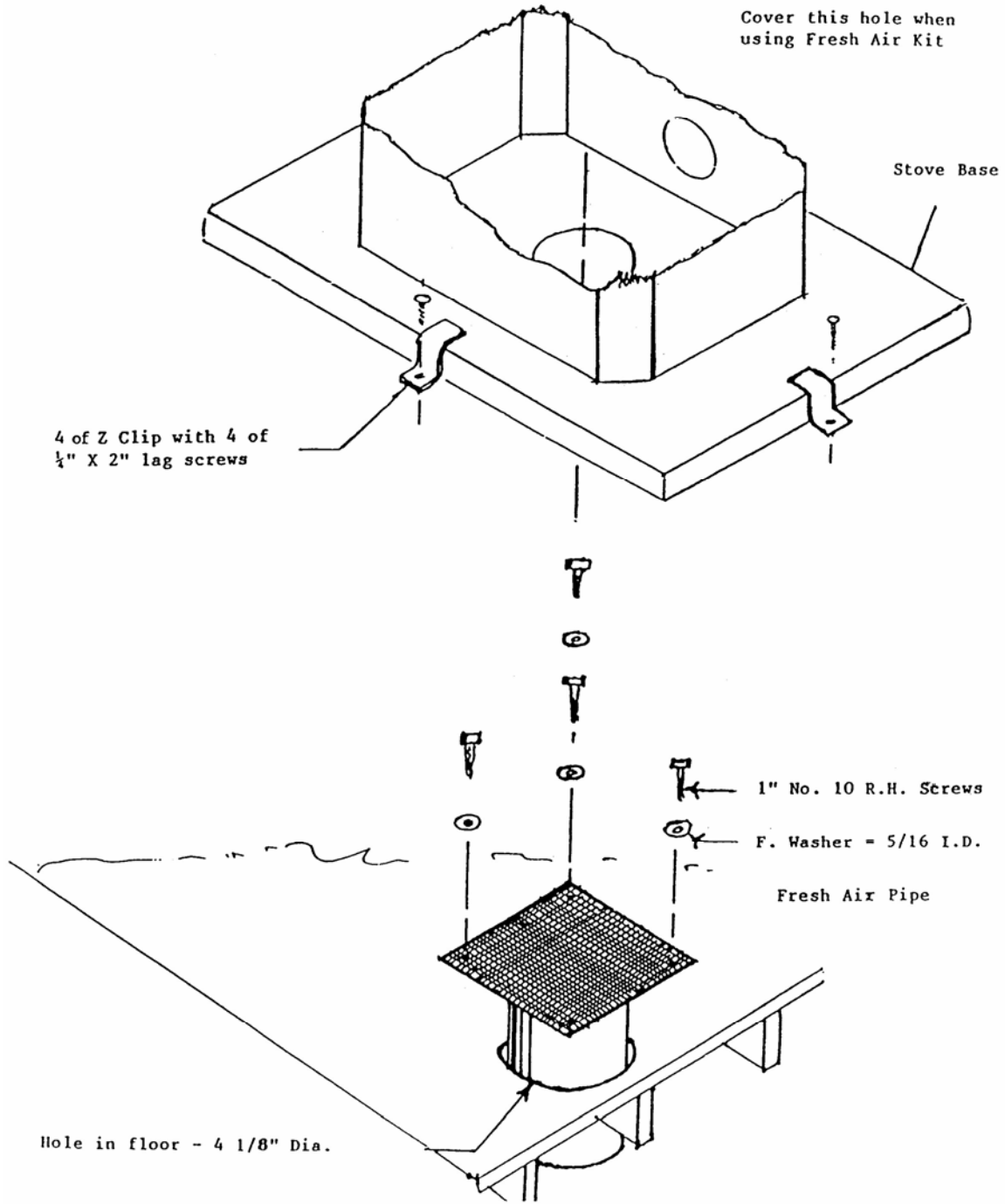


DIAGRAM #2

INSTALLATION OF MOBILE HOME (MAKE-UP AIR) KIT



## PROCEDURE

NOTE: See COMBUSTION AIR & MAKE-UP AIR KIT INSTALLATION (Pages 9 b 10)

