

# Magnum Baby Countryside Corn Agri-fuel Stove

Models BC-AC, BC-DC

## OWNER'S MANUAL

### Installation – Operation – Maintenance Instructions

**NOTE: THESE INSTRUCTIONS MUST BE SAVED for future reference**

**PLEASE READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS CORN AGRIFUEL BURNING STOVE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.**

**Technical assistance: Contact your dealer or email the factory at [technical@magnumheat.com](mailto:technical@magnumheat.com). For Telephone technical assistance call 320-227-2902. When you email or call have your model number, serial number, purchase date, who installed the unit and a list of questions.**

- ✓ When installing your **Magnum Corn** stove, particular attention needs to be made in regards to fire protection. If the unit is not properly installed, a house fire may result. For your safety, follow the installation and operation instructions provided, and if a question arises contact local building or fire officials about restrictions and installation requirements in your area.
- ✓ Read the operations and fuel section of this manual before plugging in your unit.
- ✓ Always unplug the unit before attempting any service work.
- ✓ Do not connect the unit to a chimney flue already serving another appliance.
- ✓ When installing the chimney pipe to the unit, it is important to remember that the unit operates on a negative pressure and the chimney on a positive pressure. All chimney connections, elbows and fittings must be airtight. **(proper venting practices must be followed. Consult with a venting professional)**
- ✓ Ashes must be disposed of in a metal container with a tight fitting lid.
- ✓ All minimum clearances to combustibles must be followed.
- ✓ **The Magnum Corn Stove is tested for operation with Corn with a moisture content from 10-14 percent. Corn with 11-12 percent moisture is ideal.**
- ✓ **It is important to use fuel that is clean, dry and consistent.** Make sure that your supplier is giving you the same fuel each time that you purchase. It is recommended that you purchase your entire heating season supply of fuel at one time so that the fuel will be the same.
- ✓ **A voltage surge protector or ground fault outlet is required for this unit. The electrical component warranty will be voided if surge protection is not installed before operating this unit.**
- ✓ **A grounded outlet must be provided with proper polarity. A constant 120 volt (120v on DC models), 60 cycles must be provided for proper operation or the warranty of this appliance will be forfeited.**
- ✓ **Special attention needs to be taken to clean out the top heat exchangers of this unit on a regular basis. The fly ash settles on the heat exchangers and must be cleaned off to keep the unit operating properly. Check for plugging every two-four weeks or when needed.**
- ✓ **If unit is not operated for extended periods of time (like summer) unplug the unit and disconnect the battery to assure long life of electrical components.**
- ✓ **This appliance has been tested to UL1482/ ASTM E 1509,**

**AMERICAN ENERGY SYSTEMS, INC. GRANTS NO WARRANTY, IMPLIED OR STATED, FOR THE INSTALLATION OR MAINTENANCE OF THE STOVE AND ASSUMES NO RESPONSIBILITY FOR ANY CONSEQUENTIAL DAMAGE(S).**

AMERICAN ENERGY SYSTEMS, INC. -50 Academy LN NW - HUTCHINSON, MINNESOTA 55350 – 320-227-2903

Web Site: [www.magnumheat.com](http://www.magnumheat.com)

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## TESTING/CERTIFICATION INFORMATION

The Magnum Baby Countryside Stove, models BC-AC, BC-DC (report # 150-S-05B-2) independently tested  
in accordance with ASTM E1509-4 ULC C1482 & ULC S627

Tested with OMNI TEST LABORATORIES, INC., BEAVERTON, OREGON 97005  
per EPA Method 28A, APFI req.

The Corn fired appliance has been tested and listed for use in manufactured homes in accordance with  
Oregon Administrative Rules 814-23-900 through 814-23-909 (UM) 84-HUD

SERIAL # \_\_\_\_\_ DATE PURCHASED \_\_\_\_\_

READ THIS MANUAL THOROUGHLY BEFORE INSTALLING THIS UNIT AND KEEP THIS  
MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.

**IMPORTANT: This appliance should be installed by a factory trained technician. If self-installed, you will accept all responsibility for service, warranty and proper installation and operation of this appliance.**

## DEAR VALUED MAGNUM PRODUCT OWNER,

We appreciate your decision to help preserve our precious environment by purchasing your **Magnum Corn Agri-fuel Appliance**. With everyone working together, we can have clean air and renewable heat for our homes.

Please read this Owners Manual carefully before using this appliance and if you have any questions contact your local **Magnum Dealer**. All service, maintenance contracts, warranty work, installation and operational questions must be directed to the dealer that you purchased your **Magnum** appliance from. We appreciate your business and wish you many warm days and nights with your new **Magnum appliance**.

Sincerely,  
Mike Haefner, President  
American Energy Systems, Inc.

**P.S.** You are very important to the success of our business and your referral of our products is very much appreciated. The factory has a reward program where you can earn \$\$\$\$\$\$ for referring your friends and family. Go online to [www.americanenergysystems.com](http://www.americanenergysystems.com) for details.

### ***SPECIFICATIONS***

American Energy Systems, Inc., manufacturer of the **Magnum Baby Countryside Appliance**, reserves the right to alter its products, their specifications and/or price without notice.

**NOTE: see certification label on unit for complete specification/requirements for installation**

Heating range	5,000 - 32,000 BTU
Fuel Storage Capacity	Up to 50 Lbs.
Width	20 1/4"
Height	31 3/4"
Depth ash lip to pipe	26.5"
Unit Weight	200 Lbs.

	<b>CLEARANCE TO COMBUSTIBLES</b>
	Vertical Termination w/ 3" Pellet Vent
<b>Back Wall</b>	3" (75mm)
Side	9" (229mm)
Corner	3" (75mm)
Flue to Wall	3" (75mm)
Floor Prot.	6" (150mm) out in front of unit 9" to sides

BTU input will vary, depending on the brand of fuel, size of fuel, quality of fuel and moisture content. Consult your authorized Magnum reseller for information on the best fuel to use to get the best results. Fuel feed rates can vary as much as 50 percent depending on fuel quality, size, brand and moisture content

## Importance of adequate fresh air

Every home is a slightly different situation and depending on the design of the air movement within the home, might be easy to distribute heat or very difficult. If you have boiler heat or other non-ducted central heating this becomes even more of a challenge as adequate circulation within the home and proper make up air for combustion is lacking because of the design of your central heating system.

When a forced-air system is put into a home that is not designed with proper circulatory patterns, it might be necessary to add return air ducts or at least vents to get the air moving around the home. Fresh air for the home and fresh air for combustion will have to be added or the stove or furnace will burn dirty and efficiency will suffer.

Your dealer needs to assess the fresh air requirements for the home. At a minimum, there should be a 6" or larger (this should be determined by figuring what the home requires) fresh air vent coming in to a neutral part of the home to make sure that there is adequate fresh air to the home. Then the 3" make up air to the unit is required to be provided.

If the fuel is not burning correctly you need to address a few things. Is the fuel wet or dirty? If it is, make sure that you clean and dry the fuel. 11-12 percent is ideal for corn.

The most common cause of fuel not burning properly is contaminated air or negative pressure in the home. It can be as simple as the air adjustment not set properly on the side of the stove or it could be that there is a serious lacking of good quality air in the home caused by negative pressure. If you have done any remodeling or if this is a newer home, it is a very real possibility that this is happening. Most basements have negative pressure even if you feel that your home is drafty. This is called the stack or chimney effect.

If there is a black coating of soot coming into the home it is caused by the reversal of the exhaust that would normally exit the stove outside being drawn into the home by negative pressure or improperly installed venting. Depending on your venting configuration this could be aggravated by back drafts, high wind and cold chimneys.

Sometimes this also occurs if there is an intake for fresh air too close to the exhaust on the outside of the home or other conditions causing the exhaust to be pulled back into the home. The first indications of negative pressure affecting the stove occurs app. 3 days after the stove is lit. The glass gets dirty very easy, the firepot might keep filling up even though you pull the air adjustment out, and you notice that the venting fills up with soot rapidly. After a few days, the exhaust can no longer adequately pull out all of the fly ash so it reverses and is pulled into the home. This might happen through the venting if it is not sealed properly or it might come out when you open the door for maintenance and also backwards through the air wash system.

This can be easily corrected by adding the fresh air for the home and also for the appliance. It is imperative that you would have your dealer or installer check the unit out for proper operation to make sure that there is nothing mechanical wrong with the appliance and then determine your need for proper fresh air. Your dealer can contact the factory with any questions that he might have.

## SAFETY STEPS

**IMPORTANT:** Proper installation of this stove is crucial for proper and safe operation. Installing this product improperly may result in a house fire and personal injury. All applicable building codes for your location must be followed. In areas where building codes require additional steps to the installation of this product not included in this manual, the building codes will take precedent and must be followed. Contact your local building inspector to obtain any necessary permits or inspection guidelines before installing the product. **(This appliance should be installed by a trained professional installer to assure proper installation and warranty service of this product) Warranty Labor, parts failing due to improper installation, operation, maintenance and shipping will not be covered.**

- ✓ **DISCONNECT THE POWER CORD BEFORE SERVICING THIS STOVE! A power surge protector is required.** The unit must be plugged in to a **grounded** 120 -volt 60 Hz or (if a DC model, a 12V DC sealed Battery power source. NEVER use an “unsealed” type battery, nor operate unit on a battery without a 12 volt 4 ampere in-line fuse on a positive line.
- ✓ Always route the power cord away from the unit. Do not route cord in foot traffic areas. Do not pinch cord under furniture. Do not add any additional length to the power cord.
- ✓ “This heater needs periodic maintenance and repair for proper operation. It is against federal regulations to operate this heater in a manner inconsistent with operating instructions in this manual.”  
**Do not operate with the door or hopper open.**
- ✓ **The Magnum Baby Countryside stove is designed, approved and tested to burn Corn Agri-fuels.** The burning of other solid fuels such as cord wood in this stove is not permitted. If you are burning fuels not approved for this appliance it will void the warranty and no service/warranty will be allowed.
- ✓ A working smoke and carbon monoxide detector must be installed in the same room as this product. It is recommended that a fire extinguisher “class a-b-c” be installed close to the appliance. Also have a carbon monoxide detector located in any internal fuel storage areas.
- ✓ Flammable or explosive liquids such as gasoline, naphtha or engine oil must NEVER be used in or around this stove. These liquids must be stored well away from this stove as the open flame in the burner chamber could ignite the fumes of such liquids. **Do not burn garbage in this unit.**
- ✓ According to HUD requirements, when installed in a mobile home, this stove must be grounded directly to the steel chassis of the mobile home and bolted to the floor.
- ✓ This stove is not intended for use in commercial installations but can be used.
- ✓ The moving parts of this stove are propelled by high torque electric motors. The auger can cause severe injury to body parts that may get near them. Keep all body parts away from the auger while the stove is plugged into an electrical outlet. These moving parts may begin moving at any time while the stove is plugged in.
- ✓ This unit must be installed on a non-combustible surface. Make sure that the unit is level.
- ✓ Do not attempt internal service to the unit when it is burning and or plugged into power.
- ✓ It is a good idea to burn the unit outside for a couple hours before installation to burn off any paint or oil fumes. (most resellers pre-burn the unit before you receive them, do not worry if your unit looks like it has been burnt)

**IMPORTANT: It is the customer’s responsibility to make sure the Magnum Appliance is installed with the proper make up air system and the home is checked for adequate fresh air so that the appliance does not become the fresh air source for the home.**

## **BURNING SOLID FUELS (shelled corn agri-fuels)**

Unlike petroleum and natural gas products, solid fuels such as corn create ash as the fuel is burned. Even with the highly efficient flame your **Magnum** stove will produce, the solid fuels used will produce ash. This ash will have to be cleaned out of the stove from time to time. The cleaning procedure will be discussed later in this manual. You can minimize the amount of cleaning required and maximize the efficiency of your stove by maintaining the correct draft settings.

The draft setting on your stove may have to be changed from time to time to accommodate your specific burning conditions, fuel size or quality. Proper draft setting will be discussed later in this manual. The point we wish to make here is that your **Magnum** stove, due to the nature of solid fuels, will require brief periodic attention. Please do not expect to light your stove and walk away from it until you want to shut it off in the spring. A few moments of adjustment and cleaning from time to time are an important part of burning solid fuels.

The **Magnum** stove has been designed to burn shelled corn, AES cannot be responsible for damage done to your stove due to fuel problems. The following are guidelines to using and selecting proper fuels for your stove.

### **SHELLED CORN (11-12 percent moisture recommended)**

- ✓ Store your corn supply in a dry place and keep the bags or container sealed to prevent your corn from absorbing excess moisture. Test the moisture content periodically to maintain the proper dryness. **Check your Corn for foreign objects. Your stove warranty will not cover damage done to your stove due to foreign objects in the fuel supply.**
- ✓ **Do not carry your corn supply over into the next heating season if possible unless properly stored.** If you carry over your corn supply make sure to check the corn for proper moisture content.
- ✓ **DO NOT BURN “TREATED” SEED CORN IN YOUR STOVE.** Seed corn is treated with chemical pesticides that are harmful or fatal if swallowed; therefore, seed corn is dangerous to have in the house, especially where children can reach it. **Burning treated seed corn in your stove will void the warranty and will destroy the exhaust system on the unit.**
- ✓ **Corn must be 14% or less moisture content.** Wet corn will cause rapid plugging and deterioration of the stove and exhaust system, lower the heat output and will void the product warranty.
- ✓ Corn must be cleaned and free from debris. Corn right from the field will often have stalks, sticks, bolts and cob debris, which can plug the auger and/or cause damage to the auger and motor. Damage caused by dirty corn and other foreign objects are not covered by the product warranty. Ask for clean corn when you purchase it from your local corn supplier. Clean corn can be purchased in bulk or bagged from most elevators, feed stores or even your local farmer.

#### **ALWAYS ASK FOR CORN WITH 11-12% MOISTURE CONTENT.**

**If you are having trouble finding clean Corn, contact your local Magnum Dealer and ask them to get you a corn cleaning system.** Cleaning your corn will assure a more consistent burn rate. It is also important to vacuum out your hopper once a month to assure trouble free auguring of the corn.

- ✓ There are many varieties of corn grown around the world. Each variety has unique characteristics including the shape and size of the kernel. Your stove will burn more consistently with a small to mid-size kernel corn. If the kernel size of the corn varies greatly or if you switch sources frequently, you will get a less consistent burn, which will require more attention to the draft setting on your stove. Therefore, purchasing corn from the same source will help achieve a more consistent burn. **DO NOT USE CORN WITH A HIGH WAX CONTENT!**
  
- ✓ Check your fuel for foreign objects. Your stove warranty will not cover damage done to your stove due to foreign objects in the fuel supply. It is always best to screen your fuel before burning.
  
- ✓ Store your fuel in a dry place to prevent it from absorbing excess moisture and do not use corn from a previous year unless stored in a dry environment.
  
- ✓ Vacuum the hopper out after every 6-7 bags to eliminate buildup of dust. More often if the fuel is poor quality. If dust is a problem you will have to screen each bag of fuel for a consistent feed.
  
- ✓ Do not buy fuel that is wet, looks hard and crumbly in the bag, has a lot of fines in the bag, is left over from last year, the bottom bags are moldy or wet.

## UNPACKING YOUR MAGNUM Baby Countryside APPLIANCE

**When you receive your Magnum appliance, be careful to inspect all parts and components to make sure that nothing was damaged or lost in shipment. If there was shipping damage, be sure to report it to your Magnum reseller, or the shipping company that delivered your unit. Freight damage claims must be made to the Freight Company immediately. If parts are missing contact your local Magnum reseller or contact the factory right away. Your satisfaction is our top priority.**

To uncrate your **Magnum appliance**:

- 1) Cut the banding straps and open the carton lid. The carton is stapled to the wood pallet so it will be necessary to pull the cardboard loose from the pallet. Remove the crating box carefully lifting up over the top of the unit. Be careful not to scratch the unit with the staples. Remove the wood blocks and plastic. We strongly urge you to recycle the packaging materials to help protect the environment.

The unit comes completely assembled.

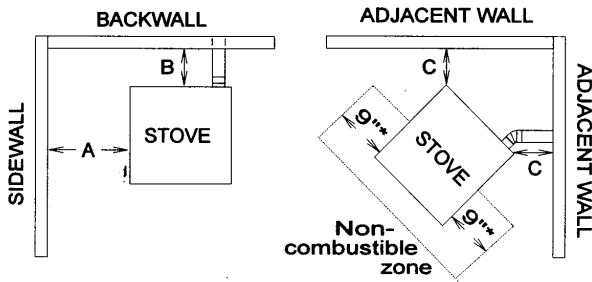
# CLEARANCES

## CONVENTIONAL CLEARANCES

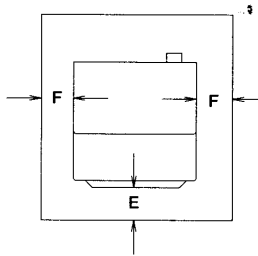
A...SIDEWALL	9 In. (229 mm)
B...BACK WALL	3 In. (75 mm)..... (VERTICAL VENTING INSTALLATION REQUIRES A MIN. 3" CLEARANCE FROM COMBUSTIBLES TO VENT PIPE).
C...CORNER WALL	3 In (75 mm)..... (VERTICAL VENTING INSTALLATION REQUIRES A MIN. 3" CLEARANCE FROM COMBUSTIBLES TO VENT PIPE).
D...VENT PIPE TO WALL	3 in (75 mm)..... (MAINTAIN 3" INCH CLEARANCE FOR ALL INSTALLATIONS)
E...FLOOR PROTECTION FRONT	6 In (150 mm)
F...FLOOR PROTECTION SIDES	9 In (229 mm)

Floor protection must be 3/8" inch minimum thickness non-combustible material or equivalent extending beneath heater and to the front/side/rear as indicated.

