

12/12/88

Medallion® MANUFACTURED HOMES CORP.
P.O. BOX 1024, WATERTOWN, SD 57201 • 605/886-3270

SINGLE WIDE

INSTALLATION
INSTRUCTIONS

RADCO

FEDERAL MANUFACTURED
HOUSING CONSTRUCTION
& SAFETY STANDARDS

DEC 12 1988

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Medallion ® MANUFACTURED HOMES CORP. P.O. BOX 1024, WATERTOWN, SD 57201	SECTION	PAGE
	S	I

SITE PREPARATION

The site selected to place the home should be properly graded to prevent the accumulation of water under the home. Enclosed crawl spaces shall be cross ventilated with a free air space of at least 1/150 of the floor area. Internal moisture control is the responsibility of the home owner by controlling the humidity levels in the home. (See Condensation Control information provided in the warranty information).

WARRANTY INFORMATION

Refer to manufacturers warranty information included in the warranty package for periodic maintainance and general upkeep information on items such as exterior siding, shingles, appliances, windows, doors, floor coverings, etc...

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<i>Radco</i> MANUFACTURED HOMES CORP. <small>P O BOX 1004 WATERLOO, ON N2L 2G1</small>	SECTION	PAGE
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BLOCKING AND LEVELING INSTRUCTIONS

WARNING - LIMITED WARRANTY on your mobile home is partially NULL & VOID, of not properly blocked, steel frame is not to be removed.

The footing on which blocks are placed must be on firm ground to assure minimum settling - poured concrete, at least 4" thick, is recommended.

Concrete blocks, placed with walls vertical, must not be more than 8 feet apart, must not be more than two feet from both front and rear ends of the home. Each block support must be capable of holding at least 4,000 lbs. without failure.

Proper blocking and leveling on firm footing will prevent settling and much unnecessary trouble, such as: body sagging, doors dragging, windows binding, interior and/or exterior paneling buckling, floor seams, out of square conditions, etc.

The drawing below shows recommended blocking of a typical SINGLE WIDE mobile home. Wood chims are recommended to be used above blocks for precision leveling.

Make sure to place leveling jacks directly under center of I beams, floor joists and/or perimeter rails - do not place leveling jacks under axles, outriggers or other brake formed members.

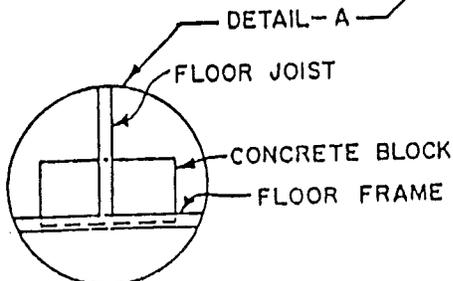
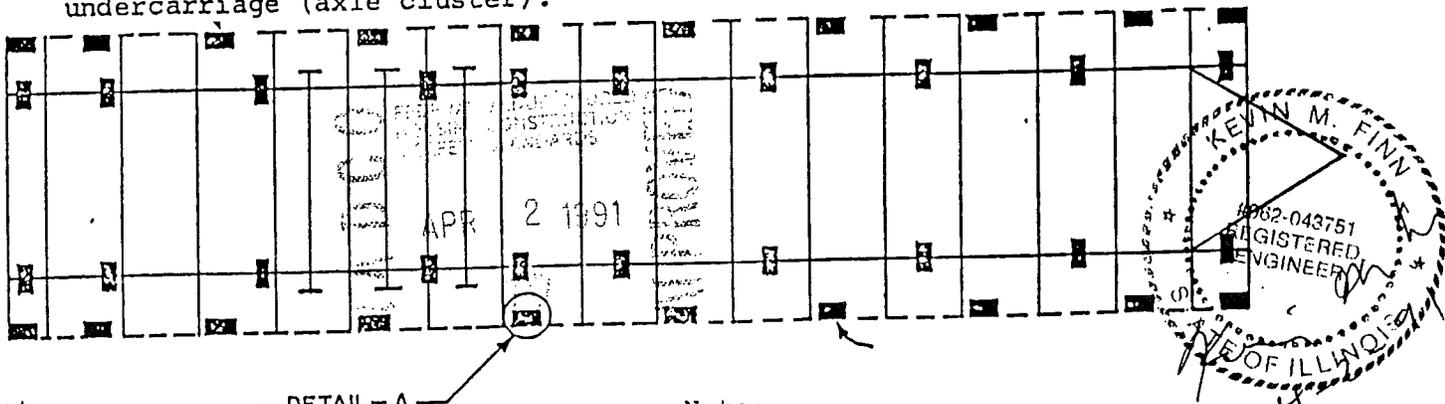
Always place a piece of 2" x 6" lumber or equivalent between leveling jack and frame member to avoid damage to frame.

Blocks should be placed under Rails of floor frame as shown, 1/2" from outer edge of exterior walls, under front and rear exit doors, sliding glass doors each side of sidewall openings 2' larger, if any, at points indicated by white marks painted on surface of subfloor, along longitudinal perimeter floor rails, and 12' O.C. along remaining perimeter of home. Refer Detail A.

HURRICANE TIE-DOWN STRAPS (over body type) are used, a set of blocks must be placed just inside each TIE-DOWN STRAP, directly under Rails of floor frame to prevent body sags at those points. Refer Detail A.

When Walk-A-Bay is located in sidewall, at least 2 piers should be located under edgerail-walk-a-bay joint.

NOTE: If 4 or 5 axles are used, add one (1) set of concrete blocks under longitudinal perimeter floor rails on each side of mobile home approximately centered with undercarriage (axle cluster).



Note:

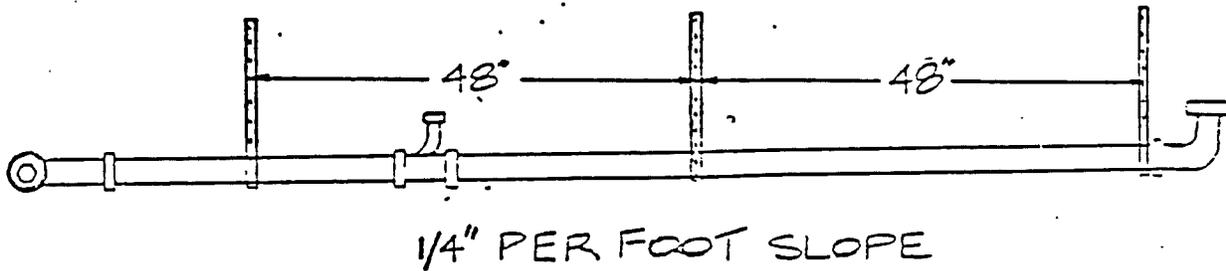
For required footing size chart Page S-15, Required Anchor Spacing chart page S-16.

INSTALLATION OF PLUMBING DRAIN LINE

1. In compliance with Federal Mobile Home Construction and Safety Standards Paragraph 280.603 (b) (3) the crossover drain lines are being shipped loose (in the mobile home) and are to be installed in accordance with the drawing below and must be installed so it will have a uniform grade of not less than 1/4 inch per foot toward the mobile home drain outlet.

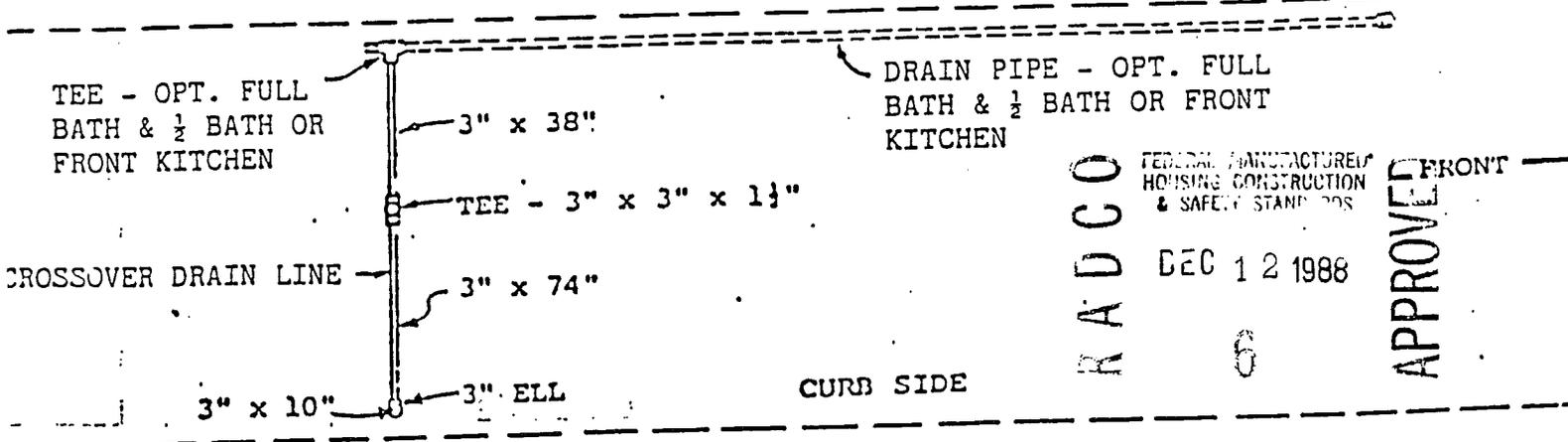
2. In mobile homes with Optional Full or Half Bath or Front Kitchen, drain pipe (dotted lines on sketch below) has been raised to decrease in-transit damage. This pipe must be installed (lowered) so it will have a uniform grade of not less than 1/4 inch per foot toward the mobile home drain outlet. Where it is impractical, due to the structural features or arrangement of mobile home, the pipe or piping may have a grade of not less than 1/8 inch per foot when a full size cleanout is installed at the upper end.

Refer to paragraph 1.



CROSSOVER DRAIN LINE

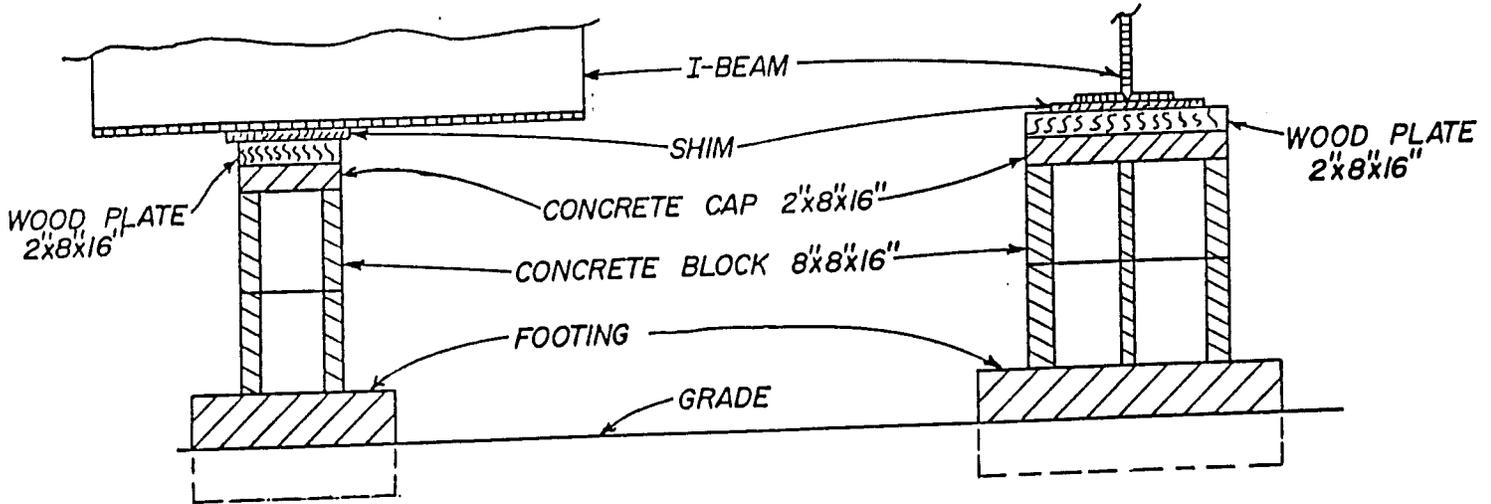
Refer to paragraph 2.



TYPICAL BLOCKING SUPPORT

Illustrated below is a typical footing and concrete blocking arrangement. In areas where ground freezes as well as areas where ground support is soft, footings should be extended as necessary - in case of soft soil, to a depth of satisfactory bearing subsoil level. All organic material is to be removed from beneath footings.

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For soil bearing conditions and required footing size see page S-15.

CHECK WITH LOCAL AUTHORITIES FOR
SPECIFIC FOOTING, FROST LINE, SOIL
CAPACITY AND OTHER LOCAL REQUIREMENTS



EXTERIOR HEAT TAPE RECEPTACLE OUTLET

A 15 AMP receptacle outlet is provided on the exterior of the home, under the water heater compartment, which may be used for heat tape to protect plumbing to avoid freezing.

If heat tape is used, it shall be listed for mobile homes, and must be used in accordance with the heat tape manufacturer's instructions.

INLET WATER PRESSURE

This Mobile Home is designed for a water inlet pressure of 80 PSI maximum.

When the water pressure exceeds 80 PSI, a pressure reducing valve shall be installed at the water inlet.

MASTER COLD WATER SHUTOFF

A Master Cold Water Shutoff Full Flow Valve is to be installed in the water supply line adjacent to the home.

The Valve is to provide through flow capability equal to or greater than the minimum required water distribution piping size supplied by the valve.

GAS SUPPLY SYSTEM DESIGN PRESSURE

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The design pressure limitation for safe and effective operation of the gas piping system in this mobile home is designed for a pressure not exceeding 14 inch water column and not less than 11 inch water column for L.P. gas and not exceeding 10.5 inch water column and not less than 7 inch water column for natural gas.

DRAINING MAIN WATER LINES

To drain water lines, remove cap from drain location or open faucets and apply air pressure until all water is removed from system.