1. Position stove and floor protection with hole for combustion air in accordance with the clearances as stated on the label and on page 5 of this manual.
2. Mark the position for the hole in the ceiling and roof by using a string and plumb-bob.
3. CHECK THAT THE INTENDED LOCATION WILL NOT INTERFERE WITH FLOOR JOISTS, CEILING JOISTS, OR RAFTERS BEFORE PROCEEDING FURTHER.
4. Cut a pilot hole in the ceiling. CAUTION: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL AND CEILING/ROOF MUST BE MAINTAINED.
5. Cut a hole in the ceiling and roof to suit the chimney system and frame in the sides. The chimney support is mounted to the framing.
6. Assemble chimney sections (twist lock) so the finished length is resting on support and protruding through the roof. Avoid having joints between ceiling and roof. Install radiation shield.. Assemble flashing and storm collar and be sure to maintain the vapour barrier at this point.' (Seal securely) Attach rain cap and check flashing for leaks.
7. Install connector as per manufacturer's instructions.

## COMBUSTION AIR

Intake or combustion air can be supplied to the stove in one or two ways.

1. ROOM AIR SUPPLY - Remove the cover from the rear of the pedestal. The stove will now draw its air from the room through the pedestal and into the firebox intake.
2. OUTSIDE AIR SUPPLY -(Necessary for mobile home installation, optional for residential installation). To draw outside air through the floor, leave the cover on the pedestal in place. Cut or drill a 4" diameter or larger hole in the floor anywhere inside the perimeter of the pedestal. This hole must get its air from a ventilated crawl space or be extended with duct to the outdoors. Cover hole with 4" x 4" (100mm x 100mm) rodent screen (staple/nail) See diagram #3 Page 8. The use of outside combustion air for residential installation requires the unit to be secured to the structure to prevent dislodging of the air duct.
3. As a mobile home heater, this unit is not designed to be operated with the firing door open. In addition to the obvious hazard of sparks landing on combustibles, an open fire door will cause the heater to draw air from the living space and possibly cause suffocation.
4. Do not burn anything but wood. Other fuels, e.g.. charcoal, can produce large amounts of carbon monoxide; a tasteless, odourless gas that can kill. Under no circumstances should you attempt to barbecue in this heater.
5. The living space around the heater must be ventilated with good air circulation. Anything that may cause a negative pressure can cause gasses or fumes to be pulled into the living area. During extremely cold weather, and especially when burning at very slow rates, the upper parts of the exposed chimney may ice up, partially blocking the flue gasses.

## RESIDENTIAL INSTALLATION

### WARNING:

- DO NOT ATTEMPT TO CONNECT THIS HEATER TO ANY AIR DISTRIBUTION DUCT.
- Under no circumstances is this heater to be installed in a makeshift or temporary manner. It may be fired only after all the following conditions have been met.
- The services of a competent installer are strongly recommended.

### CHIMNEY

- Use only listed chimney suitable for use with solid fuel that is lined in good condition that meets building code. Chimney flue exit is to be 3 feet (1m) above roof and 2 feet (7m) above highest projection within 10 feet (2.5m). The installation must meet all local codes. Do not connect this unit to a chimney flue serving another appliance. Minimum chimney height is 15 feet (measured from base of appliance).

### CLEARANCES

- This heater may be installed on a combustible floor with protection extending 18 inches in front and 8 inches to the sides and rear. See diagram #1, page 9.
- Clearances to combustible surfaces and materials are shown on Table #1, page 6.
- Clearances can be reduced with various heat insulating materials. Consult local fire codes and authorities for approval.
- Alternately, for reduced clearances in residences, the Mobile Home installation may be used. (Listed connector pipe from stove collar to chimney).

### SMOKE PIPE

- Smoke pipe must be:
  - As short and straight as possible, use six inch diameter for the "CHALLENGER MMX"
  - Secured at every joint and collar with 3 sheet metal screws.
  - Installed with the crimped or male ends pointing down. This will carry any liquid creosote or condensation back into the stove.
  - The chimney connector should not pass through attic or roof space, closet or similar concealed space, or a floor, ceiling, wall, or partition of combustible material. Floor protection is required under the chimney connector and 2" beyond each side.

HOW TO DETERMINE IF  
ALTERNATE FLOOR PROTECTION  
MATERIALS ARE ACCEPTABLE

1. First and foremost, floor protection materials must be non-combustible. In general metals, brick, stone, mineral fiber boards, etc. are noncombustible. Any organic materials (i.e. plastics, wood, paper products, etc.) are combustible and must not be used.
2. The floor protector specified may include some form of thermal resistance such as R-value or K-factor or C-factor. These terms are often confusing and may make it difficult to readily determine if an alternate floor protection system meets the specification.