### HORIZONTAL INSTALLATION

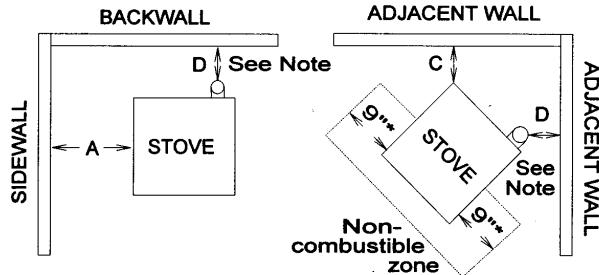


### FLOOR PROTECTION



\* Sides of the stove to the front of the grill openings must have a 9"inch clearance.

### VERTICAL INSTALLATION



CHIMNEY AND CONNECTOR: 3" LISTED PELLET VENT ONLY

NOTE: REGARDLESS OF STOVE CLEARANCE, VENT PIPE MUST ALWAYS HAVE A 3" INCH CLEARANCE.

### ALCOVE CLEARANCES

- MIN. ALCOVE WIDTH 38 In. (965 mm)
- MIN. ALCOVE HEIGHT 47 In. (1194 mm)
- MAX. ALCOVE DEPTH 36 In. (914 mm)
- MAX. ALCOVE DEPTH 36 In. (914 mm)

**WARNING: THE MINIMUM CLEARANCES LISTED ABOVE ARE BASED ON 3" INCH PL LISTED PELLET VENT PIPE. IF YOUR APPIANCE IS NOT PROPERLY INSTALLED A HOUSE FIRE MAY RESULT. PLEASE FOLLOW THE PIPE MANUFACTURERS INSTRUCTIONS AND LOCAL BUILDING CODES FOR THE CLEARANCE TO COMBUSTIBLES REQUIRED FOR THE INSTALLATION OF THE VENT PIPE BEING USED.**



## GUIDELINES FOR EXHAUST VENTING SYSTEMS DESIGN

**It is recommended that only an authorized Magnum installer install your corn stove.** The following installation guidelines must be followed to ensure conformity with both the safety listing of this stove and to local building codes.

- ✓ A listed 3” or 4” type “PL” corn/pellet vent exhaust system must be used for FREESTANDING installation and attached to the pipe connector provided on the back of the stove. Use a 3” to 4” adapter for 4” pipe. A cap must be used at the termination of type “L” vent chimneys. **It is recommended to use Corn Vent to assure long life of the venting.**
- ✓ Do not terminate vent in any **enclosed or semi-enclosed** area, such as; carports, garage, attic, crawl space, under a sundeck or porch, narrow walkway or closed area, or any location that can build up a concentration of fumes such as a stairwell, covered breezeway, etc.
- ✓ Vent surfaces can get hot enough to cause burns if touched by children. Non-combustible shielding or guards may be required. **Do not install a flue damper in the exhaust vent of this unit.**
- ✓ Termination must exhaust above air inlet elevation. **It is recommended that at least 3 ft. of vertical pipe be installed when the appliance is vented directly through a wall or in a basement.** This will create some natural draft to prevent the possibility of smoke or odor during appliance shutdown and to keep exhaust from causing a nuisance or hazard from exposing people or shrubs to high temperatures. In any case, the safest and preferred venting method is to extend the vent through the roof. **Do not connect this unit to a chimney flue serving another appliance.**
- ✓ Distance from doors and windows, gravity or ventilation air inlet into building:  
Not less than 4 ft. / 1.2 m below, 4 ft. / 1.2 m horizontally from, 1 ft. / 305 mm above (This does not apply if the Windows are non-opening or have been fixed so they cannot open.)
- ✓ Distance from bottom of termination and grade – 1 ft. / 305 mm minimum. This is conditional upon the plants and nature of grade surface. The exhaust gases are not hot enough to ignite grass, plants or shrubs located in the vicinity of the termination. The grade surface must not be a lawn. Distance from bottom of termination and public walkway is 7ft. /2.1m minimum.
- ✓ Distance to combustible materials – 2 ft. / 610 mm. This includes adjacent building, fences, protruding parts of the structure, roof overhang plants and shrubs, etc.
- ✓ It is recommended that a single or double clean-out “tee”, for cleaning the vent in both directions, be installed at every 90<sup>0</sup> junction to enable collection of fly ash and to permit periodic cleaning of the exhaust system. 90<sup>0</sup> elbows accumulate fly-ash and soot thereby reducing exhaust flow and performance of the stove.
- ✓ Total equivalent length of horizontal vent must not exceed 10 feet / 3,000 mm. **No more than 5 feet strongly recommended and will be needed if unit does not perform properly.** All joints in the vent system must be fastened by 3 screws and/or all joints must be sealed with RTV silicone sealer to be airtight.
- ✓ A 3” single-wall, stainless steel flexible or rigid type PL exhaust pipe should be used for INSERT installations and must be attached to the stove with a single-wall, stainless steel “tee” with a clean-out cap. The stainless steel “tee” should be inclined at 45<sup>0</sup> to enable the vent to be centered on the stove and allow the “tee” to be cleaned without removing the stove (see diagram).
- ✓ When venting into an existing masonry or factory built chimney, the chimney must be cleaned, with all creosote removed. The chimney must be a type suited for solid fuel. **WARNING:** The chimney and the chimney connections must be kept clean and in good condition.
- ✓ The “PL” vents or single wall stainless exhaust system must be installed so as to be GAS TIGHT! The vent manufacturer’s installation procedures must be followed. In addition, pipe connections, joints and all pipe seams within the home should be sealed with high temperature RTV silicone sealer.
- ✓ If an insert is to be installed into an unlined masonry chimney, it is recommended that at 3” or 4” stainless steel pipe be extended to the top of the existing chimney. The top of the existing chimney should be sealed with a steel plate (see diagram).

**GUIDELINES FOR EXHAUST VENTING SYSTEMS DESIGN, CONT.....**

To determine whether a 3” or 4” exhaust system should be used, follow the guidelines below: **Whenever in doubt, use 4”.** All high altitude installations need 4” and a preferred 3-5 foot vertical rise.

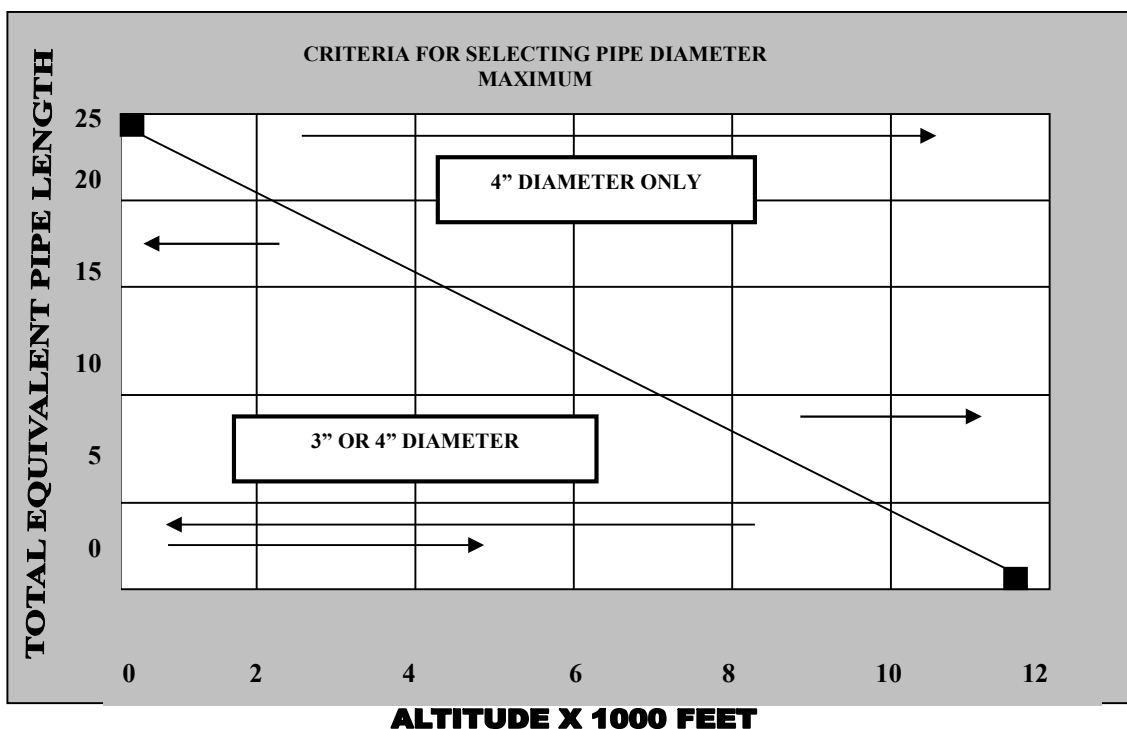
- 1) Determine the “equivalent pipe length” for each component used according to the comparison chart below. Add the “equivalent pipe length” of all components to get the “total equivalent pipe length”.
- 2) Determine the altitude at which you are installing the stove.
- 3) Cross-reference the “total equivalent pipe length” and the altitude using the graph below.

**NOTE:** The “total equivalent pipe length” should not exceed 25-30 feet. The installer is responsible for

Determining proper total equivalent pipe length depending on installation conditions.

Component	Equivalent Length	Equivalent Pipe Length			
			=		
Horizontal Straight Pipe	Actual Length in ft. x 1.0	Horizontal Pipe	=	1 x (2+1) =	3 ft.
Vertical Straight Pipe	Actual Length in ft. x 0.5	Vertical Pipe	=	0.5 x 8 =	4 ft.
90° Elbow or Tee	5.0 feet	90 Degree Tee	=	2 x 5 =	10 ft.
45° Elbow	3.0 feet	45 Degree Tee	=	1 x 3 =	3 ft.
		<b>TOTAL</b>	=		<b>20 ft.</b>

**NOTE:** These are guidelines only. Proper venting is accomplished by design and common sense. In most installations 3 inch diameter venting is adequate. If it does not vent properly you will have to change it to 4”.



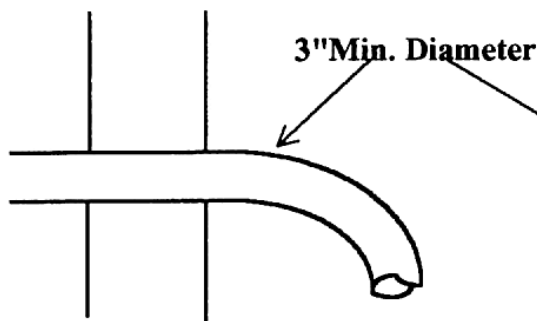
# DESIGN GUIDELINES FOR OUTSIDE COMBUSTION AIR CONNECTION

## OUTSIDE MAKE-UP AIR FOR COMBUSTION IS REQUIRED ON ALL INSTALLATIONS

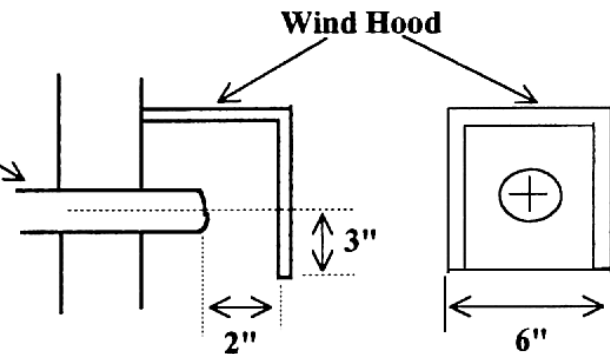
- 1) For FREESTANDING installations with horizontal through-the-wall exhaust, it is REQUIRED that the stove combustion air intake be connected to a fresh air intake outside. If the home is newer or has been tightly insulated it is imperative to the operation of the unit to install outside combustion air. If you do not, then an additional 6 inch intake into the furnace room in the basement is required.
- 2) For installations on an existing fireplace, or FREESTANDING installations with a vertical exhaust, outside air connection is required. It is not recommended to exit the fresh air intake out the top of the Chimney.
- 3) Connection to outside the house is REQUIRED for mobile home installations.

**IMPORTANT: It is the customer's responsibility to make sure that there is adequate fresh air to the home so that the Magnum appliance does not become the fresh air source. If the run is over 10 feet, exits into a known air blocked area or if the appliance appears to be starved for air, a 4" diameter fresh air vent will need to be used.**

### 90 DEGREE BEND TERMINATION



### WIND HOOD TERMINATION



- 4) Only non-combustible pipe 3 inches in diameter is approved to use for outside air connections (straight or flexible). PVC pipe is NOT approved and should NEVER be used.
- 5) If the air inlet is connected to the outside, it MUST be terminated with a vertical 90-degree bend (down) or with a wind hood. Failure to do so could result in a burn back during high winds blowing directly up the air inlet during a simultaneous power failure (see diagram above).
- 6) It is important not to terminate the inlet of the fresh air intake too close to the venting outlet for the smoke. It is recommended that the inlet for the fresh air is a minimum of 3 to 5 feet away from the venting outlet and at least 1-2 feet below. In some cases the fresh air inlet will need to be further away to prevent smoke from entering.
- 7) Blockage, excessive length, or bends in the air intake pipe will starve the stove of combustion air. A 90-degree bend is equivalent in restriction to approximately 30 inches of straight inlet pipe.

## INSTALLATION PRECAUTIONS

**CAUTION: DO NOT INSTALL THIS APPLIANCE IN ANY MANNER OTHER THAN AS DESCRIBED IN THIS MANUAL. DO NOT TAMPER WITH ANY MECHANISMS OF THIS PRODUCT.** If you have any questions about properly venting or installing your **Magnum** appliance, please contact your dealer for information.

**NOTE: THIS STOVE MUST BE BURN TESTED OUTSIDE IN A WELL VENTILATED AREA FOR AT LEAST (2) TWO HOURS. THIS WILL CURE THE PAINT AND SEASON THE STOVE METAL. SMOKING AND STEAMING IS NORMAL DURING THE CURING PROCESS, AND MAY CONTINUE DURING THE FIRST FEW TIMES THE STOVE IS USED.**

The **ONLY** authorized exhaust vent pipe for this appliance is **3 or 4 inch listed Type PL corn/pellet vent pipe** designed for use with corn stoves. This stove may be connected to an existing factory-built chimney using corn/pellet vent pipe as a connector, and a 3-4", 3-6", or 3-8" **CHIMNEY ADAPTER**. Follow the vent pipe manufacture's instructions for the installation of the vent pipe being used. (See "Existing Vertical Installation").

**As you plan your installation, consider the following:**

- The stove should be placed as central in the home as possible. Consider safety, convenience, traffic flow and the fact that the stove will need a venting system and fresh air to the outside of the home.
- Before drilling or cutting holes, select the location of the appliance. Determine where the ceiling rafters, wall studs or floor joists are located before making any large holes as the appliance may have to be moved.
- Care must be taken to maintain minimum clearances to combustibles as per local building codes, fire codes, and the safety listing tag on the inside hopper lid.
- An outside air source **must be** connected to the stove and can be brought in through the sidewall or vented crawl space. Flexible or rigid pipe should be used and will connect to the adaptor on the back of the stove. (See air inlet location under the **CLEARANCE** section of this manual)
- Place the stove where you will enjoy watching the fire along with getting the best heat distribution possible. Locating the stove in a closed room will not allow the unit to perform properly. Installing the stove in an un-insulated area will also not allow the stove to heat the home properly.
- If the home was not designed with proper heat circulation, the stove will not perform properly. Make sure that the installer looks at the entire home as a unit when installing your **Magnum** appliance. Make sure that there is adequate cold air returns to pull the heat to adjoining rooms.

**DO NOT CONNECT THIS STOVE TO A CHIMNEY FLUE SERVING ANOTHER APPIANCE.  
DO NOT USE SINGLE WALL PIPE FOR ANY INSTALLATION.  
DO NOT INSTALL A FLUE DAMPER IN THE EXHAUST VENTING SYSTEM OF THIS UNIT.  
THIS EXHAUST SYSTEM IS PRESSURIZED.**

Electrical power is 120 volt-60 Hz. The stove is provided with a six foot grounded electrical cord, and should be connected to a standard 3 prong 120 volt, 60 Hz electrical outlet. (Make sure you have a surge protector) Do not route the cord in front of, or under the stove.