JUNCTION BOX SIZE

For straight pulls the length of the box shall not be less than eight times the trade diameter of the largest raceway.

For angle pulls the distance between each raceway entry inside the box and the opposite wall of the box shall not be less than six times the trade diameter of the largest raceway.

Note - For angle pulls if one of the raceway entries is opposite a cover the distance between the entry and the cover may be less than indicated above, but shall not be less than given in the following table:

Size of Feeder Conductors To Be Installed, Awg Or MCM	Distance, Raceway Entry To Cover, In.
4-3	2
2	2-1/2
1	3
1/0-2/0	3-1/2
3/0-4/0	4
250	4-1/2
300-350	5

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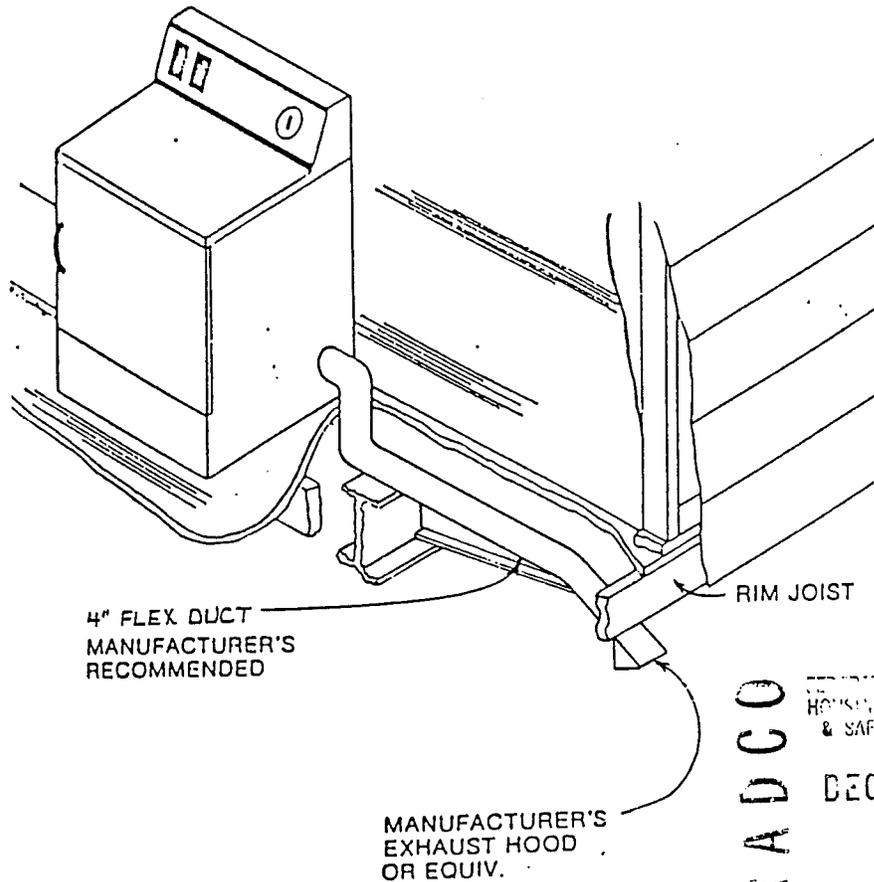
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RESIDENTIAL MOBILE HOME FIXED FEEDER SUPPLY
 (BASED ON 1984 NEC)
 REQUIRED FEEDER RACEWAY SIZE AND MARKING
 FOR CONDUCTOR SIZE

When this Mobile Home is equipped with 100 Amp Maximum Load and Main Breaker or Fuse, the Feeder Raceway is sized for Copper, 75C rated conductors, Types RH, RHH, RHW without outer covering, THW or XHHW, size No. 4 Awg circuit conductors and size No. 8 Awg grounding conductor.

When this Mobile Home is equipped with 200 Amp Maximum Load and Main Breaker or Fuse, the Feeder Raceway is sized for Copper, 75C rated conductors, Types RH, RHH, RHW without outer covering, THW or XHHW, size No. 2/0 Awg circuit conductors and size No. 6 Awg grounding conductor.

TYPICAL DRYER VENTILATION



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DRYER INSTALLATION:

If your home is equipped with a clothes dryer, it must be exhausted to the outside by a moisture-lint exhaust system.

CAUTION: THIS EXHAUST SYSTEM MUST NOT TERMINATE IN THE FLOOR CAVITY OR UNDER THE HOME.

All required components and fittings are provided in the home. An opening in the floor is provided. Typical dryer exhaust connections are shown in Illustration.

If your home is not equipped with a dryer, but an electrical or gas outlet is provided for one, then the opening in the floor or wall is provided. Installation of the exhaust system must be in accordance with the dryer manufacturer's installation instructions.

FINAL (DEALER) ON SITE INSTALLATION INSTRUCTIONS
EXTERIOR DRYER VENT

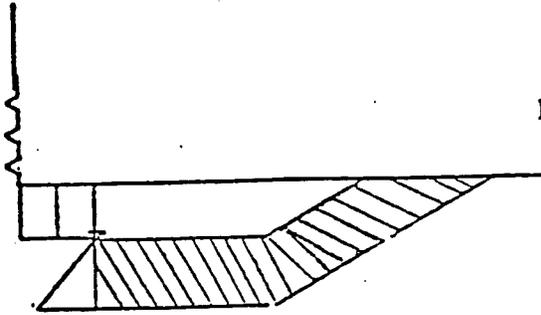


Fig. 1. Remove 2 screws on back side of 2 x 3 x 6 Doublor Vent Block.

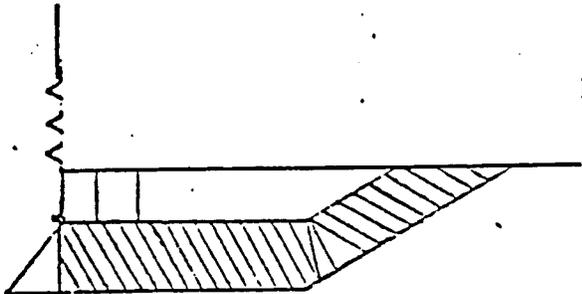


Fig. 2. Extend Dryer Vent beyond 2 x 3 x 6 Doublor Vent Block and resecure to exterior side of mobile home.

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STEEL FRAME TOUCH-UP PAINT

The steel frame on this mobile home is painted with an asphaltic base type material in compliance with Federal Mobile Home Construction and Safety standards, Paragraph 280.305.

It is recommended that Mortell #615 Asphalt Frame Paint be used for touch-up purposes.

BOTTOM BOARD MATERIAL PATCHING INSTRUCTIONS

Below are listed four different patching methods which depending on such factors as size and/or location of tear, type of tear, location of home, etc. offer the manufacturer, dealer, or home buyer a reasonable means of resealing Typar.

1. Using 3M #76 or #90 Spray Adhesive - Patches may be constructed in any shape or size utilizing scrap pieces of Typar or other suitable materials. The adhesive should be sprayed both on the patch and the affected area of the bottom board when using the #90 adhesive. The #76 adhesive needs to be sprayed on one surface only.
2. Using Con-Bond 773 (h), 2153, 1560 NH mastic or approved equal instead of 3M #90. Care should be taken to ensure complete coverage of the patch by the mastic.
3. An approved Shepherd Pressure Sensitive Tape, JF-3, (or equivalent) is available for patching the occasional small tears and cuts which occur during set up, or to affix patches made of Typar or other suitable material around the perimeter of the patch.
4. Outward Flare Tacker - An air operated tool Model LN3045 manufactured by Senco Products, Inc. Suitable for either transverse or longitudinal floor construction. It may be used either in the plant or on erection site. The patch should first be affixed to the bottom using an approved Shepherd Pressure Sensitive Tape, or equivalent, (described in method #3), to secure the perimeter and then fastened on the perimeter at 3 inch intervals. Use the staples described in Senco Bulletin M-100.

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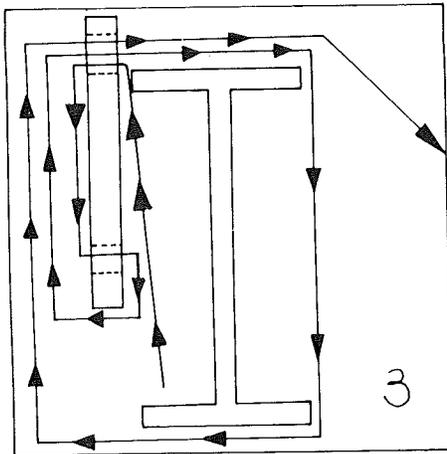
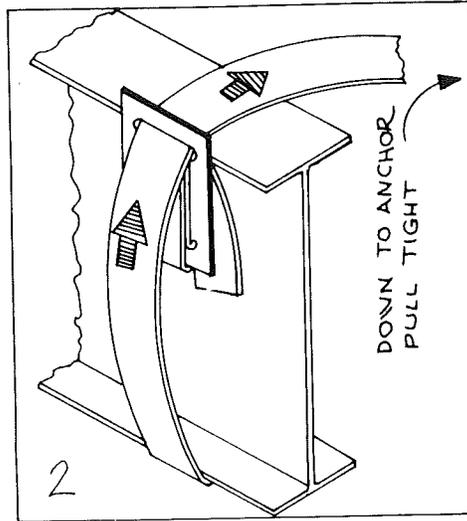
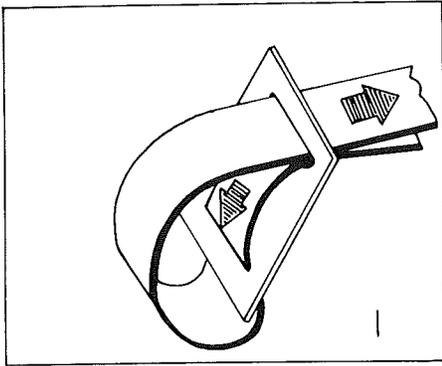
TIE DOWN SYSTEM FOR FRAME TIES ONLY

Diagonal Frame Ties are to be spaced as per page S-16.
for Zone I

See attached "Minute Man Anchors" brochure for suggested tie down system - For Frame Ties Only.

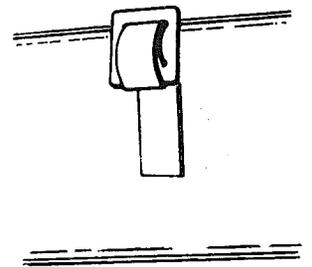
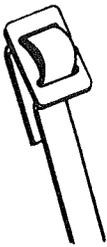
POSITIONING FRAME TIE

FRAME TIE INSTALLATION INSTRUCTIONS



1. Thread 7' length of frame tie strap through buckle as shown.
2. Next, thread long end of strap between frame and floor of home. Bring strap through buckle as shown in diagram and fasten to anchor head.
3. Diagram showing strap in position around frame and through buckle. It is important to remove all slack from system.

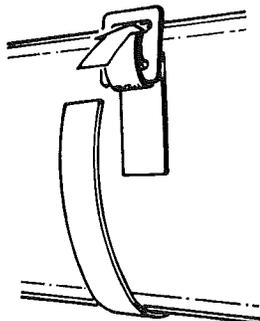
1. See step one in installation instructions.



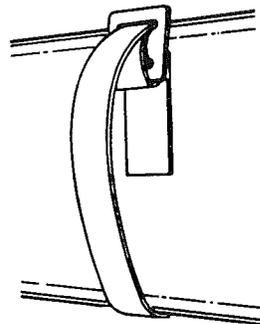
2. Insert strap in position through buckle.

3. Strap should be through buckle in this configuration before installation on frame.

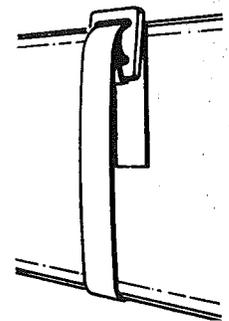
4. Strap should be passed over frame from inside, and buckle pulled into position as shown.



5. Strap should encircle frame and pass through buckle for the second time and over the frame.



6. Strap is pulled tight from outside, or anchor side, of frame.



7. Inside of frame tie, properly installed.



Minute Man anchors®

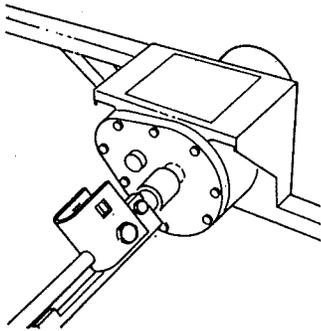


INSTALLATION

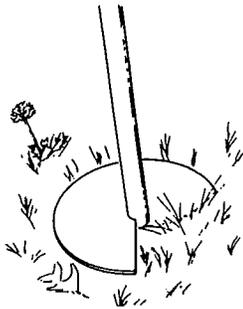
There are two basic methods of installing anchors, each equally effective in properly securing mobile homes to the ground.

Machine Installation

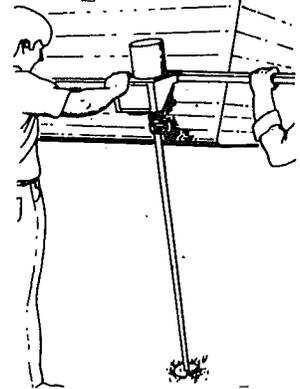
In this method, the anchor is turned the **full depth** of four feet into the ground by an anchor drive machine.



1. Attach anchor to machine.



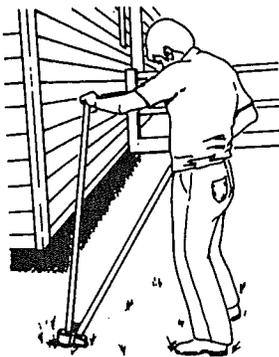
2. Auger is placed in proper position in line with strap, and machine started.



