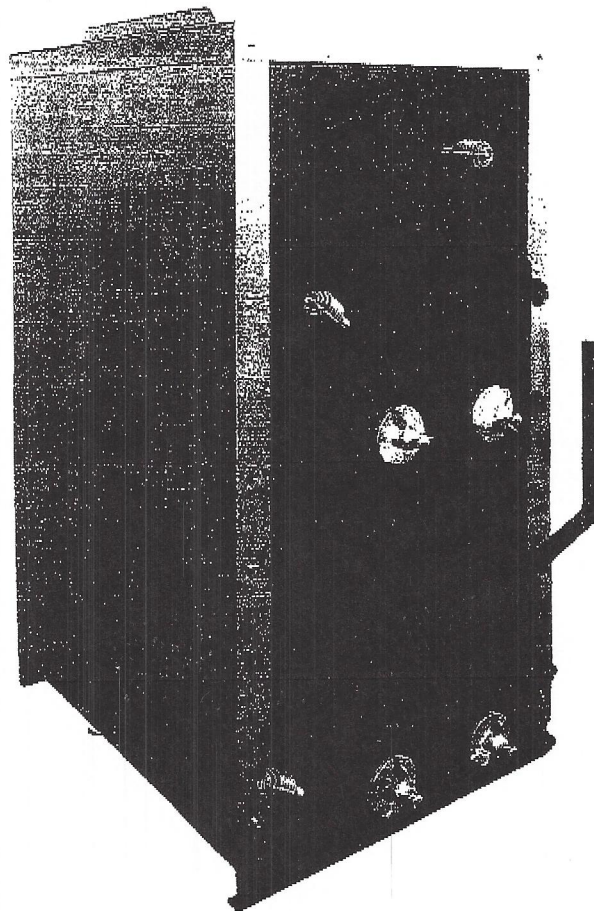




ECOMISER HOT AIR FURNACE
Model 200-10

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. Stove,
you must:**

- Read all instructions carefully
- Install smoke and carbon monoxide detectors.

Safety Instructions

- 1 - Read all instructions carefully 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 codes, this installation must comply with their rulings.
- 3 - Never leave furnace doors open when unattended
- 4 - Do not hook up a wood or coal furnace to an aluminum type B gas vent. Use a code approved chimney with a 6" diameter (minimum) to 8" (maximum), that is high enough to give a good draft.
- 5 - Before you ignite stove, be sure to inspect chimney for any cracked or leaking liners. This will affect your draft.
- 6 - Clean chimney before installing furnace. If there is creosote attached to the liner you could create a serious chimney fire.
- 7 - Never leave children unsupervised when they are in same room as stove. Provide a sturdy barrier to keep children and pets a safe distance from the stove, or they could get severely burned.
- 8 - Keep stove area clear from all combustible materials, gasoline, and other flammable vapors and liquids.
- 9 - Use the required floor protection as shown on the UL Listing plate on back of stove.
- 10 - Check the clearance to combustible walls and Floors.
- 11 - Do Not allow anyone who is unfamiliar with the furnace to operate it.
- 12 - Spend some time with your furnace to become well acquainted with the different settings and how each will affect its burning patterns. It is impossible to state just how each setting will affect your stove because of variations in each installation, and chimney drafts.
- 13 - Be extremely careful when removing the stove ash pan. It can get very hot!
- 14 - Make sure your stove pipe has at least 3 screws per joint.
- 15 - Do not install this furnace in a mobile home or trailer.

Testing Furnace Before Lighting

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

Starting A Coal Fire

Set D.S. Regulator to 5 (High). Remove wood plate from grates. Place crumpled paper and kindling wood on grate and ignite with match or lighter. Use a good amount of kindling to get the fire started. Add larger pieces of wood to get a hot fire. Once you have a hot fire, add 2" of coal over the entire grate area. As the coal starts burning and glowing red add another layer of coal. Keep adding coal until you have an 8" body of fire. You can now add 30 lbs. of coal, close your bypass baffle and adjust draft on D.S. Regulator to meet your needs. Adjust fire door knobs so they are open approximately 1/8".