**NOTE: A MAJOR CAUSE OF VENT RELATED FIRES IS FAILURE TO MAINTAIN REQUIRED CLEARANCES (AIR SPACES) TO COMBUSTIBLE MATERIAL. PLEASE FOLLOW THE VENT PIPE MANUFACTURERS INSTRUCTIONS AND LOCAL BUILDING CODES FOR THE PROPER CLEARANCES TO COMBUSTIBLES REQUIRED FOR THE INSTALLATION OF THE VENT PIPE BEING USED.**

**IMPORTANT: If you exceed 4 feet of horizontal run you will have to clean your venting system more often. The venting system must be checked every week or two to assure that the vent will not fill up with fly ash and cause the appliance to back smoke up into the home.**

## INSTALLATION CONFIGURATIONS

The Magnum Corn agri-fuel Appliances may be installed as follows:

- 1) A freestanding unit
- 2) A built-in heater mounted in an alcove with a pedestal
- 3) A built-in heater mounted on a non-combustible floor

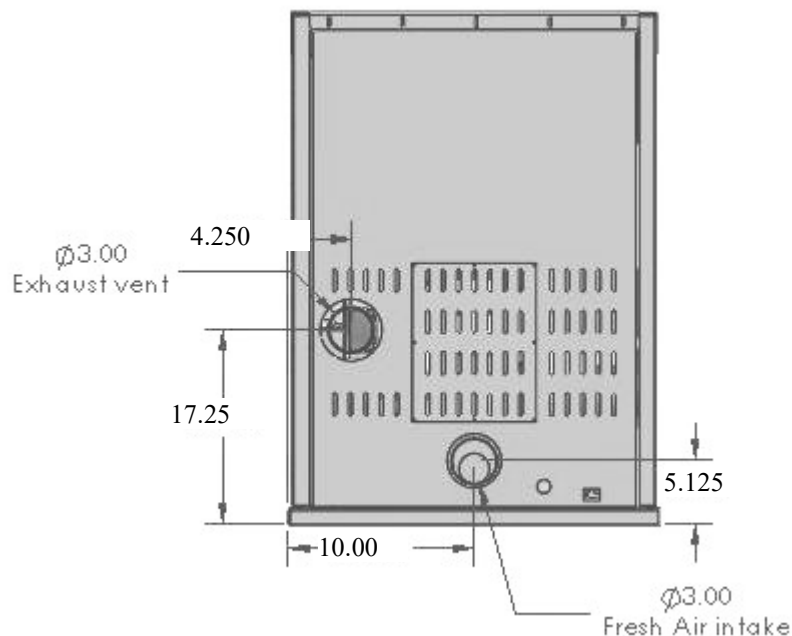
### MOBILE HOME INSTALLATION REQUIREMENTS

**IN ADDITION TO THE STANDARD INSTALLATION INSTRUCTION, THE FOLLOWING REQUIREMENTS ARE MANDATORY FOR INSTALLATION IN A MOBILE HOME:**

**WARNING**  
**DO NOT INSTALL IN SLEEPING ROOM**

- 1) Stove must be permanently bolted to the floor.
- 2) Stove must have permanent outside air source.
- 3) Stove must be permanently electrically ground to the steel chassis of the mobile home. (12 ga. or larger wire)
- 4) All vertical chimney vent must have wall supports every (5) five feet.
- 5) All exhaust systems must have a spark arrestor.

**CAUTION**  
**The structural integrity of the mobile home floor, wall and ceiling must be maintained.**  
**Check with your local building official as other codes may apply.**



# VENT TERMINATION GENERAL INSTRUCTIONS

**NOTE:** The following are general instructions for installing this appliance.

**THE VENT PIPE MANUFACTURER'S INSTRUCTIONS SHOULD BE FOLLOWED FOR THE VENT PIPE BEING USED. USE ONLY 3 or 4 INCH LISTED TYPE PL CORN/PELLET VENT PIPE.**

**WARNING: Shut off all electrical power to the wall or room where the appliance is going to be installed before cutting any holes. Be careful not to drill or cut into any water lines or electrical wiring as water damage or electrical fire may result.**

Upon determining the best location for your new appliance, maintain at least the minimum allowable clearances. Line up a plumb bob to the flue collar on the stove with the location for the hole in the wall or ceiling before drilling or cutting any holes. (See rear exhaust and air inlet locations under the **CLEARANCE** section of this manual) **Be sure to allow for any stove pad that you will be placing underneath the unit.**

Prepare the vent pipe for painting (if you are painting the venting) by wiping down with straight vinegar. Rinse vinegar off with clean water and allow the pipe to dry. Use high temperature paint as directed by the manufacturer (the standard paint is Stove Bright Metallic Black). Let the paint dry for a couple hours before assembling.

Drill and enlarge the hole as required for installation of the wall thimble, vent pipe and components **per the pipe manufacturer's instructions.**

Connect the pipe and lock the joints as directed by the pipe manufacturer, and secure the vent pipe to the flue collar on the back of the stove. Add a small bead of RTV high temperature silicone around the outside edge of the flue collar prior to securing the vent pipe. Drill and attach the vent pipe to the flue collar with sheet metal screws. **Alternate (preferred) method:** Attach the approved PL pipe adaptor on the back of the exhaust pipe located on the rear of the appliance, secure with a 3" hose clamp and then attach all venting to the pipe adaptor.

Do not terminate the vent in any enclosed or semi-enclosed area, such as a carport, garage, attic, crawl space, under a sun deck or porch, in a narrow walkway or closely fenced area, stairway, covered breezeway, or any other location which can build up a concentration of flue gases.

Vent surfaces can become hot enough to cause burns if touched. Non-combustible shielding or guards may be required.

**Note:** make sure that you leave adequate clearance between the back of the unit and the wall to allow for proper cleaning, service and also so that when you open the hopper lid that it does not hit the wall. It is recommended that you leave 4-6 inches of clearance between the appliance and the back wall of the home.

**NOTE: THE VENT PIPE SHOULD BE INSPECTED FREQUENTLY TO VERIFY THE INTEGRITY OF THE VENTING SYSTEM AND TO INSURE THAT NO OBSTRUCTIONS OR BUILD-UP EXIST WITHIN THE VENT PIPE. FAILURE TO INSPECT THE VENT PIPE CAN CAUSE A MALFUNCTION OR HAZARDOUS OPERATION OF THE STOVE.**

# HORIZONTAL INSTALLATION

EXHAUST VENT TERMINATION SHALL BE AS FOLLOWS:

A MINIMUM OF 4 FEET/1220mm BELOW, BESIDE AND 1 FOOT ABOVE ANY DOOR OR WINDOW THAT OPENS, OR ANY OPENING INTO A BUILDING.

A MINIMUM OF 2 FEET/610mm FROM ANY ADJACENT BUILDING OR OVERHANG.

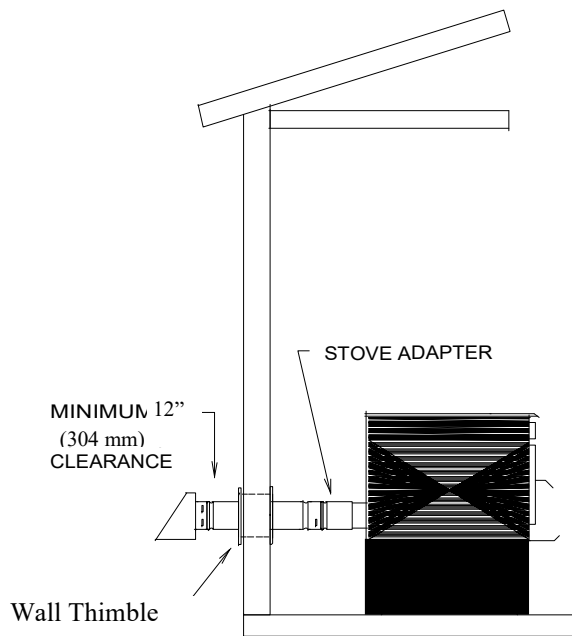
A MINIMUM OF 7 FEET/2130mm ABOVE GRADE, WHEN LOCATED ADJACENT TO PUBLIC WALKWAYS.

A MINIMUM OF 2 FEET/610mm ABOVE GRASS, PLANTS OR OTHER COMBUSTIBLES.

Note: The pipe lengths shown are for reference only.  
Your actual pipe length requirements may differ.

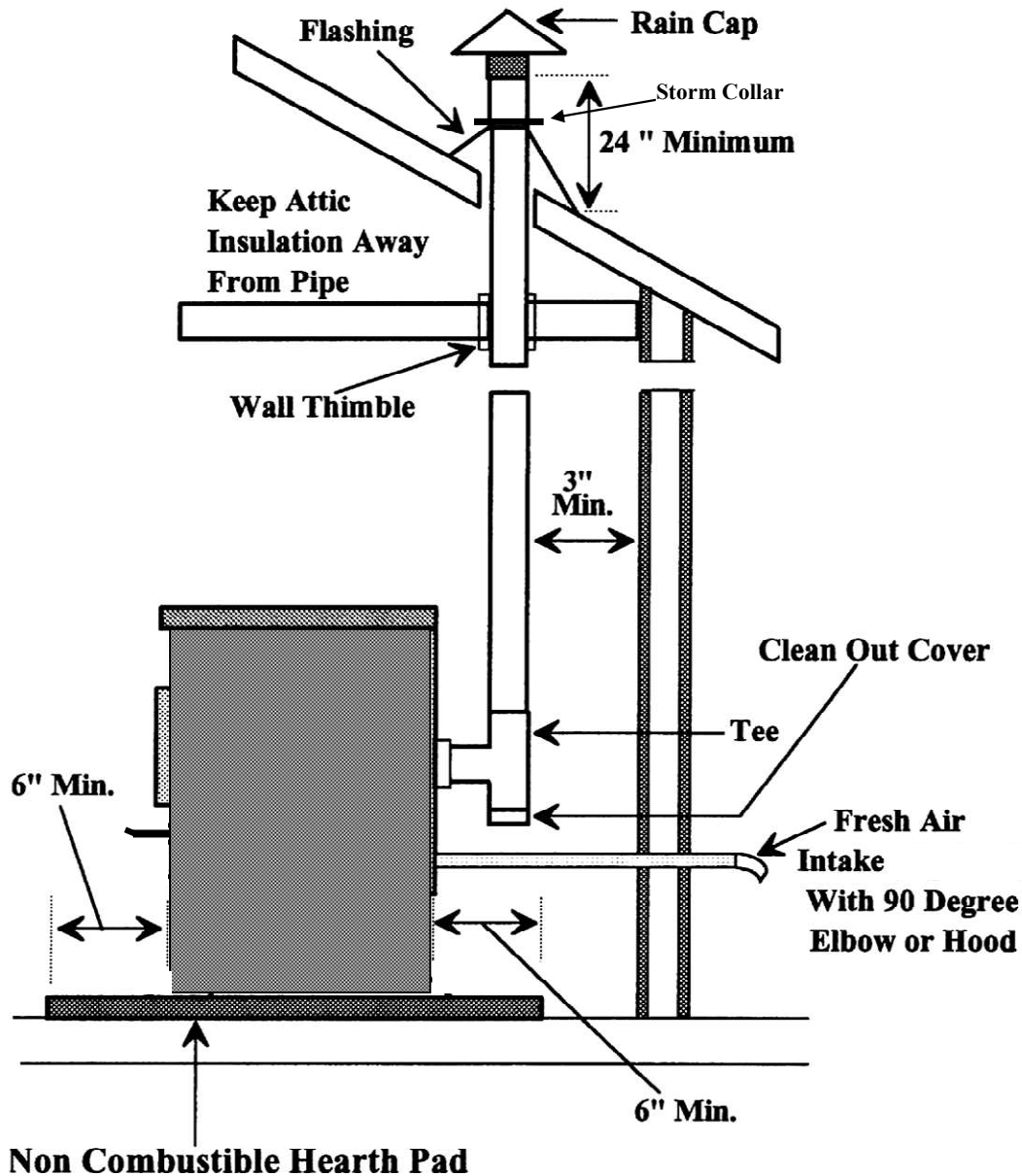
SINGLE WALL PIPE SHALL NOT BE  
USED FOR ANY INSTALLATION.

HORIZONTAL INSTALLATION SHALL  
BE A MAXIMUM OF 5' FEET.



**WARNING:**  
Vent surfaces can become hot enough to cause burns  
if touched. Non-combustible shielding may be required.

**PLEASE FOLLOW THE PIPE MANUFACTURER'S INSTRUCTIONS AND LOCAL BUILDING CODES FOR  
THE CLEARANCES TO COMBUSIBLES REQUIRED FOR INSTALLATION OF THE VENT PIPE BEING USED.**



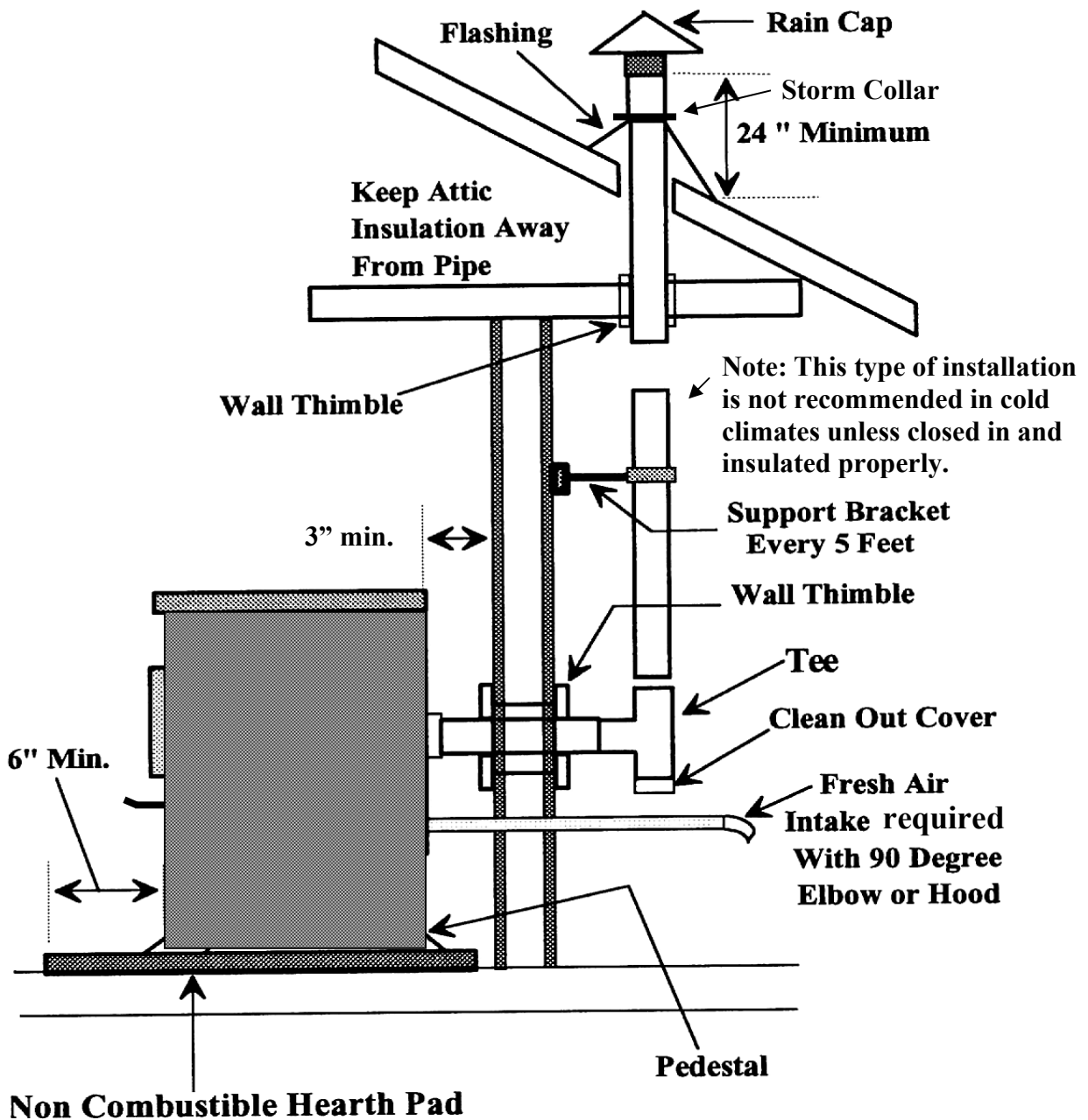
## INSIDE VERTICAL PIPE WITH ROOF TERMINATION

### VERTICAL INSTALLATION

#### GUIDELINES ON CONNECTING TO AN EXISTING FACTORY-BUILT CHIMNEY:

1. Inspect the chimney for the presence of creosote, soot or other combustible deposits, and blockage or obstructions. Thoroughly clean the chimney and remove any obstructions.
2. Thoroughly inspect the chimney for soundness, proper clearances and presence of all necessary parts, including a chimney cap, prior to making the connection.
3. This stove may be connected to an existing ceiling-mounted factory-built chimney with a diameter of 4, 6, or 8 inches.
4. Use a 3-4", 3-6" or 3-8" Chimney Adapter provided by the vent manufacturer.
5. Use only listed 3 inch Type PLCorn/ pellet vent pipe between the stove and the chimney.
6. Follow the pellet vent manufacturer's instructions to assemble the vent pipe and make the connection to the chimney.





**THROUGH THE WALL, VERTICAL PIPE INSTALLATION WITH TERMINATION THROUGH THE ROOF**

**Warning:** Unless the venting is enclosed and insulated, this installation will cause poor venting, excess ash buildup, premature failure of exhaust system, staining of the house siding and serious creosote buildup. This installation should not be used in a cold climate area.