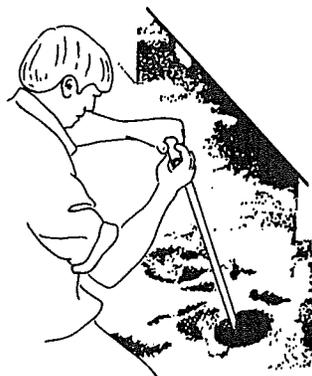
3. Anchor should be installed at a slight angle as shown to assure head being positioned behind future skirting.

Installation with Manual or Mechanical Post Hole Digger

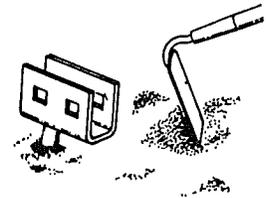
In this method, anchors can be installed with equipment available to the average home owner.



1. A hole is dug to a depth of approximately two feet in the proper position as explained under machine installation.



2. After the hole is dug to 24" depth, the anchor is turned into the ground by hand, using a rod or length of pipe for leverage.



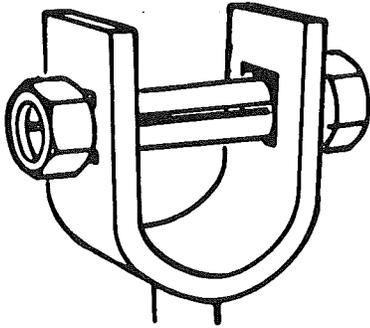
3. After anchor is installed to **full depth**, earth is repacked, six inches at a time.

WARNING: Be careful to avoid underground water lines, phone lines and power lines.

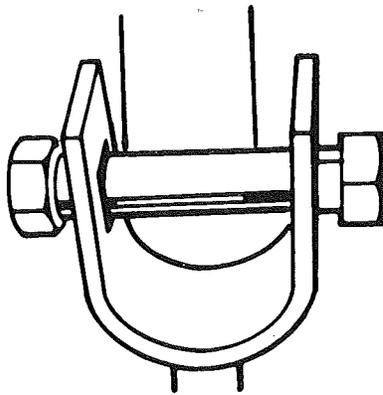
PROPER TENSIONING OF STRAP TO ANCHOR HEAD 3.

Note: The tensioning bolt can be inserted in the head from either side.

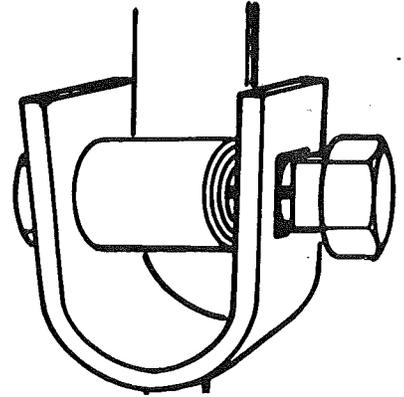
Notice: In areas of severe cold weather where possible damage could occur from frost heave, the homeowner should release some of the tension from the vertical tie each fall.



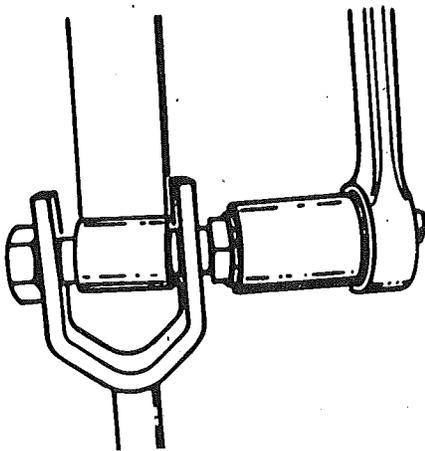
1. Insert bolt into head; attach nut loosely.



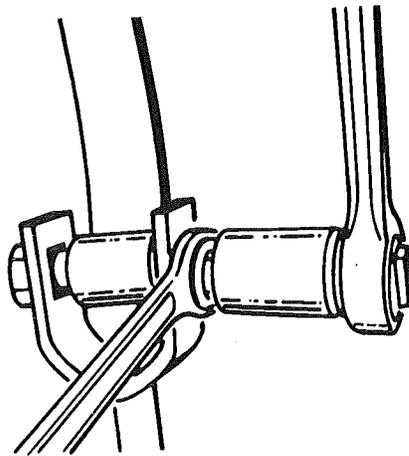
2. Insert strap in slot of bolt 5/8", or until strap is flush with far side of bolt.



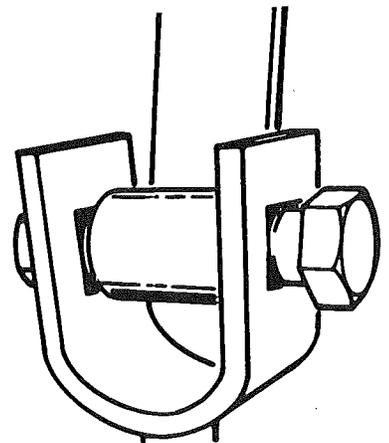
3. Bend strap 90° and take at least four complete turns on bolt until strap is taut.



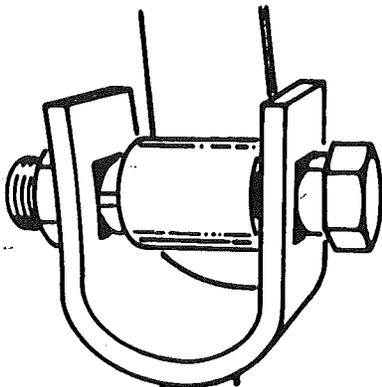
4. Bolt is turned with 15/16" socket wrench, or adjustable wrench, on hex head.



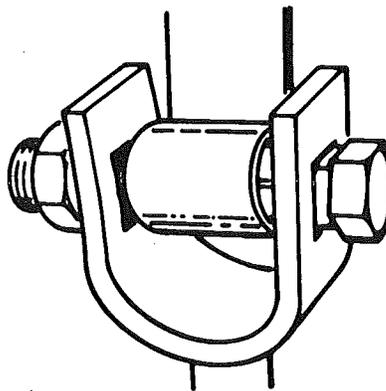
5. To hold bolt under tension while re-positioning wrench, an open-end wrench is placed on 5/8" square shoulders of bolt.



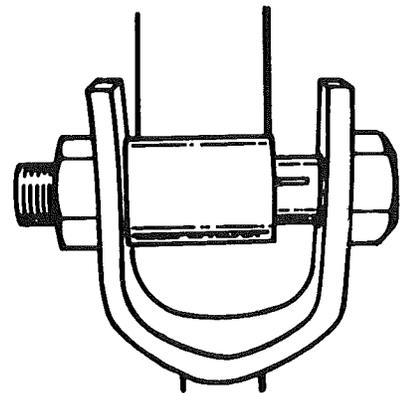
6. Align square shoulders of bolt with square hole in anchor head.



7. Holding hex head of bolt in position, tighten nut to draw square shoulders into square hole.



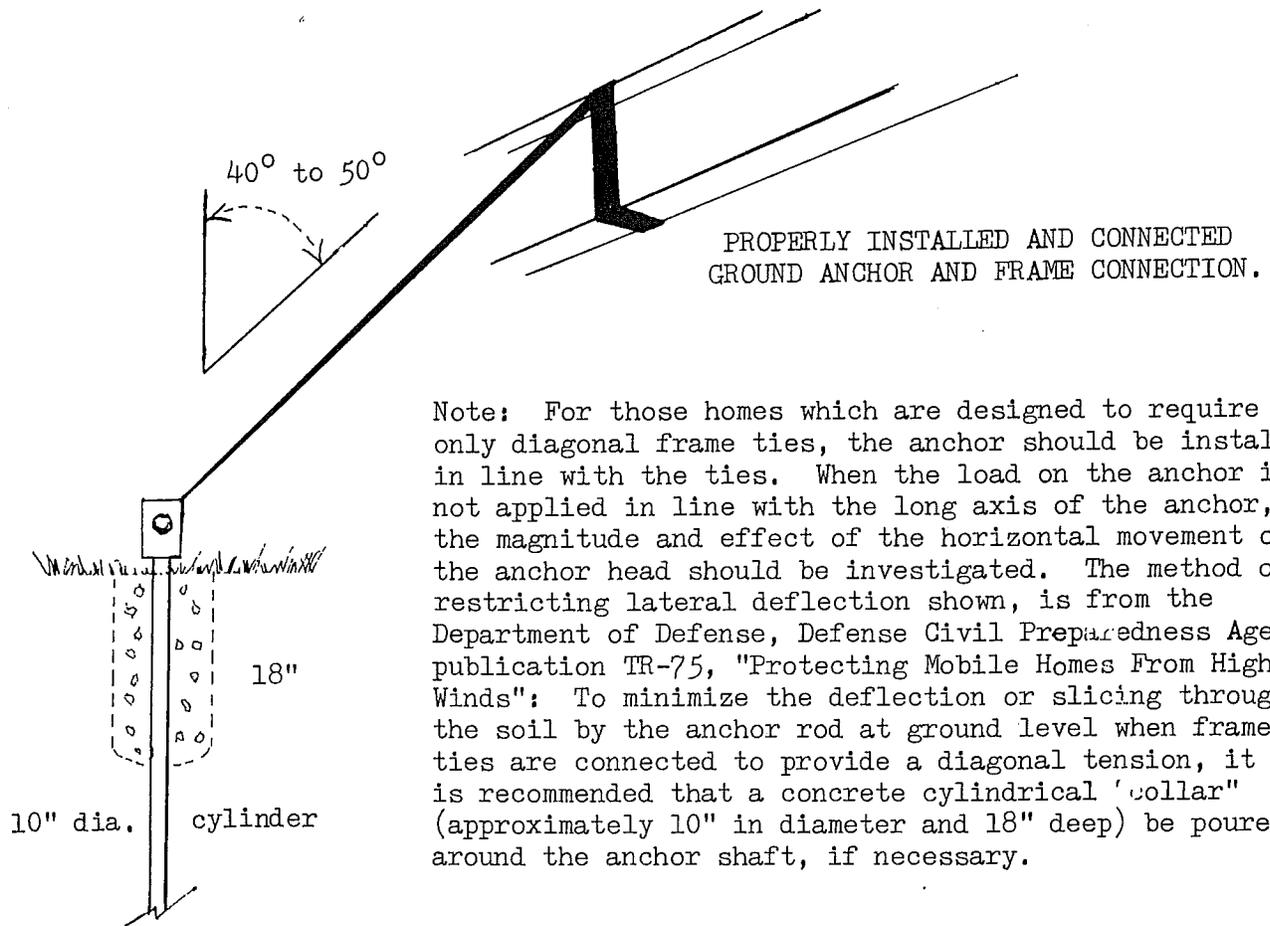
8. Shoulders are now in locking position; continue to tighten nut.



9. Tensioning device is now ir locked, secure position.

For clarity, tools not shown on most photos above.

4.

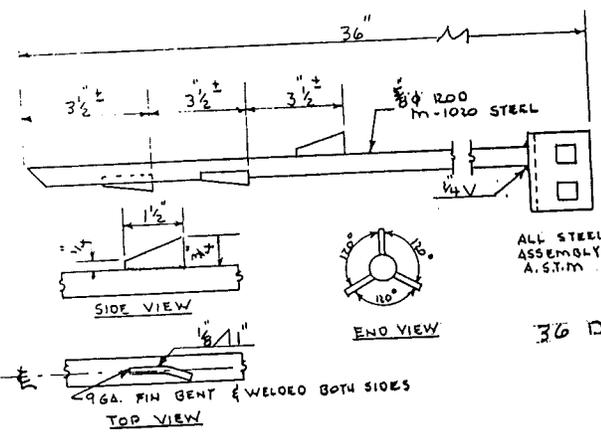
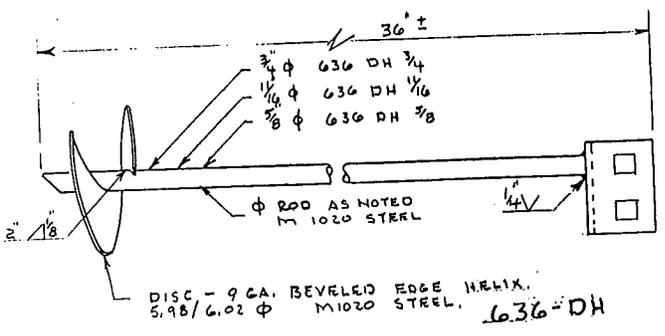
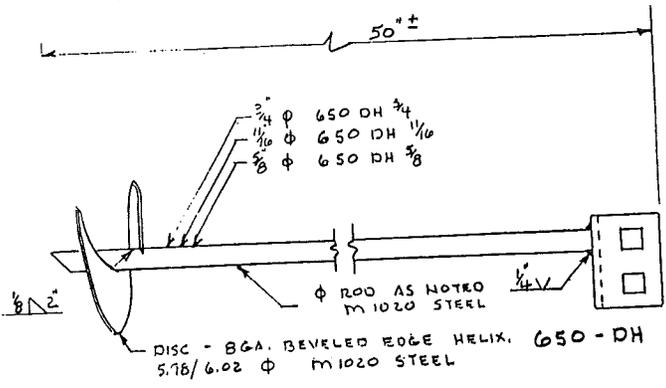


TYPES OF SOIL

Many anchors are designed for particular soil conditions and are unacceptable for use in other type soils. We have therefore, listed the soils for which each anchor is designed and approved. Soil classifications are taken from the "STANDARD FOR THE INSTALLATION OF MOBILE HOMES" NFPA 501A 1975/ANSI A119.3 1976.