DEFINITIONS

K-value or K-factor: This is a measure of the rate of heat transfer through a 1 foot by 1 foot area of material one inch thick.

C-value or thermal Conductance: This is the rate of heat transfer through a 1 foot by 1 foot area of material at whatever thickness the material is.

R-value: This is the thermal resistance and is equal to 1/C and is given for the material thickness.

R/Inch: This is the inverse of the K-value and is the thermal resistance of a 1 inch thickness of material.

(Other values used commonly include U, Ru, Hn, He, Rn, and Re: These generally are values for built-up sections such as walls or roofs and airfilm properties. These values are not used for floor protector analysis).

The easiest means of determining if a proposed alternate floor protector meets requirements listed in the appliance manual is to follow this procedure:

a) Convert specification to R-value:

✱ R-value given - no conversion needed.

✱ K-value is given with a required thickness  
(T) in inches:

$$R = 1/K \times T \quad (1)$$

✱ C-value is given:

$$R = 1/C \quad (2)$$

✱ R/Inch is given with a required thickness  
(T) in inches:

$$R = R/\text{Inch} \times T \quad (3)$$

## PROCEDURE

1. If a listed chimney connector is to be connected to stove, see mobile home installation. (outside combustion air is optional)
2. If it is desirable to use smoke pipe in conjunction with the insulated chimney, see step 4.
3. If a roof or ceiling support is used in the installation, you will find the chimney manufacturer's complete instructions packed with the roof support.
4. To start installing smoke pipe (chimney connector), slip crimped edge of the pipe inside the stove collar. Use holes provided in collar to secure pipe with two screws.
5. Install the remaining lengths of pipe one on top of the other to the finished height of the chimney connector and secure to each other. When approaching the ceiling, slip the ceiling trim plate and joist shield over the chimney so that after the chimney is extended through the ceiling, the trim plate can be secured to the ceiling.

**CAUTION:** Never use gasoline, gasoline type lantern fuel, kerosene, charcoal lighter fluid or similar liquids to start or "freshen tip" a fire in this heater. Keep all such liquids well away from the heater while it is in use.

**NOTE: WE STRONGLY RECOMMEND THAT SMOKE DETECTORS BE INSTALLED.**

If smoke detectors have been previously installed you may notice that they are operating more frequently. This may be due to curing of stove paint or fumes caused by accidentally leaving the fire door open. Do not disconnect the detectors. If necessary-relocate them to reduce their sensitivity.

## LIGHTING THE FIRE

1. Open the door by lifting the door handle up.
2. Adjust air control to the open position by pulling the air control out fully.
3. Crumple newspaper and place kindling wood criss -crossed on top of it. Add small logs to the top. **CAUTION: BURN SOLID WOOD FUEL ONLY.**
4. Light paper and close the door.
5. **READ OPERATING INSTRUCTIONS.**

## OPERATION

**WARNING:** Do not use grates or andirons to elevate the fuel. Burn directly on the fire bricks. Replace broken or missing bricks. Failure to do so may create a hazardous condition.

Your REVERSO heater is designed for maximum overall efficiency at a moderate firing rate. Overfiring is hazardous and a waste of fuel. Too slow a burn contributes to creosote buildup and lowers combustion efficiency.

1. To start a fire set the air control to high by pulling Air Control all the way out.
2. Leave control on high until:
  - a) there is a bed of red hot coals
  - b) the wood is charred
3. Operate air control on medium for ten minutes to make sure fire is well established.
4. Set air control to desired setting. If smoke pours down across the glass (waterfall effect) this indicates you have shut the air control off too soon or you are using too low a setting. The wide range air control makes finding the desired setting for your application easy. As every home's heating needs vary (i.e. insulation, windows, climate, etc.) the proper setting can only be found by trial and error and should be noted for future burns.
5. To refuel, pull the air control all the way out and give the fire time to brighten. Open the door slowly, this will prevent back-puffing.
6. When refueling, do not load fuel to a height or in such a manner that would be hazardous when opening the door.

SEE PAGE 18- OVERNIGHT BURN FOR FUEL LOADING SUGGESTIONS.

7. When burning at a slow rate for extended periods, occasionally maintain a strong fire under supervision for a couple of hours to relieve firebox and chimney of deposits as well as some of the deposits on the glass.
 