# AC CONTROL PANEL/THERMOSTAT HOOK-UP

**WARNING: ALWAYS DISCONNECT POWER CORD DURING ANY ELECTRICAL OPERATION**

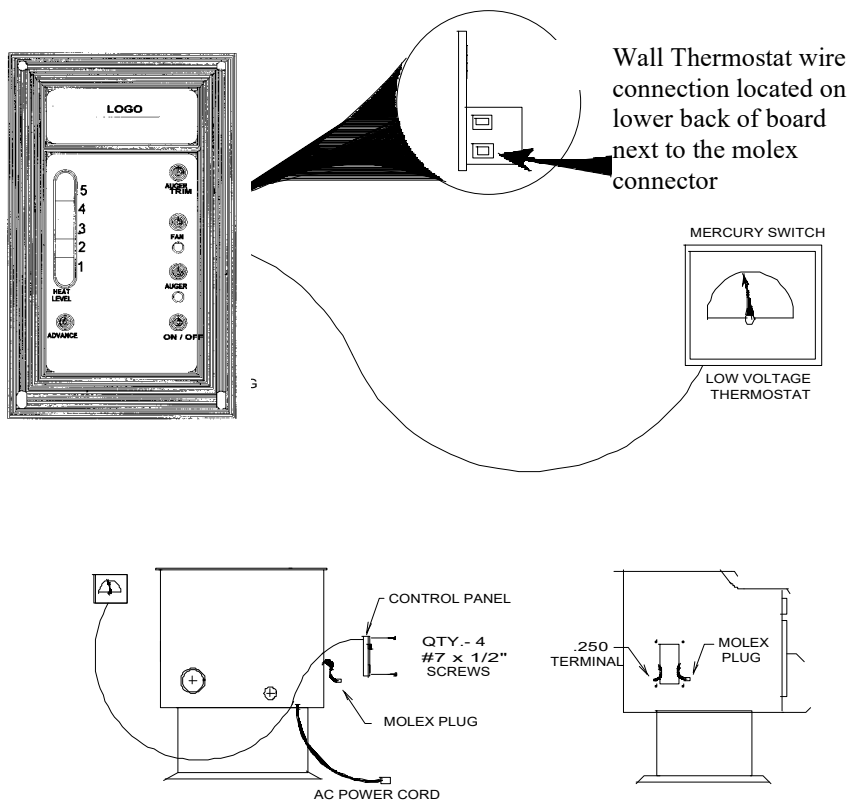
1. Remove control panel from protective packaging. (If control board is not installed on unit)
2. Connect the one way molex plug to the control panel; do not pull on the wire harness inside the stove.  
(NOTE: There are two molex plugs on the DC board, do not use this board on the AC unit)

**NOTE: Use only a low voltage mercury or bi-metal thermostat switch. (No power Required on thermostat)**

**NOTE: If you are not going to use the thermostat function and will operate the unit in the manual mode, then skip steps #3 -#8 and go to Step #9.**

3. Locate the thermostat on a wall six (6') to (10') feet away.
4. Route the wires into the stove near where the AC power cord enters.
5. Pull the thermostat wire through to the control panel cut-out.
6. Connect the thermostat wires to the two terminals on the back of the control panel.  
When the room temperature drops below the thermostat setting, the thermostat switch will close, allowing the stove to operate at the medium or higher settings. When the room temperature matches the thermostat setting, the thermostat switch will open, allowing the stove to operate at the low setting.
7. Locate the control panel into the side panel cut-out and secure with four (4) #7 X ½ Phillips screws (supplied). Do not over tighten. Set Control Board to thermostat operation (top front of board)
8. The stove is now ready for operation. Refer to the **OPERATING INSTRUCTIONS**

**Note: The thermostat function of the stove will cycle with the room temperature when the "Fuel Feed Control" is set at a medium or higher setting and the switch on the top front of the control panel is set to the T-STAT setting.**



# DC CONTROL PANEL/THERMOSTAT HOOK-UP

**WARNING: ALWAYS DISCONNECT POWER CORD DURING ANY ELECTRICAL OPERATION**

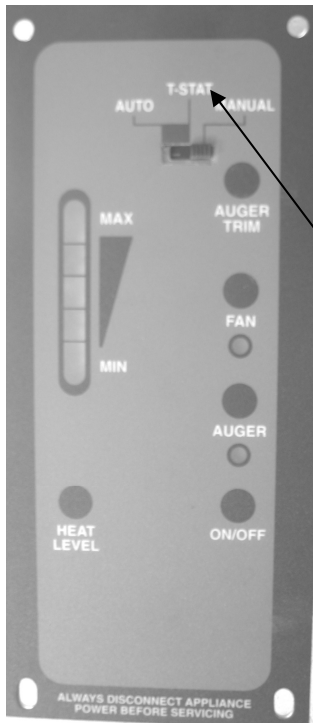
**NOTE: Use only a low voltage mercury or bi-metal thermostat switch. (No power Required on thermostat)**

**NOTE: If you are not going to use the thermostat function then skip steps #9 -#14.**

9. Locate the thermostat on a wall six (6') to (10') feet away.
10. Route the wires into the stove near where the AC power cord enters.
11. Pull the thermostat wire through to the control panel cut-out.
12. Connect the thermostat wires to the two terminals on the back of the control panel.  
When the room temperature drops below the thermostat setting, the thermostat switch will close, allowing the stove to operate at the medium or higher settings. When the room temperature matches the thermostat setting, the thermostat switch will open, allowing the stove to operate at the low setting.
13. Locate the control panel into the side panel cut-out and secure with four (4) #7 X ½ Phillips screws (supplied). Do not over tighten.
14. The stove is now ready for operation. Refer to the **OPERATING INSTRUCTIONS**

**Note: The thermostat function of the stove will Cycle with the room temperature when the "Fuel Feed Control" is set at a medium or higher setting.**

The Thermostat wire connection is located on the back of the board just above the white molex connector.



To operate the unit in the thermostatic operation mode, place the selector switch in the T-Stat position. (center position) **NOTE: THE UNIT WILL NOT OPERATE IF YOU HAVE THE MODE SWITCH IN THE T-STAT OR AUTO POSITION AND DO NOT HAVE THE UNIT HOOKED TO A WALL THERMOSTAT. IF THIS IS THE CASE, SWITCH THE MODE TO MANUAL.**

# OPTIONAL 12 VOLT BATTERY BACK-UP

## NOTE: FOR BC-DC MODEL ONLY

**WARNING: ALWAYS DISCONNECT POWER CORD DURING ANY ELECTRICAL OPERATION**

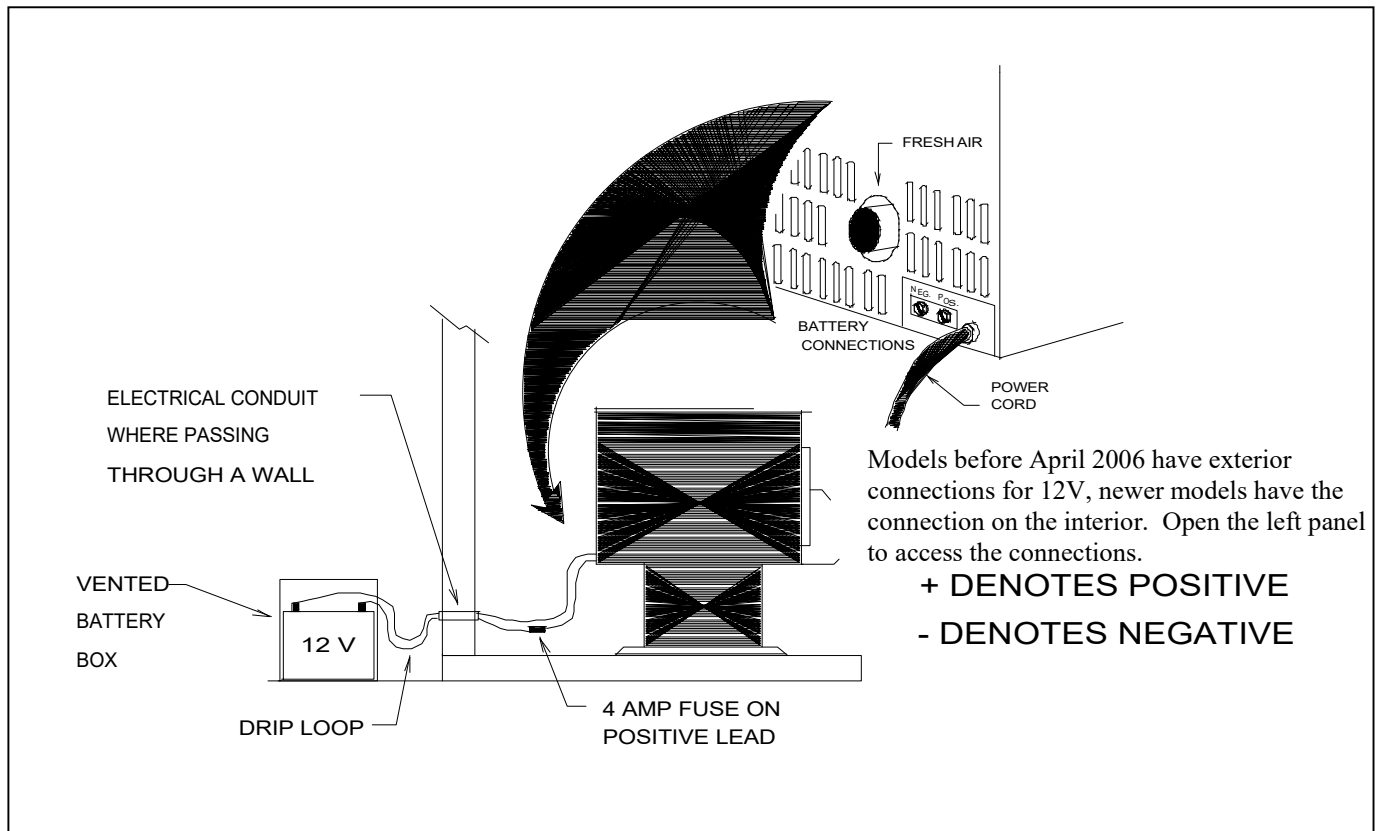
**Note: Never use an unsealed battery**

1. Disconnect the 120 volt AC power before connecting the 12 volt battery.
2. Determine the location for the 12 volt battery and obtain the proper length and type of wire (Use 18 gauge stranded wire)
3. Drill and install 1/2" conduit where passing through a wall or floor.
4. Connect a red 18 gauge wire to red positive (+) battery terminal on the stove. (located on some models on the back of the stove and on newest models on the inside of the stove. (see drawing)
5. Install a 4 amp inline fuse on the red positive wire near the stove.
6. Connect a black 18 gauge wire to black negative (-) battery terminal on the stove.
7. Pass wire through the conduit to battery location. Allow enough wire length between battery box and exterior wall for a drip loop to prevent moisture from reaching terminals. (see diagram)
8. Connect the red positive (+) lead to the positive (+) battery terminal.
9. Connect the black negative (-) lead to the negative (-) battery terminal.
10. Reconnect the 120 volt AC power. The stove is now ready for 12 volt back-up and will switch automatically to 12 volt operation when AC power is lost. When AC power is restored, the stove will automatically switch back to AC power and recharge the battery.

**NOTE: THE SELF IGNITER WILL NOT START THE STOVE IN THE DC POWER MODE. (12v Battery Back-up) VOLTAGE MUST BE KEPT ABOVE 10 VOLTS.**

## STARTING THE STOVE IN DC POWER MODE (12v Battery Back-up)

1. See standard starting operations.



# BASIC OPERATING INSTRUCTIONS (BC-DC Models)

**NOTE:** Each time BEFORE the stove is started, the firepot should be checked for debris and clear air holes. Some fuel will cause the firepot to build up more frequently making it necessary to stir and clean the firepot more often. Do not allow ash to build up underneath the firepot. Take the firepot out at least weekly to vacuum out any ash in the bottom.

## PRIMING THE AUGER:

Never leave the stove unattended during priming or start-up. Priming the auger is required when the unit is new or when the hopper has completely run out of fuel. Use starter fuel to light the stove as corn is hard to start.

TO PRIME THE AUGER: Place Thermostat switch in manual position or turn up wall thermostat to call for heat.

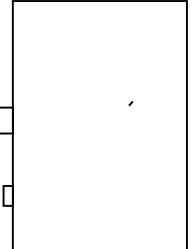
**NOTE:** Make sure that the hopper lid is closed when starting unit or the auger will not run.

- Load the hopper with Fuel. Plug the unit into 120 volt outlet Close Lid
- Push the “On/Off” switch to start the control. (green light will blink) Wait about 1 minute,
- Press the “auger” switch button until fuel begins to drop into the firepot.  
Only allow a small amount of fuel to drop into the firepot

## STARTING YOUR STOVE

**Note:** The viewing door, ash pan door and hopper door must be closed and latched during operation.

Air intake, butter fly damper adjustment



- Plug unit in. Turn the air intake butterfly damper to approximately ¼ open. (Located on back of unit, handle shows direction of air butterfly)
- If using a DC battery, make sure that all connections are secure. If the unit will not start, the battery (not supplied with unit) may need charging.
- Clean out the firepot; make sure nothing is plugging or covering the igniter.
- Press the “On/Off” switch to the “On” position (green light is blinking).  
This stove is equipped with a self igniter (optional) that will start the starter fuel.

**NOTE:** You cannot use the self igniter to start

**corn. You must place a hand full of wood pellets(starter fuel) in the firepot and then you will be able to start the corn as it auger in. The igniter will not operate if the unit is on DC battery power. You must manually light the unit.**

Fuel will drop into the firepot and ignite in 3-5 minutes. The igniter will continue to run for approximately 10 min until a fire is established.

If a fire is not started within the minimum cycle, the auger will stop feeding and You will need to start the cycle over again.

Pushing and holding the Auger switch allows you to prime the auger and add fuel to the firepot automatically. This can be done app. 1 minute after pushing the on/off start button. The unit starts automatically on the #2 heat setting. When you have started the unit (app. 10 minutes) you can press and release the Heat level button and it will advance one heat setting. Adjust the air to app. ½ open or until fire is burning bright. Press the button until you

Have reached the desired heat setting. It is recommended to burn the unit on the Number 2 heat setting for the first 30-45 minutes before advancing the heat setting.

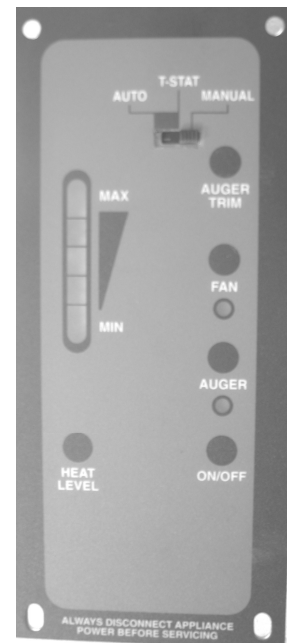
The convection blower speed varies directly with the feed rate. The “High Fan” switch will override the variable fan function (# 1 heat setting only). Setting 2-5 is full fan speed.

**NOTE:** In case of a power outage or interruption lasting longer than 5 seconds, the “Start” button must be pushed to re-engage the auger. The self-igniter will not operate if the unit is on battery power. Manually light the unit.

**IMPORTANT:** The circuit board will not function properly if the outlet is not a constant 120 volt, 60 cycle power source. The outlet must be grounded properly and have the correct polarity. A polarity and ground tester can be picked up at any hardware store to assure proper operation. If you are using a power generator, solar power or wind generation make sure that you have a constant correct power source.

The unit electrical warranty would become void if a constant power source is not available. Also make sure that a proper surge protector is between the unit and the power source. The circuit board will not be warranted if there is not a surge protector installed to the unit.

It is strongly recommended that you unplug the power source during times when the unit is not being operated to protect the unit from power surges, power spikes and drops in power. It is very common for a circuit board to work when the unit is shut off in the spring and then won't work in the fall. Unplugging the unit will prevent this from happening.



# BASIC OPERATING INSTRUCTIONS (BCAC models)

**NOTE:** Each time the stove is started, the firepot should be checked for debris and clear air holes. Some fuel will cause the firepot to build up more frequently making it necessary to stir and clean the firepot more often. Do not allow ash to build up underneath the firepot.

## PRIMING THE AUGER:

Never leave the stove unattended during priming or start-up. Priming the auger is required when the unit is new or when the hopper has completely run out of fuel. Be sure to vacuum out the hopper every 4-6 bags of fuel.

TO PRIME THE AUGER: : Place Thermostat switch in manual position or turn up wall thermostat to call for heat.

- Load the hopper with fuel Plug the unit into a grounded 120 volt 60 hertz outlet.
- Push the “On/Off” switch. (green light will blink) Wait about 1 minute,
- Press the auger override button until pellets begin to drop into the firepot. When corn begin to drop regularly, the auger is primed. You may need to prime the auger a couple times if the fuel has been completely run out. This may take a few lightings more than normal. Do not run too much fuel into the firepot ( 10-15 )

**STARTING YOUR STOVE:** : Place Thermostat switch in manual position or turn up wall thermostat to call for heat.

**Note:** The viewing door, ash pan door and hopper door must be closed and/or latched during operation.

- Turn the air intake butter fly damper to approximately  $\frac{1}{4}$  open.
- Clean out the firepot, make sure nothing is plugging the igniter.
- Press the “On/Off” switch to the “On” position (green light will blink).  
This stove is equipped with a self igniter (optional) that will start Wood Pellet starter fuel without the use of fire starter. **NOTE: You cannot use the self igniter to start corn. You must place a small hand full of wood pellets in the firepot and then you will be able to start the corn as it auger in.**

Fuel will drop into the firepot and ignite in 3-5 minutes. The igniter will continue to run for approximately 10 min until a fire is established.

If a fire is not started within the minimum cycle, the auger will stop feeding and You will need to start the cycle over again.

Pushing and holding the Auger switch allows you to prime the auger and add fuel to the firepot automatically. This can be done app. 1 minute after pushing the on/off start button. The unit starts automatically on the #2 heat setting.

When you have started the unit (app. 10 minutes) you can press and release the Heat level button and it will advance one heat setting. Adjust the air to app.  $\frac{1}{2}$  -  $\frac{3}{4}$  open or until the fire is burning bright. Press the button until you have reached the desired heat setting. It is recommended to burn the unit on the number 2 heat setting for the first 30-45 minutes before advancing to a higher setting. Adjust the air damper after app. 1 hour so that the firepot does not fill up with fuel more than app.  $\frac{1}{2}$ ” of fuel in the bottom of the firepot.