Starting A Wood Fire

When starting a wood fire use the same steps as starting a coal fire above, but do not add coal. Allow ash to build up on top of grates, this will not choke fire until it covers louvers. Keep approximately 2" of ash on grates at all times. NOTE: Keep fire door knobs closed when burning wood. You can adjust thumb screw so draft can never completely shut off.

Creosote – Formation and need for removal

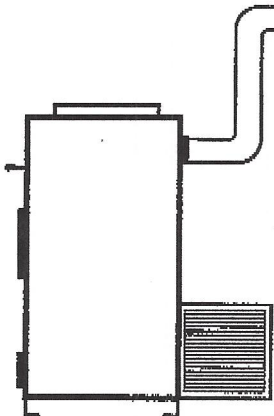
When wood is burned slowly, it can produce tar or other organic vapors, which combined with expelled moisture will form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote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

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.

Caution: Do not store combustible or flammable material near furnace.		
	Specifications	200-10
	Sides	18"
	Back	18"
	Front	48"
	Flue to combustible with single wall stove pipe	18"
	Flue to combustible with double wall stove pipe	6"

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 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.

Operating Notes

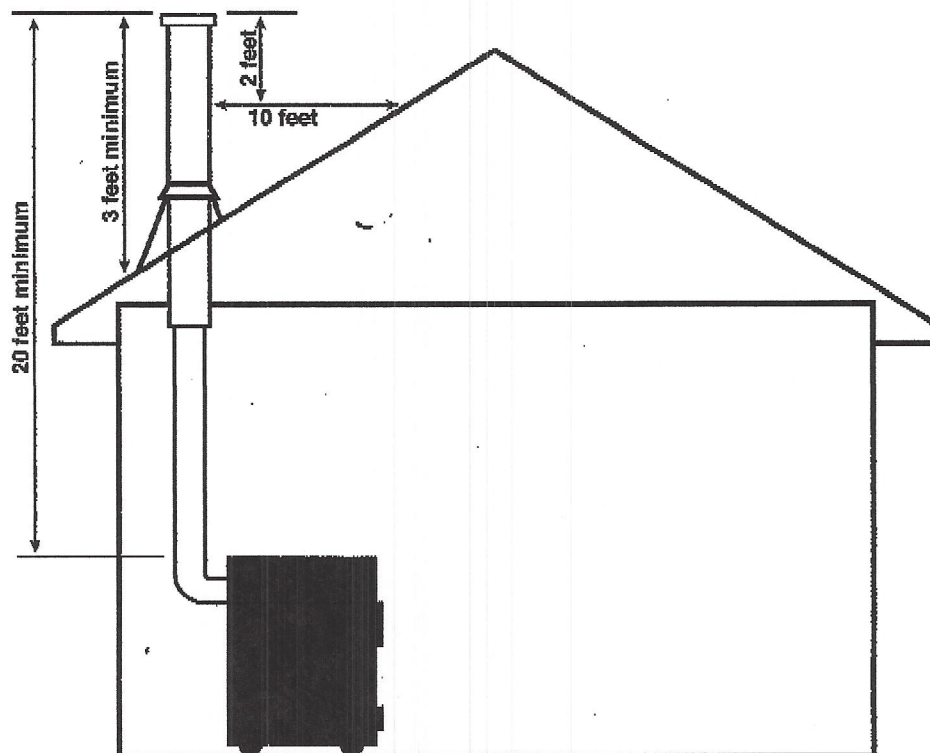
1. Do not allow ashes to build up higher than 3" above grates.
2. Be extremely careful when removing furnace ash pan. It can get very hot.
3. With new steel there is a small amount of oil or dirt on the metal. You may smell an odor. This is normal during the first operation. You may want to assemble the furnace out of doors and build a small fire in it to "BURN OFF" this dirt and oil before installing the unit.
4. The furnace is designed to burn air dried wood and coal at a predetermined firing rate. Over firing could result in damage to the heat exchanger and cause dangerous operation. 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.
5. When tending the firebox always pull the baffle slide rod out prior to opening load door. Open load door slowly to avoid a "flash back." After closing load door, push the baffle slide rod to the rear.
6. Equip your home with fire extinguishers and smoke detectors appropriately located.
7. Inspect air filters regularly. The air filter in the filter box should be changed at least every thirty (30) days.