**WARNING:** This method is not a substitute for regular chimney inspections and cleaning.
8. **WARNING:** Always keep loading door closed when burning. This heater is not designed to operate with the door open.
9. To achieve maximum firing rate, set control to "High" by pulling the air control out while starting or preheating fresh fuel loads.

**WARNING:** No alteration or modification of the combustion air control assembly is permitted. Any tempering will void warranty and could be very hazardous.

## ASH REMOVAL

**CAUTION:** Ashes are to be removed only when stove is cold. With the door open, simply use a small shovel and remove the excess ashes and dispose of in a metal container with a tight fitting lid. It is advisable to leave one inch of ashes on top of bricks on bottom of combustion chamber. Do not remove any hot coals as there is considerable heat still to be released.

## 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. Other waste should not be placed in this container!

## CREOSOTE 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 condenses in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire. The chimney connector and chimney should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

1. Highest smoke densities occur when a large amount of wood is added to a bed of hot coals and the air inlet is closed. The heated wood generates smoke, but without ample air, the smoke cannot burn. Smoke-free, clean burning requires small fuel loads, two or three logs at a time or 1/4 to 1/2 of a fuel load and leaving the air inlet relatively wide open, especially during the first 10 to 30 minutes after each loading, when most of the smoke generating reactions are occurring. After 30 minutes or so, the air inlet can be pushed in substantially without excessive smoke generation. Wood coals create very little creosote-producing smoke.
2. The cooler the surface over which wood smoke is passing the more creosote will be condensed. Wet or green wood contributes significantly to creosote formation as the excess moisture that is boiled off cools the fire, making it difficult for the tars and gasses to ignite, thus creating dense smoke and poor combustion. This moisture-laden smoke cools the chimney, compounding the problem by offering the smoke the ideal place to condense.

In summary, a certain amount of creosote is inevitable and must be lived with. Regular inspection and cleaning is the solution. The use of dry, seasoned wood and ample combustion air will help to minimize the buildup.

## CHIMNEY FIRES

The result of excessive creosote buildup is a chimney fire. Chimney fires are DANGEROUS. Chimney inside temperatures can exceed 2000 degrees F. This causes much higher than normal temperatures in the chimney and on its exterior surfaces. Thus ignition of nearby or touching combustible material is more likely during a chimney fire. Proper clearances are critical during such a fire.

Chimney fires are easy to detect, they usually involve one or more of the following:

- Flames and sparks shooting out of the top of the chimney
- A roaring sound
- Vibration of the chimney

### IN CASE OF A CHIMNEY FIRE

1. Prepare to evacuate to ensure everyone's safety. Have a well understood plan of action for evacuation. have a place outside where everyone is to meet.
2. Close air inlets on stove, by pushing air control all the *way* in.
3. Call local fire department. Have a fire extinguisher handy. Contact your local municipal or provincial fire authority for further information on how to handle a chimney fire. It is most important that you have a clearly understood plan on how to handle a chimney fire.
4. After that chimney fire is out, the chimney must be cleaned and checked for stress and cracking before starting another fire. Also check combustibles around chimney and the roof.

### AVOIDING A CHIMNEY FIRE

There are two ways to avoid chimney fires:

1. Do not let creosote build up to a point where a big chimney fire is possible.
2. Do not have fires in the heater that may ignite chimney fires. These are hot fires, such as when burning household trash, cardboard, Christmas tree limbs, or even ordinary fuel wood. (e.g. with a full load on a hot bed of coals and with the air inlet excessively open.)

**DO NOT BURN WET OR GREEN WOOD**

## WOOD

Wood should be properly air dried (seasoned) for six months or more. Wet or undried wood will cause the fire to smoulder and produce large amounts of creosote. Wet wood also produces very little heat and tends to go out often.

## HOW TO TEST YOUR WOOD

Add a large piece of wood to the stove when it has a good large bed of coals. It is dry if it is burning on more than one side within one minute. It is damp if it turns black and lights within three minutes. If it sizzles, hisses and blackens without igniting in five minutes it is soaked and should not be burnt.

## OVERNIGHT BURN

1. To get an overnight burn with significant heat output you must load your stove as full as you can endwise. (Approx. six 6" diameter pieces, 20" long, preferably unsplit as they last longer. Note: When burning unsplit wood it must be properly dried.)
2. Push air control in all the way when:
  - a) there is a bed of red hot coals.
  - b) the wood is charred.