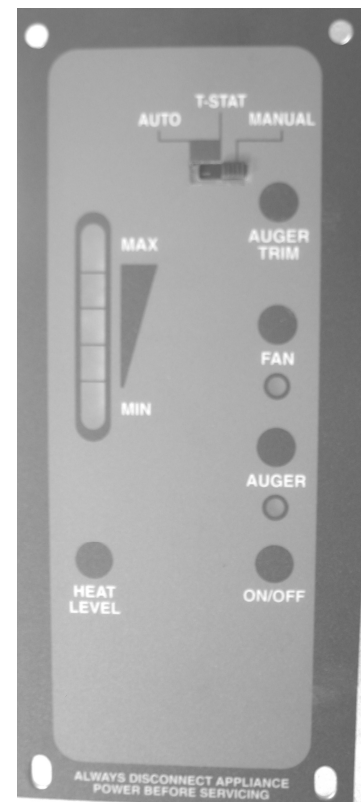
The convection blower speed varies directly with the feed rate. The “Fan” button will override the variable fan function when pressed. It will set the convection blower to high at any feed rate setting.

**NOTE:** In case of a power outage, the pressure switch has tripped, the door has been opened, the hopper door has been left open or any power interruption lasting longer than 5 seconds, the “On/Off” button must be pushed and held for app. 5 seconds (or until you here a click) to re-engage the auger system.

**IMPORTANT:** The circuit board will not function properly if the outlet is not a constant 120 volt, 60 cycle power source. The outlet must be grounded properly and have the correct polarity. A polarity and ground tester can be picked up at any hardware store to assure proper operation. If you are using a power generator, solar power or wind generation make sure that you have a constant correct power source.

The unit electrical warranty would become void if a constant power source is not available. Also make sure that a proper surge protector is between the unit and the power source. The circuit board will not be warranted if there is not a surge protector installed to the unit.

It is strongly recommended that you unplug the power source during times when the unit is not being operated to protect the unit from power surges, power spikes and drops in power. It is very common for a circuit board to work when the unit is shut off in the spring and then won't work in the fall. Unplugging the unit will prevent this from happening.



## BASIC OPERATION INSTRUCTIONS...continued (ALL MODELS)

### PROPER FUEL

This stove is designed and approved to burn approved corn agri-fuels only. Do not use any other type of fuel. Clean corn with moisture content less than 15% must be used. The use of unapproved fuel will void all warranties. Do not burn damp or wet fuel. The stove's performance depends greatly on the quality of your fuel.

**Clean fuel means a consistent and trouble-free operation. Do not use corn that has:**

1. **Excess fines**-loose material that looks like sawdust or sand. Loading this material into the hopper may eventually slow down or jam the auger and prevent the flow of fuel in the hopper compartment. Dirty Corn (corn cobs, cockle burrs, etc. will plug the auger)
2. Wax content corn cannot be used.
3. **High ash content**-avoid fuel that immediately smoke up the viewing window and leave a residue in the burn pot. You will be required to clean the ash boxes and vent pipe more frequently. It may be necessary to sample several brands until you find a brand of fuel that will burn properly. Corn supply must be clean, consistent and preferred 11-12% moisture.

### RUNNING YOUR STOVE (WARNING) DO NOT ATTEMPT TO OVERFIRE STOVE

- A. After starting the stove, leave it burning on the 2<sup>rd</sup> setting for at least 30-45 minutes to allow the stove to heat to operating temperatures. You may then set the desired burn rate by pressing the heat level button until you reach the desired operating position. Select the most efficient burn by adjusting the air damper control about 1/3 to 1/2 open, 1/2 to 3/4 on higher settings. An air damper closed too much will produce a lazy and slow flame. Adjusted properly, the flames should be bright and lively. Altitude and fuel types greatly affect the amount of air required. Opening the damper approximately 1/3-1/2 will be sufficient for most installations and fuels. **The operating temperatures of this unit may vary with the different types or grades of fuel used. BTU values can vary 30-40%. Always adjust your air setting so that there are no visible signs of smoke. DO NOT SET THE STOVE ON HIGH RIGHT AWAY.**

### TURNING THE STOVE OFF

- A. Press the On/Off button. The room& exhaust fan will continue to run for approximately 45 minutes to let the stove cool down, and then shut itself off.

**NOTE: IF THIS UNIT RUNS OUT OF FUEL AND COOLS DOWN, THE AUGER WILL STOP FEEDING. IT WILL BE NECESSARY TO RE-PRIME THE AUGER ANY TIME THE HOPPER EMPTIES. THE BLOWERS WILL CONTINUE TO RUN UNTIL UNIT COOLS DOWN OR THE ON/OFF BUTTON IS PRESSED TO SHUT THE UNIT DOWN MANUALLY.**

**WARNING: DO NOT USE ADDITIONAL GRATES TO SUPPORT THE FUEL.**

**WARNING:** Auger jams are the leading cause of stove malfunctions. Jams occur due to foreign objects in the fuel, or more commonly, failure to follow the operating instructions. Most auger jams are preventable by properly priming the auger as required before starting the stove. Keeping the hopper from running out of fuel will help prevent auger jams. Warranty does not cover damage due to auger jams.

**IMPORTANT:** Selecting the proper combustion air is done by turning the air damper control rod closed or open to decrease or increase the air flow (direction of rod, horizontal= open, vertical = closed). High altitude or high ash fuel may require more air for efficient fuel combustion. The stove should be started with the damper control rod in the 1/4 to 1/3 open position. Once the air damper is set for your fuel and installation conditions, it should rarely need to be changed. Having to frequently change the air setting

could mean improper fuel, installation, negative or positive pressure in the home or other operational problems.

## CLEANING INSTRUCTIONS

**NOTE: BE SURE THE STOVE IS TURNED OFF, THE POWER CORD IS UNPLUGGED, AND THE UNIT IS COLD BEFORE CLEANING OR SERVICING.**

**FOR TECH BULLETINS & VIDEOS GO TO [WWW.AMERICANENERGYSYSTEMS.COM](http://WWW.AMERICANENERGYSYSTEMS.COM)  
RECOMMENDED CLEANING PERIODS:**

- A. The heat exchange tubes in the stove cleaned every 1-2 days.
- B. The fire box/ash pan cleaned every 3 to 7 days or when needed.
- C. The interior ash chambers inspected and cleaned monthly or as needed.
- D. The chimney pipe and cap checked/cleaned every 2-4 weeks for soot buildup.
- E. Combustion/room blower cleaned as needed. Check monthly, clean semi-annually.
- F. Back cabinet area checked/cleaned monthly, hopper checked for leaks monthly.
- G. Hopper vacuumed out weekly or more often if fuel has a lot of fines, dirt, cobs, etc.
- H. Glass cleaned as needed or weekly. Do not use petroleum products or clean hot.

### DISPOSAL OF ASHES:

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

**WARNING: MANY HOME VACUUM CLEANERS ALLOW ASH TO ESCAPE INTO THE ROOM AIR; HOWEVER, VACUUMING IS RECOMMENDED OCCASIONALLY TO AID IN SEASONAL CLEANING AND KEEP THE UNIT FREE OF EXCESS ASH. DISCARD THE VACUUM BAG AFTER EACH USE ON THE STOVE. Use an approved Ash Vacuum system.**

### FIREBOX: This needs to be done every 3-7 days depending on fuel quality, heat setting

Shut off unit and let cool down, open the door, sweep or vacuum out the ash buildup. Remove the firepot and empty, inspect all air holes and clean if blocked. Inspect under the firepot for build up of ash. Replace the firepot in the stove.

### BACK ASH CHAMBER AREA: Every 2-4 weeks

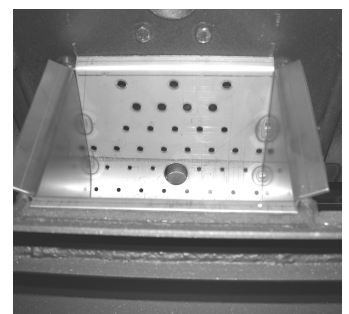
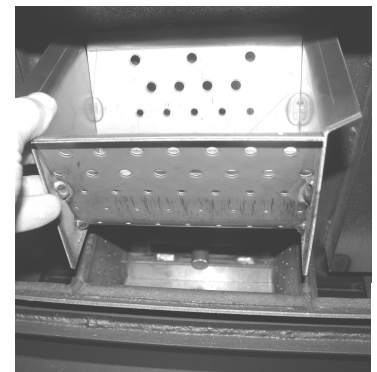
Periodically inspect the back ash chambers to make sure that they have not plugged. Contact your local dealer for the proper cleaning tools. Clean out any obstruction that would cause the ash to not drop out of the chamber. There is a clean out plug behind the ash pan that needs to be inspected once a month.

### ASH PAN: Empty when needed

Empty the ash pan before it overflows with ash. Clean out the area that the ash pan sits in so that the ash pan can go back to its original location.

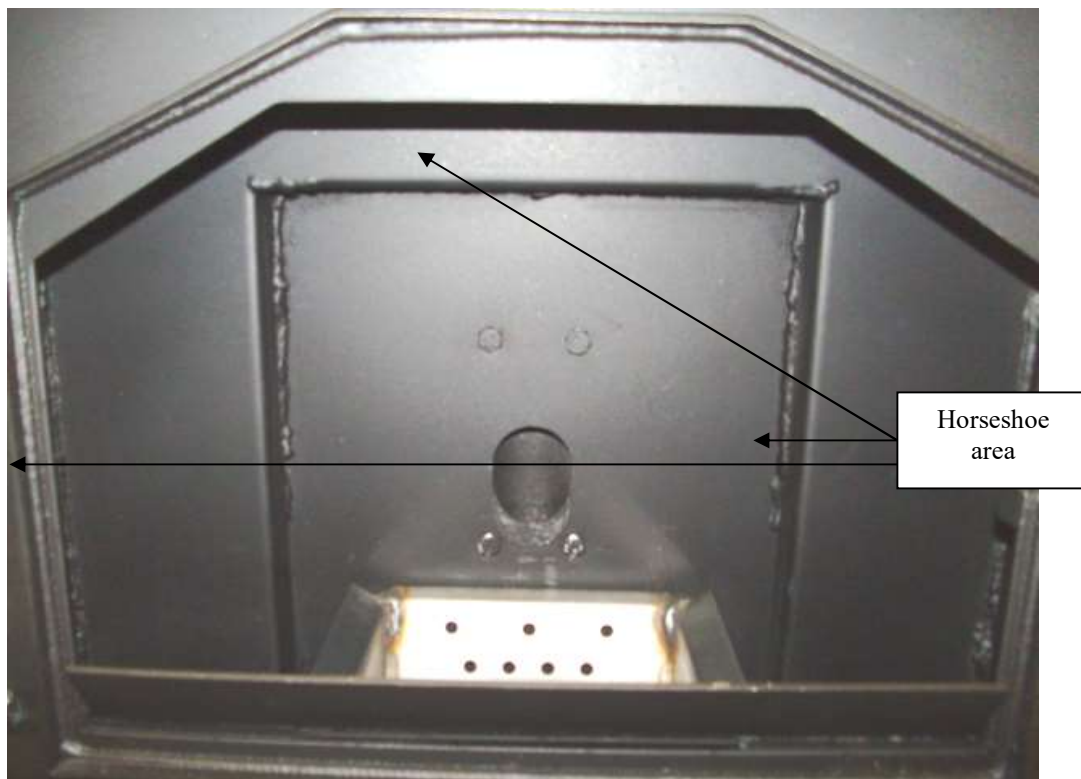
**NOTE:** The ash pan door must be latched for the unit to operate.

**WARNING: Failure to clean the stove is a leading and preventable cause of stove malfunctions. Fuel types and installations may dramatically affect the cleaning intervals required for your stove. Sampling different brands of fuel to find the cleanest burning fuel available in your area can greatly reduce the amount of maintenance required.**

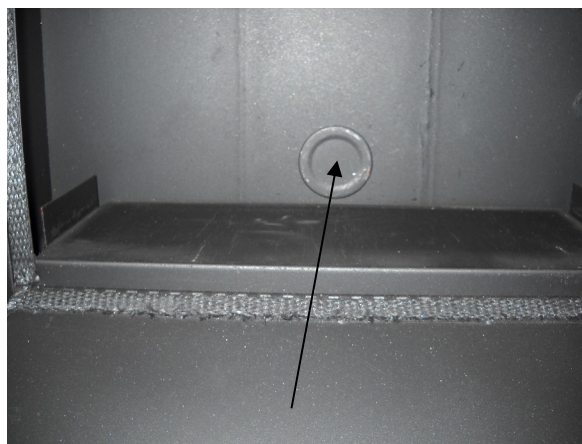
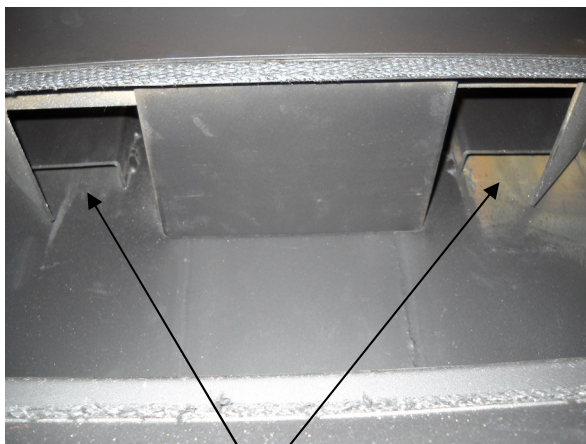




## Horseshoe area to clean behind the firepot on Baby Countryside BC-AC & BC-DC



To Access the horseshoe area open the ash pan, remove the ash pan and run a wire or something flexible like a tape measure up each side indicated by the arrows below. Try to work over the top to clean that area also. If really plugged you might need to use compressed air. Hint, do this with the exhaust blower running to keep dust out of the home.



Run wire or other up each side at these locations, also if your model is a newer model, take out the cleaning plug shown and vacuum out the area inside real well all the way back to the air intake.

Also pull the cleaning rake forward and using your wire, clean the tubes in the back of the unit as good as possible. Take the firepot out and make sure that all holes are open and vacuum out holes if necessary. Make sure that firepot fits down snug on the firepot cradle.

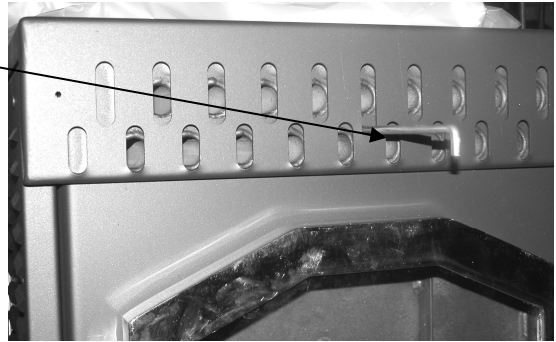
## CLEANING INSTRUCTIONS...continued

**WARNING: DISCONNECT THE POWER CORD BEFORE CLEANING OR SERVICING THIS UNIT. THE STOVE MUST BE TURNED OFF AND COOLED BEFORE USING THE RAKE HANDLE.**

### I. HEAT EXCHANGER:

This stove is designed with a built-in heat exchange tube Rake. The ash handle is located on the front of the stove and is moved backwards and forwards several times to remove the buildup of ash. After cleaning, push the rake handle in until it stops.

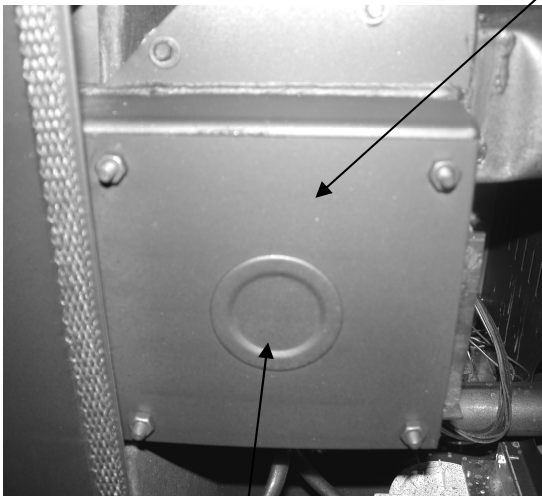
Ash Rake Handle



### II. COMBUSTION BLOWER:

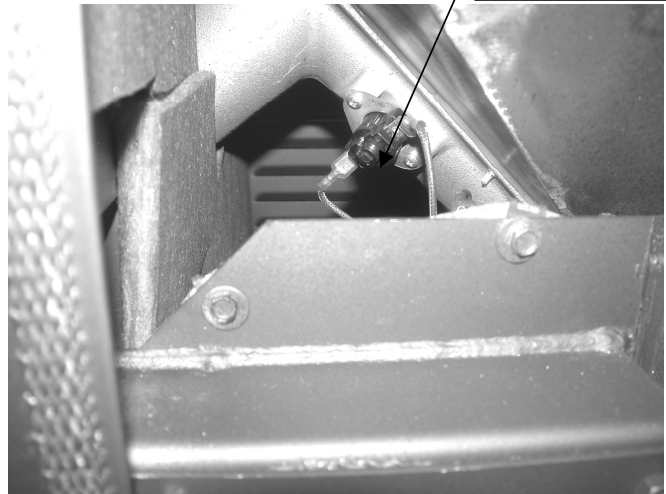
Over the course of the heating season dust and ash may collect on the blades of the combustion blower. Periodically they should be inspected and vacuumed clean. The combustion blower is accessed by opening the stove's right side panel and then removing the inspection caps or the exhaust manifold cover (See figure below). Never operate the stove without the inspection cap or manifold cover in place.

Inspection Manifold Cover



Inspection Cap

200 Manual Reset High Temp Shut Off Auger Thermodisk



Auto Reset 110 deg Normally open Cool Down



The Convection (room fan) blower will accumulate dust, pet hair, etc. on the blades during the heating season. This must be vacuumed clean as often as necessary. If you have pets, they will need to be cleaned regularly as the pet hair will clog up the fins and also the motor windings and cause premature wear, overheating and failure of the blower system.

