

USER'S INFORMATION, MAINTENANCE AND SERVICE MANUAL

**DOWNFLOW/UPFLOW
ELECTRIC FURNACE**

MODELS: EB



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CONTACT INFORMATION FOR USA

- Contact us by mail:

DISTRIBUTED BY:
StyleCrest
801 W. 37th Street
Building #7
Wichita, Ks 67219

MANUFACTURED BY:
Johnson Control, Inc.
5005 York Drive
Norman, OK 73069

CONTACT INFORMATION FOR CANADA

- Go to website at www.york.com click on "contact", then click on "contact form" and follow the instructions.
- Contact us by mail:

Johnson Controls, Inc.
Consumer Relations
5005 York Drive
Norman, OK 73069

The manufacturer recommends that the user read all sections of this manual and keep the manual for future reference.

WARNING

FOR YOUR SAFETY - Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

For personal safety be sure to turn the electrical power OFF at the household service box and at the furnace before attempting any service or maintenance operations. Homeowner should never perform any maintenance which requires opening the furnace electrical panel.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

CAUTION

This furnace and its components, including the air conditioning coils and blowers listed on the A/C accessory sticker were listed in combination as a system by Underwriters Laboratories.

Use of other components not tested in combination with this furnace may make the equipment in violation of State Codes, may create a hazard, and may ruin the equipment.

In addition, the National Manufactured Housing Construction and Safety Standards Act and its Regulations require the use of components listed or certified by a nationally recognized testing laboratory in all manufactured homes built and sold subject to that act.

SECTION I: INTRODUCTION

WARNING

To avoid the possibility of electrical shock do not open electrical box panels.

SECTION II: TO OPERATE FURNACE

1. Be sure electrical power to furnace is turned on at the house-hold service box.
2. Set wall thermostat to the desired temperature.
3. If furnace is equipped with Air Conditioning, the System Switch, located at the wall thermostat, must be turned to HEAT in order for the furnace to operate in the heating model.

WARNING

If you have an air conditioner which does not use the furnace blower for air distribution and operates completely independent of the furnace, the thermostat system must have an interlock to prevent the furnace and air conditioner from operating at the same time. Such operation could cause equipment damage, energy waste and over-heating of the home.

The interlock system usually contains a heat-cool switch which must be turned to either HEAT or COOL to activate either heating or cooling operation.

If an interlock system has not been provided, the electrical supply to the furnace must be turned OFF at the household service box, when the air conditioner is being used. When operating the furnace, the electrical supply to the air conditioner must be turned OFF.

TO SHUT FURNACE OFF

1. Turn thermostat to its lowest setting.

NOTICE

Furnace will still operate if room temperature falls below thermostat setting.

2. For complete shut-down, turn off electrical power at the household service box.

SECTION III: SEQUENCE OF OPERATION

When room thermostat calls for heat, 24-volt power is supplied to the heating element switches. As soon as the first heating element switch closes, the blower starts and power is supplied to the first heating element. Each additional element is staged on in successive intervals.

When the room thermostat is satisfied and no more heat is required, the elements sequence off in the reverse order and the blower will then turn off.

LIMIT CONTROLS

Each element has an automatic limit switch which is wired into the circuit and shuts off power to that element if the heat at that point exceeds the allowable maximum heat.

BLOWER REMOVAL

NOTICE

Only authorized service technicians should remove the blower.

To remove blower from furnace, turn off power at household service box, turn furnace circuit breakers OFF. Disconnect wiring to blower, and remove five (5) screws holding blower in furnace and slide blower out from front of the furnace. See Figure 1.

Re-install blower in reverse order when assembling back into furnace.

