HOME OWNER'S MANUAL

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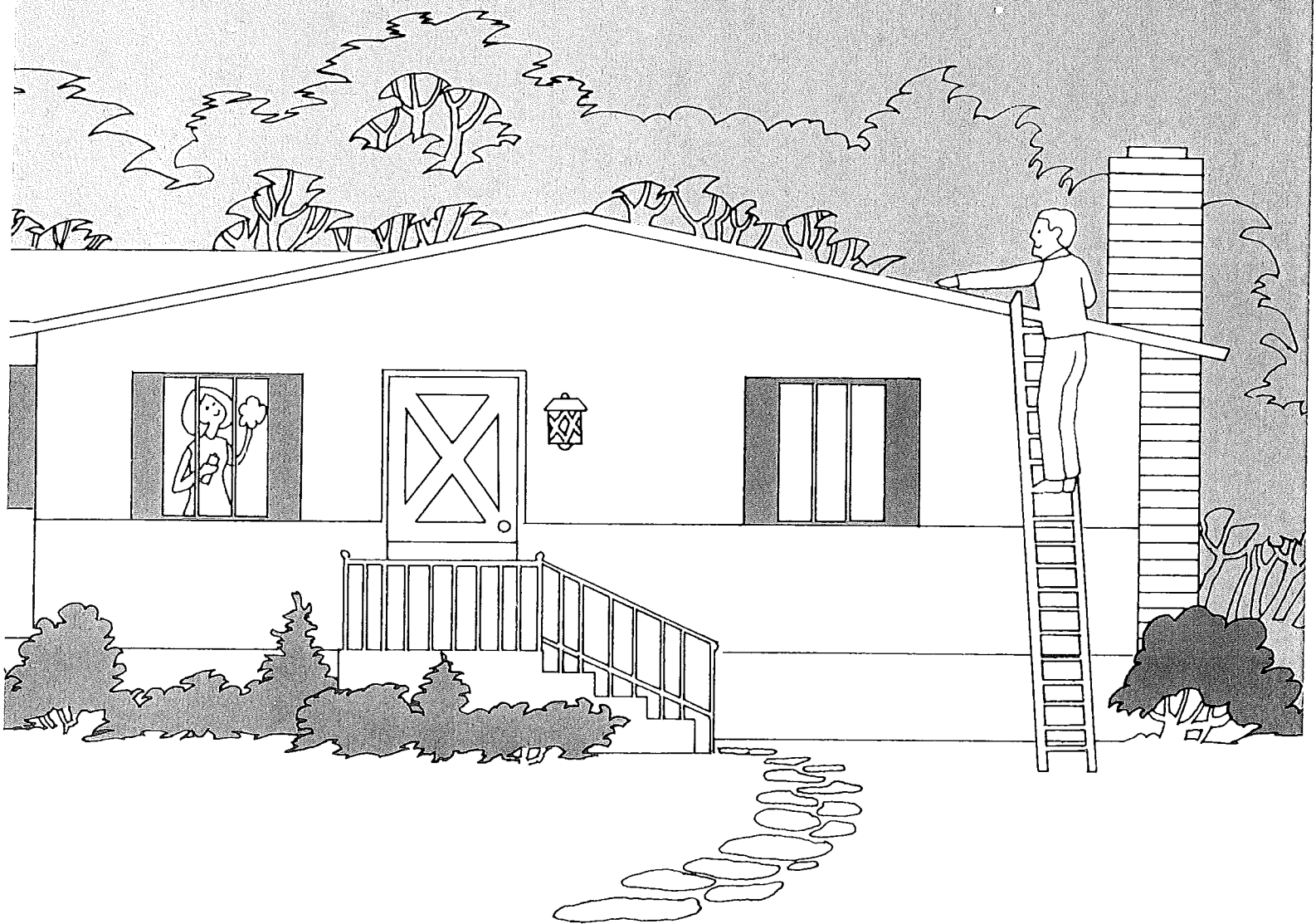
North American Homes

A DIVISION OF DESIGN HOMES, INC.

Builders of Quality Manufactured Homes P.O. Box 239 Prairie Du Chien, Wisconsin 53821



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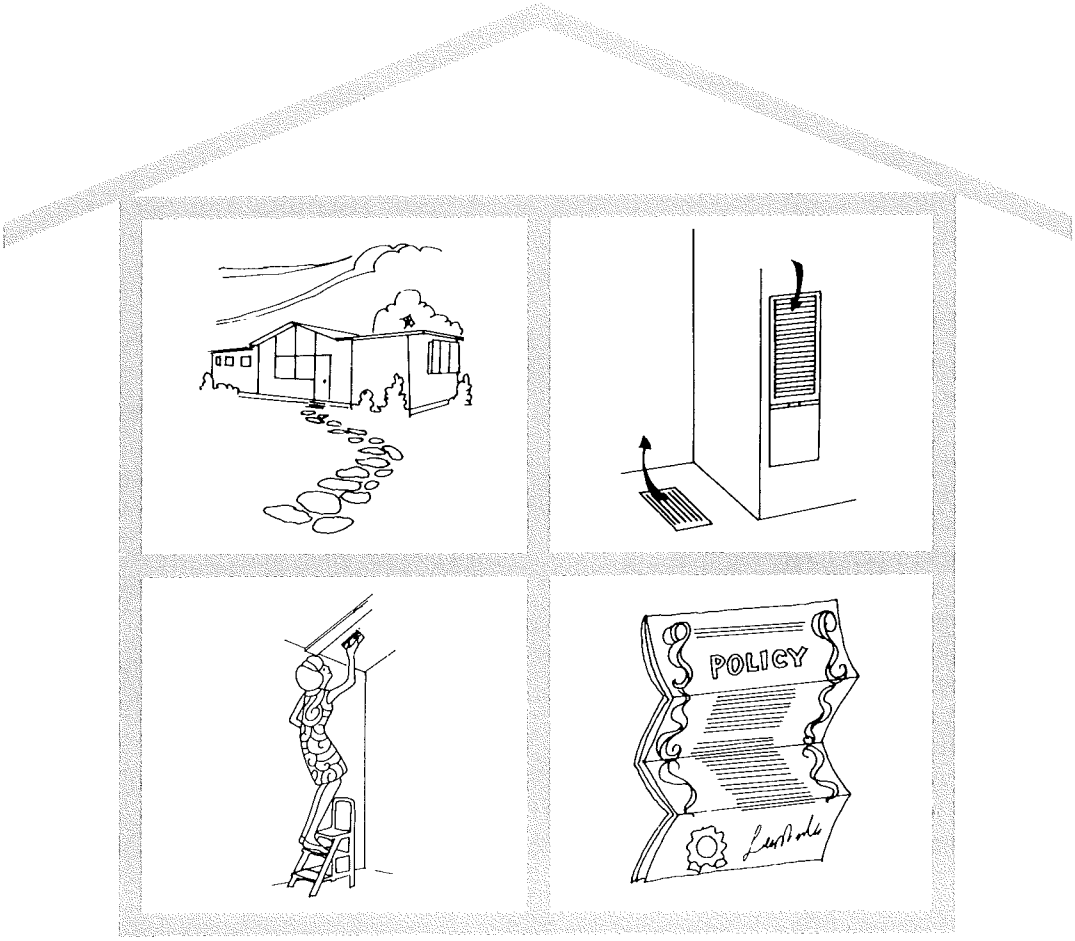

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Consumer Manual
Part I

The Purpose of This Manual

Like any valuable investment, your home needs tender loving care to keep it in smooth working order and to assure its being a source of pride and enjoyment to you and your family. The responsibility for its maintenance is largely yours. The routine is fairly simple — but it does require that you give it attention before problems arise. This book has been prepared to help you meet your responsibilities and to explain the principal areas of your home which should receive regular attention.

The Maintenance Calendar on page 26 will help you give regular attention to the working systems of your home, including:

- The central utility systems of plumbing, heating, electricity and gas.
- The structure of your home — roof, floors, windows, doors.
- Special problems such as moisture, or shrinkage and expansion.
- Special safety features in your manufactured home.

Some routine tasks can be performed by you, others require the services of trained and qualified personnel. We suggest that you attempt only those home repairs that you know you are qualified to perform. Structural changes, repair of the operating equipment, electrical, gas, or water systems should be attempted only by qualified service personnel.

The vital information regarding the performance of this home will be found on the DATA PLATE that is normally located near the electrical distribution panel. If the data plate is placed elsewhere, its location will be indicated on a separate index provided with this manual. This data plate is your reference guide about the functioning of your home *within the geographical area for which it has been designed.* It provides the following information:

1. Manufacturer's Name and Address.
2. The serial number and model of the home. Date of manufacture.
3. A statement of conformance to the Federal Manufactured Home Construction and Safety Standard.
4. A listing of all factory-installed equipment and the manufacturer's name and model designation of all appliances that are installed in the home.
5. Maps which explain the geographical structural zone of the USA for which the home has been manufactured, the snow and/or wind live loads which the roof will withstand, and the outdoor winter design temperature zones.

A Heating Certificate provides information regarding the outdoor winter design temperature for which the home is acceptable and the lowest outdoor temperature for which the installed heating equipment has the capacity to maintain an average temperature of 70°F.

Information about the readiness of the home to accept a central air conditioning system will be given in *one of three* possible ways on a Comfort Cooling Certificate. These are:

If a central air system is *provided*, a statement regarding its ability to maintain an indoor temperature of 75°F.

If the air distribution system is suitable for use (but not equipped) with air conditioning, a statement is provided.

If your home is equipped with an air supply duct system that is *not suitable* for installation of central air conditioning, this fact will be stated.

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A Special Word to you, the Manufactured Home Owner

The National Manufactured Housing Construction and Safety Standards Act of 1974 was enacted to improve the quality and durability of manufactured homes and to reduce the number of injuries and deaths caused by manufactured home accidents. The Federal manufactured home construction and safety standards issued under the Act govern how manufactured homes must be constructed. Your manufactured home was manufactured to the standards. The standards cover the planning and construction of your home. They were developed so that you would have a safe, durable home. The standards do not cover such aspects of the manufactured home as furniture, carpeting, certain appliances, cosmetic features of the home and additional rooms or sections of the home that you have added.