## CLEANING INSTRUCTIONS...continued

**WARNING: DISCONNECT POWER CORD BEFORE CLEANING OR SERVICING.**

**NOTE: CLEANING INTERVALS MAY VARY GREATLY WITH DIFFERENT BRANDS OF FUEL DUE TO THE ASH CONTENT, MOISTURE, AND MATERIAL COMPOSITION OF DIFFERENT FUELS.**

### INSPECT AND CLEAN EXHAUST SYSTEM FREQUENTLY

	DAILY	WEEKLY	MONTHLY	ANNUALLY
<b>FIREPOT</b>	Stirred Emptied	SCRAPPED & CLEANED	Inspected	Inspected
<b>FIREBOX</b>	CHECKED	CLEANED		
<b>ASH CHAMBERS</b>	CHECKED	CLEANED	EXTRA CLEANING	
<b>EXCHANGER TUBES</b>	CLEANED	EXTRA CLEANING		Inspected
<b>COMBUSTION FAN</b>			INSPECTED	CLEANED
<b>VENTING SYSTEM</b>		CHECKED	CLEANED	Inspected & cleaned
<b>GASKETS</b>			INSPECTED	Inspected or replaced
<b>DOOR GLASS</b>		CLEANED	INSPECTED	

#### IV. CHIMNEY CLEANING:

- A. **Creosote Formation**-Any time a solid fuel product is burned slowly, tar and other bi-products of combustion are produced. These products can condense in a cooled chimney flue and will accumulate over a period of time. It is important to remove these products periodically to eliminate the possibility they will be ignited in the chimney and produce damage to the chimney or even possibly destroy the home. Clean the chimney as often as needed and never go more than a year without a flue cleaning.
- B. **Soot and Fly ash-Formation and Need for Removal**-The products of combustion will contain small particles of fly ash. The fly ash will collect in the exhaust venting system and restrict the flow of the flue gases. Incomplete combustion, such as occurs during startup, shutdown, or incorrect operation of the room heater will lead to some soot formation which will collect in the exhaust venting system. The exhaust venting system should be inspected at least once every year to determine if cleaning is necessary.
- B. **Inspection and Removal**-The chimney connector and the chimney should be inspected to eliminate the risk of a chimney fire. Check the chimney from both the top and bottom. The

creosote should be removed with a brush designed for your chimney. A chimney sweep can perform this service. It is recommended that before each heating season the entire system be professionally inspected, cleaned, and repaired if necessary.

### **SPRING CLEANING:**

When the heating season is over make sure that you clean out all of the fuel in the hopper, firebox area, ash pan and firepot area corn can accumulate moisture over the summer months causing the unit to rust and the fuel to mold.

It is recommended that prior to shutting down the unit in the spring, run the unit on the higher settings for a day to help clean out the heat exchanger system, venting system and firebox area.

When the unit is cleaned out, take the venting apart, clean out the fly-ash, rinse the venting out with a water hose and let dry, take the draft blower off and clean, clean out all areas such as back heat exchanger and lubricate the auger, auger tube, firepot area, fuel stirrer shaft and bearings and hopper area with a light oil. (Something like Pam cooking oil works great to coat the inside of the unit and the moving parts.

Clean the glass, doors and outer cabinet so that you are ready for the next heating season.

For additional information watch maintenance videos' at [www.americanenergysystems.com](http://www.americanenergysystems.com)

## **AUTOMATIC FEATURES**

### **A. THERMOSTAT OPTION:**

When using a thermostat, select either T-STAT or AUTO operation and set the stove to one of the medium or higher settings. The stove will burn at the rate selected on demand by the thermostat (medium to high). **NOTE: You cannot use the auto operation when burning corn.** When the room temperature drops below the thermostat setting, the thermostat switch will close, allowing the stove to operate at the medium or higher settings. When the room temperature matches the thermostat setting, the thermostat switch will open, allowing the stove to operate at the low setting or will shut the unit off if in the AUTO mode.

### **B. THERMOSTAT EQUIPMENT REQUIRED (optional):** A low voltage millivolt thermostat that will automatically switch between settings previously selected. Type CL2 thermostat wire-20 AWG, 2 conductors.

### **C. STOVE PRESSURE SENSOR:**

A blocked flue, a down draft, open door, open or unlatched ash drawer, open hopper lid, negative or positive pressure in the home, drafty location of the appliance, not hooking up the outside air, improper make up air for the home, improper venting or failure to clean the 3" exhaust in the stove will cause the pressure switch to shut off the fuel feed. To resume operation, it is necessary to locate the cause and correct it. Restart the stove following the instructions in this manual. Contact your local Magnum dealer for help if needed.

### **D. HIGH TEMP THERMODISK:**

If the stove overheats, it will shut itself down safely. The stove may not be restarted until it has cooled and the reset button is depressed. (See Thermodisk location section) If the auger does not turn after cleaning the back of the unit, you might have tripped this disk. Check it by pressing in on the center button until it clicks into place.

**WARNING: "THIS HEATER HAS A MANUFACTURER-SET MINIMUM LOW BURN RATE THAT MUST NOT BE ALTERED. IT IS AGAINST FEDERAL REGULATIONS TO ALTER THIS SETTING OR OTHERWISE OPERATE THIS HEATER IN A MANNER INCONSISTENT WITH OPERATING INSTRUCTIONS IN THIS MANUAL." DO NOT TAMPER WITH ANY MECHANISM ON THIS APPLIANCE.**

**E. SELF-IGNITER:**

Automatically ignites wood pellets within 3-5 minutes, without the use of fire starter. The igniter will continue to run for approximately 10 minutes until a fire is established. If the fuel is wet, poor quality or the hopper not primed, it might take 2-3 cycles for the unit to properly light. Using a little fire starter will help with this. **Do not attempt to light corn without starter fuel.**

**F. PROOF OF FIRE THERMODISK:**

If the temperature required by the PROOF OF FIRE thermodisk is not high enough within the 15 minute cycle, the auger will stop feeding fuel and you will need to push the ON/OFF button to start the cycle over again. This is not unusual to happen so be patient.

**G. COOL DOWN SENSOR: (Same as Proof of Fire Thermodisk)**

After the power switch has been moved to the "OFF" position, the blowers will continue to run for approximately 45 minutes. The cool down sensor will allow the stove to cool down and then automatically shut itself off. If the hopper runs out of fuel and the stove cools off, the auger will stop feeding. However, the blowers will continue to run until the POF switch has cooled down to initiate the shut down cycle.

**GLASS MAINTENANCE, ADJUSTMENT, REMOVAL AND REPLACEMENT**

Your **Magnum Stove** comes to you with the glass door installed in place, ready for use. The glass is surrounded on the edges with a gasket and seated in a glass channel. It is held in place with two (2) clips on the top and two (2) clips on the bottom

**REMOVAL OF BROKEN OR DAMAGED GLASS**

Open the door and lift off of hinges. If the door is tight, tap gently on the bottom of the door with your hand or rubber hammer. Lay door down on newspaper with glass clips facing you. Using a #2 Phillips screwdriver, loosen the screws and take off the glass clips. Remove the broken glass carefully and discard. Check to make sure that the gasket material under the glass is in good shape. You can get this material from the factory or from an authorized **Magnum** reseller if it needs to be replaced.

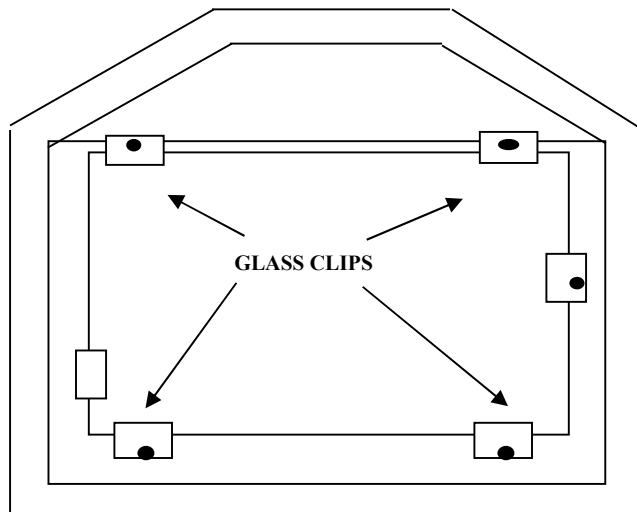
Reverse the above procedure for replacing new glass. **When installing the new glass make sure that the glass is not sitting on top of any obstruction. The glass will break when tightening the screws if the glass is on the gasket. Hold the glass toward the top of the door glass channel when tightening.**

**WARNING**

**Do no operate unit with broken glass.  
Do not substitute original factory glass.  
You must use only factory authorized glass:  
(8.984 x 12.563" high temperature Ceramic glass, 5mm  
thick)  
Do not slam door shut.  
Do not strike glass.  
Do not use abrasive cleaners.**

## CLEANING THE GLASS

When the fire is first started, it will produce some smoke. The smoke might accumulate on the glass surface. Before the fire gets hot, open the door and wipe the glass surface off with a damp rag. Do not touch the surface with your hands. If after constant use, the glass is dirty; you must clean the glass so that it will not become etched with the fly-ash. When the glass has cooled off, take a damp rag, put a little fly- ash from the unit on it and clean the glass. If this does not clean the glass use a special glass cleaner provided by your **Magnum** reseller. **We have found that Amway crème glass & chrome cleaner works real well.**



## **CIRCUIT BOARD FUNCTIONS (Expanded operation and Board functions?)**

### Startup/ normal operation

When the circuit board is energized (the On/Off button is pushed), the start up cycle is initiated. This starts a timed 8-15 minute cycle which allows the unit to light. If the unit is on AC power, the automatic ignition system will energize. The igniter (optional feature) will glow red in the firepot for 10 minutes and then shut off to protect the igniter. If the unit is on DC back up power the automatic ignition system will not work and the unit will have to be lit manually. If the proof of fire thermodisk has not reached operating temperature, the unit will go into the shut down mode. The circuit board is programmed to start on the proper feed rate no matter where the heat level is set. The unit should be set to the # 2 heat level for the first 45 minutes. To restart the system if it does not light, push the ON/OFF button for 5 seconds and the startup sequence will start again. If you open the door, it will stop the startup sequence and you will need to push and hold the on/off button for 5 seconds to reset.

The circuit board is programmed to start on the number 2 heat setting no matter what the advance heat setting is on.

**NOTE:** Make sure that the wall thermostat is turned up so that the unit will start. (if using T-STAT or AUTO)

If using the “manual” mode function and not a wall thermostat but using the auto ignition feature, pushing the on/off button will initiate the startup sequence and the igniter will light the fuel.

If using the “manual” mode function and not a wall thermostat or the auto ignition feature, place a small handful of starter fuel in the firepot, mix in starter gel or place a starter block in the firepot, light the fire, wait app. 1 minute and close the door and then push the on/off button and the fire will light up. If the firepot fills up with too much fuel, push the on/off button to stop the fuel and let it burn up the excess fuel and then push the on/off button again to resume. You can also open the Hopper lid and the auger will stop until you close the lid again.

Once the unit is operating at the proper temperature (usually 10-15 minutes), the circuit board switches from the start up cycle to normal operation. (green light will change from blinking to solid green) Then the manual draft damper can be set for the right fuel load in the firepot (1/3 to ¾ open depending on heat setting and fuel quality).

The unit is best not to be operated for long periods of time on the highest setting. Optimum efficiency is achieved by using lower settings (2 or 3). It is also recommended that the unit not be run for extended periods of time on the number 1 setting. The draft blower and venting will fill up with fly ash after a long period of time. It is recommended to run the unit on a higher setting (2 or 3) once a week. Run it this way for a few hours to clear the venting and draft blower.

With all models, the manual draft will have to be adjusted (1/2 to 3/4 open) when the higher (4-5) heat settings are used. The circuit board will automatically change the draft and also the room air speed when you change heat settings.

If you open the door, ash pan door, hopper lid, have negative or positive pressure in the home or place the unit in a drafty location the vacuum pressure switch will shut off the auger and the unit will go out. You can reset the circuit board by pressing the On/Off button for 5seconds and the unit will re-set itself. If the unit does not respond, then the pressure switch will have to be re-set by shutting the unit down, unplugging the power and then starting over again.

### **Shutdown**

To shut the unit down simply turn the heat setting knob to the off position and the system will enter the shut down mode. **The room fan and exhaust blower** will continue to operate until the low limit cool down sensor tells it that the fire is out. Then the entire system shuts down.

**Before starting up the Magnum unit again, it is important to remember to clean out the firepot, empty the ashes, clean out the heat exchangers, vacuum out the hopper if needed and fill the hopper with fuel.**

## Circuit Board Functions (expanded) / Diagnostics operation

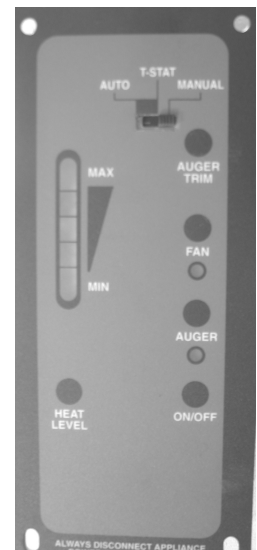
The ON/OFF button initiates the start of the circuit board and the shut down of the board. Pushing the ON/OFF button momentarily will engage the start up sequence. The ON/OFF button also is used to re-set the board when the vacuum switch or proof of fire switch is tripped. Pushing the ON/OFF button until the board re-sets (usually 3-5 seconds) will re-establish the system and the fire will continue unless there is a failure in the electrical components.

When you push the ON/OFF button to start the unit, the green light will flash until the start up sequence is done (app. 10-15 min.), then it turns to solid green. During the start up sequence, the fuel heat setting will be over ridden and the unit will feed at the #2 fuel setting. After the start up sequence is established (app. 10-15 min.) the unit will burn at whatever fuel level is chosen. The number 2 or 3 heat level is recommended.

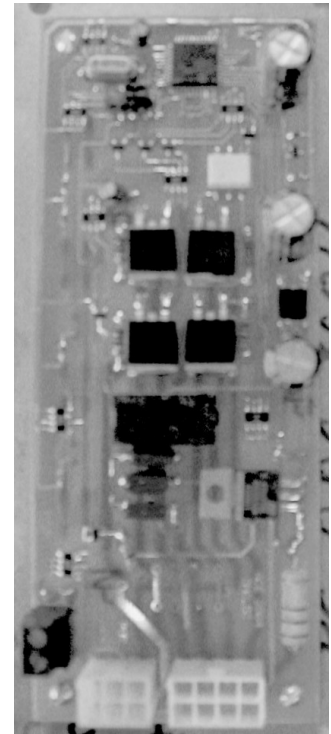
The auger light will come on when the auger is running. After the first minute of startup, you can hold the auger button down to override the system and manually prime the auger.

The fan button will override the # 1 heat level fan speed and go to high speed. This will not change the fan on the 2-5 heat settings

The auger trim button allows for low fuel setting fine tune adjustment on the # 1 heat setting only. When pushing the auger trim button, if the # 4 heat level light is shown this indicates the lowest fuel feed setting, when pushing the auger trim button again, if the # 5 heat level light is shown this indicates the highest fuel setting. If no light is shown, this indicates the normal programmed # 1 low heat setting.



The heat level button is a manual heat adjustment. Pushing the heat level button will advance the heat settings one level each time that it is pushed. The LED light will show which heat level that the unit is on. On start up, no matter where the heat level button is set, the unit will feed on the number 2 heat level. For the first minute after pushing the on/off button the heat selector will not advance. Once the start up sequence is established, the fuel feed will go to whatever level has been set. During a short power outage, the board will detect if the proof of fire switch is engaged. If it is still engaged (closed) the unit will auto re-start.



#### **DIAGNOSTICS:**

If the proof of fire switch does not close after 15 minutes, the board will shut down the igniter, auger feed motor and put the unit into a shut down mode. The # 3 led light will flash indicating that the proof of fire switch did not close. If the air pressure switch opens during operation at any time, the system will auto disable the auger motor and/or the igniter if during start up and the # 2 led light will flash indicating that the air pressure switch is not closed. This will initiate a shut down mode. As of 5/1/07 the following error lights have been added to the DC control panel. Bad auger motor is a #1 led light will flash and shut down the system, igniter drawing to many ohms a #4 led light will flash but system will continue to work but must be checked, high limit switch opens a #5 led light will flash and shut down the unit. If the start up mode fails during the AUTO T-STAT mode, unit will shut down and require toggling (on/off) of T-STAT to restart.

**Your Magnum Baby Countryside comes with the ability to use 3 separate programming features. This programming must be done by a qualified factory trained technician. Contact your local dealer or the factory to set up an appointment to have this done. The unit also has 3 separate modes of operation (switch located on top of board). Manual setting allows operator to choose heat setting changes. T-STAT setting allows operator to set the high setting and when the thermostat is satisfied, the unit will automatically go to the low setting. AUTO setting allows the unit to shut completely off when the thermostat is satisfied and re-start when the thermostat calls for heat.**

## **SETTING THE DRAFT**

A proper draft (air) setting is crucial to the successful burning of solid fuels. Draft (air) refers to the amount of air flowing through the burn chamber of your stove. Too much or too little draft (air) will cause your stove to burn improperly and may result in the fire burning out. Please follow these guidelines carefully as you operate your stove to achieve maximum efficiency and enjoyment. Always set your air setting so that there is no visible smoke.