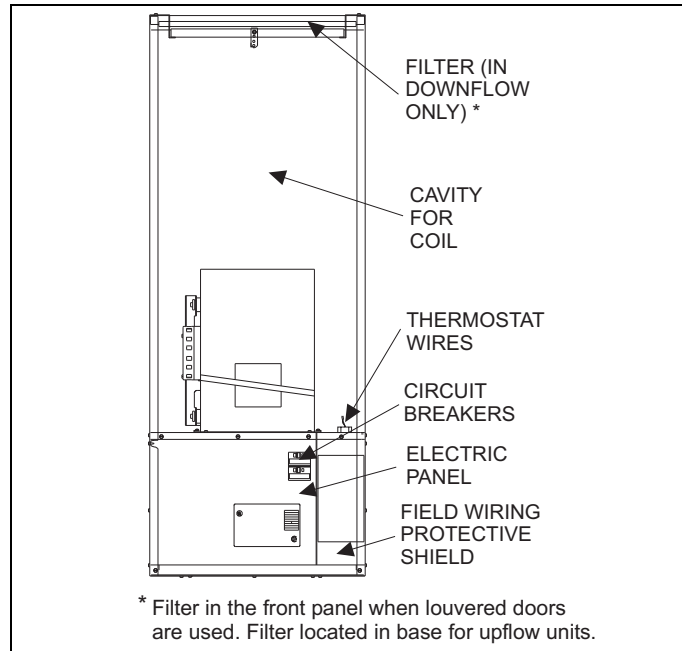


FIGURE 1: Component Locations

SECTION IV: FURNACE OPERATION

CIRCUIT BREAKERS

Your electric furnace is equipped with a unique safety feature - circuit breakers. These circuit breakers are located behind the door of the furnace, near the bottom of the furnace. See Figure 1. If a component should fail inside the furnace, the circuit breakers will prevent damage that can be caused by an electrical short. If the breakers ever trip, they can be reset by first turning off the power to the furnace at the home's circuit breaker panel. See Warning below. Then remove the furnace door and reset the circuit breaker in the furnace. Re-install the furnace door and turn the power back on at the home's breaker panel. If for some reason these circuit breakers should trip again, a service technician should be contacted as a problem exists inside the furnace. A list of authorized service centers is provided with every furnace and will assist you in obtaining service for your furnace.

WARNING

You must first de-energize the furnace at the main household power supply and lock it.

LUBRICATION

The blower motor bearings are factory sealed. Additional lubrication is not required.

BLOWER ASSEMBLY

Every electric furnace comes equipped with a blower capable of operating a heat pump or air conditioner. With the addition of the proper heat pump, you can enjoy comfort and savings all year long. An air conditioner will also work with your furnace and will provide cool summer days, at a very low operating cost.

AIR FILTER

The filter supplied with the furnace is a throw-away type. Filters need to be cleaned frequently. Shake out all loose dirt, and use vacuum cleaner to clean additionally. This method of cleaning will prolong life of filters. DO change filters often since clean filters not only provide added comfort, better and cleaner environment, but increase the efficiency of the furnace as well.

FILTER LOCATION: The furnace's front panel must be removed to gain access to the filter of the downflow furnace. (See Figure 1.) However, the filter for the upflow furnace* is located behind the return air grill, adjacent to the furnace closet or any other location in the return air.

RETURN AIR

Return air must be provided back to the circulating blower in order to provide air distribution. DO NOT OBSTRUCT ANY RETURN AIR GRILLE. To do so will cause the furnace heating elements to cycle off and on repeatedly.

WHILE YOU'RE AWAY

The power supply to your furnace is equipped with either a fused or breaker type disconnect. In case of an overload, this will interrupt the operation of your furnace until it is reset or fuse replaced. For this reason it is never practical to assume that the furnace will operate unattended for long periods of time, especially if there is a possibility of damage to your property because of freezing. So, if you plan to be away, arrange for someone to check your home every day or so.

AT THE BEGINNING OF EACH HEATING SEASON

NOTICE

Be sure electrical supply to furnace is turned off at the household service box and furnace circuit breakers before cleaning.

1. Replace filters as discussed previously. Clean dust and lint from in and around the furnace. Clean dust and lint from blower and blower compartment.
2. If furnace fails to operate properly:
 - a. Be sure electrical power is being supplied to furnace. Check main household power supply.
 - b. If, after following this procedure, the furnace still fails to operate, shut off furnace and contact your service technician.

YOUR AUTHORIZED SERVICE TECHNICIAN

Your furnace's best friend is your service technician. If the unit gives any indication of improper operation, call your authorized service technician. If the service technician is allowed to perform the normal routine care of your furnace, many times he can detect potential difficulties and make corrections before trouble develops. Preventive maintenance of this type will allow you to operate this unit with a minimum of concern and pay for itself in added years of comfort.

OPTIONAL AIR CONDITIONING ACCESSORIES

This furnace is equipped with a blower and control system to add-on air conditioning and heat pumps to specified sizes. Insulation and coil shelf kit (3500-8941 for downflow or 3500-8961/A for upflow) must be installed when adding on such remote air conditioning systems.

