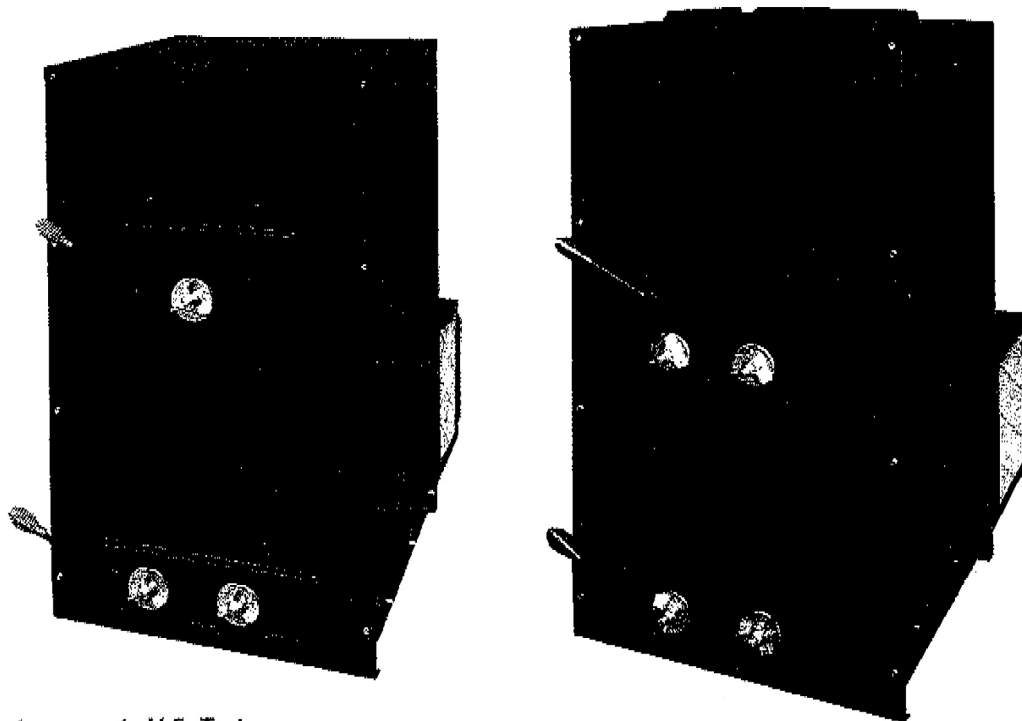




**Do Not
Discard
This
Manual**

KOZY-KING HOT AIR FURNACE
Models 100-14 • 300-09 • 400-09

OWNER'S MANUAL



This stove meets U.S. Test
Standard UL 391,ETLM78-1
CAN/CSA-366-1



MADE IN USA
By
D.S. MACHINE SHOP



**Before you install or operate a D.S. furnace,
you must:**

- Read all instructions carefully
- Install smoke and carbon monoxide detectors.
- Connect return air to furnace

YOU MUST INSTALL A SMOKE AND CARBON MONOXIDE DETECTOR BEFORE INSTALLING THIS UNIT

Safety Instructions

1. Read all Instructions before installing or operating any D.S. Furnace
2. You must install smoke and carbon monoxide detectors before you install or operate any furnace. **Check your local code, this installation must meet their rulings.**
3. Do not open bottom ash door to increase draft. It is designed only to empty ashes.
4. Never leave furnace doors open when unattended.
5. Do not hook up a wood or coal furnace to an aluminum Type B gas vent. Use a code approved Class A chimney with a 6" diameter (minimum) to 8" diameter (maximum), and minimum of 15' high.
6. Before you ignite your Furnace, be sure to inspect chimney for any cracks or leaking liners. This will affect your draft.
7. Clean chimney before installing furnace. If there is creosote attached to the liner you could create a serious chimney fire.
8. Never leave children unsupervised when they are in same room as furnace. Provide a sturdy barrier to keep children and pets a safe distance from the furnace, or they could get burned.
9. Keep Furnace area clear from all combustible materials, gasoline, and other flammable vapors and liquids.
10. Use the required floor protection as shown on the Safety listing on back of furnace.
11. Check the clearance to combustible walls and floors.
12. Do not allow anyone who is unfamiliar with furnace to operate it.
13. Spend some time with your furnace to become well acquainted with the different settings and how each setting will affect its burning patterns. It is impossible to state how each setting will affect your furnace.
14. Be extremely careful when removing the furnace ash pan. It may be extremely hot!
15. Make sure your stove pipe has at least 3 screws per joint.
16. Do not install this furnace in a mobile home or trailer.
17. Do not use a manual, barometric or automatic damper when burning wood.
18. It is required to hook the return duct to the filter box.