## MORE WOOD, MORE HEAT

Seasoned wood has approximately 7500 BTU's per pound. If you put 10 pounds of wood in your stove for an eight hour burn the wood will be producing 9375 BTU's per hour. ( $7500 \text{ BTU} \times 10 \text{ lbs} / 8 \text{ hrs} = 9375 \text{ BTU's per hr.}$ ) If you put 20 lbs of wood in your stove for an eight hour burn you will get 18,750 BTU's per hour. ( $7500 \text{ BTU} \times 20 \text{ lbs} / 8 \text{ hrs} = 18,750 \text{ BTU's per hr.}$ ) This is only an example and is based on the probability of 100% efficiency. In reality, your stove should perform in the 70% efficiency range.

## SAFETY AND MAINTENANCE

1. Burn wood only, dry and well seasoned. The denser or heavier the wood when dry, the greater its heat value. This is why hardwoods are generally preferred. Green or wet wood will cause a rapid buildup of creosote. If you feel it is necessary to burn wet or unseasoned wood, do so only with the air control out enough to maintain a good strong fire and fairly high chimney temperatures. Do not attempt to burn overnight using green or wet wood. Wet wood can cause up to 25% drop in heater output, as well as contributing significantly to creosote buildup.

**WARNING:** Never use chemicals or any other volatile liquid to start a fire. Do not burn garbage, or flammable fluids such as gasoline, naphtha, or engine oil. We strongly recommend that smoke detectors be installed.

2. Remove ashes frequently. Embers can roll out the door and create a fire hazard. Maintain a 1" minimum ash base.
3. If glass becomes darkened through slow burning or poor wood, it can readily be cleaned with any oven cleaner when stove is cold. Never scrape with an object that might scratch the glass. The type and amount of deposit on the glass is a good indication of flue pipe and chimney buildup. A light brown dusty deposit that is easily wiped off usually indicates

good combustion and dry, well seasoned wood and therefore relatively clean pipes and chimney. On the other hand, a black, greasy deposit that is difficult to remove is a result of wet and green wood and too slow a burning rate. This heavy deposit is building up at least as quickly in the chimney.

**WARNING: ONLY USE MATERIALS SUPPLIED BY MANUFACTURER WHEN DOING MAINTENANCE OR REPLACEMENTS.**

4. The gasket used by Reverso requires only light pressure to seal. This will prolong seal life. Periodically inspect seals and replace if necessary.
5. Do not slam loading door or otherwise impact glass. When closing door, make sure that no logs protrude to impact the glass. If the glass gets cracked or broken, it must be replaced before using the stove. Replacement glass can be obtained from your Reverso dealer.

**NOTE:** The Reverso Challenger MMX uses two pieces of "ROBAX" (Ceramic High Temperature Glass) Size 11" x 17".

**IT IS IMPORTANT THAT THE CHALLENGER MMX SOLID FUEL HEATER MUST NEVER BE OPERATED WITHOUT THE TWO PIECES OF "ROBAX" GLASS PROPERLY INSTALLED IN THE DOOR.**

To remove broken glass, back out the retaining screws, remove the clamps with their gaskets, noting position for re-assembly. Remove all particles of glass. Be careful as they are very sharp. [f the soft gasket attached to the door casting looks doubtful, replace it. Replace clamps, gaskets and screws. Tighten screws very carefully, do not overtighten.

**WARNING:**

- Do not over fire stove
- Do not use flammable liquids to start or freshen up a fire
- Do not clean glass when hot
- Do not use abrasive cleaners on glass

6. Do not store wood within heater installation clearances, or within the space required for fuel loading and ash removal. Keep the area around the heater clean and free of all loose combustibles, furniture, newspaper, etc.
7. If glass door requires cleaning, use mild soap and water only. Use of abrasive cleaners will void warranty.
8. Establish a routine for the fuel, woodburning and firing technique. Check daily for creosote buildup until experience shows how often you need to be cleaning to be safe.
9. Be aware that the hotter the fire, the less creosote is deposited. Weekly cleanings may be necessary in mild weather, even though monthly cleaning is usually enough in the coldest months when burning rates are higher.
10. Instruct all members of your family on the safe operation of the heater. Ensure they have enough knowledge of the entire system if they are expected to operate it. Stress the section on chimney fires and the importance of following the steps outlined in, "In Case of Chimney Fire". See Page 17