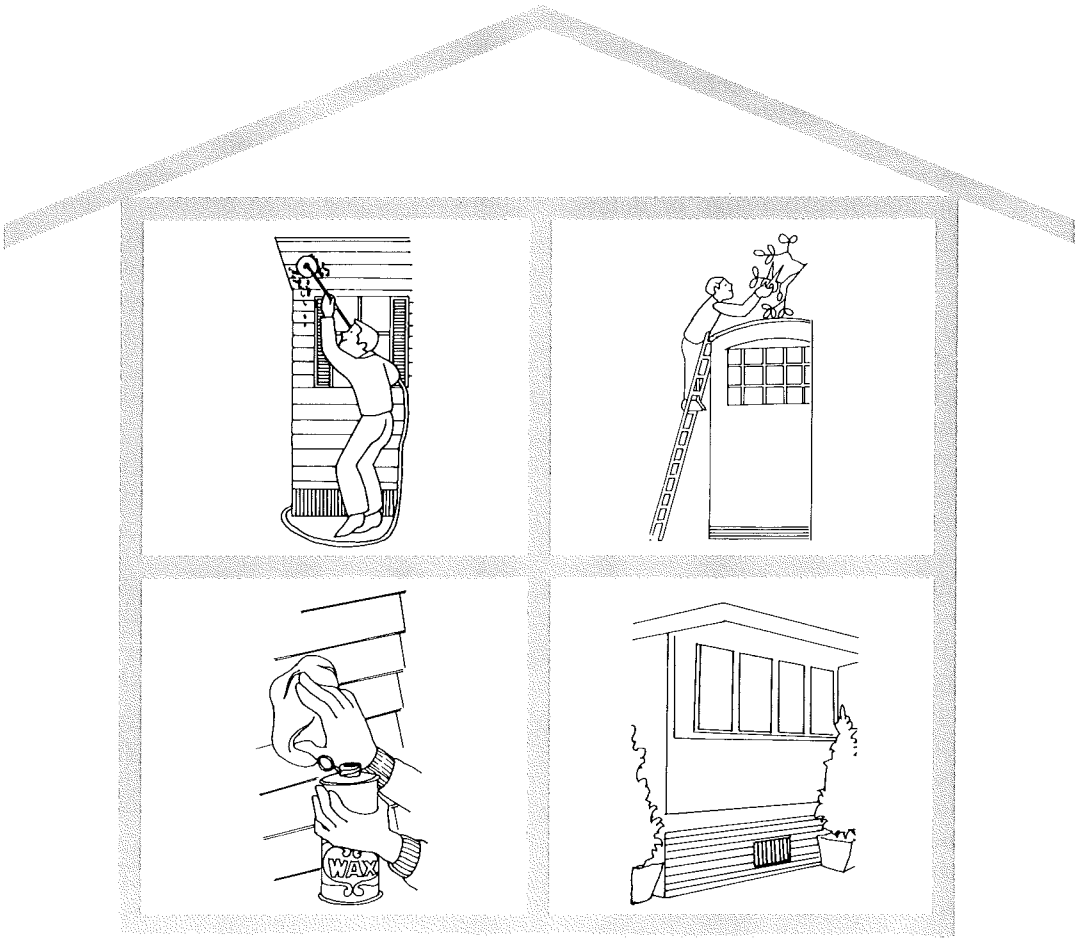
The Act provides that if for some reason your manufactured home is found not to meet the standard or to contain safety hazards, the manufacturer of the manufactured home must notify you of that fact. In some cases where there is a safety hazard involved, the Act requires the manufacturer to correct the manufactured home at no cost to you or to replace the home or refund all or a percentage of the purchase price. If you believe you have a problem for which the Act provides a remedy, you should contact the dealer, the manufacturer, the manufactured home agency in your state (see the list on page 23 of this manual), or the Department of Housing and Urban Development. Our address is printed on the front cover of this manual. We recommend that you contact either your dealer or us first, because that is the quickest way to have your complaint considered.

To assist us should we need to contact you, please complete the self addressed stamped owner registration card which we have provided and mail it to us.

SECTION

I

EXTERIOR MAINTENANCE



Exterior Maintenance

Exterior Finishes and Their Care

Manufactured home exteriors may be pre-finished color coated aluminum, sheet steel, vinyl, wood siding, or hardboard.

Aluminum or Steel Siding The color coating of the metal-sided manufactured home is generally a synthetic enamel, lacquer, or acrylic-type enamel, each of which has good endurance qualities. Any finish will deteriorate with age and exposure to the elements. However, the life of the finish can be extended by keeping it clean and waxed.

Best maintenance of exterior finishes involves washing with clear, cool water before dirt and grime accumulate excessively. The surface should never be dry dusted.

Exterior Washing A metal sided manufactured home should never be washed in the rays of the hot sun. The exterior should be allowed to cool before it is washed.

To remove oils, greases, dust and dirt, wash the surface with any mild, non-abrasive soap or detergent. Detergents used in automatic dishwashers are generally too strong to be used in cleaning painted or bare aluminum.

Use a large sponge or a soft cotton cloth to apply the cleaning solution. In the case of patterned surfaces, apply with a medium bristled brush.

Following the application of the cleaner, rinse with clear water, flushing out all cracks, grooves and crevices thoroughly. Then dry the entire surface using a chamois or cloth to prevent streaking.

Cleaners These come in paste and liquid form and can be used to loosen any road film, or oil accumulated when the home is in transit as well as tree sap and grime that collects after the home is sited.

An efficient cleaner removes oxidized paint which sometimes forms. Because paint and lacquer are organic materials, they deteriorate from the action of the elements, especially sunlight. A microscopic film of "dead" paint or lacquer forms on the surface which must be removed if the finish is to be bright. The "live" paint remaining is still tough and hard and is unaffected by the cleaner.

After the surface has been cleaned, it may then be waxed (polished) for maximum protection.

Waxing Pre-finished metal exteriors may be waxed for maximum protection. Wax finishes last longer when applied in spring or fall and when the temperature ranges between 50 and 70 degrees. Winters are hard on wax durability because of snow, sleet, mud, and dirt. Hot summer sunshine deteriorates the paint film and makes waxing necessary more frequently.

Paste waxes leave a durable coating. They provide protection from abrasion and minor scratches. The wax coating makes the home easier to wash.

Most waxes have limited cleaning power, and should only be applied to a clean surface. Unless a manufactured home is brand new, it should be cleaned with a commercial cleaner or cleaner-polish before waxing. The wax should be applied to a small section at a time with a soft cloth. Only a thin coating should be put on and then rubbed vigorously until the solvent has evaporated and the wax has set in a hard, brilliant shine.

Combination cleaner-polish This is usually in liquid form and a single application both cleans and polishes. It is a faster method of protection but less effective and must be done more often. The cleaner-polish contains a slightly abrasive cleaning ingredient and a small amount of wax or oil.

Before using either a cleaner preparation or a combination cleaner-polish, the manufactured home should be washed and allowed to dry. Then either the cleaner, followed by waxing, or the cleaner-polish routine should be followed. Only a soft, clean cloth should be used. The residue should be removed with a dry cloth.

Oil and Tar A tar remover can be used to remove tar and oil without damaging the finish.

CAUTION: If the finish is of the acrylic type high luster enamel, naphtha or gasoline should NOT be used for removing tar as such solvents may soften the finish. These cleaning materials are also highly flammable and their use could result in a fire or explosion.

Vinyl Siding Normal rainfall or an occasional rinsing with the hose will keep the siding free of loose dirt. Do not wash the house when the surface is warm from the sun. If dirt accumulates, use a non-abrasive household detergent with a soft cloth, sponge, or soft bristle brush to clean the siding. Some stains, such as wet leaves or flowers which have been allowed to stand, may require extra spot rubbing with the cleaner. Rinse thoroughly. Waxing of vinyl siding is not recommended.

NOTE: For the exterior cleaning of metal or vinyl siding a commercial cleaner is available in most areas. Your local park manager or retailer can be of help in locating a reliable source when needed.

Wood Siding Plywood and most other wood exteriors have already been stained and treated to help protect them from weather. In most instances, an occasional rinsing with water is sufficient to keep the home in good condition.

Some types of wood, such as cedar and redwood, have excellent natural weather resistive properties and can be used without an additional protective finish.

Painting Exterior Surfaces

Manufactured home exteriors can be repainted using normal materials and procedures followed for the type of surface used on your home. The surface should be cleaned and any loose or peeling paint should be scraped and sanded to achieve a smooth base for the new paint. Follow the recommendations given by any reputable paint distributor . . . and then follow the step-by-step instructions provided by the paint manufacturer.

Insulation

Manufactured homes are insulated with fiberglass wool or other suitable insulation in the walls, floors, and ceiling.

The type, thickness, and application of the insulation have been carefully engineered so that the home meets the requirements of the applicable Standard to keep the home comfortable in both summer and winter. The manufactured home standard sets maximum allowable heat loss for manufactured homes for different zones of the country. The manufacturer must provide a map showing for which zone the house has been built. This map is to be found on the Data Plate.

Locks and Keys

Locks on exterior doors are designed to function properly when the depth behind the strike permits the latch bolt to be fully extended. The house must be level so that the latch bolt and door strike are completely in alignment. If not, an adjustment should be made so that the door strike and the latch bolt will mate properly. (See Section entitled "Settling" on page 5.) Powdered graphite should be used occasionally to lubricate any lock mechanism. A record should be kept of the identification number and make of the house lock. With this information, it should be possible to obtain a duplicate key from a locksmith if keys are lost.

Exterior Maintenance

Roofs

The roof of your manufactured home generally receives the hardest wear of any part of the structure. Rain and sleet may beat unrelentingly upon it, wind, hot sun, and alternate freezing and thawing temperatures in some areas, all take their toll, and it may develop leaks.

The smallest leak or break in the roof can mean damaged ceilings, interior panels, and even furnishings. Rust, oxidation, breaks, and cracks on the roof panels are all potential trouble points. The roof should be checked for these danger signals.

Rust and oxidation are almost sure signs of metal roof panel wear. These areas should be scraped or wire brushed and the roof re-coated with a standard roof sealer manufactured for this purpose before additional damage occurs.

Cracks and breaks in metal roof panels should be treated with a special conditioner before using the regular coating. Consult your local paint dealer.

The cause of most costly roof troubles can be avoided by following basic maintenance procedures.

1. The manufactured home roof should not be walked on except when absolutely necessary. Most inspections, cleaning, and repair work can be done effectively from a stepladder. When walking on a roof cannot be avoided, only those sections which are supported by rafters or stringers should be walked on. Pieces of board or plywood can be used to distribute one's weight and avoid damage.

2. The roof should be inspected at least twice yearly, and accumulated debris removed. An occasional washing with soap or detergent solution, followed by a rinse with clear water, will reduce corrosive action from accumulated dirt.

3. When sited, it is EXTREMELY IMPORTANT that the manufactured home is properly leveled to avoid strain which can part seams and create buckling of the roof area. Low hanging tree branches should not scrape the roof.

Metal Roofs Metal roofs are generally either sheet aluminum or steel. The semi-annual roof inspection should include checking of the seams, moldings, stacks, and vents, as well as the roof surfaces. They should be coated or painted as necessary for a maximum trouble-free life. Coatings should be heavily applied.

Shingled Roofs Inspect in the spring and fall for any damage or rolling of individual shingles. A roof mastic can be used to re-cement and flatten any shingles that have become loose. Cracked or torn shingles should be replaced. Proper roof inspection and maintenance will forestall possible leaks which could be damaging and costly to your home. A roof check after a heavy windstorm may avert trouble.

Other Roofing Materials Occasionally other materials, such as vinyl, may be used for roofing. If your roof is of a different material which has special care requirements, these may be on a separate sheet enclosed in the package containing this manual.

Exterior Moldings All moldings should be held tightly be screws. Damaged moldings can be removed for repair or replacement. Before moldings are reset, a heavy coating of caulking should be liberally applied to the underside with a small brush, putty knife, or caulking gun. If molding is tight, or after it has been reset, a coating should be applied over the top of the entire molding. Special attention should be given to assure that all screw heads are coated.

Stacks and Vents If stacks or vents have rusted and fail to function properly, they should be replaced. Before replacing them, remove the old, dried caulking around them and apply new caulking. Caulking should be applied to the underside of the base flashing of the stack or vent as well as to the roof area on which the flashing is to be set.

The flashing should be firmly secured in place with screws. Caulking should be applied so that it completely covers all screws.

Seams All roof seams should be occasionally checked for spreading, parting, or buckling and for loose fasteners. Any failure of seams will require expert attention. If you have such a problem, contact the dealer from whom you purchased your manufactured home.

Set-Up Procedure

Correct set-up procedures are absolutely essential if your home is to perform correctly. This work should be done by a competent installer. Your dealer can normally provide this service. You will find instructions for the installer to follow in the package which contains this manual. After the manufactured home installation has been completed, we recommend that it be professionally inspected to assure that it has not been damaged in transit and is properly set-up.

Anchoring Procedure Your home has been designed for the installation of an anchoring system to give you added safety and protection from the danger of high winds. You, the home owner, must bear the final expense and responsibility of having this anchor system fastened to ground anchors. **You should not attempt to do this yourself.** The procedure depends on the design of your home, the soil conditions, and other climatic factors. Your manufactured home retailer or park manager can probably do this for you or refer you to a qualified installer. Detailed instructions for anchoring are contained in the set-up instructions mentioned above. Many states require the anchoring of homes at the time of installation. Even if this is not the case in your area, it is recommended that you do so. Remember that it is a safety advantage to your family to anchor your home. Anchoring your home is a wise decision — lenders and insurance firms may require it.

Leveling The dealership or service firm which installs your home will check the floor to insure that it is level. In performing this procedure they may use a spirit level as a guide but will also rely on proper operation of doors and windows to provide an indication of proper alignment. In multiple section homes the joints between the sections are also an excellent indication of proper floor alignment, and excessive gaps or drafts at the marriage line are indications of improper installation, settling, frost heave, or other problems.