Operational / Work Practice Standards

1. When burning wood, burn only seasoned, dry cord-wood that has been dried; then warmed before firing. (Warming cord-wood means placing near stove or furnace for 1 day before burning)
2. Keep wood under cover: in a wood shed, or under a tarp.
3. Right after delivery: stack cord-wood under cover
4. Split cord-wood before drying.
5. Do not burn green wood, it needs to have no more than 20% moisture.
6. All firewood must be seasoned at least 1 year.
7. Check cord-wood with moisture meter provided with your unit. Check wood moisture at least once a week!
8. Keep a 2" to 3" ash layer on top of your grates when burning wood. Note: Do not cover louvers.
9. The furnace is designed to burn air dried wood and coal at a predetermined firing rate. Over firing occurs when the ash door is left open during operation or a highly volatile fuel, i.e. large amounts of small kindling is used. Do not exceed 600° degrees on top of furnace.
10. When tending the firebox always open load door slowly to avoid a "flash back".
11. With new steel there is a small amount of oil or dirt on the metal. You may smell an odor. This is normal during the first operation. You may want to assemble the furnace out of doors and build a small fire in it to "BURN OFF" this dirt and oil before installing unit.
12. Inspect air filters regularly. The air filter in the filter box should be changed at least every thirty (30) days.
13. Be extremely careful when removing furnace ash pan. It can get very hot.
14. Check the fit on the load door. It must fit tightly. If it does not, check for deterioration or wear of the ceramic rope seal. Replace defective seals.

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15. Inspect and clean your chimney and stove pipe regularly.
16. In the event of a chimney fire, shut all draft controls and blower off and call your fire department immediately. Alert everyone in the house. If flue is still burning vigorously, throw baking soda into firebox or discharge a fire extinguisher into fire box. After the chimney fire is over, have a certified chimney sweep completely inspect your system for damage before farther use.
17. Slow Fires: It is not recommended to burn the Energy-Max Furnace any more than necessary early in the fall and late in the spring, as you can not keep the fire box hot enough to burn gasses. (without overheating your home) Slow fires can cause excessive creosote build-up in firebox, stove pipe and chimney.
18. In the event of a power failure, **all air filters must be removed, before operating furnace. Open basement dump.**
19. Equip your home with fire extinguishers, carbon monoxide and smoke detectors.
20. Do not burn garage, gasoline or any other flammable liquids in this furnace.
21. This is a wood and coal-burning furnace and should not be altered in any way.
22. It is required to hook the return duct to the filter box.

NOTE: When burning coal, shake ashes every 12 hours if possible. You must keep your ashes cleaned out from under grating. This may require emptying your ash pan daily. If there is no air space under the grates, the grates will warp and become inoperable.

Testing Furnace Before Lighting

To test your draft: Place a piece of newspaper inside of furnace and light it.

Starting A Coal Fire

- 1 - Shut off draft blower
- 2 - Remove wood plate on grates
- 3 - Put 80/20 handle on the out (coal) position
- 4 - Use a good amount of kindling or charcoal to start fire
- 5 - Open spinners on ash door
- 6 - Add coal as necessary, 1" layer at a time
- 7 - When you have an established coal fire, your body of fire should be 8" to 12"
- 8 - Close spinners on ash door. Keep fire door spinners open 1/8"
- 9 - Set thermostat
- 10 - Open draft blower slide to about 1/2" or as needed
- 11 - Turn draft blower on
- 12 - Shake ashes approximately every 12 hours

Starting A Wood Fire

- 1 - Install wood plate
- 2 - Have draft blower in "off" position
- 3 - Put 80/20 handle on the in (wood) position
- 4 - Open spinners on ash door
- 5 - Open Fire Door, start fire with newspaper and kindling. Fire starter blocks work also
- 6 - Once wood fire is established:
 - A - Close spinners on ash door and fire door
 - B - Load the furnace with wood
 - C - Set thermostat
 - D - Turn draft blower on
 - E - Reload as needed

Creosote – Formation and need for removal

When wood is burned slowly, it can produce tar or other organic vapors, which combined with expelled moisture will form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire.

The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote build-up has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

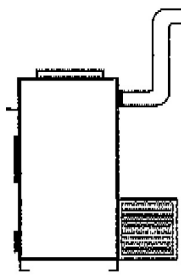
YOU MUST INSTALL A SMOKE AND CARBON MONOXIDE DETECTOR BEFORE INSTALLING THIS UNIT

Locating Furnace

This furnace is to be installed maintaining clearances as shown in illustration.