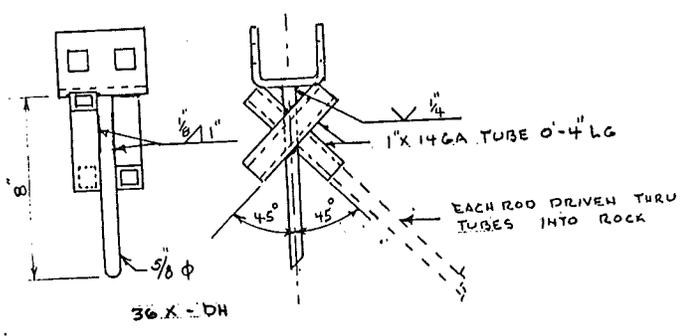
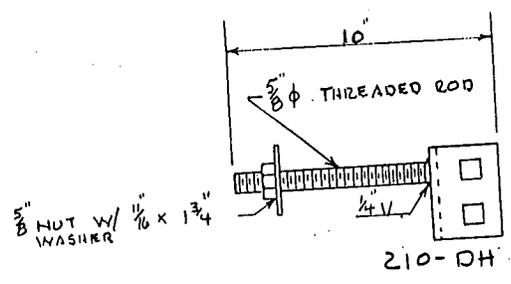
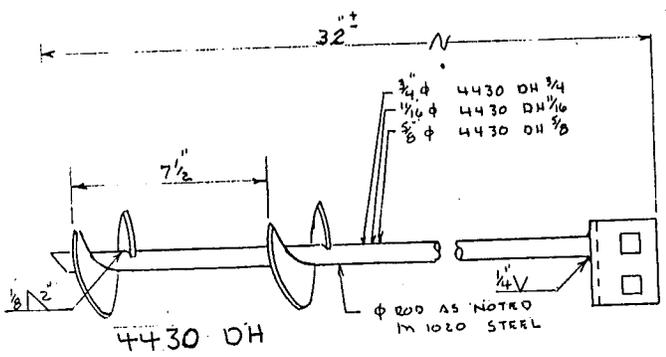
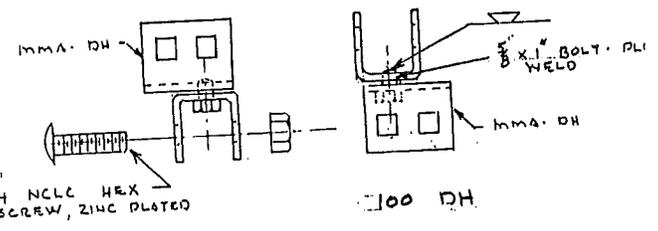
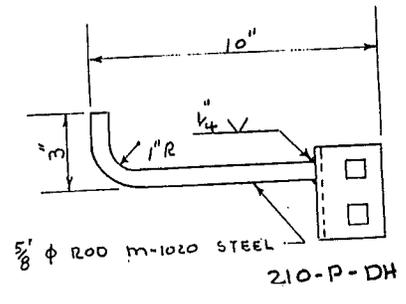
1. Sound hard rock.
2. Very-dense and/or cemented sands, coarse gravel and cobbles, preloaded silts, clays, and corals.
3. Medium-dense coarse sands, sandy gravels, very-stiff silts and clays.
4. Loose to medium dense sands, firm to stiff clays and silts, aluvian fill.

NOTE: All Minute Man Anchors tensioning devices are certified and tested to 7,100 pounds (3,220kg).



FOR HEAD DETAIL SEE DWG. MMA-DH

ALL STEEL USED IN ANCHOR ASSEMBLY CONFORMS TO A.S.T.M. A-36 M-1020



6.

R. M. Hudgins, Jr., P.E.
P. O. Box 5695
Asheville, N. C. 28813
704-274-4627

June 8, 1989

Mr. Locke M. Jones
Minute Man Anchors, Inc.
305 W. Walker Street
East Flat Rock, North Carolina 28728

Dear Mr. Jones:

I have analysed design drawings and physical testing reports for those Minute Man Anchors listed in the tabulation attached. My analysis and the physical test reports define the breaking strength of each of these anchors and their components to be in excess of 5,000 pounds. The strapping meets Federal Specification QQ-S-781H for Type I, Class B, Grade 1 strapping. The strapping is 1 1/4 x .035 hot dip galvanized steel.

On file are testing reports of the direct withdrawal strength of these anchors. These tests evaluate the anchorage strength of Minute Man Anchors installed resisting an axial and a 45° angle applied withdrawal load. For the anchors listed on the attached sheet the average ultimate holding power is not less than 5,433 pounds when installed in accordance with manufacturer instructions in the soil types indicated in the 'table'.

Very truly yours,



R. M. Hudgins, Jr., P.E.



LIST OF CERTIFIED MINUTE MAN ANCHORS WITH A MINIMUM HOLDING POWER OF
4,725 POUNDS (2143 kg).

7.

1. Sound hard rock.
2. Very-dense and/or cemented sands, coarse gravel and cobbles, preloaded silts, clays, and corals. (Probe torque value range- greater than 550 inch pounds).
3. Medium-dense coarse sands, sandy gravels, very-stiff silts and clays. (Probe torque value range- 350-550 inch pounds).
4. Loose to medium dense sands, firm to stiff clays and silts, aluvian fill. (Probe torque value range- 200-349 inch pounds).

<u>MARK</u>	<u>MODEL</u>	<u>DESCRIPTION</u>	<u>USE IN SOIL TYPE*</u>
MMA-2	650-DH 5/8	Double Head, Earth Auger Anchor	2,3,4
MMA-4	650-DH 3/4	Double Head, Earth Auger Anchor	2,3,4
MMA-38	650-DH 11/16	Double Head, Earth Auger Anchor	2,3,4
MMA-40	636-DH 5/8	Double Head, Earth Auger Anchor	5
MMA-28	636-DH 3/4	Double Head, Earth Auger Anchor	5
MMA-30	4430-DH 5/8	Double Head, Double Disk, Earth Auger Anchor	2
MMA-36	4430-DH 11/16	Double Head, Double Disk, Earth Auger Anchor	2
MMA-6	4430-DH 3/4	Double Head, Double Disk, Earth Auger Anchor	2
MMA-35	36-XDH	36" Double Head Cross Drive Anchor	2
MMA-8	48-XDH	48" Double Head Cross Drive Anchor	2
MMA-18	THDH	Double Tension Head	SLAB
MMA-18	THDHL	Double Tension Head W/Lag & Sheild	SLAB
MMA-10	36-DH	Double Head Coral Anchor	CORAL
MMA-12	210-DH	Double Head Tension Device for Slab	SLAB
MMA-14	210-PDH	Double Head Tension Device for Concrete	SLAB
MMA-42	210-JDH	Swivel Double Head Anchor W/base for Concrete	SLAB
MMA-22	100-DH	Double Head Tension Device Adaptor	CONNECT

*NOTE: MANY ANCHORS ARE DESIGNED FOR PARTICULAR SOIL CONDITIONS AND ARE UNACCEPTABLE FOR USE IN OTHER TYPE SOILS. WE HAVE THEREFORE LISTED THE SOILS FOR WHICH EACH ANCHOR IS DESIGNED AND APPROVED. SOIL CLASSIFICATIONS ARE TAKEN FROM THE "STANDARD FOR THE INSTALLATION OF MOBILE HOMES" NFPA 501A 1975/ANSI A119.3 1976.

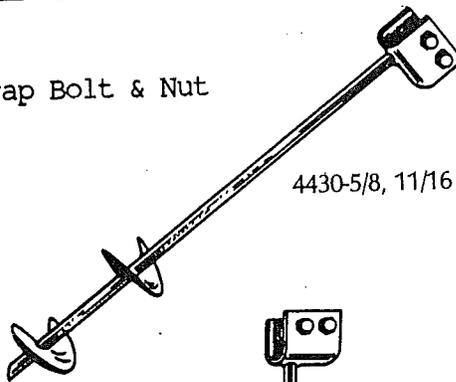
Minute Man anchors[®]

All anchors are "DH" type for use with either one or two tension bolts. Anchors are priced without tension bolt and nut — they must be ordered separately. Tension bolts and nuts will be packed separately from anchors.



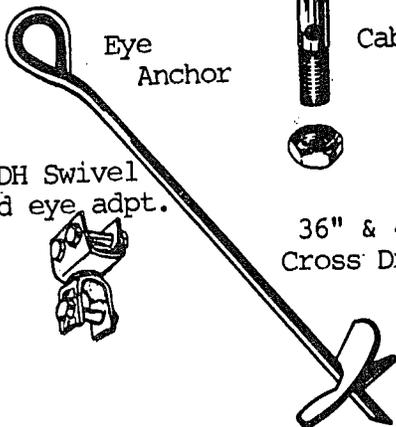
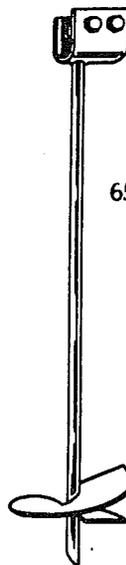
Strap Bolt & Nut

4430-5/8, 11/16 & 3/4



Cable Bolt & Nut

650 5/8, 11/16 & 3/4

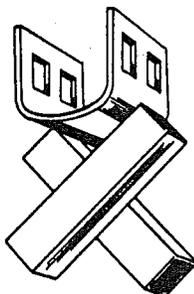


Eye Anchor

100DH Swivel head eye adpt.



36" & 48" Cross Drive



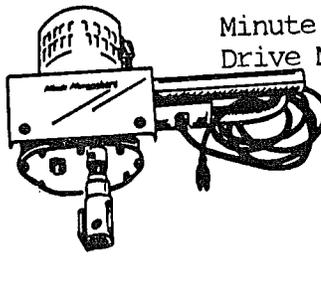
210PDH



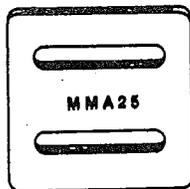
210DH



THDHL



Minute Man Anchor Drive Machine



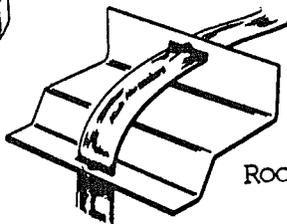
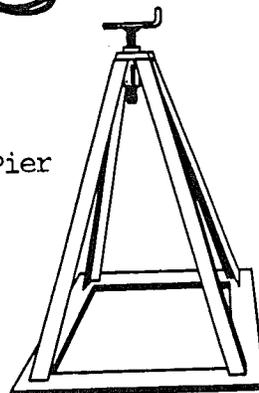
Strap Buckle

MMA25

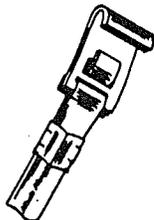


Galvanized Strapping

Pier



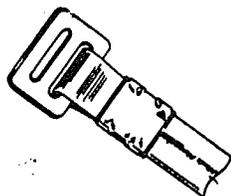
Roof Bracket



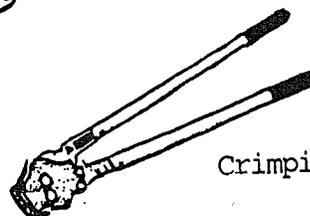
FC W/S



FC II W/S



BUC W/S



Crimping Tool

PIER AND PAD SCHEDULE SINGLE WIDE AND DOUBLE WIDE 30 Psf

Soil Cap.	Pier Location	18 Feet Wide						Soil Cap.	Pier Location	16 Feet Wide					
		8 Foot O.C.			12 Foot O.C.					8 Foot O.C.			12 Foot O.C.		
		Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.	Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.			Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.	Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.
1000	Chassis Perimeter	2779	3.2	460	5181	6.0	858	1000	Chassis Perimeter	2629	3.0	435	4596	5.3	761
1500	Chassis Perimeter	2779	2.0	293	5181	3.8	547	1500	Chassis Perimeter	2629	1.9	278	4596	3.4	485
2000	Chassis Perimeter	2779	1.5	215	5181	2.8	401	2000	Chassis Perimeter	2629	1.4	203	4596	2.5	356
2500	Chassis Perimeter	2779	1.2	170	5181	2.2	316	2500	Chassis Perimeter	2629	1.1	161	4596	1.9	281
3000	Chassis Perimeter	2779	1.0	140	5181	1.8	251	3000	Chassis Perimeter	2629	.9	133	4596	1.6	232

Soil Cap.	Pier Location	28 Feet Wide 14' Single wide						Soil Cap.	Pier Location	24 Feet Wide					
		8 Foot O.C.			12 Foot O.C.					8 Foot O.C.			12 Foot O.C.		
		Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.	Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.			Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.	Req'd Pier Cap. (lbs)	Req'd Footing sq.ft.	Req'd Footing sq.in.
1000	Chassis Perimeter	2029	2.3	336	4856	5.6	804	1000	Chassis Perimeter	1829	2.1	303	4076	4.7	675
1500	Chassis Perimeter	2029	1.5	214	4856	3.6	513	1500	Chassis Perimeter	1829	1.3	193	4076	3.0	430
2000	Chassis Perimeter	2029	1.1	157	4856	2.6	376	2000	Chassis Perimeter	1829	1.0	142	4076	2.2	316
2500	Chassis Perimeter	2029	.9	124	4856	2.1	297	2500	Chassis Perimeter	1829	.8	113	4076	1.7	249
3000	Chassis Perimeter	2029	.7	102	4856	1.7	245	3000	Chassis Perimeter	1829	.6	92	4076	1.4	205

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REQUIRED ANCHOR SPACING PER PIER HEIGHT

18' WIDE	Pier Hght	Zone I
		16 in
	24 in	13 ft
	32 in	12 ft
	40 in	11 ft
	48 in	10 ft

16' WIDE	Pier Hght	Zone I
		16 in
	24 in	12 ft
	32 in	10 ft
	40 in	9 ft
	48 in	8 ft

14' WIDE STD. Pier Hght	Zone I	
	16 in	15 ft
24 in	14 ft	
32 in	12 ft	
40 in	11 ft	
48 in	10 ft	

14' WIDE W/ OPT. 12" OVER HANG	Pier Hght.	Zone I
		16 in
	24 in	13 ft
	32 in	12 ft
	40 in	11 ft
	48 in	10 ft

24' WIDE	Pier Hght	Zone I
		16 in
	24 in	12 ft
	32 in	10 ft
	40 in	9 ft
	48 in	8 ft