NOTICE

If the controls are located at the top of the unit, the furnace is an upflow furnace and the airflow is forced up through the furnace and into the airways.

WARNING

Failure to install this insulation and coil shelf kit could result in damage to equipment and/or personal injury. Liability and warranty from the manufacturer could also be void.

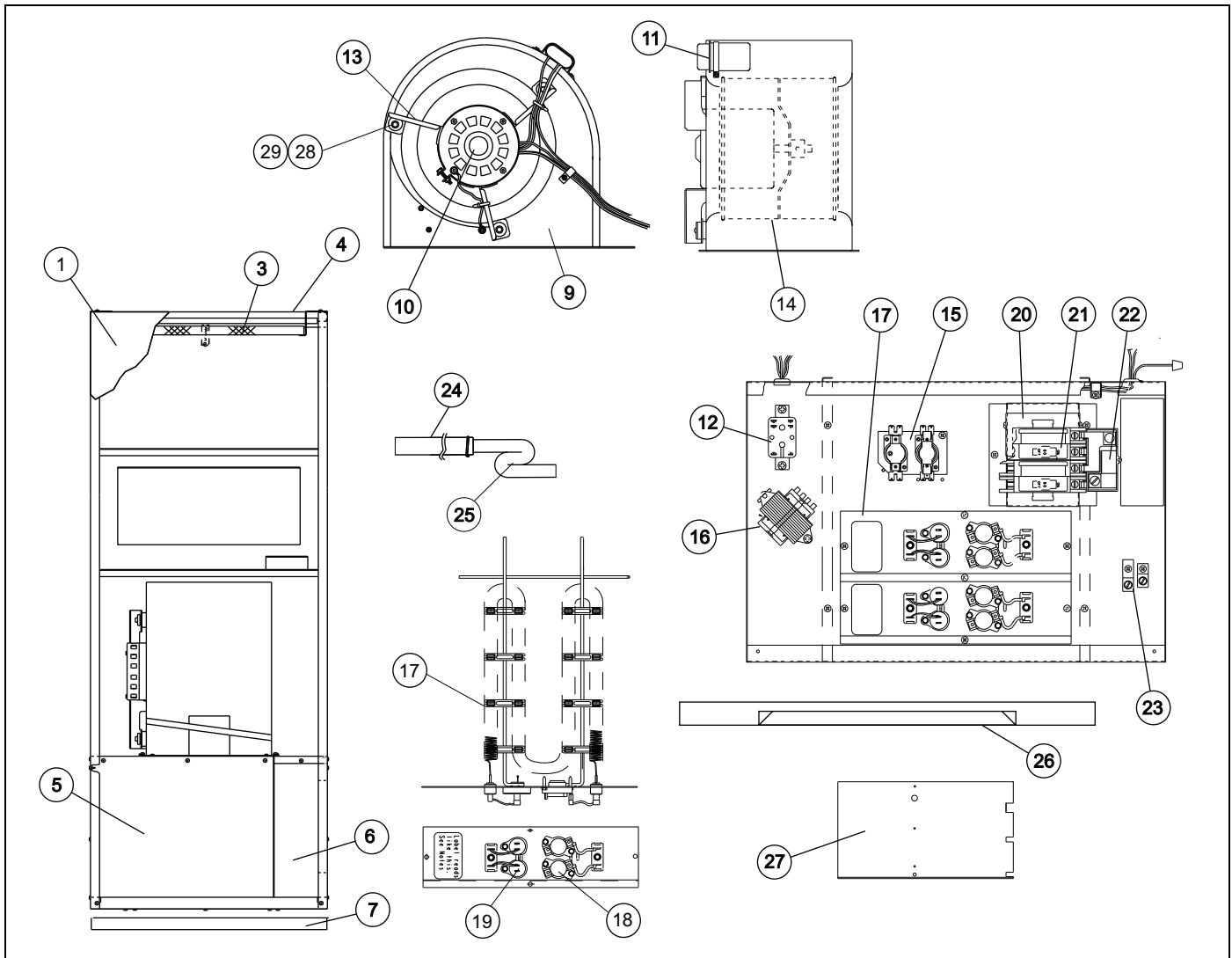
HIGH PERFORMANCE BLOWER ACCESSORY PACKAGE

All EB furnaces are equipped with a blower and control system to add-on air conditioning and heat pumps to specified sizes. If the requirement is to achieve more air flow or cooling than specified, then the blower inside the furnace has to be replaced with an accessory blower package 3500-7901*. This accessory blower package would deliver air conditioning up to 5-tons, and heat pump up to 4-tons. Accessory package (3500-7901*) includes blower, insulation, coil shelf, trap, clamps, etc. Please refer to the installation instructions packed with the accessory package for more information.