1. Set the furnace on a solid noncombustible floor.
2. Use an approved fire retardant material for the floor mat.
3. The material must extend at least 16" in front of and 8" on either side, and underneath the chimney connector and extending at least 2" on either side of the chimney connector.

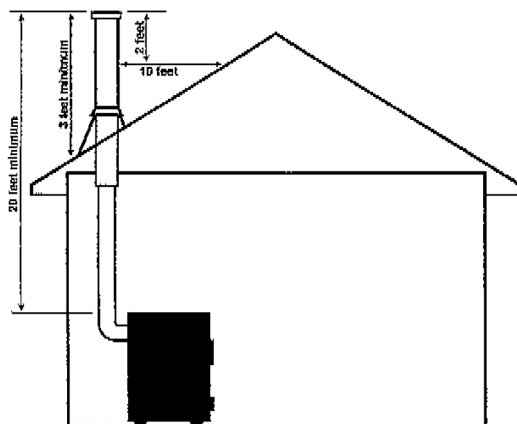
1. The furnace should be the only heating appliance using a chimney. One furnace per flue.
2. A masonry chimney should be a chimtek or lined with an insulated stainless steel liner.
3. The masonry chimney should not have any missing mortar or loose bricks.
4. There should be no mortar or parts of the chimney blocking the chimney flue.
5. There should be a two inch clearance between any chimney except chimtek has zero clearance.
6. The chimney should extend at least 2' above the highest point of the house, or 2' above the point at which the chimney is 10' from the roof.

Caution: Do not store combustible or flammable material near furnace.				
	Specifications	#100-14	#300-09	#400-09
	Sides	18"	18"	18"
	Back	18"	18"	18"
	Front	48"	48"	48"
	Clearance between flue & combustible with single wall stove pipe	18"	18"	18"
	Clearance between flue & combustible with double wall stove pipe	6"	8"	8"
	Corner clearance to combustible	18"	18"	18"

Chimney Requirements

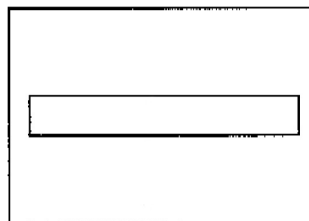
The minimum height of a chimney system for the D.S. Stove is 20 feet. The chimney must exceed the roof of a house at a minimum of 3 feet at any point of exit. In a pitched roof installation the chimney must be 2 feet higher than anything within a 10 foot radius of the chimney. It is important to have a chimney draft of 0.06 water column. It is required to abide by the manufacturer's instructions on Class A chimneys as well as local building codes. It is not recommended to build a chimney on an addition that is lower than the main part of your house. **Do Not extend the stovepipe past the inside of a masonry chimney liner. Never connect this unit to a chimney serving another appliance.**

Should you have a problem with inadequate draft you should see page 8.



Wood Plate

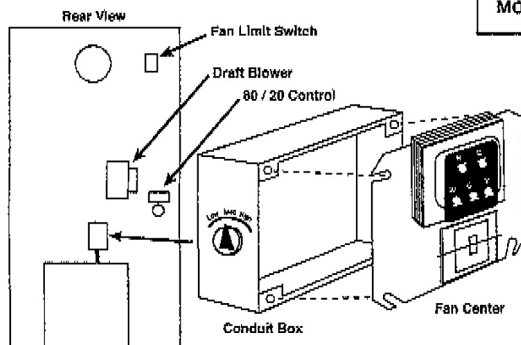
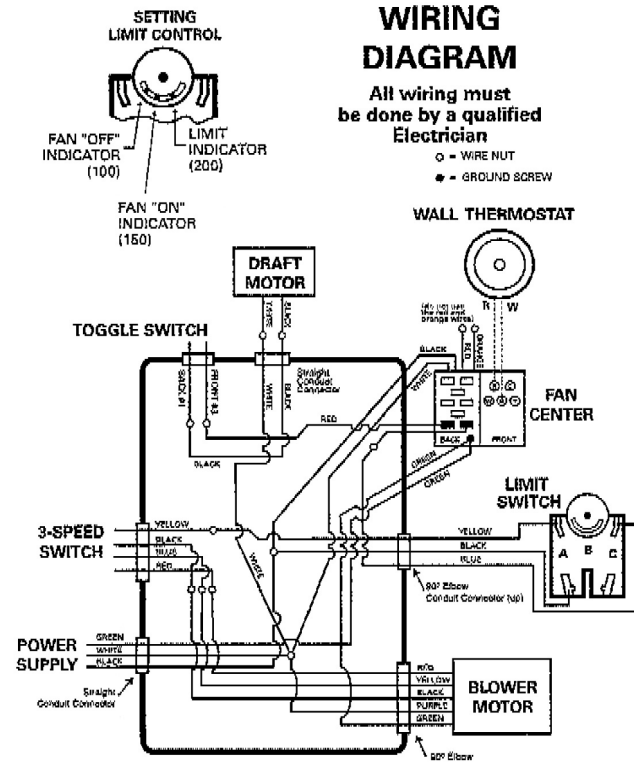
NOTE: Set on grates for wood burning ONLY.
Remove when burning coal