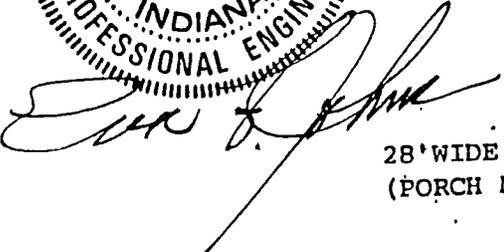
24' WIDE (PORCH MODEL)	Pier Hght	Zone I
		16 in
	24 in	12 ft
	32 in	10 ft
	40 in	9 ft
	48 in	8 ft

28' WIDE	Pier Hght	Zone I
		16 in
	24 in	14 ft
	32 in	12 ft
	40 in	11 ft
	48 in	10 ft

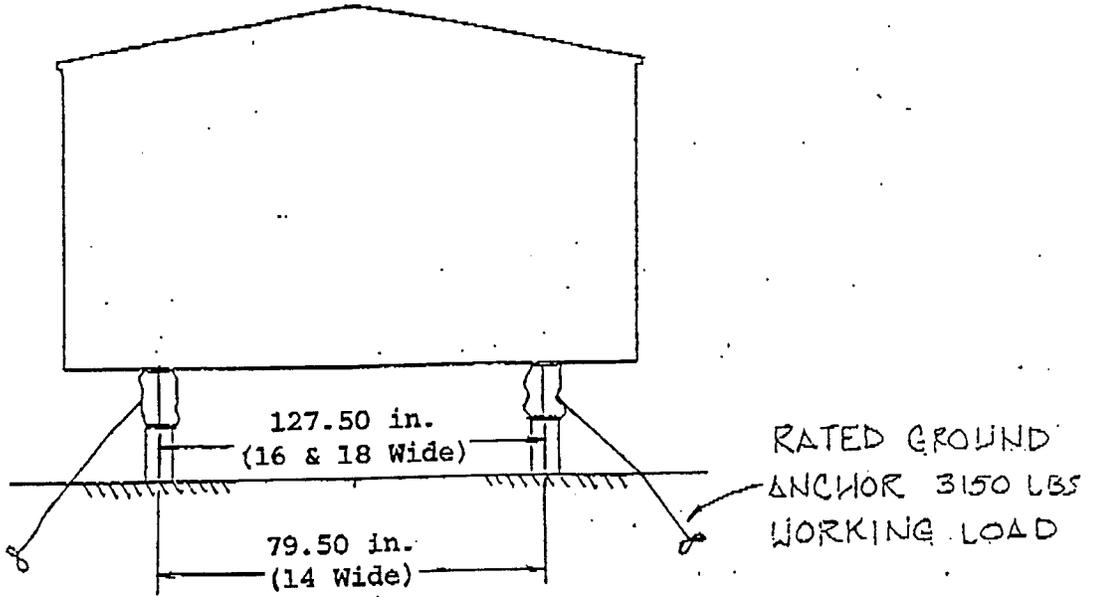
28' WIDE (PORCH MODEL)	Pier Hght	Zone I
		16 in
	24 in	14 ft
	32 in	12 ft
	40 in	11 ft
	48 in	10 ft

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 & SAFETY STANDARDS
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APPROVED

EVOR F. JOHNS
 REGISTERED
 NO. 01666
 STATE OF INDIANA
 PROFESSIONAL ENGINEER



TYPICAL TIE DOWN SINGLE WIDE



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6

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VENTILATION IMPROVEMENT INFORMATION SHEET

MEDALLION MANUFACTURED HOMES CORP. in compliance with Section 3280.710 of the FMHCSS which requires each manufacturer to offer an OPTIONAL Venting or Ventilation System to improve the air quality to each prospective home buyer, has installed as STANDARD a COLEMAN P.O.S. (Positive Operating System) in ALL models. Other ventilation systems offered at extra charge include the COLEMAN BLEND-AIR SYSTEM and Wall Mounted Ventilation Fans. The manufacturers installation instructions for these systems have been included in the following pages.

NOTE: It is the responsibility of the dealer to deliver to the prospective purchaser this Ventilation Improvement Sheet which describes the ventilation option(s) included and offered.

12

BLEND AIR™ ENVIRONMENTAL SYSTEM ACCESSORY 3400-6601

U.S. PATENT PENDING

IMPORTANT NOTICE

These instructions are for the use of qualified individuals specially trained and experienced in the installation of this type equipment and related system components.

Installation and service personnel are required by some states to be licensed. Persons not qualified shall not attempt to install this equipment nor interpret these instructions.

WARNING

IMPROPER INSTALLATION MAY DAMAGE EQUIPMENT, CAN CREATE A HAZARD AND WILL VOID THE WARRANTY.

NOTE

The words "Shall" or "Must" indicate a requirement which is essential to satisfactory and safe product performance.

The words "Should" or "May" indicate a recommendation or advice which is not essential and not required but which may be useful or helpful.

CONTENTS OF PACKAGE

Inspect the parts for any evidence of shipping damage. If damage is found, notify freight carrier and file claim.

1. Roof Cap Assembly
2. Blower Assembly
3. Two Plastic Clamps
4. Fuse Box with 10 feet of 1/2 inch flexible conduit, 4 feet of 3/8 inch flexible conduit and wiring
5. Ceiling collar
6. Damper Assembly
7. Ten feet of 5 inch Class I Flexible Duct
8. Packet of 9 (No. 10 x 1/4") Sheet Metal Screws, a Strain Relief and a Plastic Wire Clamp

9. Blend Air Plaque with Screws
10. Wiring Diagram and Important Sticker
11. Warranty and Registration Card

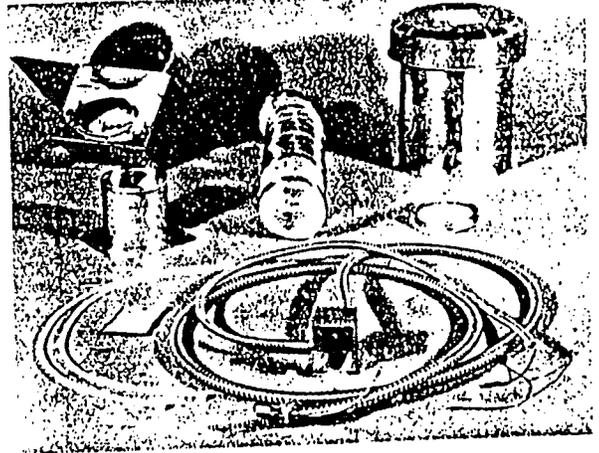
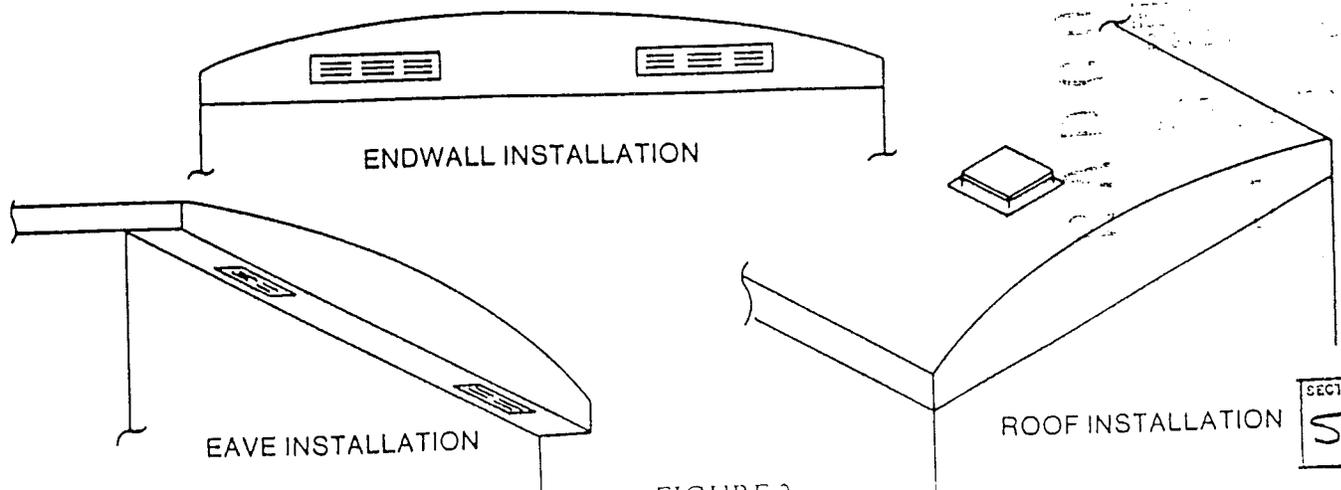


FIGURE 1

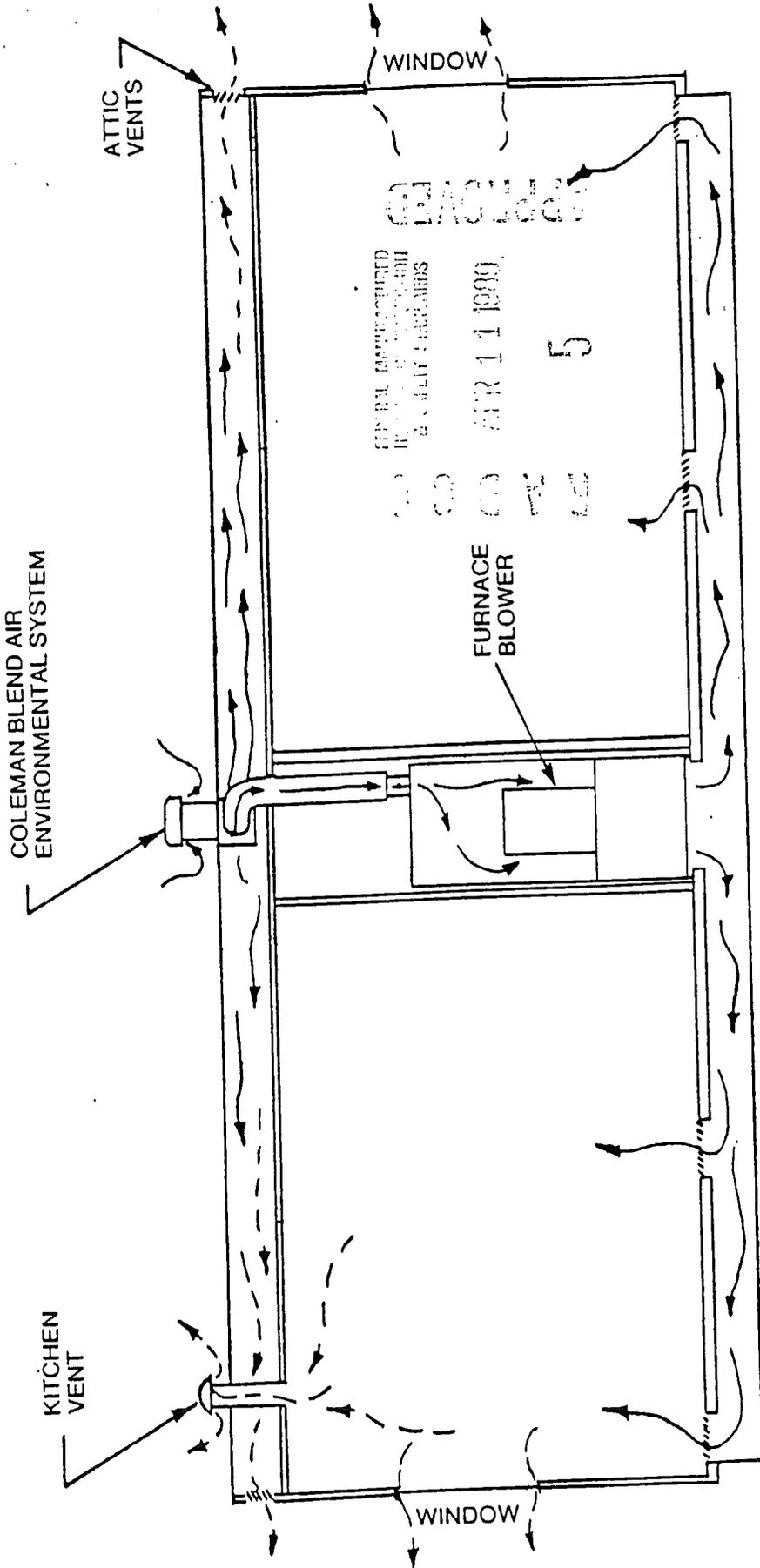
APPLICATION

This device is primarily intended for installation at the manufactured housing plant and designed only for use with the Coleman 3400-800 series downflow electric furnace. The Coleman Blend Air Environmental System will automatically provide fresh air to the living space and outside air to the attic space. The attic must be vented to the outside at each end of the manufactured home, either at the roof or under the eave, for the air to move through the attic. This venting must have a minimum of 35 square inches of free open area at each end of the manufactured home. See figure 2. Make sure the vents cannot be restricted by loose fiberglass or blown in insulation.

The air induction blower is wired in parallel with the furnace blower; therefore, whenever the furnace blower runs,



INSTALLATION INSTRUCTIONS



DRY AIR INTRODUCED INTO ATTIC BY THE COLEMAN BLEND AIR ENVIRONMENTAL SYSTEM.

FRESH DRY AIR INTRODUCED INTO HOME BY THE COLEMAN BLEND AIR ENVIRONMENTAL SYSTEM.

MOISTURE LADEN AIR LEAVING ATTIC DUE TO PRESSURIZATION EFFECT OF THE COLEMAN BLEND AIR ENVIRONMENTAL SYSTEM.

STALE MOISTURE LADEN AIR LEAVING HOME DUE TO PRESSURIZATION EFFECT OF THE COLEMAN BLEND AIR ENVIRONMENTAL SYSTEM.

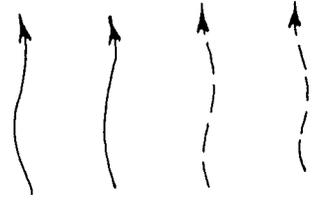


FIGURE 3

the air induction blower will also run. The furnace fresh air damper assembly opens when the induction and furnace blower run and closes when the blowers stop.