In the event you experience symptoms such as those listed above which indicate improper floor alignment contact the dealer or installer who set up your home to make the necessary adjustments. Finally, although proper alignment of the floor may look simple it requires considerable training and experience and should be left to a professional installer.

Settling As with any building there is always the possibility that a manufactured home may settle after it has been in position for a period of time. This is most likely to occur in those cases where the home is not sitting on a solid concrete base (or parallel concrete strips). When settling does occur, it can affect the proper functioning of locks, closing of doors, windows, and cabinets as well as place undue strains on the structural portions of the home. It can even cause wall panels to come loose and floor coverings to separate.

Should this problem occur, corrective measures should be taken according to the instructions which accompany this manual. It is recommended that your dealer or a manufactured home service firm he suggests, be engaged to do this work. Consult with your dealer for a suggested source.

CAUTION: In any event, for safety's sake, the procedure should never be attempted alone or by an amateur. If the house should slip or tip, a serious accident could occur, causing personal injuries and/or damage to the home.

Skirting Skirting of your manufactured home is recommended. Not only does it improve the appearance of the home, but it also reduces the energy used to heat and cool your home. Some manufactured home communities require that all manufactured homes be skirted.

An accumulation of moisture can cause condensation or damage. When skirting your home, provision should be made for both front and rear vents. These vents allow air circulation which will reduce moisture accumulation underneath the home. If the home is not positioned on a cement pad prevent drawing ground moisture into your home by covering the ground under the home with roofing paper or heavy

polyethylene. Be sure to check for adequate drainage and run-off of water from under and around the home.

Leave an access door so you or a serviceman can get under the home for routine inspections or in case of emergencies.

Depending on the model of your manufactured home there may be instructions for installing skirting in your Installation manual, and you should check this document.

Maintaining Anchoring Systems Tie tension should be checked and adjusted when necessary to prevent damage to the manufactured home from settling or other unforeseen movements (such as frost heave).

Frost Heave Frost heave can have an adverse effect on your manufactured home through displacement of the manufactured home anchoring and blocking systems. If your manufactured home is located in an area subjected to frost heave, one of the following additional steps should be considered:

(a) Footings and the load-carrying portion of the ground anchors should extend below the frost line, or

(b) The manufactured home should be placed on a reinforced concrete pad.

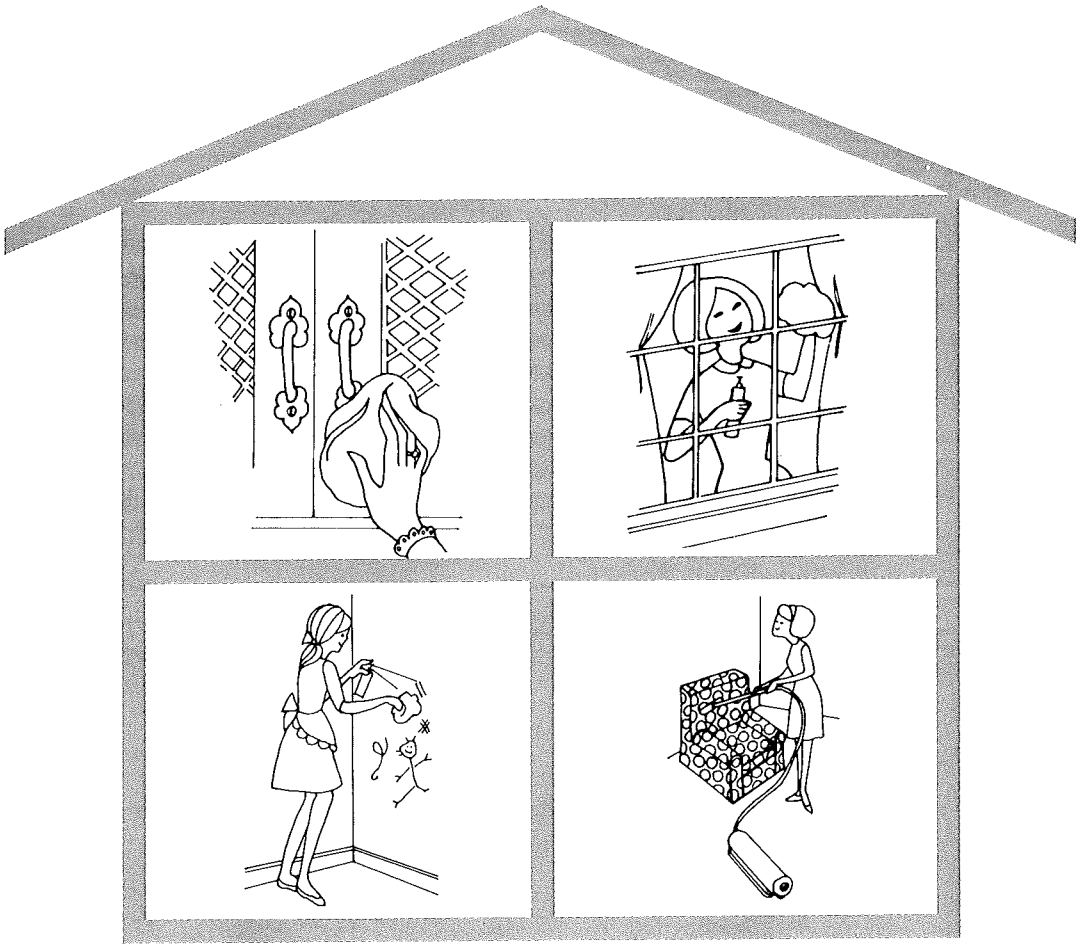
Standard Wind vs Hurricane Wind Zones

Some parts of the country, notably the coastal areas of the Southeast, Alaska, Puerto Rico, and the Virgin Islands, have a high occurrence of hurricanes with their extremely high wind velocities. These areas, which are shown on the Wind Zone Map on the data plate in your home have more rigorous structural design criteria. Complete installation of the anchor system provided with your manufactured home is especially important if you live inside this hurricane zone.

SECTION

II

INTERIOR MAINTENANCE



Interior Maintenance

Air Conditioning

Most air conditioning units are installed by the service representative when the home is sited. When an air conditioning unit is added, it must be installed in accordance with local and national codes. It must be listed by a nationally recognized testing laboratory, such as Underwriters' Laboratory, Pittsburgh Testing Laboratories, or the American Gas Association.

Before turning on the unit (or system) be sure to read all instructions provided by the air conditioner manufacturer, including those for care of the air filter. The filter must be cleaned or replaced periodically as the manufacturer recommends. Usually filters can be cleaned by removing them and flushing them thoroughly with water from a hose or tap. Hot water and detergent can be used if necessary.

The thermostat controls can be set to maintain the desired comfort temperature. Special attention should be given to its regulation and the manufacturer's instructions should be followed. A heating/cooling thermostat should be installed to prevent simultaneous operation of heating and cooling systems.

If ever the unit should fail to operate, check the fuse first. If the fuse has blown, and you cannot determine the reason for the blown fuse, contact the representative who provides service for the air conditioner manufacturer. Do not attempt to operate the unit again without the appropriate repairs. If there is a warranty, refer to its provisions.

Appliances and Fixtures

Certain appliances in your manufactured home may be warranted by their manufacturers. If so, the warranty cards have been provided with this manual. Manufacturers of appliances and some fixtures also supply "Use and Care" information. This should be studied carefully and the advice given for preventive maintenance and emergency use should be observed. This information should remain with the appliances when ownership is transferred.

Service representatives for specific brands of appliances are often listed in the yellow pages of your telephone directory. The retailer from whom you bought your home may also have this information.

There are some general maintenance rules which can be followed in caring for major appliances and fixtures.

Ranges NOTE: All ranges, whether gas or electric installed in your manufactured home, are listed by a nationally recognized testing agency.

Some ranges have a specially treated all-in-one cooking surface which does not have cracks or crevises to trap grease and dirt. These surfaces must be cleaned and cared for in accordance with the manufacturer's instructions. In general, harsh cleansers should not be used on these surfaces, which should be cool when cleaned.

Gas Ranges Gas ranges may be adapted for use with either LP or natural gas upon the installation of the proper orifice. The vast majority in manufactured homes are equipped for natural gas. The gas range should be carefully adjusted for the correct fuel at the time of placing the home in operation.

The entire gas system should be thoroughly checked for leaks by a qualified person before the gas is turned on (a representative of the local gas company should be consulted). Incorrect adjustments of the burners, the pilot lights, or any part of the system can result in unsatisfactory operations and a dangerous situation. Proper gas pressure is important. Any considerable variation from "normal" will adversely affect the operation of the appliance.

CAUTION: Before moving your home, the main valve at any outside gas cylinder must be turned off.

Electric Ranges Care should be taken in cleaning the control panels and the burners so that they are not damaged.

Refrigerators If defrosting is necessary, it should be done in accordance with the "Use and Care" (operating instructions) book. To allow proper air circulation, open grillwork at the top and/or bottom should never be covered. This grill should be brushed or vacuumed as needed. The interior should be cleaned with a solution of water and baking soda as needed, then wiped dry. The exterior can be cleaned with any of the recommended cleaning agents listed in the operating instructions for the appliance.

Water Heaters These appliances are operated by gas or electricity and require little care. They are equipped with thermostats to maintain the water at the desired temperature (usually around 150°F). An adjustment can be made to obtain either hotter or cooler water.

If your manufactured home has an electric water heater, be sure that the heater is filled with water before energizing the circuit to the water heater to prevent damage to the heating element.

In the event you must replace a water heater, see the section on water heater on page 18. See also the separate water heater operating instructions for additional information.

Furnaces See the section on furnace maintenance on page 17.

Washers and Dryers The manufacturer's instructions for Use and Care should be followed for both of these items. Although your home may have the proper electric and plumbing systems to accommodate late installation, do not attempt to install either one in your home without competent assistance.

CAUTION: If you remove your washer, be sure to cap the drain standpipe to prevent the escape of sewer gases into the manufactured home.

Other Appliances A dishwasher, microwave oven, garbage disposal or other optional appliance may be provided with your manufactured home. Operating instructions for factory installed optional appliances will be included with this manual, or will be with the appliance, if it is factory installed. If your dealer has installed these extra appliances, he may place the warranty and operating information in a different location. For convenience and safekeeping you may wish to include this information, along with that for other appliances, in the package containing this manual.

Porcelain Enamel Surfaces Most porcelain enamel surfaces of kitchen appliances and some modern plumbingware can be cleaned with warm water and good detergent used *promptly*. Commercial cleansers are rarely needed on porcelain finish except for baked-on grease and oven stains or a sink stain which has come from highly mineralized or rusty water.

Porcelain enamel should be protected from a harsh blow with a sharp instrument which can chip it.

Stainless Steel Surfaces Sinks or counters of stainless steel should be cleaned with detergent, a liquid, or a foam producing cleanser. There are several cleansers which are specifically prepared for stainless steel. Avoid scratching surfaces with sharp edges of utensils or knives as these scratches cannot be removed. A rubber mat in the sink is good protection.

Acrylic Surfaces Some lavatories, bathtubs, and counters have acrylic surfaces. There are special cleansers or polishes available for them which should be used instead of an abrasive powder. If a detergent is used, be sure that the surface is thoroughly rinsed so that no film is left to dull the finish.

CAUTION: Always follow instructions provided by the appliance manufacturer for surface care and cleaning.

Cabinets and Cupboards

Most manufactured homes have some built-in cabinetry. If any drawers should stick, wax, paraffin, or other suitable commercial products should be applied to the drawer guides to allow them to slide easier.

Should excessive moisture cause plywood or lumber to expand, cabinet doors might stick. If so, a block plane can be used to remove just enough material to eliminate the binding. When doing so, care should be taken not to mar the finish of the door or to remove too much. When atmospheric conditions are less humid and the wood shrinks to normal again, the doors would perhaps be too small.