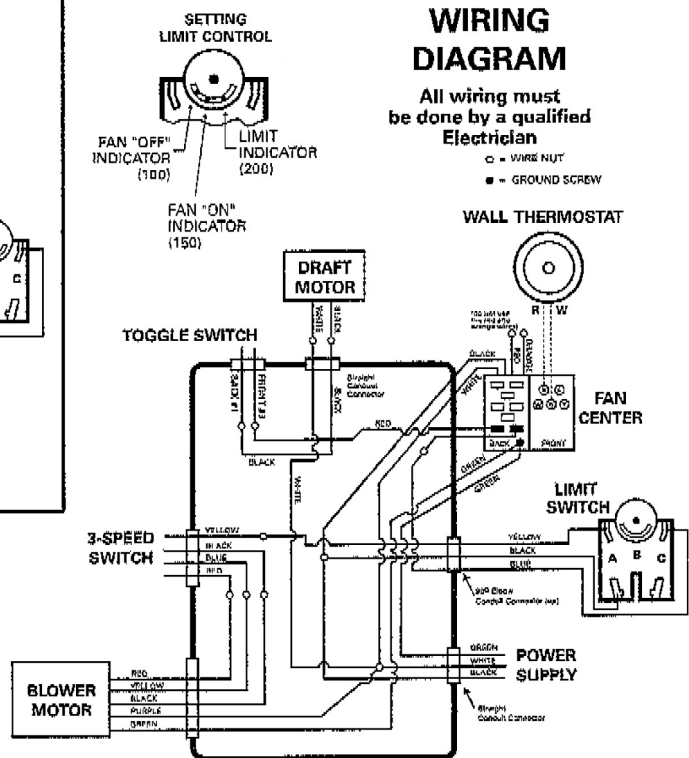
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Wiring Diagrams

Model #100-14



Models #300-09 #400-09



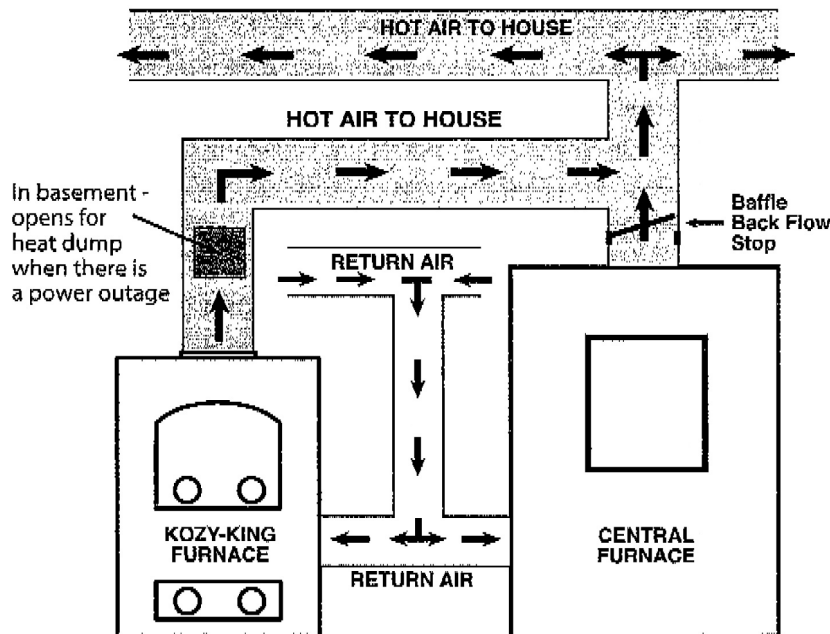
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Typical Installation

Below is a typical way to install a Kozy-King Add-On Furnace. In case of power outage you should always run the hot air plenum up so that it can circulate by gravity. The supply duct must be constructed of material with a minimum 250° temperature rating.

If you are using this unit as an add-on furnace, locate as close to the central furnace as possible.

NOTE: Do Not use a chimney serving another appliance!



Trouble Shooting

1. Problem:

Smoke puffs from furnace

Solution:

Check chimney draft. Check for blocked chimney or flue pipe. Use mirror to check chimney clearance.