8. 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.
9. Inspect and clean your chimney and stove pipe regularly.
10. In event of chimney fire, shut all draft controls and blower and call your fire department immediately. Alert everyone in the house. If the flue is still burning vigorously, throw baking soda into firebox or discharge a fire extinguisher into the firebox. After the chimney fire is over, completely inspect system for damage before further use.
11. Slow Fires: It is not recommended burning the Ecomiser Furnace any more than necessary early in the fall and late spring, as you cannot keep the firebox hot enough (without overheating your home) to burn gasses. Slow fires can cause excessive creosote build-up in smoke pipe, chimney and the firebox.
12. In the event of a power failure you may operate the furnace provided the following instructions are follows:
A – Any air filter should be removed.
13. Do not use green wood, it needs to have no more than 20% moisture.
14. Do not burn garbage, gasoline or other flammable liquids.
15. This is a wood and coal-burning furnace and should not be altered in any way.

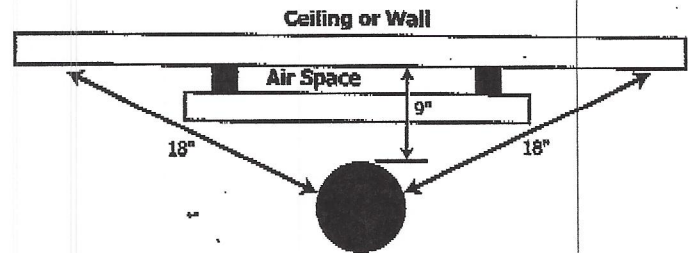
Chimney Requirements

The minimum height of a chimney system for the D.S. Stove is 15 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.



According to NFPA Standards single wall stove pipe can be within 9" of combustible provided an approved fire retardant material covered with 28 gauge sheet metal, spaced out 1" on non-combustible spacers is utilized.



Parts List

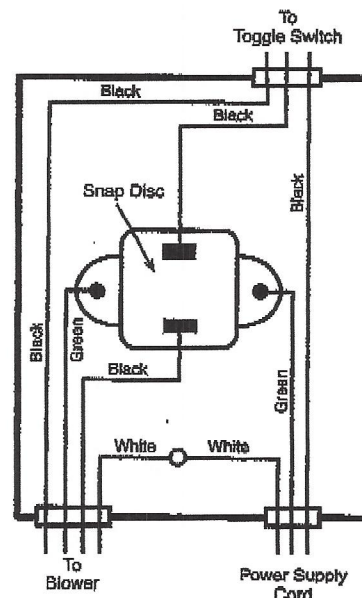
Qty per furnace	Description	Model	Parts#
1	Left side sheet metal jacket	200-10	200-10-01
1	Right side sheet metal jacket	200-10	200-10-02
1	Top sheet metal jacket w/plenum	200-10	200-10-03
1	Back sheet metal	200-10	200-10-04
1	Cast Iron Grate Rails	200-10	200-10-05
4	Cast Iron Grates	200-10	200-10-06
1	Cast Iron Fire Door	200-10	200-10-07
1	Cast Iron Ash Door	200-10	200-10-08
	Fire brick 4-1/2 x 9 x 1-1/4	200-10	200-10-09
2	Spinners on Fire Door	200-10	200-10-10
2	Spinners on Ash Door	200-10	200-10-11
2	Removable After Burner Pipes	200-10	200-10-12
3	Spring Handle on Ash Door, 1/2"	200-10	200-10-13
	Fire Door, and Baffle Handle		
1	Ash Pan	200-10	200-10-14
1	Ash Shaker Bar Assembly	200-10	200-10-15
1	Slide Steel Baffle	200-10	200-10-16
1	965 cfm Blower	200-10	200-10-17
1	Snap Disc	200-10	200-10-18
1	Electrical Box	200-10	200-10-19
1	Toggle Switch	200-10	200-10-20