CAUTION

All areas around the line sets, drain hoses and other openings in the furnace should be sealed airtight. Use some moldable compound or caulking to seal the area. Failure to do so may result in loss of performance and premature compressor failure.


SECTION V: REPAIR PARTS LIST



ITEM	DESCRIPTION	EB10D	EB12D	EB15D
1	Front Panel (Insulated)	3501-9111	3501-9111	3501-9111
	Filter (20 x 20 x 1) (Front Return Panel)	S1-1214-2521	S1-1214-2521	S1-1214-2521
2* (Opt)	Front Panel (Louvered, 4-Ton) (Insul)	3501-9211	3501-9211	3501-9211
	Front Panel (Front Return, 5-Ton)	3500-1591	3500-1591	3500-1591
3	Filter (16 x 20 x 1)	S1-1214-2511	S1-1214-2511	S1-1214-2511
4	Support Angle (Door)	S1-3500-1861	S1-3500-1861	S1-3500-1861
5	Cover, Electric Box	S1-3500-2351/A	S1-3500-2361/A	S1-3500-2361/A
6	Cover (Service Entrance)	S1-3500-1271	S1-3500-1271	S1-3500-1271
7	Sub-base (Optional)	S1-3500-1071/B	S1-3500-1071/B	S1-3500-1071/B
	Sub-base (M10) (Optional)	3500-5221	3500-5221	3500-5221
8				
9	Blower Housing	S1-37323744001	S1-37323744001	S1-37323744001
10	Blower Motor	S1-02427651000	S1-02427651000	S1-02427651000
11	Capacitor (7.5MFD/370V)	S1-02420045700	S1-02420045700	S1-02420045700
12	Relay, Fan	S1-3110-3301	S1-3110-3301	S1-3110-3301
13	Motor Mount Assembly Kit (1PC)	S1-37319831002	S1-37319831002	S1-37319831002
14	Blower Wheel	S1-02632627700	S1-02632627700	S1-02632627700
15	Sequencer	S1-3110-3571	S1-3110-3571	S1-3115-3571
16	Transformer (240/24V-40A)	S1-3300-3861	S1-3300-3861	S1-3300-3861
17	Heater Element Assembly w/Limit and Jumper Wire	(9.6Kw)	(11.2Kw)	(4.8Kw) & (9.6Kw)
		S1-02541236000	S1-02541238000	S1-02541237000 S1-02541236000
18	Limit Switch	S1-02541249000 (Open 200, Close 60)	S1-02541249000 (Open 200, Close 60)	S1-02541249000 (Open 200, Close 60)
19	Fusible Link	S1-02435663000	S1-02435663000	S1-02435663000
20	Bracket (Circuit Breaker)	3500-128	3500-128	3500-128
21	Circuit Breaker (1 Req'd)	S1-3500-377P/A	---	---
	Circuit Breaker (2 Req'd)	---	S1-3500-377P/A	S1-3500-377P/A
22	Buss Bar (See Note 2)	S1-3500-378P	S1-3500-378P	S1-3500-378P
23	Ground Lug (Large)	1216-231	1216-231	1216-231
	Ground Lug (Small)	---	---	S1-02521798000
24	Drain Tube (See Note 1)	S1-02922184001	S1-02922184001	S1-02922184001
25	Condensate Trap (See Note 1)	S1-3240-3051	S1-3240-3051	S1-3240-3051
26	Coil Shelf (See Note 1)	3500-174	3500-174	3500-174
27	Coil Shelf Panel (See Note 1)	3500-171	3500-171	3500-171
28	Ferrule (3 Req'd)	S1-02320541000	S1-02320541000	S1-02320541000
29	Grommet (3 Req'd)	S1-02814740000	S1-02814740000	S1-02814740000
30	Fuse	S1-02532746026	S1-02532746026	S1-02532746026
31*	Wiring diagram	570551	570539	570540

NOTE: *Not Shown

New replacement parts shown in **bold** face type at the first printing of parts list dated 4/10.

Major components and suggested stocking items are shown with shaded item number. 

"<" Across from row indicates a change in that row.

--- Not applicable to specified model.