- ✓ The amount of draft (air) required for your stove to burn properly will depend upon your installation and the fuel you use. You can set your manual draft (air) control by looking at the flame and following these guidelines. The manual draft lever is located on the back of the stove. Turning the lever toward vertical decreases the draft (air) and horizontal increases the draft (air). A little movement of the lever goes a long way to changing the flame. It may take several trial and error adjustments on the lever to achieve the correct burn setting.
- ✓ The flame should be an “active” flame. A flame that moves around lazily and emits visible smoke needs more draft (air). To give the fire more draft (air), turn the lever app. 1/8” and check the flame again. If the status of the flame has not changed, move the lever another 1/8” until you get a clean “dancing” flame. **If moving the damper does not change the fire or fuel is building up in the**

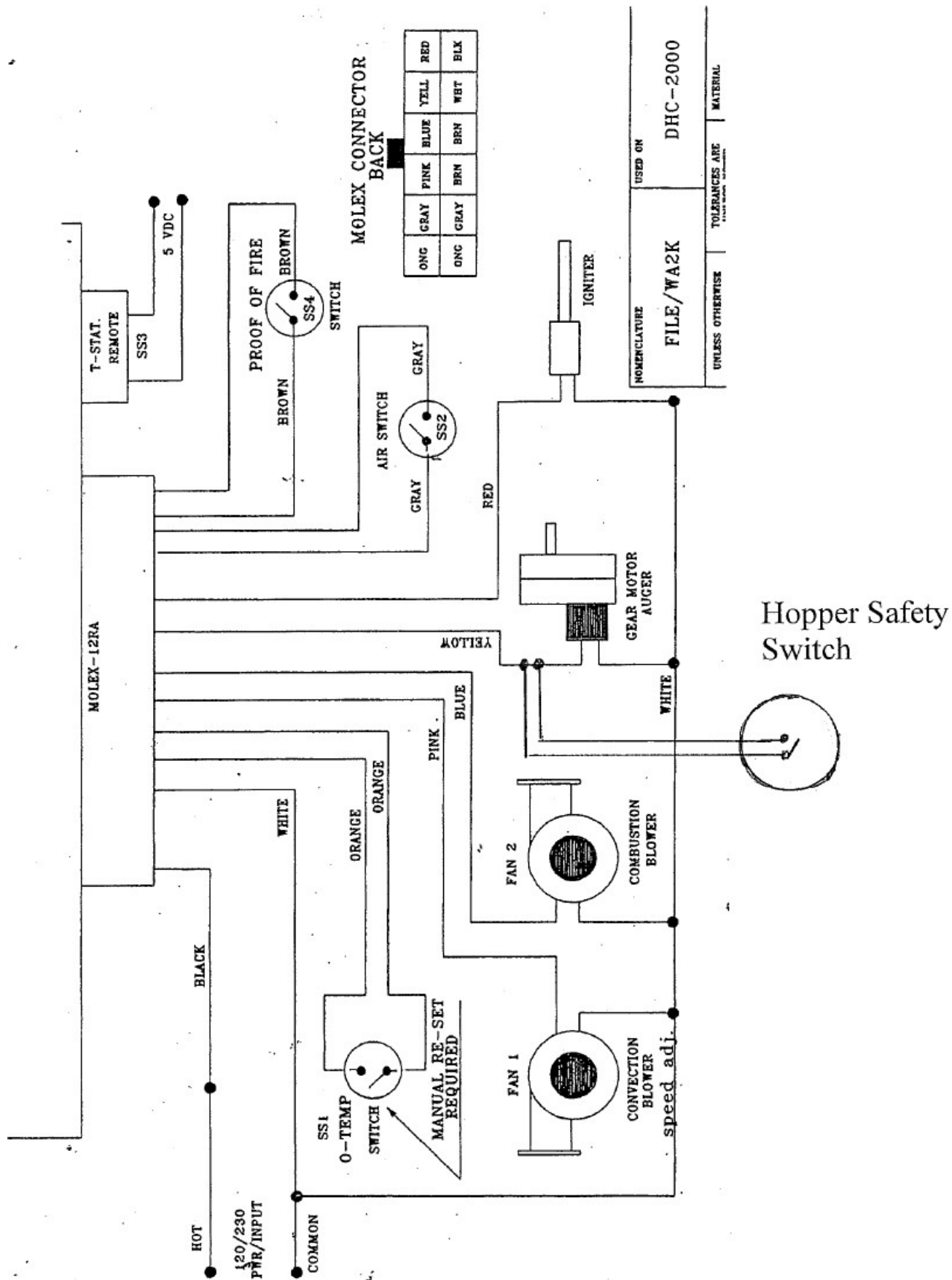


**firepot, you might have negative pressure in the home, a plugged air intake, a plugged exhaust system, a plugged heat exchange system or a bad batch of fuel.**

- ✓ The base of the flame should be blue in color and the top of the flame should be white with some yellow. If the firepot fills up quickly and does not maintain a constant level, it needs more air.
- ✓ If the flame does not have enough draft (air), fuel will build up in the firepot and eventually smother the flame or overflow the firepot. If this happens, or if you notice the firepot is filling up with partially burned fuel, open the damper 1/8" at a time until the fire is clean and dancing. If this continues and moving the draft lever does not change anything, you probably have a negative air problem and need to have a service tech take a look at your installation. **Do not operate the unit if smoke is being pulled into the home.**
- ✓ If the flame has too much draft (air), the flame will look like a torch in that it will be moving rapidly and possibly blowing fuel out of the firepot. If you find that you have this condition, turn the damper lever 1/8" at a time until the condition of the flame changes. If the fire goes out because you are burning all of the fuel up, reduce the setting.
- ✓ If the fuel crusts over, you will need to check into the fuel quality. This will also be a problem if you do not have outside air hooked up or if your home is starving for fresh air.
- ✓ Over time, the firepot will gradually fill up with clinker residue and will need to be cleaned out. This will happen from 1-5 days depending on fuel quality and type of fuel. When you open the door to take the clinker cube out the safety sensor will trip and the unit will go into shut down mode. To reset the board, push the ON/OFF button for a few seconds and the unit will go back to regular operation.
- ✓ Use the tool provided to get underneath the clinker cube and lift up. You can then use a fireplace tong (available at any hardware store) to pick up the clinker cube and drop into the ash pan to either side of the firepot. The fire should stay burning unless you take too long or if the fire is picked out with the cube. It is ideal to shut the unit down, take the clinker cube out and then clean everything and then restart the unit. This will give you the best results.
- ✓ For further information, technical bulletins and videos on proper operation and maintenance of your unit, go to [www.magnumheat.com](http://www.magnumheat.com) and click on the technical section.

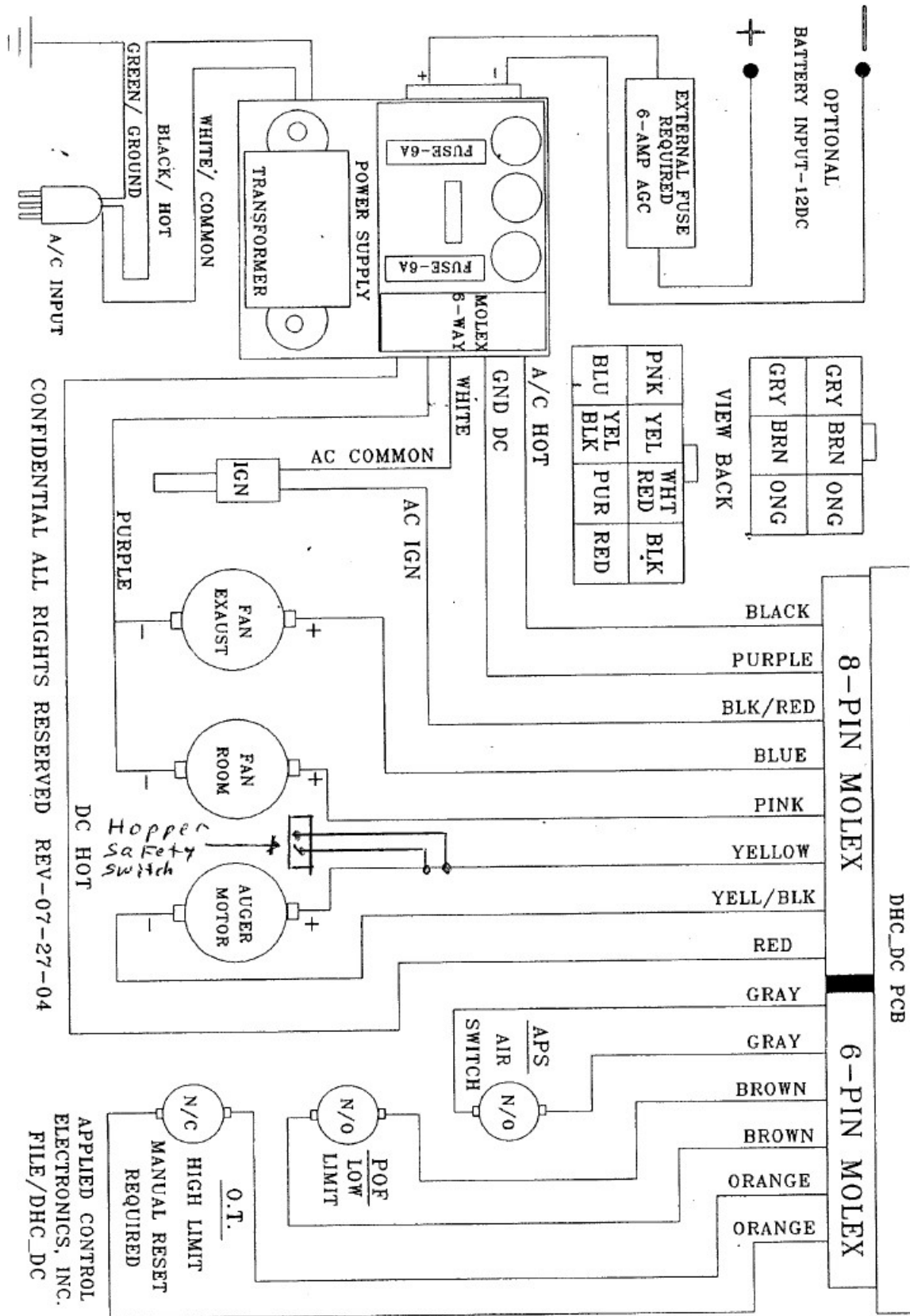
# BC-AC MODELS (RP2007 control board) WIRING DIAGRAM

WARNING: DISCONNECT POWER BEFORE SERVICING THIS UNIT.



# BC-DC MODELS (RP2004DC3 control board) WIRING DIAGRAM

WARNING: DISCONNECT POWER BEFORE SERVICING THIS UNIT

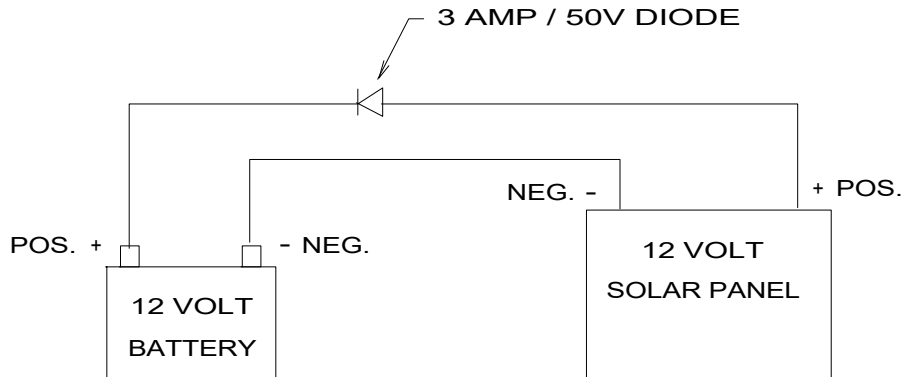


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APPLIED CONTROL ELECTRONICS, INC. FILE/DHC\_DC

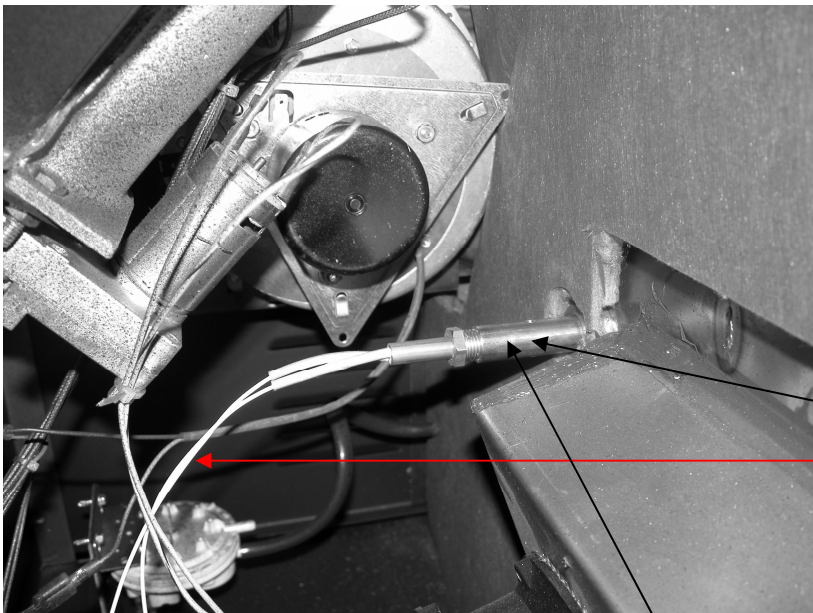
## OPTIONAL SOLAR PANEL CONNECTIONS

**WARNING:** Use a 3 AMP, 50 volt diode on the “+” positive lead between the solar panel and battery as shown in the diagram below.



## IGNITER REPLACEMENT

The igniter system on the Magnum appliances' is an integral part of the wiring system. If the igniter is shorted out, the wiring must be disconnected in order for the unit to operate. If the wires are by-passed it will cause the stove to short out and blow a fuse. It is recommended that once a season the igniter is checked for proper operation and replaced if it does not glow red.



Access to the igniter can be made by opening up the left side panel. The power must be disconnected and make sure that you do not pull on the wiring when taking out the circuit board.

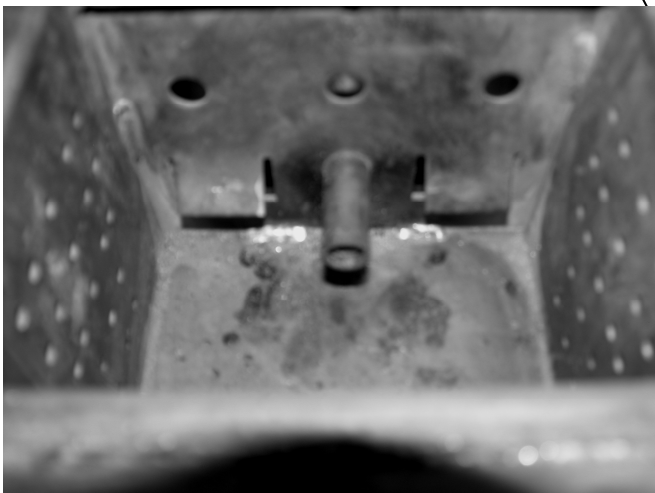
The AC model is a little harder to get to than the DC Model that is shown here.

Take special care not to cut yourself or damage wiring.

Igniter

Wires for Igniter

Use a couple pliers or needle nose pliers to take the wire terminals apart. Be careful not to pull the wire out of the terminal ends as they are tight.



the igniter assembly is threaded so turn counter clockwise to loosen. You will be able to slide the igniter out the back if the end of the igniter in the firepot is not deformed. If the igniter will not slide out the back, you will need to work the igniter back and forth to dislodge any buildup.

Take the firepot out of the unit to access the igniter end. When installing the new igniter, hand tighten the igniter and then

apply a slight pressure to secure the threads. Do not over tighten the igniter assembly. If you over tighten the igniter assembly it may ruin the igniter. Crimp on the terminal ends and attach the terminal ends onto the wiring harness. If you do not have a terminal crimping tool, you will need to get one from a hardware store. Igniters are a consumable item and will need to be replaced periodically.