Wiring Diagram

ALL WIRING MUST BE DONE BY A QUALIFIED ELECTRICIAN

- 2 Black wires in electrical box connect to black wire in blower
- White wire in electrical box connects to white wire in blower

- Ground
- Connector
- Wire Nut

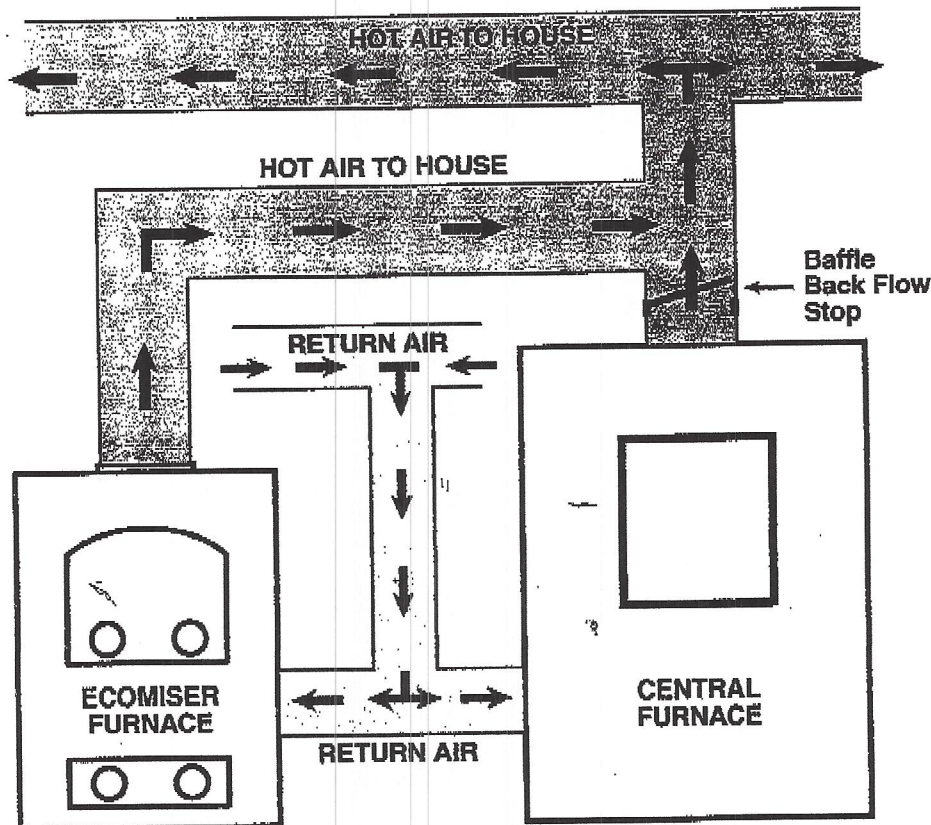


Typical Installation

Below is a typical way to install a Ecomiser 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 drawer. 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 is tight if you have one.

Trouble Shooting - continued

2. Problem:

Inadequate heat being delivered to your home.

Solution:

Adjust D.S. Regulator to higher setting.

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?

Check filter.

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.

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.

Slide baffle should be pulled out prior to load door opening.

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.

Check thermostat or thermostat wire for short.

Make sure temperature is calling for heat.

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.

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.



LIMITED WARRANTY

Ecomiser Hot Air Furnace

Please read this warranty carefully!

D.S. Stoves warrants this Kozy-King 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.

	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 stove.

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 stove 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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