Ceilings

Ceilings can be either of wood or mineral fiber or of drywall panels. They require little care, but a few problems sometimes occur.

Scrapes, Scratches, Chips These can be rubbed with very soft white chalk and then wiped lightly with a clean cloth. A deep scratch may require more than one application. Drywall ceilings may require touch-up paint.

Gouges Even a badly damaged wood-fiber panel can usually be repaired. If not, it can be removed, and a new one installed in its place. To repair a gouge first remove all loose pieces, then fill in with spackling paste applied with a clean putty knife. The paste

should be leveled off to the surface of the panel, and the compound sculptured to conform with the surface of the panel. After the compound dries, touch-up paint should be applied. Dry-wall panels need not be replaced, but other than that, the repair procedure is the same as for wood fiber panels.

Dirt Smudges Soft art gum will probably remove dirt and fingerprints from wood fiber ceilings. If a portion of the dirt remains after art gum has been used, the area should be wiped with a soft white chalk and rubbed over the spot to conceal as much as possible. Drywall ceilings can be cleaned with a damp cloth and mild detergent.

Water Stains Water stains on ceiling panels indicate a roof leak or condensation problem. Be sure that this condition is corrected, or repair of the stain itself will be futile. Check with your dealer if you need help determining the cause of the stain. After the leakage has been stopped, the area can usually be repainted. In cases where the panel has been badly damaged you may wish to have it replaced.

Panel Removal and Replacement This type of repair should only be performed by competent service personnel. Should you have a problem of this nature, contact the dealer from whom you bought the home.

Maintenance All types of ceilings can be dusted clean of smudges or loose dirt by the use of a vacuum cleaner attachment or a soft cloth. Dry wall can be washed if the cloth is wrung very dry after it has been dipped in a detergent solution. Fiber ceilings should be dusted rather than washed.

Repainting When repainting is necessary, a good quality product suitable for the surface to be painted should be selected.

Condensation, Ventilation, and Humidity

In all types of buildings, proper humidity is necessary for health and comfort of occupants as well as for proper maintenance of the structure and the furniture.

If the humidity level is too dry, people may experience a dry feeling of the skin, scratchy throats, and high levels of static electricity resulting in shocks and clothes clinging to the body. If furniture, books, and structural members of the home are too dry, they may be damaged by possible shrinkage.

A satisfactory humidity level for a manufactured home is one that can be maintained without moisture condensation on windows or walls. During the winter (and depending on whether or not storm windows are in use), a maximum of 30% or 35% relative humidity may be sufficient. Your manufactured home is enclosed by an "envelope" of insulation material adequate for the zone for which the home was built. Windows are considered part of the "envelope" and must meet specified air and water infiltration tests. Moisture can be regulated by exhaust fans or windows.

Too much moisture (condensation) can be as damaging to the home as too little, particularly in the winter. Because the warm air has the ability to hold more moisture than the cold air, the tendency is for water vapor to move from a warmer to a cooler place. Thus windows may fog or frost. Moisture may accumulate on doors, millwork, ceilings, and floors and produce stains or deterioration.

Some functions in the home which tend to cause condensation problems are:

- Cooking
- laundering
- bathing

If gas is used for cooking, the open gas flame will produce hydrogen as one of the products of combustion. This hydrogen combines with the oxygen of the air to produce water. To prevent an accumulation of moisture condensation in kitchens and bathrooms, an electrically powered vent fan or a slightly opened window can be utilized.

Proper Ventilation Much condensation can be prevented by heat and ventilation. Because doors and windows usually are opened in summer, water and vapor readily escape. At other times, it may be advisable to have a fan in operation.

A natural circulation of air or the movement of heated air by a fan or blower can remove cold spots in a room where condensation is liable to occur. Most heating units require no extra ventilation. Some furnaces are designed to blend some outside air with the inside air and distribute it by the furnace blower throughout the manufactured home duct sytem.

Doors

The care of doors in a manufactured home is the same as in any home.

The exterior doors have been installed so that they provide a certain amount of clearance at all sides. The clearance space is normally filled with flexible weatherstripping. If the door clearances are not maintained fairly uniform, there is likelihood that the door will bind . . . and ultimately the door or hardware may fracture. Proper installation of the home is essential to assure that proper clearances are maintained to prevent problems from occurring.

Further, a level home will assure that the door will remain weathertight and the locking device will function properly.

Your home has a minimum of two doors which are remote from each other and provide egress to the outside. Since the doors may open differently (either by a hinge or a sliding track) every family member should be taught how to open them. The passage to the doors should never be blocked.

Floors

Floors, whether they be wood, linoleum, or composition tile will look better and last longer if they are cleaned and waxed regularly. Avoid excessive application of water on tile as it may cause lifting and curling. It is best to establish a good coating of wax in and around tile seams. If provided, follow the care directions from the manufacturer of the floor covering. If none is available, a number of good floor coatings and preservatives are available and may be purchased locally.

For longer wear, rugs and carpeting should be kept clean by frequent vacuuming. There are also several commercial cleaning processes available. A thorough cleaning of carpeting is recommended at least every 12 to 18 months. Heavy use may necessitate more frequent cleaning. Vinyl floors require a minimum of care. Vinyl should be mopped regularly.

Other flooring materials may require the use of special cleaning preparations that are available in most stores.

Furniture

The life and beauty of any kind of furniture can be prolonged with proper cleaning and care. Prompt removal of stains is best.

Fabric-covered furniture should be vacuumed frequently. Many fabrics can also be dry cleaned or shampooed according to directions provided with the fabric. In selecting a cleaning agent, be sure to follow the specifications on the label regarding its suitability for the fabric on which it is to be used. Loose cushion pieces, as well as mattresses, should be turned frequently. Turn and reverse so that the same side will not be in constant use and exposed to light and air which may modify color.

Wood, leather, vinyl and other synthetic materials all require regular cleaning. This is best accomplished by using some of the countless cleaning and polishing agents designed for specific materials and available to the home owner in almost every supermarket, hardware, or home store.

Smoke Detectors

Smoke detectors have been installed in each separate sleeping area of your manufactured home. You should be familiar with their operation and learn how the alarm can be silenced and the detector reactivated once the alarm has sounded. This is an important safety device installed for your protection. **Be sure that it is kept in A-1 working condition by testing it frequently in accordance with the manufacturer's instructions.**

These detectors operate on household current, rather than by batteries. Their purpose is to provide early warning in case of a fire. Since smoke and accompanying toxic gases are the cause of most fire fatalities or injuries, smoke detectors, which generally provide earlier warning, are provided rather than other fire alarm devices.

Many fire departments advocate family fire drills. Your local fire department may have suggestions for you to help you set up **practice drills for your family, so that each member understands the location and operation of exits and bedroom egress windows as well as other procedures which should be followed.**

Walls

Walls in your home may be of plywood, natural wood, paint coated material, plastic coated wood or hardboard, or gypsum board dry wall.

Interior Maintenance

Care of Plywood and Natural Wood Walls Walls may be washed with detergent or household cleanser, and then waxed.

Most wax manufacturers recommend using a damp cloth to apply the wax. The cloth should be wiped across the wax in the can, then applied to the walls in a thin, even coat — the thinner the coat, the better the polish. Use a circular motion, first rubbing across the grain of the wood, followed by rubbing with the grain using longer strokes. It is best to work in an area of two square feet at one time.

There are also many cleaner/polish combinations on the market that give excellent results. These should be applied according to the manufacturer's instructions.

Frequency of cleaning and waxing depends on amount of wear. Areas receiving hard use should be rewaxed more than other areas. Smudges can be removed with any of the household waxes marketed for that purpose. The label on the container will tell the type of surfaces for which the wax is made.

Woodwork that has a dull, natural finish to start with can be cleaned with mild, soapy water, dried, and then treated with any of several wood oils, such as lemon or linseed, which prevent drying out of the wood.

Care of Plastic Coated Wood or Hardboard Walls In most cases, surface dirt can easily be removed with a damp soft cloth or with a vacuum cleaner using one of the special attachments. No further care may be necessary. However, if there is a stubborn stain or grease spot, a detergent solution can be applied.

Some home owners also apply a good vinyl wax in either liquid or spray form for added beauty. Strong soaps or cleansers are not advisable.

Care of Paint-finished Walls Paint-coated materials are easy to keep clean and maintain. They can be kept beautiful by washing with a damp cloth and household cleaning agent.

Always avoid the use of abrasive materials. Do not use solvents such as gasoline, turpentine, alcohol, paint thinner, or lacquer thinner.

Walls should be washed before repainting.

Refinishing The Interior Your manufactured home was constructed using materials for the ceiling, wall surfaces, kitchen cabinets and counter tops, tub and shower enclosures, furnace and water heater enclosures and doors, and range wall splash panels specially selected for their flame spread and fire resistant characteristics as specified by the Federal Standards for Manufactured Homes. In order to maintain these characteristics, it is important that any refinishing or remodeling be done only after determining that it will not adversely affect the fire safety of your home.

Windows

The installation of storm windows and doors will conserve energy, reduce air conditioning and heating bills, and reduce the accumulation of excessive moisture on the windows that often occurs due to condensation in extremely cold climates. If storm windows were not supplied with your new manufactured home, they may be ordered through a manufactured home retailer or service center and are easily installed.

Windows and storm windows should be opened frequently and cleaned around the casing; a good window cleaning preparation should be used to clean the glass. Loose screws in the window garnish as well as thrust arms should be kept tightened. Window hinges and operating arms should be lubricated with a light oil at least once a year.

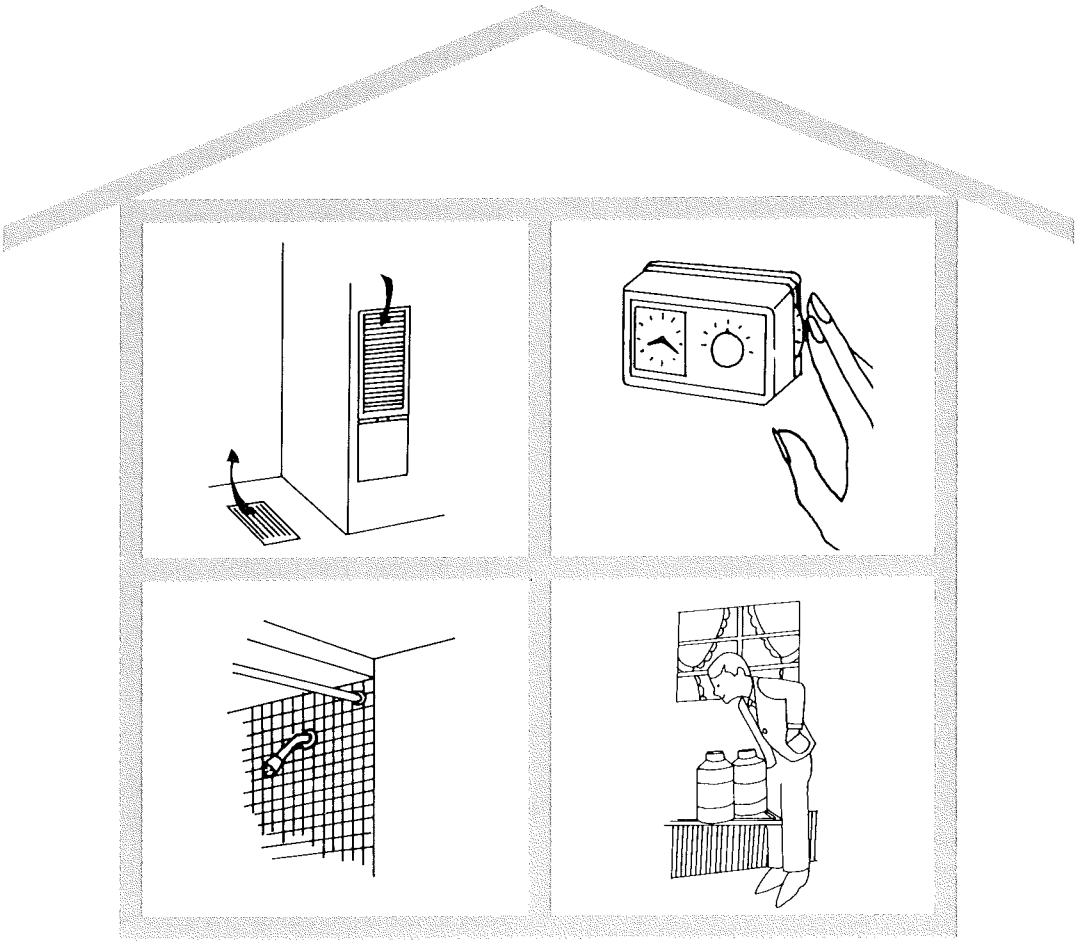
Exit Windows

All manufactured homes built under the federal standard are required to have an emergency exit window in each bedroom which does not have an exterior door. This window, called an egress window, must have an instructional label on it when the home is delivered to the home owner. We suggest that you leave these instructions attached. **All members of the family should be taught how to operate the window and to test it occasionally to see that it is in working condition. Access to the egress window should never be blocked.**

SECTION

III

UTILITY SYSTEMS



Utility Systems

Electric Power Supply

Like all modern dwellings, the electrical system of a manufactured home must comply with applicable sections of the National Electrical Code (NFPA 70, ANSI C-1). In addition the HUD Manufactured Home Construction and Safety Standards have other requirements on the electrical system which are intended to make your home safe and durable.