If, for some reason, the homeowner desires to block the damper shut for any length of time, a screw hole has been provided in the furnace fresh air damper assembly which allows a screw to be inserted and "lock" the damper closed. The homeowner must remember to remove the screw when he wants the system to be fully functional again. See page 6 figure 13.

The Blend Air Environmental System electric furnace A/C-H/P accessory 3400-6611 contains an automatic solenoid damper control which provides the home owner the option of shutting off the warmer outside air to the furnace during A/C operation.

IMPORTANT

When an air conditioning or Heat Pump system is installed in an electric furnace with the Blend Air system, the Blend Air electric furnace A/C-H/P accessory 3400-6611 must also be installed. Failure to do so will cause improper operation of the Blend Air system.

If the home owner does not have air conditioning connected to the furnace or the home's ductwork but has a continuous fan switch on his furnace, then he could circulate air in both the attic and the home by turning this switch "ON".

This Blend Air Environmental System is not designed to work with manufactured housing electric upflow furnaces.

NOTE

When the A/C-H.P. Blend Air Environmental System control package is also being installed on the furnace with this 3400-6601 package, then the A/C-H.P. control package installation instructions should also be read before any installation is started on the Blend Air Environmental System.

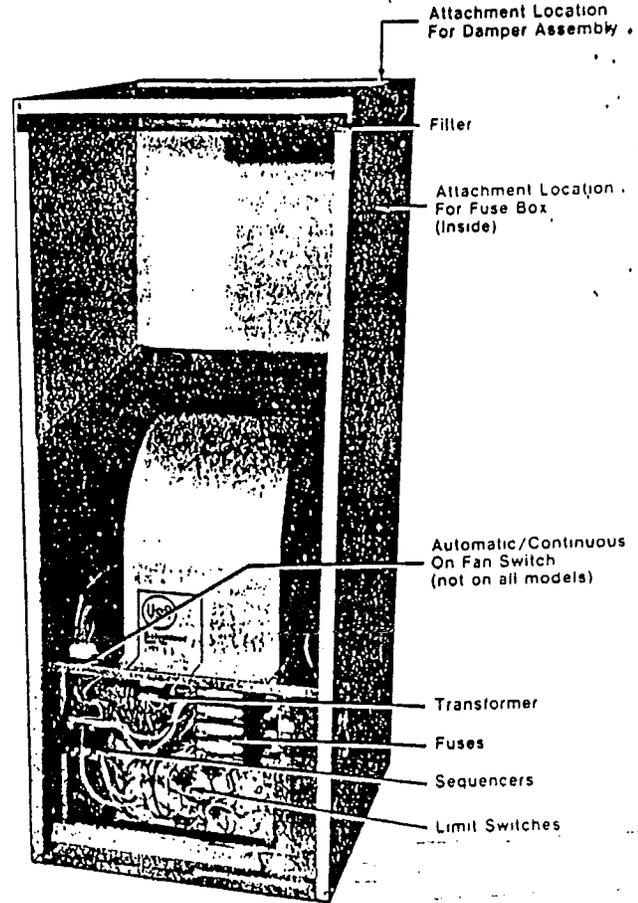
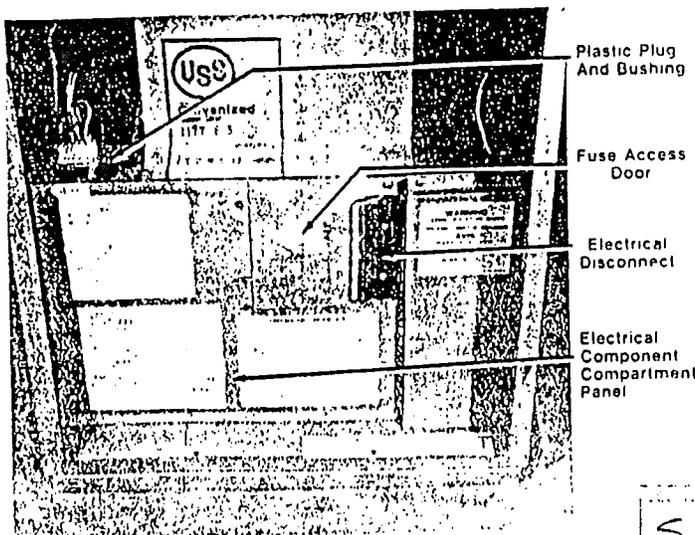


FIGURE 5

INSTALLATION PROCEDURE

A. Prepare the furnace.

1. Remove the furnace door panel.
2. Remove furnace electrical disconnect.
3. Remove filter from top of furnace.
4. Locate damper assembly attachment holes at right, back corner of furnace top. See figure 5. The one inch diameter hole in the filter stop is for routing the 1/2 inch flexible conduit through when going from the fuse box to the air induction blower in the attic.

Earlier production electric furnaces will not have these holes and they will have to be put in by the installer

- a. Use the ceiling collar as a template.
- b. Set ceiling collar in right, rear corner of furnace top with the large hole of the ceiling collar towards the center of the furnace return air opening. Place the ceiling collar in such a way that neither the furnace flange nor the filter stop blocks off any of the 5 inch opening of the ceiling collar.

- c. Mark the screw hole in the furnace flange and the two screw holes in the filter stop. See figure 6.

S 18 C

INSTALLATION INSTRUCTIONS

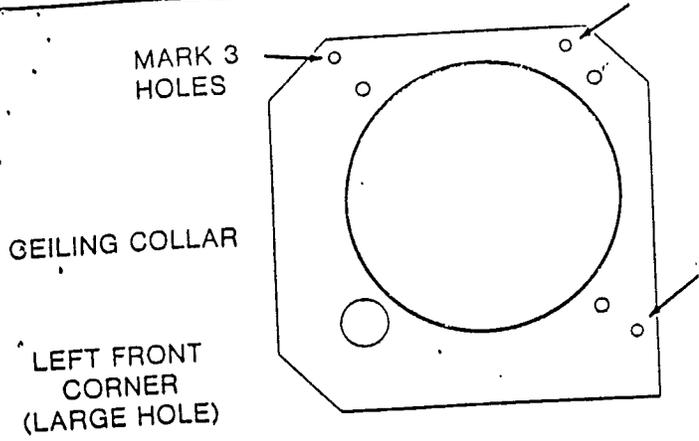


FIGURE 6

- d. Set ceiling collar aside for later use.
- e. Remove filter stop from furnace. See figures 7 and 8.

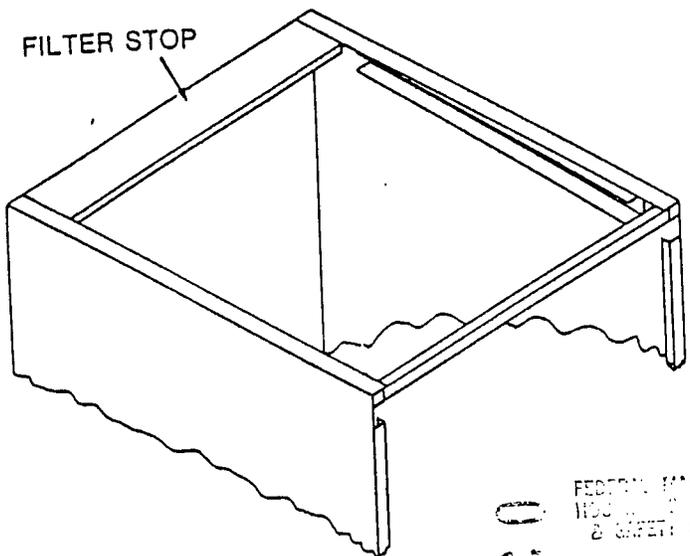
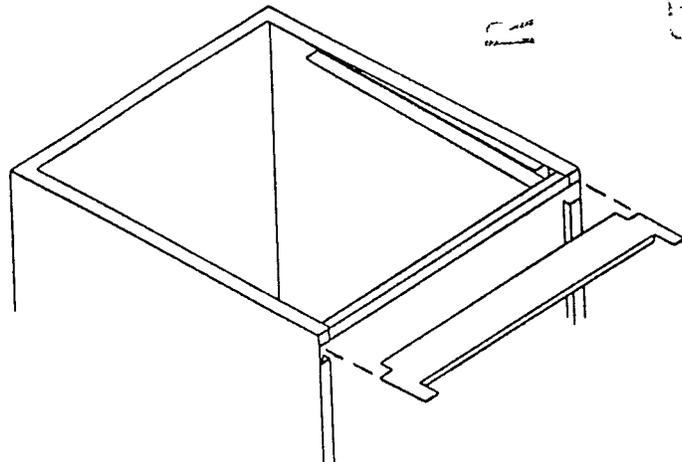


FIGURE 7



- f. Mark center locations of 1/2 inch flexible conduit and wiring passage holes in the filter stop. See figure 9 for hole locations and sizes. The 9/16 hole will be used if and when the A/C or heat pump damper control accessory is installed. And, it is easier to cut this hole now, than later trying to do it with various parts in the way at the top, back of the furnace.

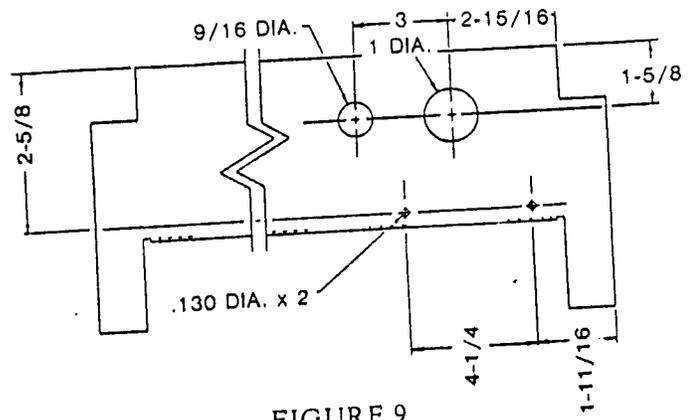
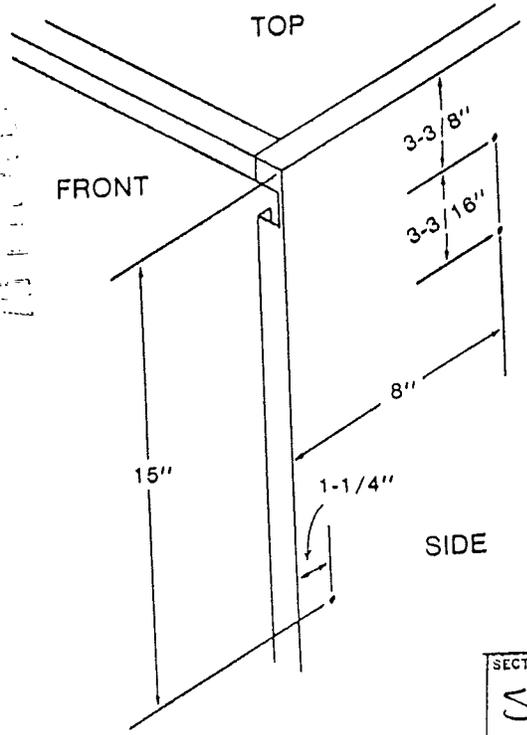


FIGURE 9

- g. Drill sheet metal screw pilot holes in filter stop and furnace flange. The two larger holes can be made with Greenlee Knock-Out punches.
- h. Reinsert filter stop into furnace.
- i. Drill 3 sheet metal screw pilot holes in right side of the furnace for attaching fuse box assembly. See figure 10 for location of holes.



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 5

5. Open furnace electrical component compartment panel.

DANGER — SHOCK HAZARD

WHEN FITTING THE BLEND AIR ENVIRONMENTAL SYSTEM TO AN INSTALLED FURNACE, FOR PERSONAL SAFETY BE SURE TO TURN THE ELECTRICAL POWER "OFF" AT THE HOUSEHOLD SERVICE BOX AND AT THE FURNACE DISCONNECT BEFORE ATTEMPTING INSTALLATION.

6. Remove the plastic plug from the 7/8 inch hole next to the blower plug in the furnace electrical component compartment top. See figure 4.

B. Attach Fuse Box Assembly to Furnace

1. Locate mounting holes on inside, right side of furnace casing. See Figure 10.
2. Attach the fuse box at the 2 uppermost holes in the furnace casing with 2 blunt end sheet metal screws provided. Fuse holders should be facing towards the front of the furnace. See Figure 11.
3. Route the smaller flexible conduit from the fuse box over to the screw hole near the furnace door opening. See Figure 10. Use plastic wire clamp provided and secure conduit to side of furnace at this location with remaining blunt end sheet metal screw. End of smaller conduit should terminate about one inch above right side of furnace electrical component compartment. Excess of conduit should be looped between the plastic clamp and the fuse box. See Figure 11.

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FIGURE 11



4. Remove the plastic bushing from the 7/8 inch hole next to the blower plug in the furnace electrical component compartment top. See Figure 4. Slip the plastic bushing around the orange and blue wires coming from the smaller flexible conduit and slide it over to the right of the furnace.