All parts with three digit suffix numbers are "Special Order" parts. These parts are subject to factory availability and require extra time for delivery.

1 Not Standard with furnace, contained in accessory kit no. 3500-8941/B.

2 Standard on EB12*.

ITEM	DESCRIPTION	EB17D	EB20D	EB23D
1	Front Panel (Louvered, 4-Ton) (Insul)	3501-9211	3501-9211	3501-9211
	Filter (20 x 20 x 1) (Front Return Panel)	S1-1214-2521	S1-1214-2521	S1-1214-2521
2* (Opt)	Front Panel (Insulated)	3501-9111	3501-9111	3501-9111
	Front Panel (Front Return 5-Ton)	3500-1591	3500-1591	3500-1591
3	Filter (16 x 20 x 1)	S1-1214-2511	S1-1214-2511	S1-1214-2511
4	Support Angle (Door)	S1-3500-1861	S1-3500-1861	S1-3500-1861
5	Cover, Electric Box	S1-3500-2361/A	S1-3500-2361/A	S1-3500-2361/A
6	Cover (Service Entrance)	S1-3500-1271	S1-3500-1271	S1-3500-1271
7	Sub-base (Optional)	S1-3500-1071/B	S1-3500-1071/B	S1-3500-1071/B
	Sub-base (M10) (Optional)	3500-5221	3500-5221	3500-5221
8				
9	Blower Housing	S1-37323744001	S1-37323744001	S1-37323744001
10	Blower Motor	S1-02427651000	S1-02427651000	S1-02427651000
11	Capacitor (7.5MFD/370V)	S1-02420045700	S1-02420045700	S1-02420045700
12	Relay, Fan	S1-3110-3301	S1-3110-3301	S1-3110-3301
13	Motor Mount Assembly Kit (1PC)	S1-37319831002	S1-37319831002	S1-37319831002
14	Blower Wheel	S1-02632627700	S1-02632627700	S1-02632627700
15	Sequencer	S1-3115-3571	S1-3120A3571	S1-3120A3571
16	Transformer (240/24V-40A)	S1-3300-3861	S1-3300-3861	S1-3300-3861
17	Heater Element Assembly w/Limit and Jumper Wire	(5.6Kw) & (10.4Kw) S1-02541239000 S1-02541240000	2 Ea. (9.6Kw) S1-02541236000	(10.4Kw) & (11.2Kw) S1-02541240000 S1-02541238000
18	Limit Switch	S1-02541249000 (Open 200, Close 60)	S1-02541249000 (Open 200, Close 60)	S1-02541249000 (Open 200, Close 60)
19	Fusible Link	S1-02435663000	S1-02435663000	S1-02435663000
20	Bracket (Circuit Breaker)	3500-128	3500-128	3500-128
21	Circuit Breaker (2 Req'd) (See Note 2)	S1-3500-377P/A	S1-3500-377P/A	S1-3500-377P/A
22	Buss Bar	S1-3500-378P	S1-3500-378P	S1-3500-378P
23	Ground Lug (Large)	1216-231	1216-231	1216-231
	Ground Lug (Small)	S1-02521798000	S1-02521798000	S1-02521798000
24	Drain Tube (See Note 1)	S1-02922184001	S1-02922184001	S1-02922184001
25	Condensate Trap (See Note 1)	S1-3240-3051	S1-3240-3051	S1-3240-3051
26	Coil Shelf (See Note 1)	3500-174	3500-174	3500-174
27	Coil Shelf Panel (See Note 1)	3500-171	3500-171	3500-171
28	Ferrule (3 Req'd)	S1-02320541000	S1-02320541000	S1-02320541000
29	Grommet (3 Req'd)	S1-02814740000	S1-02814740000	S1-02814740000
30	Fuse	S1-02532746026	S1-02532746026	S1-02532746026
31*	Wiring diagram	570571	570572	570573

NOTE: *Not Shown

New replacement parts shown in **bold** face type at the first printing of parts list dated 4/10.

Major components and suggested stocking items are shown with shaded item number.

"<" Across from row indicates a change in that row.

--- Not applicable to specified model.

All parts with three digit suffix numbers are "Special Order" parts. These parts are subject to factory availability and require extra time for delivery.

1 Not Standard with furnace, contained in accessory kit no. 3500-8941/B

NOTES

Limited Warranty

Manufactured Housing Furnace

UPG warrants this product to be free from defects in factory workmanship and material under normal use and service and will replace parts that prove to have such defects according to the terms outlined below.