CAUTION: Only a qualified electrician should be employed to handle the electrical installation or repairs of ANY home. Inexperienced persons might very well cause serious or fatal accidents and damage to the home or appliances.

The size and rating of wire for electrical service must be in accordance with the National Electrical Code for the ampere rating of the panelboard.

Wiring Systems Before moving your home to a park or the intended homesite, check to see that the electric power supply available meets the needs of your home. Wiring of inadequate capacity can result in low voltage to the home and cause a drop in the efficiency of lights and appliances. Motors may burn out and you may be paying for electricity you do not use.

If you add electrical appliances (both major and hand appliances) to your home, be sure your wiring is adequate to provide the appliance with electricity. The more appliances added, the larger the wiring must be entering the home.

Grounding Systems For the protection of its occupants, it is vital that the manufactured home is properly grounded whenever it is connected to a source of electrical power.

The manufactured home has the protection of a "grounding type" wiring system. The entire home is grounded just as one would ground a vacuum cleaner or a portable electric drill. Notice that the electrical receptacle in the wall has a third hole instead of the conventional two slots. The third hole is to provide a ground for any appliance that is plugged into the receptacle. Now observe the plug on your refrigerator cord. It has three terminal posts instead of the old fashioned two bladed type. The round terminal is the ground. Your cord has a third wire from the round post to the outer shell of the refrigerator. With this system, if the outer shell of the refrigerator should accidentally become energized, the power would be directed to ground outside the home instead of hurting someone who accidentally touched the refrigerator. All major appliances, electric equipment, and metal parts of your home are grounded for this reason — your safety.

Just as we have to have three conductors for the 115 volt refrigerator on a grounding system, then we must have an extra conductor coming into the home to provide 115/230 volt for the entire home. For that reason four conductors enter the electrical distribution panel: One conductor acts as a neutral or return (white wire), one acts as a ground (green wire), and two as "hot" wires. With this system the neutrals and grounds must remain isolated from each other throughout the home out to the source of supply from the utility branch or pole.

It is extremely important that the neutral conductor (white wire) NOT be grounded in or on the manufactured home or the manufactured home distribution panel cabinet. Grounding through the manufactured home hitch caster or metal stabilizer is NOT SAFE.

The ONLY safe and approved method of grounding the home is through an electrically isolated grounding bar located on the electrical service entrance. This bar bonds all non-current carrying metal parts of the home for grounding from a single point. Your electrical installer should know the proper method of installation to conform with the National Electrical Code.

Electrical Distribution Your home has another safety factor in its electrical distribution panel. The panel will be one of two types — fused or fuseless. Both types protect the home against overloading of the wiring. The fuseless panel has a series of switch plates with "breakers" which eliminate the use of the fuse. Should a circuit be overloaded or shorted, the breaker automatically breaks the flow of current. The affected switch can simply be flipped back to the "ON" position to restore service after the cause of the short has been corrected.

If a fuse-type panel has been installed, a new fuse must be inserted to replace the blown one following overloading of a circuit. A fuse or breaker is provided both for each circuit and for the wiring coming into the home from the utility source. The "main" controls the power throughout the entire home. The individual circuits have their own fuses or breakers that cut off the electricity to the circuit it controls if problems occur.

It is important that the rating of the fuse or breaker *not* exceed the carrying capacity of the conductor it is protecting, e.g. No. 14 copper wire (the conductor) is rated at 15 amperes. The fuse or breaker for this size wire must therefore not be rated greater than 15 amperes. No. 12 copper wire is rated at 20 amperes. The fuse must not be larger than 20 ampere rating.

In order to prevent over-fusing the manufactured home code requires that all fusing installed at the factory be properly sized and tamper resistant. Once a tamper resistant fuse is installed then only the same size replacement fuse can ever be installed. This prevents the home owner from accidentally over-fusing when he replaces a blown fuse.

If a circuit continually blows fuses or trips breakers in short periods of time, consult an electrician. More than likely you have problems with a short or an overloading of the circuit.

NOTE: The electric distribution panel has a main shut-off switch to be used if it is ever necessary to cut off electricity throughout the house.

Ground Fault Circuit Interrupter or GFCI

All bathroom and exterior receptacles of the manufactured home must be guarded by a ground fault circuit interrupter (GFCI). This GFCI is a safety device installed to protect the occupant from electrical shock. If the GFCI has tripped to the "OFF" position, due to a fault in the circuit, the receptacle which it services will not operate. The reset button on the GFCI will reactivate it. You should periodically check the operation of each GFCI by pressing the "Test" button located adjacent to its circuit breaker inside the electrical distribution panel. When the "Test" button is depressed, the circuit breaker should trip to indicate proper operation of the GFCI. You can then reset the breaker to restore electricity to the circuit.

WE REPEAT: Do not attempt to do electrical work of any kind in any situation or building unless you are qualified to do so. The safety of you and your family and home could be endangered.

Gas Supply System

Gas may supply power for a number of home appliances — water heater, furnace, oven, range, heaters, and others. **The home owner should never attempt to repair the gas lines in his house.** In most areas the local gas company will service the gas system. If a gas leak is suspected, call them at once.

If you smell gas, check the pilot lights of the various gas appliances in the house. Range burners may have been turned on but left unlit. If you cannot locate the source of escaping gas immediately, suspect a gas leak and call the gas company. **While you are waiting, don't light matches or flames, open all windows and turn off the main gas shutoff valve which is located near the gas meter. Every member of the family should know how to locate the main gas shutoff valve before an emergency occurs.**

When the emergency is over and the gas is turned back on, make sure that all pilot lights in the house are properly lit. A pilot light should be relit with great care immediately after the gas supply is turned on.

CAUTION: Be sure the gas to the pilot light has been off long enough for air currents to carry away all the gas which has escaped into the room before the pilot is relit.

If pilot lights malfunction, the gas company may provide a free adjustment so that they burn correctly. Otherwise, a qualified repairman will do this for a fee. Pilot lights of furnaces can be left burning throughout the year to prevent condensation and rusting.

If stove burners fail to ignite when the pilot light is lit they may be clogged with food particles. Removable burners may be soaked clean in a solution of washing soda. Use a wire brush to remove food particles from the holes of a nonremovable burner, taking care not to push particles into the burner.

NOTE: The gas piping supply of your home is designed for a supply pressure of between 7 and 14 inches of water column (1/4 to 1/2 psi). Do not operate gas fired appliances if the pressure to your manufactured home is outside this range. If necessary, a pressure regulator can be used to reduce supply pressure.

Utility Systems

If your home is equipped with bottled gas for cooking or heating, or both, extreme caution should be used before turning on gas at the cylinder. All appliance valves MUST be closed. If the home has been in transit, fuel lines, connections, and appliance valves should be checked for loose connections and leaks before and after opening the cylinder valve.

CAUTION: A match or flame should never be used in checking for leaks.

A safe and frequently used method of checking for gas leaks is to apply a soapy water solution to the surface of the suspected area and look for tell-tale bubbles, which will indicate the presence of escaping gas.

CAUTION: The only LP cylinder or "bottle" that should be used is one bearing the approval marking of either the U.S. Dept. of Transportation (DOT) or ASME. The chief difference between these two is that the DOT cylinders are acceptable in any state, whereas the ASME cylinders, which have been built to the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers may not be acceptable in all states.

Heating/Cooling Systems

General

As in any modern home, there are many possible types of heating installations. Yours may be one of these:

1. Gas (either Natural or Liquid Petroleum Gas)
2. Electric (either Forced Air, or Baseboard)
3. Oil

A manual covering maintenance and operating instructions will be found with your furnace. If not, request one from the furnace manufacturer. Be sure to provide the model number of the furnace, which will be found on a name plate immediately inside the front panel or door at the front of the furnace.

The thermostat control of the furnace can be set to maintain the desired comfort temperature. Special attention should be given to its regulation and the instructions provided by the furnace manufacturer should be followed regarding the operation and warranty.

Air Circulation Central heating systems require a return air system to function properly. When the blower of the furnace is operating, it forces warmed air from the furnace through the duct system into the individual rooms. To balance or compensate for that pressure, the furnace must pull air from the living areas back to the furnace, thus providing a balanced flow of air throughout the home with the furnace blower acting as the pump.

Return air may be provided in several ways. One is by return air ducts or cavities in the floor. Each room has registers that lead to the return air system. These registers are not to be confused with the registers for supply ducts.

If the furnace has a return air duct system, the furnace closet will have an area for return air, usually covered by screening. This should not be blocked.

Another common method to provide return air circulation in a manufactured home is to provide open air spaces at the door of each room through the use of grill work in the door or by allowing extra clearance space at the top or bottom of the closure. Do not block or try to seal this open space. Similarly, do not block the door in front of the furnace compartment.

Never use the furnace compartment as a storage area, even when the furnace is not in use.

The return air system is just as important to the forced air electric furnace as it is to the gas and oil furnaces.

External Appliances In some cases your home may have been shipped by us without the complete heating and/or cooling system so that this equipment can be installed on site by your dealer or installer. This is frequently done with heat pumps, central air conditioning and other combination heating/cooling systems so that the units can be properly sized for your location. In this case be sure that your dealer or installer uses equipment which is listed or labeled for that application (use with manufactured homes) and is installed in accordance with the manufacturer's installation instructions. When sizing equipment, your installer should refer to the heating and/or comfort cooling certificate for duct cooling capacity, location of external duct connection and information for heat gain calculations.

Furnace Maintenance

General If your home has a gas, electric or oil central forced air furnace the following general maintenance comments apply:

The operating instructions provided by the furnace manufacturer will outline the maintenance required for the specific model. In general, the following steps will help keep the furnace trouble free.

1. Filters should be kept clean by washing or replacing them frequently.

2. Oil the moving parts as recommended by the furnace manual.

3. A competent heating service representative should check the furnace once a year and make necessary repairs. (Oil systems may require replacement of the nozzle and adjustment of the electrodes annually.)

Gas Furnace Maintenance A qualified service representative should inspect the furnace each fall for leaks and other possible problems.

Electric Baseboard Maintenance Baseboard heating units do not have any moving parts, and require little maintenance. Return air systems are not required. Room temperatures may be controlled individually. A home heated in this manner requires the addition of a duct system if central air conditioning is added at a later date.

Oil Furnace Maintenance Where oil is used as a fuel for heating, an adequate supply must be readily available. In general, this means the use of either an individual oil storage tank located adjacent to the manufactured home or a centralized oil distribution system now found in some of the newer manufactured home communities.

Where a central system exists, it would normally only be necessary to connect from the manufactured home to the oil connection provided. The oil in the system is under pressure and is supplied through a suitable metering device.