NOTE

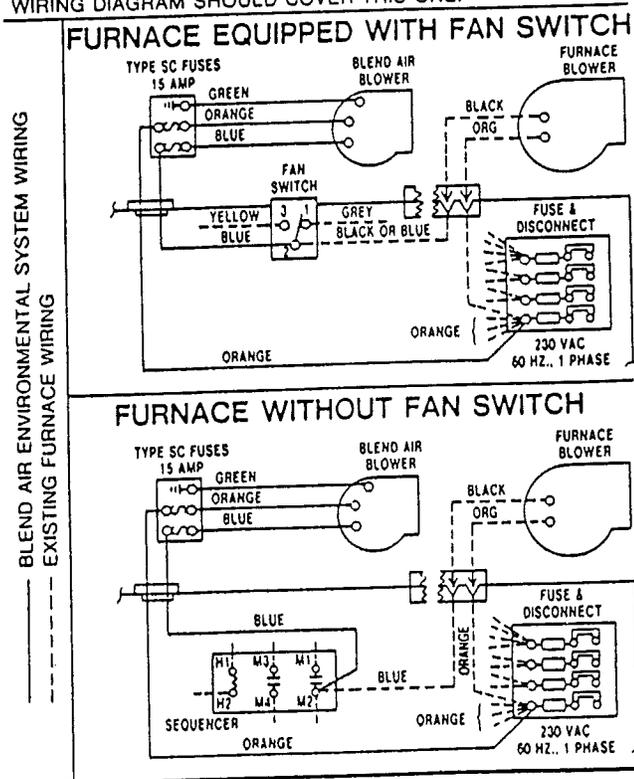
This plastic bushing is needed for other furnace accessories that may be applied in the future. Do not

5. Route the orange and blue wires from the smaller flexible conduit over to the 7/8 inch hole next to the blower plug of the furnace's electrical component compartment. Pass the wires through the 7/8 inch hole and attach the orange wire to a bottom terminal of the fuse block. One of the orange wires may have to be removed and attached to the piggy-back spade terminal on the orange conduit wire to make room for attaching the orange conduit wire to the fuse block terminal.

6. Attach the blue wire to either the fan switch or M2 of the sequencer per wiring diagram in figure 12.

NOTICE:

THIS FURNACE IS EQUIPPED WITH AND WIRED AS SHOWN BELOW FOR COLEMAN 3400-6601 "BLEND AIR ENVIRONMENTAL SYSTEM". WHEN AN A/C OR H/P SYSTEM IS ADDED THIS WIRING CHANGES. WHEN INSTALLED, A/C-H/P WIRING DIAGRAM SHOULD COVER THIS ONE.



DANGER: SHOCK HAZARD

TURN OFF ELECTRICAL POWER BEFORE SERVICING TO PREVENT POSSIBLE DAMAGE TO EQUIPMENT AND POSSIBLE PERSONAL INJURY

ONLY THE FOLLOWING U.L. LISTED ELECTRIC FURNACES MAY BE USED WITH THE COLEMAN "BLEND AIR ENVIRONMENTAL SYSTEM": 3400-800 SERIES.
U.S. PATENT PENDING

1972-397 (10-83) P 1

FIGURE 12

7. Secure the orange and blue wires in the 7/8 inch hole with the strain relief provided.
8. Replace the furnace's electrical component compartment panel. DO NOT REPLACE THE ELECTRICAL DISCONNECT AT THIS TIME

INSTALLATION INSTRUCTIONS

9. Remove the conduit connector from the end of the larger flexible conduit and set it aside. It will be used later in attaching the conduit to the air induction blower.
10. Route the large flexible conduit up through the one inch hole in the filter stop.

C. Attach Blend Air Damper Assembly to Furnace

1. Orient the Blend Air damper over the pilot screw holes at back, right corner of furnace top and attach with 3 sheet metal screws provided. The 3 holes in a vertical column on the damper assembly tube should be toward the left of the furnace. See Figure 13.

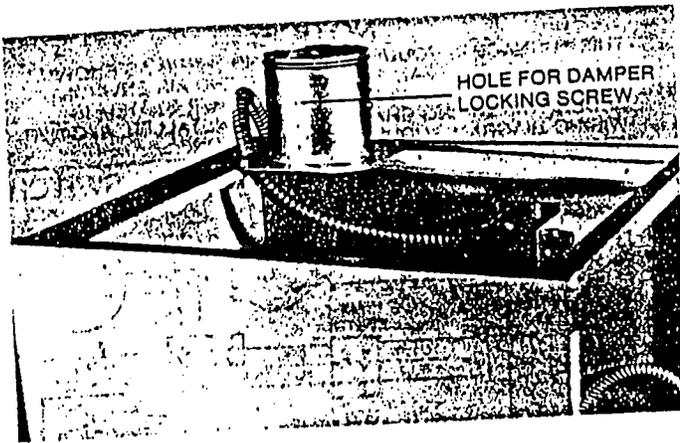


FIGURE 13

2. Put filter back into furnace.

IMPORTANT

WHEN CUTTING INTO THE ROOF AND CEILING CAVITY, EXTREME CARE SHOULD BE TAKEN NOT TO DAMAGE ANY ELECTRICAL WIRING THAT MAY BE HIDDEN UNDERNEATH THE ROOF OR BEHIND THE CEILING STRUCTURES.

WARNING

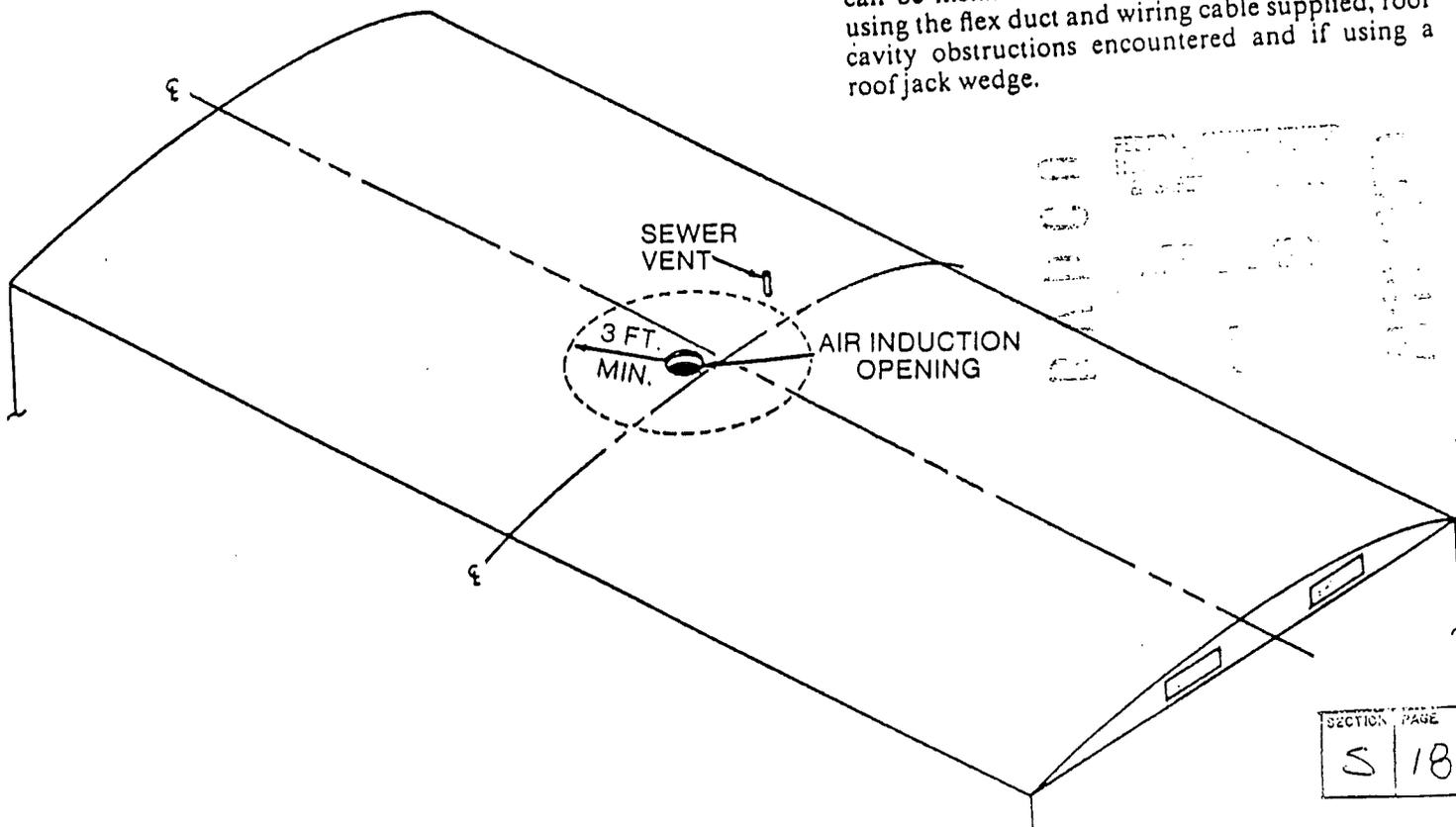
CONTACT WITH HOT ELECTRICAL WIRING COULD CAUSE EQUIPMENT DAMAGE, FIRE, PERSONAL INJURY OR DEATH.

D. Locate And Cut Ceiling Opening For Fresh Air Duct and Flexible Conduit

1. Locate 6-1/2 inch diameter ceiling hole as close as possible to being directly above the damper assembly. The 6-1/2 inch hole location will usually have to be adjusted to miss ceiling joists or other obstructions in roof cavity.
2. Once location has been selected, mark the 6-1/2 inch hole on the ceiling.
3. Cut the 6-1/2 inch diameter hole through the ceiling.

E. Locate And Cut Air Induction Roof Opening

1. The air induction roof opening shall be no closer than 3 feet to any roof opening. (e.g. sewer vent, bathroom exhaust, etc.)
2. About 4 to 5 feet is the farthest distance the Blend Air Environmental System blower and roof cap can be installed from area directly over furnace; using the flex duct and wiring cable supplied, roof cavity obstructions encountered and if using a roof jack wedge.



3. The opening should be located towards the center of the home's roof.
4. The opening should be located between rafters.
5. Mark the selected location and cut an 11 inch diameter hole through the roof and into the roof cavity. See figure 14.

F. Install Roof Jack Wedge

If the pitch of the roof is such that it requires the installation of a roof jack wedge, use the installation instructions packed with the wedge.

G. Install The Flex Duct, Conduit And Blower Assembly

1. Route the 5 inch flex duct from the air induction roof opening over to the 6-1/2 inch ceiling hole. Pass enough 5 inch duct through the ceiling hole to reach the furnace damper site.
2. Route the larger flexible conduit through the one inch hole in the ceiling collar from the side opposite the 5 inch diameter flange. This will allow the flange to fit up into the ceiling.
3. Continue routing the conduit on up through the ceiling hole and over to the air induction hole in the roof.
4. Slip the ceiling collar over the flex duct. Compress the flex duct, above the furnace, back to the ceiling opening. Turn the compressed flex duct sideways and pull it through the ceiling collar so the ring of the ceiling collar will fit up into the ceiling hole. See figure 15.



FIGURE 15

5. Attach the ceiling collar to the ceiling.
6. Pull the flexible duct down onto the damper assembly.
7. Secure the flexible duct to the damper assembly with one of the plastic clamps provided. Excess of the plastic clamp may be cut off.

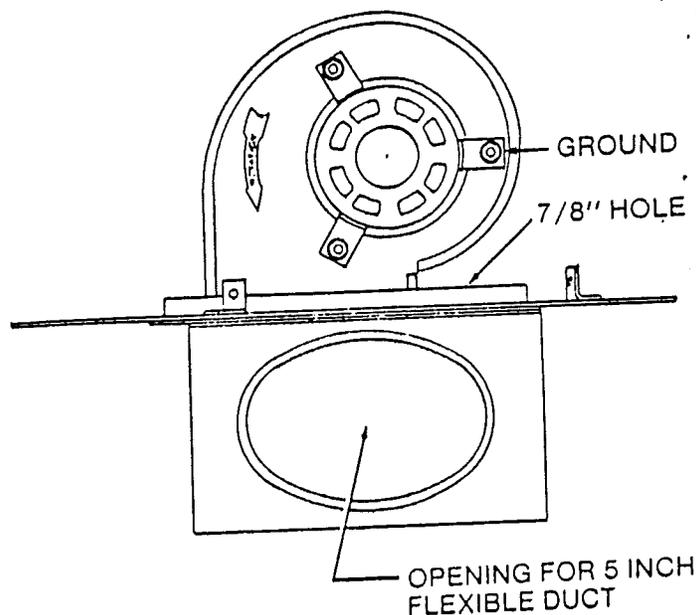


FIGURE 16

8. Pull flexible conduit up through roof air induction hole and clamp the conduit connector back onto the end of the flexible conduit.
9. Route electrical wires and conduit up through 7/8 inch hole behind blower housing. See fig. 16.
10. Secure flexible conduit to the 7/8 inch hole in the blower assembly. See figure 17.

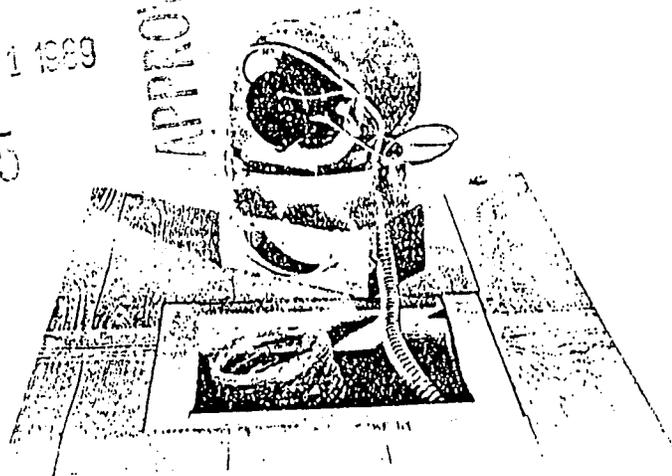


FIGURE 17

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INSTALLATION INSTRUCTIONS

11. Plug the two electrical wires into the motor.
12. Attach the green ground wire from the conduit to the motor mount. See figure 16.
13. Slip flex duct over flex duct collar on blower assembly and secure with remaining plastic clamp. Excess of plastic clamp may be cut off. See figure 18.