Furnace Model	Parts Coverage	Labor and Trip Coverage*
EB	2 years	2 years

The warranty period for any replacement part provided here under shall not extend beyond the warranty period stated above.

The warranty period will begin on the purchase date of the residence when the product is installed as original equipment, or the installation date when installed in a residence previously purchased by the consumer. Return the Warranty Registration Card to UPG promptly after product installation or purchase for your benefit and protection. The warranty period will begin upon product shipment from UPG in the absence of a recorded Warranty Registration Card.

This warranty applies to the original consumer/purchaser and any subsequent purchaser. The warranty does not apply if the furnace is removed from the original residence, or if the residence has been moved from the original location where the furnace was placed in service.

This warranty applies only to products installed: (1) in the United States of America or Canada; (2) in accordance with UPG recommendations and specifications outlined in the Installation Manual provided with the product; (3) in accordance with all national, state/provincial, and local codes; and (4) in the original residence.

Exclusions

1. Shipping/freight, or material charges.
2. Damages resulting from transportation, mishandling, improper application, installation or servicing.
3. Damages resulting from accident, abuse, fire, flood, or other acts of nature.
4. Use of the product in a corrosive atmosphere.
5. Alteration, tampering, defacing or removing the product serial number will serve to void the warranty.
6. Damages resulting from inadequacy or interruption of electrical service, improper energy supply, blown fuses, improper wiring external to the unit or other like damages.
7. Damages resulting from the use of components not approved by UPG.
8. This warranty does not cover consequential damages, incidental damages or incidental expenses including damages to property.
9. Damages caused by failure to perform normal or routine maintenance as set out in the operation and service instructions.
10. Cleaning, replacement of filters, or any other routine maintenance as set out in the User's Information, Maintenance and Service Manual.
11. Replacement or cleaning of nozzles or orifices.
12. Fuses either internal or external to the product.
13. Excessive fuel or electricity consumption.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE DISCLAIMER OF IMPLIED WARRANTY, SO THAT THE ABOVE DISCLAIMER MAY NOT APPLY TO YOU.

SOME STATES ALLOW ONLY A PARTIAL LIMITATION ON IMPLIED WARRANTIES, OR LIMIT THE DURATION OF IMPLIED WARRANTIES TO THE DURATION OF THE EXPRESS WARRANTY. IN SUCH STATES, THE DURATION OF IMPLIED WARRANTIES IS HEREBY EXPRESSLY LIMITED TO THE DURATION OF THE EXPRESS WARRANTY ON THE FACE HEREOF. IN NO EVENT, WHETHER AS A RESULT OF BREACH OF WARRANTY OR CONTRACT TORT (INCLUDING NEGLIGENCE) STRICT LIABILITY OR OTHERWISE, SHALL UPG BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF USE OF THE EQUIPMENT OR ASSOCIATED EQUIPMENT, LOST REVENUES OR PROFITS, COST OF SUBSTITUTE EQUIPMENT. THIS WARRANTY DOES NOT COVER CONSEQUENTIAL DAMAGES. THE ABOVE LIMITATIONS SHALL INURE TO THE BENEFIT OF UPG SUPPLIERS AND SUBCONTRACTORS. THE ABOVE LIMITATION ON CONSEQUENTIAL DAMAGES SHALL NOT APPLY TO INJURIES TO PERSONS IN THE CASE OF CONSUMER GOODS.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, OR FOR STRICT LIABILITY IN TORT. SO THAT THE ABOVE EXCLUSIONS AND LIMITATIONS MAY NOT APPLY TO YOU. UPG DOES NOT ASSUME, OR AUTHORIZE ANY PERSON TO ASSUME FOR UPG ANY LIABILITY FOR THE SALE OF THIS PRODUCT. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

TO OBTAIN WARRANTY SERVICE

Consult the Authorized Service Center list packed with the furnace installed in the manufactured home or contact your installing or servicing dealer.

Or, look in the Yellow Pages of the telephone book under Mobile Homes-or Manufactured Housing-Repair and Service for the name and telephone number of the nearest authorized manufactured housing service center. If local authorized service cannot be obtained, or you are unable to contact your installing dealer, contact the authorized distributor in your area. If there is no distributor in your area, and you cannot obtain proper service under the terms of the warranty, please write: Unitary Products Group (UPG) Customer Relations Department, PO Box 19014, Wichita, KS 67204-9014.