The fuel tank should be positioned so that it can be kept clean and free from moisture. This can be done by tilting the tank. The outgoing tube should be at the higher end. Any water and dirt that accumulate in the tank will flow to the low end since they are heavier than oil. This low end should be drained monthly to remove water and dirt particles. The tank should be kept as full of oil as possible to eliminate excessive condensation.

A readily accessible and approved shut-off valve, manually operated, must be installed at the outlet of the oil supply tank.

If the home is located in a cold climate, exposed oil lines should be protected to prevent the oil from congealing.

Fuel-Burning, Heat-Producing Appliances

All fuel-burning, heat-producing appliances, except ranges and ovens, used in manufactured homes draw fresh air for combustion from outside the manufactured home. This includes such appliances as furnaces, water heaters, fireplaces, gas refrigeration devices, and gas clothes dryers. This differs from site-built housing in which it is customary to draw combustion air from inside the house. The manufactured home's sealed combustion system has two advantages over conventional systems:

1. It is safer. Combustion gases are not released into the interior of your home.

2. It is more economical. Inside air, which has been heated or cooled to the desired temperature, is not lost through the exhaust duct or chimney.

CAUTION: If replacement of a fuel-burning (gas or oil) heat-producing appliance becomes necessary, the replacement equipment must be listed or labeled for use in manufactured homes.

Utility Systems

Water Supply System

All water for use in your manufactured home enters through one basic pipe system. The system enters the home in the rear half of the length of the manufactured home. The supply line entering the home must be a minimum of 3/4" in diameter. The pipe riser from the underground water line is connected directly to the system that has been installed in accordance with the specifications of the HUD standard.

A pressure regulator should be installed on your water line if the local water pressure exceeds 80 psi.

The area under the pipes should be checked occasionally for signs of leakage.

If the manufactured home is located in an area where prolonged periods of freezing temperatures occur, the water supply line to the home should be installed below the frost line. The entire pipe riser above the frost line should be insulated. There are a number of suitable insulating materials available with which to accomplish this. A thermostatically controlled electric heating element, generally referred to as a "heat tape," may also be used. This will turn off the electricity when heat is not required to prevent freezing.

When the heat tape is wrapped around the pipe and plugged into an electrical outlet, protection against freezing will be provided to the pipe even in coldest weather. Electric current consumption is about equal to that of a 25 watt light bulb if the water line is not too long. Be sure that any heat tape installed on your water line is listed (approved) for use with manufactured homes by a recognized testing laboratory.

A main water shut-off valve for the water system is usually installed at the inlet to the water supply system. This should be shut off if any break occurs in the water system. If a main water shut-off valve has not been provided for your manufactured home, we recommend that you have one installed.

Water Heater

All types of water heaters are equipped with temperature and pressure relief valves to prevent the build-up of dangerous temperatures or pressures in the event that the tank thermostat should fail. If it is necessary to install a new water heater in your home, be sure that a proper pressure and temperature relief valve is installed in the new heater, and that the vent extends, undiminished in size, so that it will discharge beneath the manufactured home. Fuel burning water heaters (those fired by oil or gas) used in manufactured homes draw fresh air to support combustion from outside the house.

CAUTION: If replacement of a fuel burning (gas or oil) hot water heater becomes necessary, the replacement equipment must be listed or labeled for use in manufactured homes. See also Fuel Burning-Heat Producing Appliances on page 17.

Drainage System

Your manufactured home drainage system has been carefully designed and installed at the factory. Your dealer will provide the final connection to the sewer system at your home site when he installs your manufactured home.

Once this drain connection has been completed, the drainage system works much like that of any other building.

The most likely problem you will ever encounter with your drain is clogging, usually caused by large objects placed into the sink or toilet drains. We do not recommend that you flush disposable diapers or similar objects down the toilets. We also do not recommend that food scraps be washed down the sink drain unless they are processed through a garbage disposal. Grease, fats and oils may be a problem, especially if drain lines are exposed during cold weather.

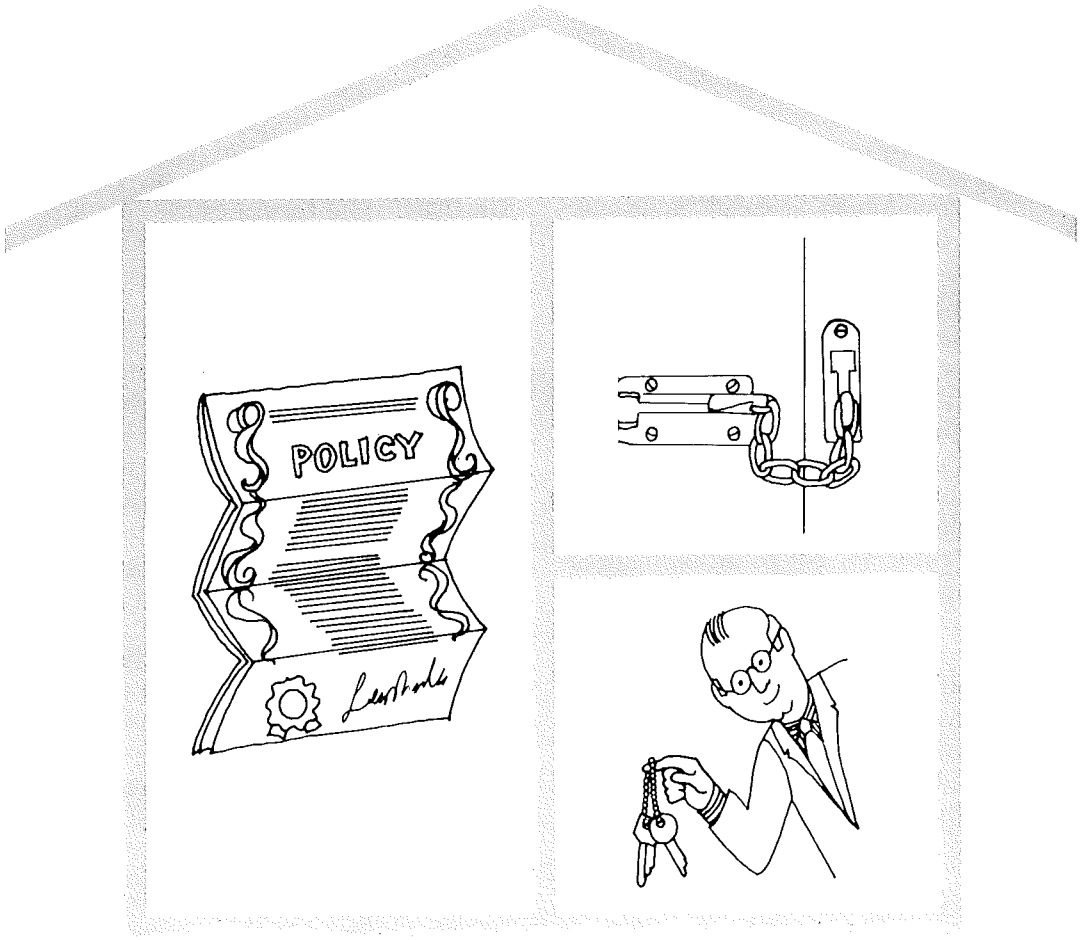
If a stoppage occurs which you cannot clear with a "plumbers helper" or a commercial drain cleaner, or if you have other drain problems, call your manufactured home dealer or serviceman for assistance.

NOTE: DO NOT use a heat tape on exposed drain lines.

SECTION

IV

INSURANCE



Insurance

Insurance coverage for manufactured homes and rates may vary from state to state as a result of their different regulations.

The kinds of coverage you need should be discussed with a knowledgable agent of your choice who represents an insurance company which understands the manufactured home and can help plan a program best suited to your needs.

There are certain basic principles and fundamental information about insurance which apply to all kinds of home ownership — manufactured or site-built.

Insurance companies have given recognition to the problems of the manufactured home owner so that adequate protection is possible both when the home is (1) in transit or (2) sited.

If you plan to relocate your manufactured home, be sure to ask your transport company which aspects of the move will be covered by his insurance. You may wish to obtain temporary additional collision or upset "trip" insurance, or to insure specific items in the manufactured home for possible transit damage.

Included among the types of insurance which the home owner should be aware of are four basic types of insurance coverage which he may want to consider. This list is included to help you select adequate coverage, but there may be additional types of coverage which you should consider.

I. **Comprehensive Physical Damage** This type of insurance pays for certain kinds of direct damages to your property, such as flood, fire, theft (of your home), earthquake, windstorm, landslide and lightning. Other damages might be included such as spillage of inks, chemicals, paint, oils, faulty thermostatic controls.

On-the-road collisions or upsets would not be included in this category, but could be insured separately as could natural disaster protection which would pay off the loan in the event the home is destroyed before all payments are made.

It would be well to determine whether adjacent structures (such as steps, awnings, carports, skirting, air conditioning, utility buildings) are automatically considered a part of the "comprehensive" physical damage policy.

Be sure to check if personal effects may also be included whether or not they are in the manufactured home at the time of destruction or disappearance. If you have collections, art, antiques, jewelry, or other valuables, determine whether or not they are automatically on your policy or must be declared separately.

Other items which could be included, if desired are:

1. Living expense coverage when the home cannot be lived in because of an insured loss.
2. Emergency removal of the home to safety and back if there is a threat of loss.
3. Fire Department Service coverage if there is a charge.
4. Radio and TV antenna loss or damage.
5. Damage or destruction of landscaping.
6. Damage to anchoring systems.

II. **Liability Insurance** This type of insurance pays damages to some one else should an accident for which the owner was responsible occur on his property. Such damages could include court costs, first aid and emergency treatments, lost wages, medical and dental costs and other items agreed upon.

III. **Credit Life Insurance** This type of insurance pays off a loan (on the manufactured home) if the home owner should die, except by suicide, before the home is paid for.

Credit life insurance should not be considered as a substitute for a sound life insurance program.

IV. **Credit Accident and Health Insurance** This type of insurance provides for the continued payment of loan installments in case the owner cannot work because of illness or an accident — up to the policy limits you purchase.

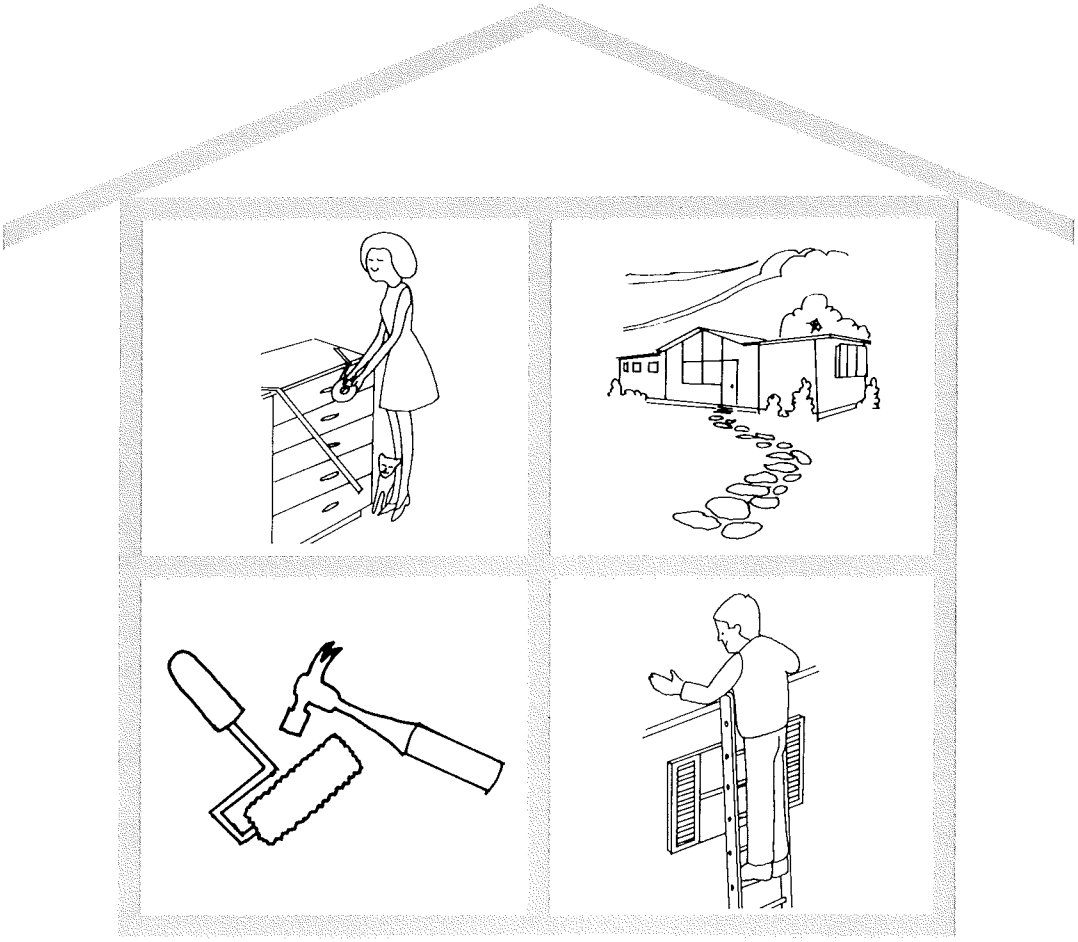
Some additional items to consider in buying manufactured home insurance are:

1. Total coverage received for money paid.
2. Comprehensive coverage that insures the home for direct or accidental loss.
3. Prompt and capable claims handling.
4. Guaranteed renewal.
5. Agent's knowledge of insurance needs of manufactured home owners.