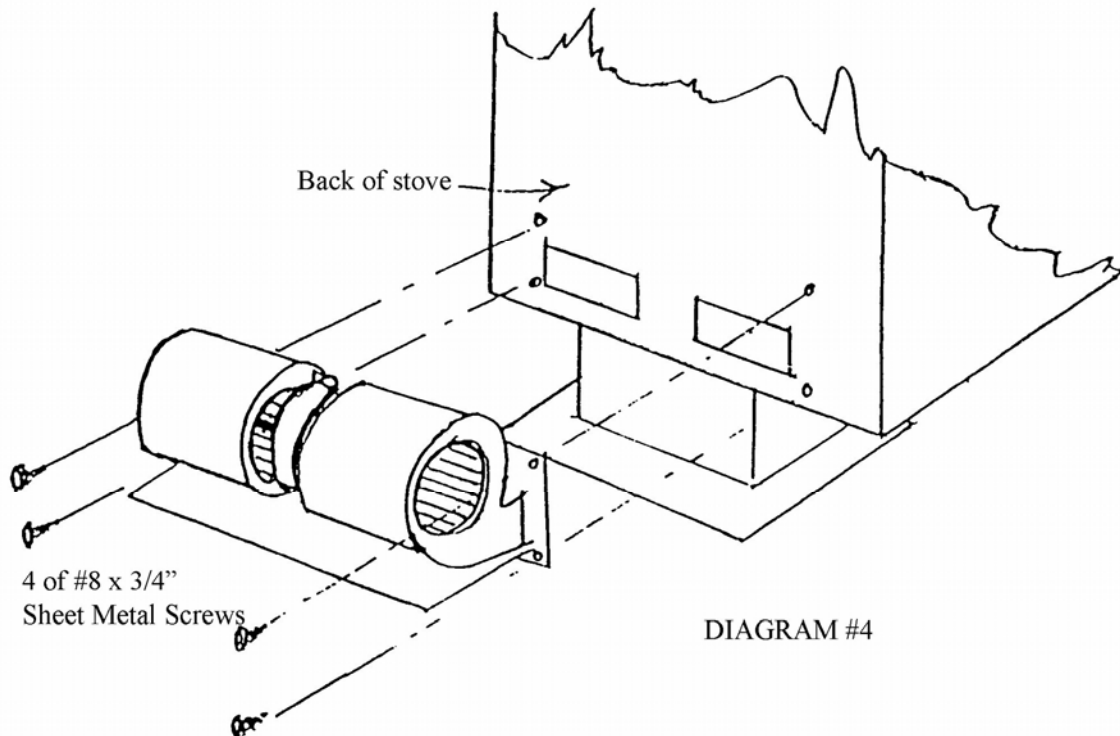
Experience will give you the right settings for proper combustion and efficient burning. Remember the air inlet setting is affected by variables such as type of wood, outside temperature and weather conditions. With practice, you will become proficient in operating your heater and will obtain the safe performance for which it was designed.

### BLOWER INSTALLATION AND OPERATION

The blower can be factory or user installed. To install, hold blower up to the back of stove. Refer to diagram #4 and line up holes. Insert screws included with fan and tighten. After mounting, check for vibration noise and adjust bolt tension to eliminate. Refer to blower manufacturer's instructions (included with blower) regarding maintenance and parts. Route power supply cord away from heater. Electrical rating 120 volts, A.C. 70 amps.

Operate blower at maximum speed only when air control is fully open (out). Operate blower at lowest speed for all other air control settings.

### BLOWER INSTALLATION INSTRUCTIONS



## TROUBLESHOOTING

PROBLEM	CAUSE	CURE
GLASS IS DIRTY	1. Wood is wet	➤ Use dry wood
	2. Air control is all the way in too soon	➤ Do not push air control in until: a) there is a good bed of coals b) the wood is charred
	3. Draft too low	➤ Improper chimney height and/or diameter. ➤ Chimney plugged or restricted, check flue. ➤ Provide outside air for combustion
	4. Door gasket leakage	➤ Replace gasket ➤ Check latch
EXCESSIVE CREOSOTE BUILDUP	See 1, 2, 3, above	
LOW HEAT OUTPUT	1. Wood is wet	➤ Use dry wood
	2. Fire too small	➤ Build a larger fire
WON'T BURN OVERNIGHT	1. Air control set too high	➤ Push air control all the way in
	2. Not enough wood	➤ Unsplit wood is preferred for overnight burns