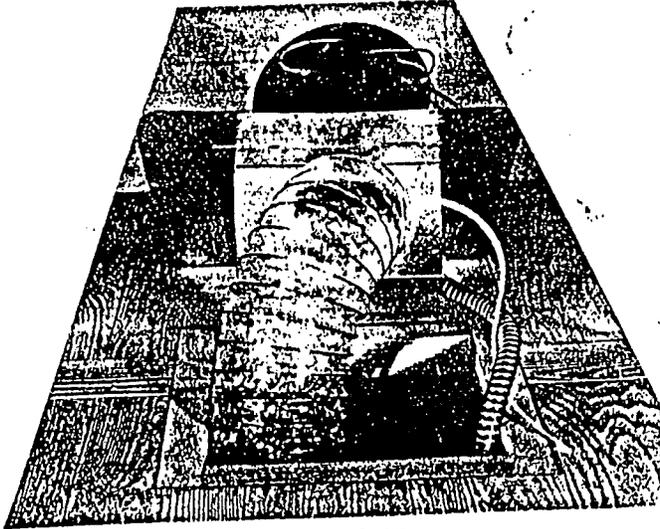


FIGURE 18

14. Insert blower assembly into opening in the roof, caulk around under roof flange to provide a rain tight seal, then secure roof flange to the roof or to a roof jack wedge if used.
15. Attach roof cap to blower assembly. Use the remaining 3 screws from the packet.

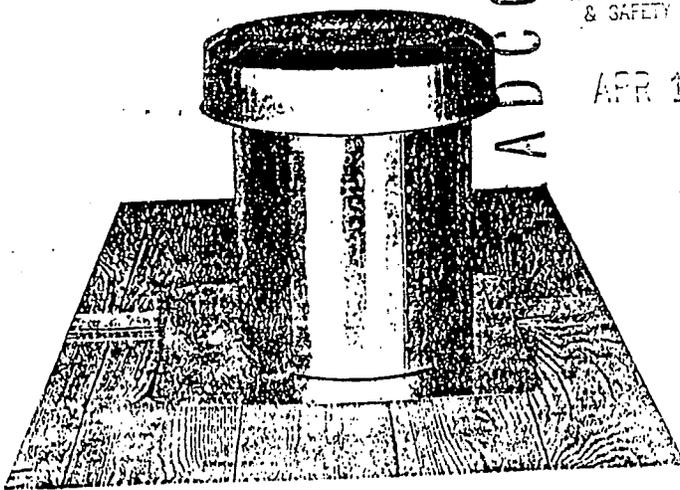


FIGURE 19

SYSTEM CHECK OUT PROCEDURE (heating only application)

1. Set wall thermostat to the lowest temperature setting.
2. If the furnace has a fan switch, set it to AUTO.

3. Reinstall the furnace electrical disconnect.
4. Replace the furnace door.
5. Set the wall thermostat above room temperature. Then when the furnace sequencer closes the #1 contacts:
 - a. Heater element should start heating up.
 - b. Furnace blower should start running.
 - c. Blend Air Environmental System blower should start running.
 - d. Outside air should blow through attic.
 - e. Damper assembly should open.
 - f. Outside air should be drawn into furnace's return air stream.
6. Turn the wall thermostat to its lowest temperature setting. Then when the furnace sequencer opens the #1 contacts:
 - a. All heater elements should be off.
 - b. Furnace blower should turn off.
 - c. Blend Air blower should turn off.
 - d. Damper assembly should close.
7. If furnace has a fan switch:
 - a. Remove furnace door, turn fan switch "ON" and put door back on furnace.
 1. Furnace blower should run.
 2. Blend Air blower should run.
 3. Outside air should blow through the attic.
 4. Damper assembly should open.
 - b. Remove furnace door, turn fan switch "OFF" and put door back on furnace.
 1. Furnace blower should turn off.
 2. Blend air blower should turn off.
 3. Damper assembly should close.
8. Set the wall thermostat to the desired "living space" temperature.

INSTALLER

1. Place wiring diagram packed with Blend Air Environmental System on furnace side wall between the newly attached fuse box and front right corner of furnace casing.
2. Place "IMPORTANT" sticker referencing A/C-H/P application on the furnace side wall next to the Blend Air wiring diagram installed in step one above.
3. For customer accessibility: Tape the Blend Air Environmental System Installation Instructions, Warranty and Customer Registration Card to outside of furnace door panel.

FEDERAL MANUFACTURED HOUSING & SAFETY STANDARDS

APR 11 1999

5

POSITIVE OPERATING SYSTEM

7681-8091

IMPORTANT NOTICE

These instructions are for the use of qualified individuals specially trained and experienced in the installation of this type equipment and related system components.

WARNING

IMPROPER INSTALLATION MAY DAMAGE EQUIPMENT AND CREATE A HAZARD RESULTING IN EXPLOSION, FIRE OR ASPHYXIATION.

NOTE

The words "Shall" or "Must" indicate a requirement which is essential to satisfactory and safe product performance. The words "Should" or "May" indicate a recommendation or advice which is not essential and not required but which may be useful or helpful.

CONTENTS OF PACKAGE:

- 1) Installation Instructions
- 2) Fresh Air Intake Assemblies (6)
- 3) Plastic Wire Ties (12)

- 4) 50' of 5" Dia. Insulated Duct
- 5) Damper Tubes (6)
- 6) Sheet Metal Screws (6)

SAFETY INSTRUCTIONS

APR 11 1989

APPLICATION:

This accessory is U.L. listed for use with Coleman Series 4000, 7600, 7700, 7900, 8800, or 8900 fuel burning furnaces and 3400 Series electric furnaces. The accessory provides a means of introducing fresh air into the furnace which is then heated and circulated in the home through the duct system. The outside air is induced into the furnace compartment by the suction of the furnace blower and will introduce 30-50 CFM of fresh air. The damper swings open only when the furnace blower runs preventing loss of conditioned air migration.

WARNING

DISCONNECT ALL ELECTRICAL POWER TO THE MOBILE HOME AT THE MAIN ELECTRICAL PANEL BEFORE CUTTING INTO THE ROOF AND CEILING CAVITY. CONTACT WITH HOT ELECTRICAL WIRES COULD CAUSE EQUIPMENT DAMAGE, FIRE, PERSONAL INJURY OR DEATH. IF ALTERNATE SOURCE OF POWER IS NOT AVAILABLE USE SELF POWERED TOOLS OR MANUALLY OPERATED HAND TOOLS TO CUT OPENINGS.

IMPORTANT

WHEN CUTTING INTO ROOF AND CEILING AREA EXTREME CARE SHOULD BE TAKEN NOT TO DAMAGE ANY ELECTRICAL WIRING THAT MAY BE HIDDEN UNDERNEATH THE ROOF OR BEHIND THE CEILING.

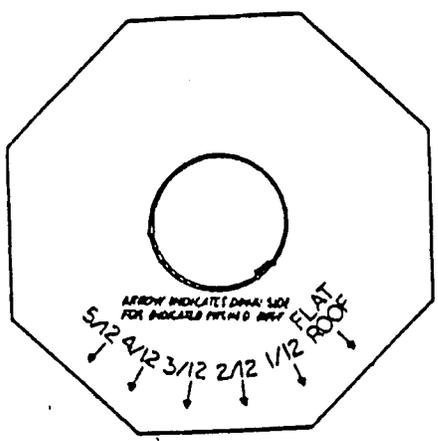
INSTALLATION INSTRUCTIONS: (See Figure)

- 1) Fresh air intake on the roof must be located at least 3 feet from any roof opening (eg.; roof jack, sewer vent, bathroom exhaust, etc.)
 - 2) Cut a 7" diameter opening in the roof.
 - 3) Cut duct to desired length and attach the duct to the 5" diameter tube with a plastic tie.
 - 4) Place the fresh air intake flashing over the 7" diameter opening in the roof. Position the flashing so that the arrow on the flashing which matches the pitch of roof is pointed toward the downslope of the pitch. Secure the flange to the roof with long sheet metal screws and adequately seal it to make it water tight. The cap on the fresh air intake may then be rotated until the cap is in a level position.
 - 5) To prevent cap rotation, drill 1/8" dia. hole through bead in fresh air intake tube and install sheet metal screw.
 - 6) Route the flexible duct in the ceiling cavity.
 - 7) Cut a 7" diameter hole in the furnace compartment ceiling above the location where the damper will be on top of the furnace.
 - 8) On gas furnaces, cut out the 5" diameter knock-out on top of the furnace. On oil furnaces a hole will need to be cut on front right hand corner. Locate and fasten the damper assembly on the top. On electric furnaces locate and install the damper assembly to the filter stop and furnace side flange.
 - 9) Attach the flex duct to the damper assembly with a wire tie.
- Fire stop requirements must be met by use of approved methods or use of Coleman Accessory ceiling ring (P/N 7660-2841). If the Coleman ceiling rings are used, attach to ceiling tightly around the duct.

11) On gas or oil furnaces, a metal fresh air filter (P/N 7681-7331 bulk packed) must be used. See illustration on filter assembly.

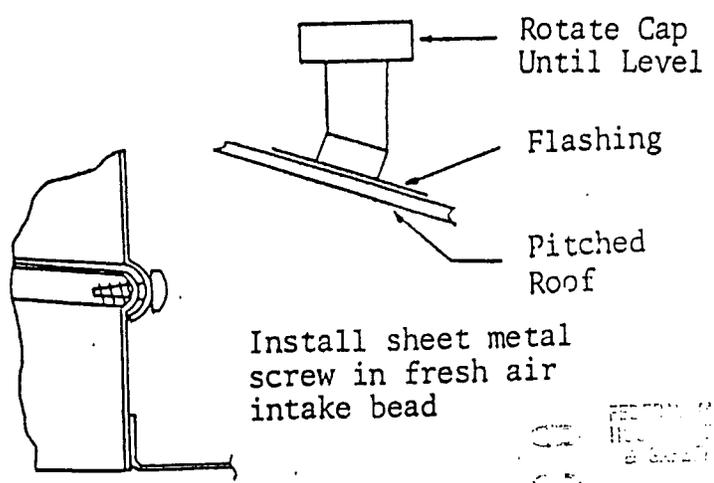
NOTE TO HOMEOWNER:

- 1) Be sure to regularly wash the metal fresh air filter used with gas or oil furnace.
- 2) If you do not wish to introduce fresh air into the home, you may lock the damper shut by installing a sheet metal screw in the hole provided on the damper tube.



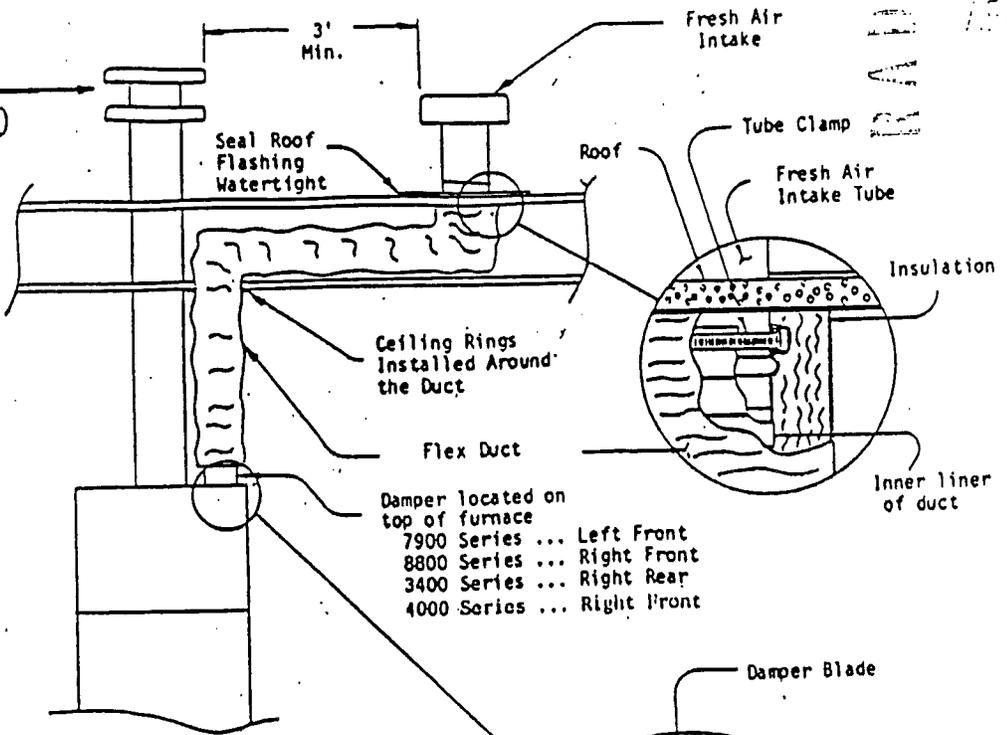
TOP VIEW
ROOF FLASHING

Position flashing so arrow corresponding to pitch is pointed toward downside of pitch slope.

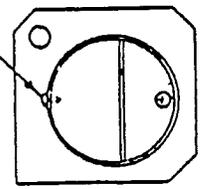


Install sheet metal screw in fresh air intake bead

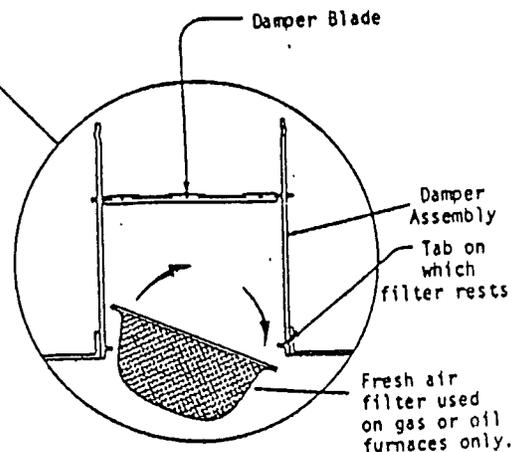
Roof Jack
(Fuel burning furnaces only)



Optional customer furnished locking sheet metal screw. (#10 x 3/8") (Screw to be BELOW Damper)



TOP VIEW OF DAMPER ASSEMBLY



(Be sure to clean every 3 months with soap and water.)

FEDERAL GOVERNMENT
RECORDS MANAGEMENT
SERIALS ACQUISITION
APR 12 1978