SECTION

V

SPECIAL INFORMATION



Special Information

Moving

Manufactured Homes are moved by professional manufactured home transporters who should know all the regulations of each state's highway departments and are equipped to obtain all necessary permits and arrange for any required escort vehicles. There are several firms that specialize in this activity. They have offices in all major cities. Consult the yellow pages of your telephone directory.

Ready for Towing (Interior Preparations) While the home owner must always employ a professional to move the manufactured home (highway regulations and inadequate horsepower of standard vehicles preclude their use), there are certain procedures that can be followed to prepare for the move. Pictures, clocks, radios, television sets, lamps, and other fragile items can be tied on a couch or bed. Remove the tops of all toilet tanks and place them, on a blanket or other padding, in the bathtub or shower stall. Anything loose will slide forward on a quick stop. Some people prefer to put these small items in cartons. Dishes should be packed in cartons with towels and pillows. Use masking tape to secure latches of cupboards, closets, and drawers. The furniture should be placed so that the weight is well-distributed. Do not overload either the front or rear of the home. Balance the load. Electricity, water, sewer and gas or other fuel should be disconnected. Close all windows. Lock all doors. All appliances should be disconnected.

Ready for Towing (Exterior Preparations) Water should be drained from the water supply system. To do this, turn the main water supply valve off, flush all toilets to empty their tanks, then disconnect the water supply and sewer drain lines. Next open all faucets in the home and the master shut off valve (if installed) on the inlet lines. After the water has drained from the system, seal the water supply inlet using the cap provided. If a cap is provided the sewer outlet can also be capped. The gas and oil inlets should be disconnected and capped. If gas bottles are attached to the hitch A-frame, be sure to turn the main valve to off position. Disconnect the anchor ties from the ground anchors and fasten the loose ends so that they will not snag when the home is moving.

A representative of the electric utility company should be called to disconnect the wiring to your manufactured home.

The mover will check the entire undercarriage — wheels, bearings, tires, lubrication needs, brakes — of the home to see that they are in acceptable condition for the move.

Coupler-Hitch Assembly Manufactured homes usually are equipped at the front with a coupling and hoisting device called a hitch. This provides a means for attachment of the manufactured home to the towing vehicle.

Most manufactured home hitches also include a jack or screw device for raising or lowering the front end of the home.

Lubrication Some hitches are removed at the time the home is sited. If not, the hitch should be lubricated and cleaned occasionally to provide for future operation.

Check List for Moving

Date	Activity
_____	Obtain moving estimates from one or more manufactured home transporters.
_____	Select and engage services of a manufactured home transporter.
_____	Determine date.
_____	Remove skirting. If practical, pack in cartons and place inside home.
_____	Be sure brakes and wheels have been properly serviced. Check for proper inflation of tires.
_____	Contact utility firms to arrange for disconnection of water, sewer, gas, electrical, and telephone service.
_____	Contact post office for proper forwarding of mail.
_____	Pack all loose items from cupboards in cartons. Label cartons.
_____	Pack all food from refrigerator and cupboards.

_____ Tie lamps, pictures, radios, television sets, and other fragile items on couches or beds; pack in cartons if preferable.

_____ Large furniture pieces should be well distributed and secured in each room.

_____ Tape all drawers and doors of cabinets, cupboards, and appliances.

_____ Lock all windows.

_____ Turn off outside gas cylinder.

_____ Disconnect all appliances, heaters, furnaces, and air conditioning.

Water Heater	Washer/Dryer
Refrigerator	Range and Oven
Freezer	Garbage Disposal
Air Conditioning	Furnace
Trash Compactor	

_____ Disconnect anchor system and secure loose ends.

_____ Remove all concrete blocks and shims.

_____ Put the cat out!

_____ Lock all doors. (Be sure keys are not locked inside the home!)

U.S. Department of Housing and Urban Development (HUD)

HUD is the Federal Agency which administers the Act and any questions concerning the Act or your rights under the Act can be directed to HUD or to the approved SAA in your state which acts as HUD's agent. In order to contact HUD you should refer to the Department of Housing and Urban Development under listings for the U.S. Government in your telephone book. In calling or writing the local HUD office, you should address your inquiry or call to the "Consumer Complaint Officer." If you live in a small town or rural area, your local HUD office will probably be located in a nearby city. You may also contact the Central HUD Office directly by writing or calling the Manufactured Home Standards Division, Department of Housing and Urban Development, Washington, D.C. 20410 (telephone 202-755-6584).

State Administrative Agencies (SAA):

Alabama—State Fire Marshal, Insurance Department, 445 South McDonough Street, Montgomery, Alabama 36130.

Arizona—Chief Engineer, Office of Manufactured Housing, 1645 West Jefferson, Phoenix, Arizona 85507.

Arkansas—Arkansas Manufactured Homes Commission, 1022 High Street, Little Rock, Arkansas 72207.

California—Director, Department of Housing and Community Development, P.O. Box 31, Sacramento, California 95801.

Colorado—Director, Colorado Division of Housing, Department of Local Affairs, 623 Centennial Building, 1313 Sherman Street, Room 523, Denver, Colorado 80203.

Florida—Chief, Bureau of Mobile Home Construction, Department of Highway Safety and Motor Vehicles, 2900 Apalachee Parkway, Tallahassee, Florida 32304.

Georgia — State Fire Marshal, 200 Piedmont Ave., West Tower, 7th Floor, Atlanta, GA 30334

Idaho—Director, Idaho Department of Labor and Industrial Service, 317 Main Street, Room 400, Boise, Idaho 83720.

Indiana—State Building Commissioner, State of Indiana, Manufactured Building Division, Administrative Building Council, 429 N. Pennsylvania Street, Indianapolis, Indiana 46204.

Iowa—State Building Code Commissioner, Office of Planning and Programming, State Planning Code Section, 523 East 12th Street, Des Moines, Iowa 50319.

Kentucky—Department of Housing, Building, and Construction, US 127 South, Frankfort, Kentucky 40601.

Louisiana—Department of Public Safety, Mobile Home Div., 1033 N. Lobdell Avenue, Baton Rouge, Louisiana 70806.

Maine — Manufactured Housing Board, Department of Business Regulation, State House Station 35, Augusta, Maine 04333

Maryland—Director, Codes Administration, Department of Economic and Community Development — Division of Housing, 2525 Riva Road, Annapolis, Maryland 21401.

Michigan—Executive Director, Bureau of Construction Codes, Department of Labor, 7150 Harris Drive, Lansing, Michigan 48909.

Minnesota—Section Chief, State of Minnesota, Building Codes Division, Department of Administration, 408 Metro Square Building, 7th and Robert Streets, St. Paul, Minnesota 55101.

Mississippi—Director, Mobile Home Inspection Division, Office of the Fire Marshal, 416 Woolfolk Building, P.O. Box 22542, Jackson, Mississippi 39205.

Missouri—Director, Mobile Home and Recreational Vehicles Division, Missouri Public Service Commission, P.O. Box 360, Jefferson City, Missouri 65101.

Nebraska—Director, Division of Housing and Environmental Health, State Department of Health, 301 Centennial Mall South, Lincoln, Nebraska 68509.

Nevada—State Department of Commerce, Manufactured Housing Division, Capitol Complex, Carson City, Nevada 89710.

New Jersey—Director, Bureau of Housing Inspection, Division of Housing and Community Renewal, Department of Community Affairs, 363 West State Street, Trenton, New Jersey 08625.

New Mexico—Director, Mobile Housing Division, State of New Mexico, Bataan Memorial Building, Santa Fe, New Mexico 87503.

New York—Director, Codes Bureau, Division of Housing and Community Renewal, Two World Trade Center, New York, New York 10047.

North Carolina—Commissioner of Insurance, North Carolina Department of Insurance, P.O. Box 26387, Raleigh, North Carolina 27611.

Oregon—Chief, Mobile Home and Recreational Vehicle Section, State of Oregon, Department of Commerce, Building Codes Division, 401 Labor and Industries Building, Salem, Oregon 97310.

Pennsylvania—Chief, Division of Industrialized and Mobile Housing, Department of Community Affairs, P.O. Box 155, Harrisburg, Pennsylvania 17120.

Rhode Island—State Building Code Commissioner, State of Rhode Island, Building Code Commission, 12 Humbert Street, North Providence, Rhode Island 02911.

South Carolina—Director, Division of General Services, Manufactured Housing Section, 300 Gervais Street, Columbia, South Carolina 29201.

South Dakota—Director, Division of Commercial Inspection and Regulation, Capitol Building, Pierre, South Dakota 57501.

Tennessee—Chief, Mobile Home Section, Department of Insurance, State of Tennessee, 413 Tennessee Building, 6th and Church, Nashville, Tennessee 37219.

Texas—Administrator, Texas Department of Labor and Standards, Mobile Home Division, P.O. Box 12157, Capitol Station, Austin, Texas 78711.

Utah—Director of Mobile Homes and Recreational Vehicles Division, Department of Business Regulation, State of Utah, 330 East 4th, South, Salt Lake City, Utah 84111.

Virginia—Director, Division of Building Regulatory Services, Department of Housing and Community Development, Commonwealth of Virginia, 205 North Fourth Street, Richmond, Virginia 23219.

Washington—Assistant Director, State of Washington, Department of Labor and Industries, Factory Assembled Structures, 300 West Harrison Street, Seattle, Washington 98119.

Wisconsin—Chief, Light Building Section, Department of Industry, Labor and Human Relations, 201 E Washington Ave., Madison, Wisconsin 53702.

Warranties and Warranty Service

Specific provisions for the warranty on this home are covered by the separate warranty information contained with this manual. In addition to the basic warranty on the home, many appliances (such as furnaces, washing machines, etc.) supplied with the home will have separate warranties *and* operating instruction manuals. We suggest that you locate and familiarize yourself with these items. For your convenience, some of the separate appliance warranty manuals are contained in the information package with this manual. In other cases, such as furnaces and water heaters, the operating instructions (which may contain the warranty information) are required to be attached to the appliance.

A handy index has been provided to help you locate these items. This index may be on the cover of the package which contains this manual or may be a separate item inside the package.

If local service is requested under the terms of your warranty, you should become familiar with the appliance service representative. It is suggested that this information be recorded in the space provided on page 26 of this book under the section entitled, "Directory of Service Firms." The retailer from whom you bought your home can probably provide this information — or it can be obtained from the manufacturer of the appliance.