Check ash pit – if it is too full, empty.

Make sure furnace room is not too airtight.

Make sure all of chimney mortar connections are airtight,

Check ash door. Make sure it's airtight.

Check chimney for possible down-draft caused by taller surrounding trees or objects. Correct with proper chimney vent cap.

Check the possibility of a cold chimney forcing cool gases backward. Remedied by properly insulating chimney with non-combustible liner – non combustible insulation.

Fuel may be too green.

Make sure no other fuel burning devices are connected to the chimney impairing the draft.

Check chimney draft, it should be .06 inches of water column. This service is provided by a certified chimney sweep.

Make sure clean out door on the chimney is tight if you have one.

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Trouble Shooting - continued

2. Problem:

Inadequate heat being delivered to your home.

Solution:

Check home insulation – is it adequate?

Check hook-up to furnace – is it installed correctly?

Cool air inlet may be inadequate or furnace room too airtight.

Your wood fuel may be too low grade. Hardwoods are recommended.

Make sure your hot air duct (and other duct work) is airtight.

If furnace room is warm but your home isn't, check back draft dampers

Is air to the blower available? It is required to hook the return air to the return filter box of the furnace.

Check filter. Change if necessary. Recommended every 30 days.

3. Problem:

Excess smoke or flames coming out door when refueling

Solution:

Wait 15 seconds and open door SLOWLY – then refuel.

Check length of flue pipe to chimney. Your unit should be within six (6) feet of your chimney.

Make sure chimney cap is not too close to the top of the chimney or it may be clogged.

Check chimney draft – make sure chimney flue pipe is clean and chimney is of adequate height.

Make sure you're not suffocating the fire with excessive amounts of unburned wood.

Shut off draft blower before opening door. Return air must be hooked up to furnace.

Is cold air return hooked up to filter box? If not it will create negative pressure and draw smoke.

4. Problem:

Distribution blower vibrating

Solution:

Tighten blower wheel to motor shaft.

Check for bad fan bearings.

5. Problem:

Distribution blower continues to run or will not run

Solution:

Check fan limit or heat sensor and cable.

Check to see that blower is properly wired. (See Wiring and Assembly Instructions).

Check fuse box or power source.

Check power supply.

6. Problem:

Draft blower continues to run or will not run.

Solution:

Check wiring, or check fan/limit. If jumper is pulled it will not work.

Check thermostat or thermostat wire for short.

Make sure temperature is calling for heat. Replace filter in return box.

7. Problem:

Odor from first fire

Solution:

The odor from new steel should disappear in a few hours.

If the odor remains, call your dealer immediately. A bad weld can cause a fume leak.

8. Problem:

Excessive Creosote

Solution:

Check the grade of wood you are burning. Needs to be less than 20% moisture.

Make sure your unit is serviced by its own proper chimney

Check length of flue pipe and its connections.

Make sure you are burning the smallest, hottest fire to adequately heat your home.

Also see Solutions to Problem One.

Adjust draft control slide on draft blower to allow more air when not calling for heat. It is recommended to have an insulated chimney no larger than 8" diameter.



LIMITED WARRANTY

Kozy-King Hot Air Furnace

Please read this warranty carefully!

D.S. Stoves warrants this Kozy-King Hot Air Furnace against premature failure of any component due to workmanship[quality or materials. So long as it is owned by the original purchaser, subject to terms, limitations and conditions herein set out. **Soft coal is prohibited in any DS Furnace or Boiler. This warranty is void if anything other than Hard Coal or Dry Cord Wood is burned in this unit.**

	Time Period
1 - Firebox	Five Years
2 - All doors - (fire and ash door)	Five Years
3 - Cast Iron Components (grates, grate rails, bypass baffle and firebox retainer)	Five Years
4 - All Electrical Components	One Year

D.S. Stoves will replace, at no charge to the owner, any defective part which D.S. Stoves determines affects the operation of the furnace.

The owner is responsible for labor and costs to complete the repair. The owner may at his option and with D.S. Stoves approval, have the stove shipped to the factory for repair. All labor and material costs for repair at the factory will be borne by D.S. Stoves.

The owner is responsible for all shipping costs.

D.S. Stoves door glass, gaskets, paint or enameled parts, firebrick, and furnace cement are not covered by this Limited Warranty.

Failure to follow installation and basic operation recommendations written in this negligence abuse modifications to the furnace or over firing 600° maximum, as determined by D.S. Stoves or its authorized dealers.

This Limited Warranty is in lieu of all other warranties either expressed or implied.

D.S. Stoves is not responsible for accidents due to improper installation or failure to follow instructions.

— D.S. Stoves
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