**Do not attempt to take the igniter out of the unit while the unit is plugged into power or if the igniter is hot.**

View of firepot inside prior to 2/20/06

## **WARNING AGAINST INAPPROPRIATE FUELS**

**DO NOT BURN:**

**GARBAGE;**

**LAWN CLIPPINGS OR YARD WASTE;**

**MATERIALS CONTAINING RUBBER, INCLUDING TIRES;**

**MATERIALS CONTAINING PLASTIC;**

**WASTE PETROLEUM PRODUCTS, PAINTS OR PAINT THINNERS, OR ASPHALT PRODUCTS;**

**MATERIALS CONTAINING ASBESTOS;**

**CONSTRUCTION OF DEMOLITION DEBRIS;**

**RAILROAD TIES OR PRESSURE-TREATED WOOD;**

**MANURE OR ANIMAL REMAINS;**

**PAPER PRODUCTS, CARDBOARD, PLYWOOD, OR PARTICLE BOARD. THE PROHIBITION AGAINST BURNING THESE MATERIALS DOES NOT PROHIBIT THE USE OF FIRE STARTERS MADE FROM PAPER, CARDBOARD, SAW DUST, WAX AND SIMILAR SUBSTANCES FOR THE PURPOSE OF STARTING A FIRE IN AN AFFECTED WOOD HEATER.**

**BURNING THESE MATERIALS MAY RESULT IN RELEASE OF TOXIC FUMES OR RENDER THE HEATER INEFFECTIVE AND CAUSE SMOKE.**

# TROUBLE SHOOTING GUIDE

**Unplug power to the appliance before performing any service.**

PROBLEM	CAUSES	SOLUTIONS
<p><b>?</b> Fire burns with a lazy, orange flame and/or fuel builds up in the firepot and the window gets sooted up quickly.</p>	<ul style="list-style-type: none"> <li>◆ Insufficient combustion air.</li> <li>◆ Feed rate too high for manual draft setting.</li> <li>◆ Corn have too much moisture, have too many fines, too high of ash content or are old.</li> <li>◆ Combustion/Exhaust blower / heat exchanger plugged.</li> <li>◆ Venting plugged with fly ash or ice.</li> <li>◆ House does not have adequate make up air (negative pressure)</li> <li>◆ Ash Slides are pulled out</li> <li>◆ Firepot not sealing against the top of the firepot cradle (clean area and make sure that firepot seats properly)</li> <li>◆ Firepot warped or plugged (contact your dealer for proper repair or replacement)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Remove any clinkers or ash from the firepot by using scraping tool. Clean entire system.</li> <li>✓ Clean out primary air in firepot holes if plugged.</li> <li>✓ Empty ash drawer and clean out heat exchangers by removing the access plates.</li> <li>✓ Change to a better grade of fuel if necessary.</li> <li>✓ Check that damper control knob is adjusted properly. Pull out to increase fire burn.</li> <li>✓ Push ash cleanout slides in</li> <li>✓ Check gasket seal around the door. If the door is loose, adjust the handle latch. A small adjustment can be made to the door seal by adjusting the door latch rod and /or the door hinges. Replace the door gasket if necessary.</li> <li>✓ Check for blockage in the air inlet tube or exhaust pipe. Clean out as necessary.</li> <li>✓ Check combustion exhaust blower impeller. This can be done by removing the exhaust pipe and shining a light into the tube or using the access plug on the exhaust manifold side plate.</li> <li>✓ Replace combustion exhaust blower if necessary.</li> </ul> <p><b>NOTE:</b> Negative pressure in a home is a serious issue. All Magnum appliances should be installed with outside air hookups</p> <p>Also make sure that adequate ventilation is supplied for the rest of the home or the unit will become the air intake causing problems.</p>

PROBLEM	CAUSES	SOLUTIONS
<p><b>?</b> Fire goes out or stove shuts down automatically.</p>	<ul style="list-style-type: none"> <li>◆ Hopper is empty.</li> <li>◆ Fuel is not feeding.</li> <li>◆ High limit temperature switch has tripped.</li> <li>◆ Vacuum pressure switch has tripped.</li> <li>◆ Poor quality or wet fuel.</li> <li>◆ Combustion air too high.</li> <li>◆ Fuel feed rate is too low.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Refill hopper.</li> <li>✓ See “fuel will not feed” below.</li> <li>✓ Allow stove to cool for 1 hour and relight after re-setting the high temperature thermodisk. If this problem persists, particularly at lower burn rates, then the high limit snap switch should be replaced by your authorized Magnum reseller.</li> <li>✓ Correct cause of pressure switch tripping. Have an authorized tech service unit. Install outside air.</li> <li>✓ Replace fuel with proper fuel.</li> <li>✓ Adjust the damper to reduce combustion airflow.</li> <li>✓ Have your Magnum reseller adjust the fuel control.</li> </ul>
<p><b>?</b> <b>Fuel</b> will not feed.</p>	<ul style="list-style-type: none"> <li>◆ Hopper is empty.</li> <li>◆ Auger, circuit board, high limit switch tripped</li> <li>◆ Foreign object caught in auger</li> <li>◆ Fuel is dirty or wet</li> <li>◆ Auger, circuit board, pressure switch or relay.</li> <li>◆ Hopper Lid Open (close lid)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Check contents of the hopper. Add fuel if necessary.</li> <li>✓ Check all operation, fuses, re-set manual high limit thermodisk</li> <li>✓ Clean out auger system</li> <li>✓ Have your Magnum reseller diagnose the problem and replace the parts.</li> </ul>
<p><b>?</b> Stove runs for 15 minutes and then shuts down.</p>	<p>Exhaust gas is not up to temperature.</p> <ul style="list-style-type: none"> <li>◆ Low limit snap switch not operating correctly; may be defective.</li> <li>◆ Wires to either the low limit snap switch (mounted on the side of the firebox) are loose or disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Relight the stove.</li> <li>✓ Have your Magnum reseller replace the low limit switch.</li> <li>✓ Contact your Magnum reseller for service.</li> </ul>
<p><b>?</b> Blower will not shut off after the fuel has been switched off and the stove has cooled down.</p>	<ul style="list-style-type: none"> <li>◆ Low limit snap switch has failed in the closed position.</li> <li>◆ Unit has not cooled down yet.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Have your Magnum reseller replace the low limit snap switch.</li> <li>✓ It can take up to 1 hour for the unit to cool down enough for the blower to shut off. If it takes longer than 2 hours for the blower to shut off or if it fails to shut off contact your local Magnum service technician.</li> </ul>

PROBLEM	CAUSES	SOLUTIONS
<p>? Blower will not operate.</p>	<ul style="list-style-type: none"> <li>◆ No power to stove.</li> <li>◆ No power to control board.</li> <li>◆ Blower has overheated due to dirt on blades or in motor</li> <li>◆ Blower is defective</li> </ul>	<ul style="list-style-type: none"> <li>✓ Check to see that the stove is plugged into the wall outlet.</li> <li>✓ Check to see if your circuit breaker has “tripped”.</li> <li>✓ Check wire connection between the high limit snap switch and the terminal block.</li> <li>✓ Clean blades and motor, have a Magnum tech replace blower.</li> </ul>
<p>? Soot or fly ash in the house.</p>	<ul style="list-style-type: none"> <li>◆ Cleaning the window, particularly when the stove is operating.</li> <li>◆ Leakage on the joints between the combustion fan, exhaust pipe and “PL” vent. This will be evidenced by dust on the impeller of the convection fan and in the heat exchanger tubes.</li> <li>◆ Using a conventional vacuum for cleaning. Ash will bypass and enter the room.</li> <li>◆ Negative pressure in home sucking ash/soot out of venting and unit</li> <li>◆ Fireplace insert installation: If the existing fireplace opening was not thoroughly cleaned and painted before the insert was installed, then the convection fan may be picking up the fireplace dust, soot or ash and blowing it into the house.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Clean the glass when the unit is not running</li> <li>✓ Seal any leaks in the exhaust system with RTV high temperature silicone sealer.</li> <li>✓ Use approved ash Vacuum</li> <li>✓ Correct negative pressure situation</li> <li>✓ Pull the insert away from the fireplace opening. Thoroughly clean the opening and paint the inside of the opening with latex or an inexpensive spray paint to hold the finer particles of dust.</li> </ul>
<p>? Buildup of soot on glass, venting and heat exchangers</p>	<ul style="list-style-type: none"> <li>◆ Dirty fuel</li> <li>◆ Inadequate air supply</li> <li>◆ Negative pressure in home</li> <li>◆ Air wash plugged or out of adjustment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Make sure you have clean fuel</li> <li>✓ Pull manual draft control out slightly to make sure that there is app. ½ inch of fuel in firepot</li> <li>✓ Install outside air to unit and make sure that the home has adequate make-up air. (suggested 6” make-up air into basement)</li> <li>✓ Clean air-wash bracket located on bottom of glass door</li> </ul>

**CAUTION:** When performing any internal electrical maintenance

- Moving parts inside of the cabinet may cause injury. Do not operate unit with panels removed or open.
- HOT parts. Do not operate the unit with panel open.
- Risk of electrical shock. Disconnect power before servicing unit.
- In the event of component failure, replace with original factory equipment.

**IMPORTANT: Electrical work must be performed by an authorized technician.**



PROBLEM	CAUSES	SOLUTIONS
Fuel burns off to quickly, have difficulty keeping a pilot fire.	<p>Air shutter is open to far.</p> <p>Over drafting on a vertical install.</p> <p>Outside air is not hooked up</p> <p>Positive or negative pressure in home is affecting the units operation</p>	<p>Adjust your air shutter to a more closed position.</p> <p>A chimney restrictor may need to be installed. Consult with your Magnum dealer.</p> <p>Make sure that the installation is correct and nothing is affecting the furnace room</p>
Foreign object caught in the auger and will not turn.	Accidental object in fuel.	<p>If there still is a fire, let it extinguish and let the unit cool down. Unplug unit after the fire has exhausted. It will be necessary to clean out hopper. As you are facing the unit open the right hand side panel.</p> <p>Take the auger motor off and gently turn the auger backwards until the object is free.</p> <p>If you cannot get the object loose, contact your Magnum Reseller.</p>
Getting to much ash.	<p>Dirty fuel</p> <p>Wet fuel</p> <p>Lack of clean combustion air.</p> <p>Dirty or plugged stove or venting. Poor exhaust vent configuration.</p> <p>Negative pressure present in the home</p> <p>Combustion motor going out.</p> <p>Use combustion enhancement system</p>	<p>Dirty , wet fuel will produce excessive ash</p> <p>Get good quality fuel</p> <p>Take proper steps to protect from the elements to not take on moisture.</p> <p>Check damper control and check combustion air inlet for obstructions.</p> <p>Check all cleanouts and exhaust venting for obstructions. Refer to cleaning section of this manual.</p> <p>Call your Magnum reseller to inspect installation and operation. Replace any bad parts.</p>
The heat output is not as high as when the unit was installed.	<p>Wet or dirty fuel.</p> <p>Inadequate cleaning.</p> <p>Change of fuel to lower BTU value</p> <p>Negative pressure or improper fresh air make up system.</p>	<p>Wet fuel has a much lower BTU output. Dirty fuel does not produce adequate heat. Excessive amounts of fines interrupt the amount of fuel delivered for burning and will decrease heat output.</p> <p>Clean heat exchangers daily, inspect unit for air flow.</p> <p>Have dealer check for proper installation and negative pressure in home.</p>

**MAGNUM BABYCOUNTRY SIDE APPLIANCES REPLACEMENT PARTS LIST**

<b>ORDER #</b>	<b>MODEL NAME/DESCRIPTION</b>		
BC2500	Magnum Baby Countryside Auto-Light system, complete assembly		
BC2000	Igniter, Baby Countryside (replacement)		
RP2004DC3	Magnum Baby Countryside,T40, Essex Control Board (DC)		
RP2015	Magnum Baby Countryside,T40, Control Board Super (DC)		
RP2007	Magnum Baby Countryside Circuit Board (AC Digital electronic board)		
RP2010	Magnum Baby Countryside,T40, Essex DC Power Supply RPS-300		
RP2020	Magnum Baby Countryside,T40, Essex, Avent DC 2 rpm Auger Motor		
RP2022	Magnum Baby Countryside,T40 AC 2 rpm Auger Motor		
RP2025	Magnum Baby Countryside,T40, Essex DC Combustion (draft)Blower Motor (Motor Only)		
RP2026	T40, Essex DC Combustion (draft) Blower Motor support plate		
RP2027	T40, Essex DC Combustion (draft) Blower (complete assembly)		
RP2030	Magnum Baby Countryside,T40 AC Combustion Blower (complete assembly)		
RP2035	Magnum Baby Countryside,T40, Essex, Avent DC Room Fan		
MF3541	Magnum Baby Countryside,T40 AC Convection blower		
MF3537	F-110 N/O POF Switch (interchangeable with F-140 & F-150 auto reset)		
RP2050	L-225 N/C Switch (manual reset) Magnum Baby C/S, T40 / Essex		
RT080	Magnum Baby Countryside,T40, Essex, Hopper Pressure Switch		
RP2063	Magnum Baby Countryside, AC unit Wire Harness assembly		
RP2062	Magnum Baby Countryside DC unit Wire Harness assembly		
RP2075	Magnum Baby Countryside, Essex Gold Door Finish (only) (re-finish gold door)		
RP2076	Magnum Baby Countryside, Essex Gold Door (complete door)		
RP2077	Magnum Baby Countryside, Essex Black Door (complete door)		
BC3525	Gold Grill assembly (separate)		
BC3555	Nickel Grill Assembly (separate)		
RP2078	Magnum Baby Countryside Nickel Door (complete door)		
BC2600	Magnum Baby Countryside Wood Firepot		
BC2700	Magnum Baby Countryside Corn Firepot		
RP2087	Magnum Baby Countryside, Essex Black Trivet (separate)		
RP2088	Magnum Baby Countryside, Essex Gold Trivet (separate)		
RP2089	Magnum Baby Countryside, Essex Nickel Trivet (separate)		
RP2090-P400	Magnum Baby Countryside, T40, Essex, Avent Auger Assembly		
RP2091	Auger Bushing (set)		
P1155	Heat Exchanger Rake Handle		
RP2093	Damper Spring Handle		
RP2096	Neoprene Hose ¼" ID Hose (per foot)		
RP2097	Door Handle Assembly		
RP2098	Magnum Baby Countryside / T40 / Essex Arched Glass (w/gasket)		
RP2099	Glass Gasket (separate) per foot (specify T40 or Essex)		
RP2100	Door Gasket (separate) per foot (specify T40 or Essex)		
P1315	4 ¾" diameter draft blower blade (located in draft blower housing)		
P1316	3" diameter blade for DC Combustion (draft) blower		

# AMERICAN ENERGY SYSTEMS INC. LIMITED PRODUCT WARRANTY

*Please keep a copy of this warranty for your personal records or in the event of a claim*

American Energy Systems Inc., hereinafter referred to as (AES), warrants to you, the original consumer purchaser, that this product is free from defects in material and workmanship for a period of five (5) years from the original purchase date minus any time past one (1) year from manufacturing date, and that the product's electrical parts and steel firepot, are free from defects in material and workmanship for a period of one (1) year from the original consumer purchase date minus any time past one (1) year from manufacturing date, and that the cast iron firepot models carry a lifetime warranty against defect in material or workmanship (excluding war page or deterioration), and that door glass carries a lifetime replacement warranty against heat breakage (does not cover accidental breakage) . There is expressly no warranty on installation of product, any venting, grates, gaskets, door latches, insulation, ceramic or brick boards/logs/backing, paint, plated surfaces/doors/trims, baffles, bushings, bearings, auger flightings, war page or discoloration of steel or plated parts or any other normal wearing part. In the event the product fails to conform to this warranty, AES, through the place where you purchased the product or if purchased on the AES E-Com store directly through AES, will provide the parts and components necessary to remedy such nonconformity. **AES will not be responsible for any labor, mileage or freight cost to the factory under this warranty.** This warranty is not transferable.

In order to obtain performance under this warranty, you must (1) have registered this warranty within 30 days of purchase by completing and returning the warranty registration card or filling in the on-line warranty registration form at [www.magnumheat.com](http://www.magnumheat.com), and (2) promptly report the claimed nonconformity to your place of purchase, also providing your name, address, phone number, proof of purchase, date of purchase, the model and serial number of the stove, digital pictures of installation and venting inside and outside of the home, pictures of the claimed nonconformity part and the claimed nonconformity. **All claims must be submitted in writing to your place of purchase.**

AES shall have no warranty obligations if this product; (1) was not purchased from an authorized AES dealer; (2) was not installed by a AES dealer or other qualified installer; does not have outside combustion air hooked directly to the unit; (3) was not operated and maintained in strict accordance with the manufacturer's instructions, local or national codes or (4) was subject to abuse, misuse, negligence or accident. AES shall have no warranty obligation for damage caused by improper handling, freight damage (must be reported to freight provider), over-firing, unapproved fuel, variance in feed rates, variances in BTU output or the unauthorized disassembly or modification of the product. AES shall have no warranty obligation if this warranty is not timely registered, for claims which are not submitted through the selling AES dealer, or for claims submitted verbally or without the required information and documentation.

Before exercising this warranty, an AES representative (the place where the product was purchased or AES approved person) must inspect the part/unit to determine if the part/unit is defective. If a local AES representative is not available the original purchaser of the product must submit digital pictures of the part/unit, installation of the unit to AES at [technical@magnumheat.com](mailto:technical@magnumheat.com) If the inspection reveals that the failure is due to defective material or workmanship and the part is covered by the conditions of this warranty, AES will, at its option, repair the defective part/unit. The sole duty of AES and liability under this warranty is limited to the repair of the covered defective part/unit. The purchaser shall assume all costs related to shipping the replacement parts or return of the unit to the factory for repairs. If it is determined that the defect was caused by AES, AES will cover the costs of shipping the repaired part/unit to an AES approved shipping point. AES will not cover additional freight or delivery services such as residence delivery charges, special handling, etc. **INSTALLATION, VENTING, REMOVAL OR REINSTALLATION COSTS ARE NOT COVERED BY THIS WARRANTY.**

THE WARRANTY PRINTED ABOVE IS THE ONLY WARRANTY APPLICABLE TO THE PRODUCT. ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. IT IS UNDERSTOOD AND AGREED THAT AES'S LIABILITY UNDER THIS WARRANTY SHALL BE LIMITED TO THE PROVISION OF REPLACEMENT PARTS AND SHALL NOT INCLUDE LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. ANY ACTION BROUGHT UNDER THIS WARRANTY MUST BE BROUGHT WITHIN ONE YEAR OF THE ACCRUAL OF THE CAUSE OF ACTION AND MAY ONLY BE BROUGHT IN THE CIRCUIT COURT OF MCCLLOUD COUNTY, MINNESOTA.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damage, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

ALL WARRANTY CLAIMS MUST BE SUBMITTED IN WRITING THROUGH THE PLACE WHERE THE PRODUCT WAS PURCHASED. In the event where the place of purchase has ceased business or if you feel that there is a legitimate reason that you cannot submit your claim to the place where the product was purchased you may make a written request to the factory by emailing your request along with all of the required information to [technical@magnumheat.com](mailto:technical@magnumheat.com) or send a written request to American Energy Systems Inc. 150 Michigan St. SE, Hutchinson MN 55350. For questions regarding warranty call the technical assistance dept. at 320-227-2902. Any parts or units returned must have a factory authorized RMA # issued and must be written on any communications or packaging.

# SERVICE RECORD

<b>DATE</b>	<b>SERVICE OR CLEANING PERFORMED</b>

This record must be sent in when any warranty claims are made.