Preventive Maintenance

The electrical, heating, and plumbing systems of your manufactured home were designed and installed in accordance with accepted engineering practices. However, normal use through time will cause some expected breakdowns on components just as would happen in any other building or home. To prevent major problems, watch for tell-tale danger signals, such as continuous damp areas under drain and water lines, oil and gas leaks in your fuel system, overloading of electric circuits resulting in a fuse or breaker continuously tripping off, or unusual flickering of lights. Become acquainted with the Use and Care Manuals provided by the appliance manufacturers and follow their instructions as closely as possible.

If a breakdown does occur, consult a concern specializing in the specific area of trouble. Complete the information requested in the Directory of Service Firms (on the following pages) as soon as possible so that you will have a ready reference in case of emergency.

If your home is equipped with gas appliances, a shut-off valve is installed within 6 feet of the appliance in case you have any problems. The electric distribution panel has a main shut-off switch to be used if it is ever necessary to cut off electricity throughout the house. The main shut-off valve for the water system is usually located at the left side rear of your home. This should be shut off if any break occurs in the water system.

CAUTION: Only qualified service personnel should be employed to make repairs in any of these vital systems.

Metal frame members are protected against corrosion. In the event it becomes necessary to touch-up exposed parts of the frame, one of the following types of paint may be used:

1. Zinc Chromate
2. Asphalt based paint
3. Other paint providing equivalent levels of protection when applied according to the paint manufacturer's instructions.

Special Information

Owner's Maintenance Calendar

Neither the manufactured home manufacturer nor the retailer is responsible for the care or upkeep of the manufactured home, beyond the terms of the warranty. In order to protect your investment and keep your home in worry-free operating condition, it is suggested that you conduct the following seasonal maintenance procedures. You may wish to add to the list, depending on your own experience.

SPRING

- Wash, wax exterior
- Clean interior walls
- Inspect roof; clean off debris; rinse off with water and hose
- Check exhaust fan systems
- Replenish fuel oil supply
- Check anchor ties for a snug, but not overly tight fit.

SUMMER

- Check air conditioner
- Clean air filters

FALL

- Check/clean furnace
- Check oil supply
- Caulk all small openings
- Wash, wax exterior
- Inspect and rinse roof; Recoat, if necessary
- Check exhaust fan systems
- Check oil lines. Wrap for winter if exposed
- Check heat tapes for operation

WINTER

- Lubricate window hinges and arms
- Check furnace filters every 30 days
- Clean filters if necessary
- Check fuel tank every 30 days; remove dirt and water as it accumulates
- Check anchor ties for excessive tightness caused by frost heave.

VACATION REMINDERS

- Clean refrigerator, leave a minimum of food in freezer section, if any. Set controls as recommended by appliance manufacturer.
- Suspend telephone service, if desirable
- Stop all regular deliveries
- Turn off water supply; during winter, put approved anti-freeze in kitchen, lavatory, and toilet traps
- Turn off water heater
- Close and lock windows
- Put the cat out
- Lock the doors
- Have fun!

Directory of Service Firms

First Aid for Your Home
Names, Locations and Phone Numbers That Will Help You If Warranty or Local Maintenance Service Is Necessary

Should service be needed for your home or any of the appliances, it will save you time and effort if information regarding the service representatives is readily available. The retailer who sold your home to you will have this and can give it to you. It may also be located in the operational instructions that usually accompany the various appliances. For problems which you feel we are responsible, contact us at our address which is imprinted on the cover of this manual.

Your MANUFACTURED HOME RETAILER

Name _____

Street _____

City _____ State _____ Zip _____

Serial Number of Your Home _____

Year Purchased _____

Serial Number of Keys _____

Warranty Expiration Date _____

RANGE Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

DISHWASHER Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

FURNACE Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

HOT WATER HEATER Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

WASHER Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

DRYER Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

GARBAGE DISPOSAL Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

AIR CONDITIONER Service

Model Number _____

Make _____

Representative _____

Phone _____

Warranty Expiration Date _____

EMERGENCY NUMBERS

_____

_____

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Owner's Maintenance Record

DATE	MAINTENANCE PERFORMED	DATE	MAINTENANCE PERFORMED

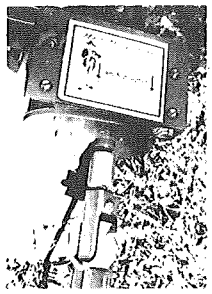
Minute Man anchors®

INSTALLATION

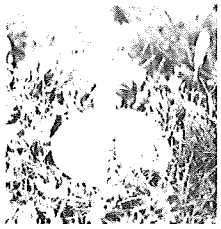
There are two basic methods of installing anchors, each equally effective in properly securing mobile homes to the ground.

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.



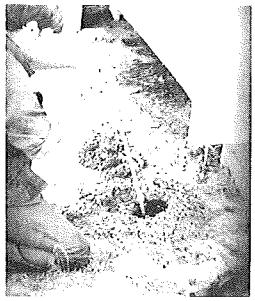
2. Auger is placed in proper position in line with strap, and machine started.

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

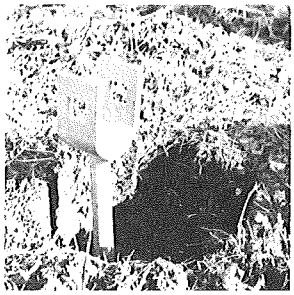
Installation with Manual or Mechanical Post Hole Digger

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.



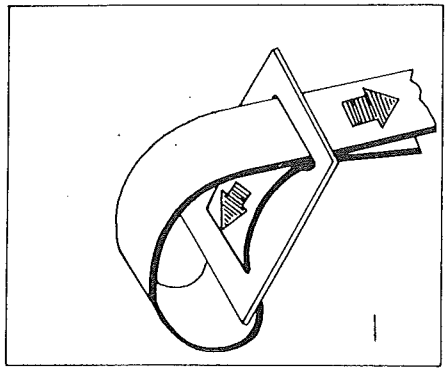
3. After anchor is installed to **full depth,** earth is repacked, six inches at a time.

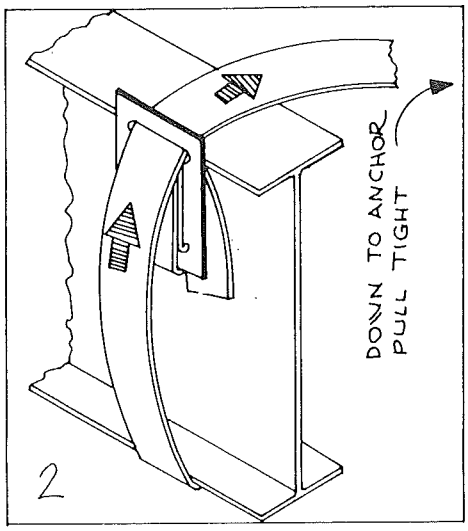
WARNING: Be careful to avoid underground water lines, phone lines and power lines.

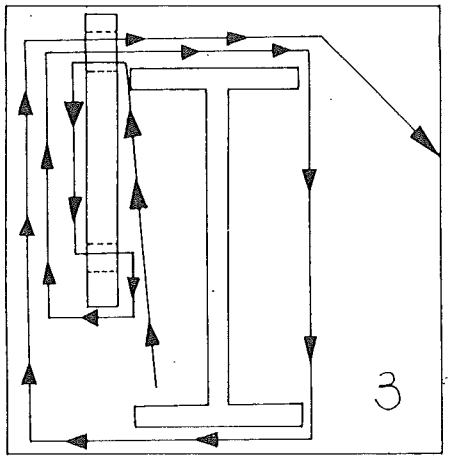
POSITIONING FRAME TIE

2.

FRAME TIE INSTALLATION INSTRUCTIONS

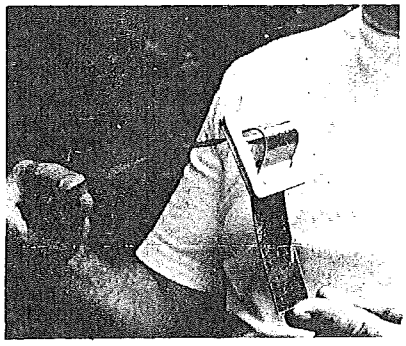




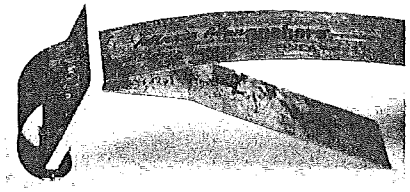


1. Thread 7' length of frame tie strap through buckle as shown.
2. Next, thread long end of strap between frame and floor of home. Bring strap through buckle as shown in diagram and fasten to anchor head.
3. Diagram showing strap in position around frame and through buckle. It is important to remove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

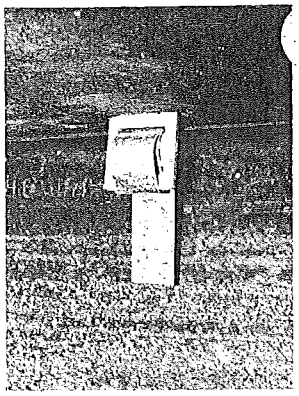
1. See step one in installation instructions.



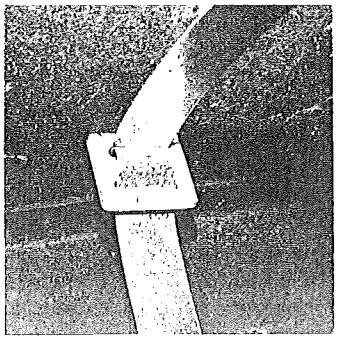
2. Insert strap in position through buckle.



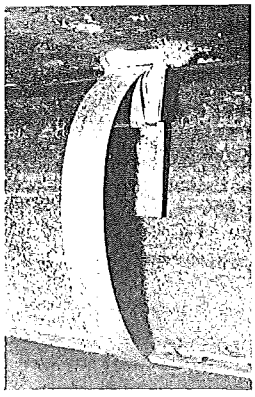
3. Strap should be through buckle in this configuration before installation on frame.



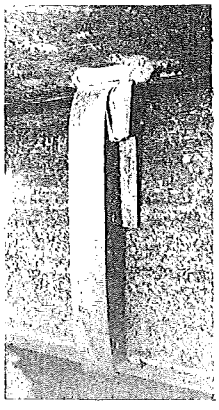
4. Strap should be passed over frame from inside, and buckle pulled into position as shown.



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.

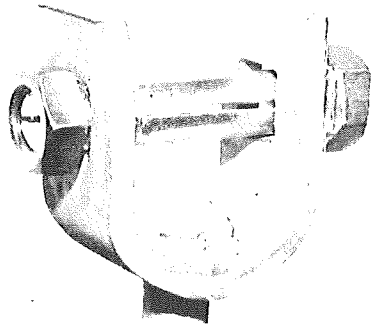


7. Inside of frame tie, properly installed.

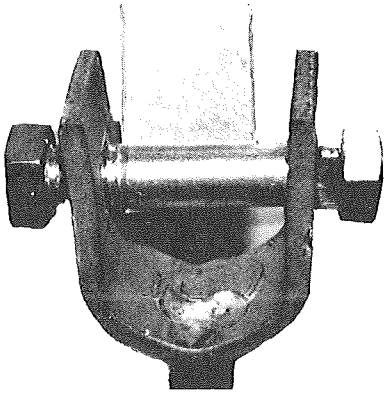
PROPER TENSIONING OF STRAP TO ANCHOR HEAD

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

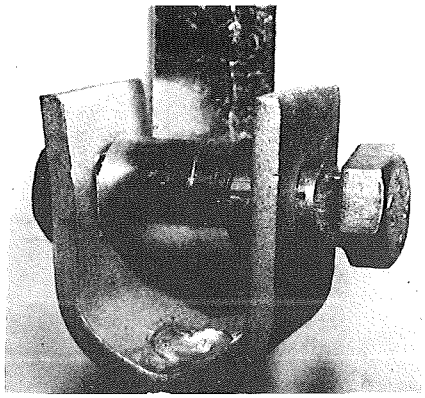
Notice: In areas of severe cold weather where possible damage could occur from frost heave, the homeowner should release some of the tension from the vertical tie each fall.



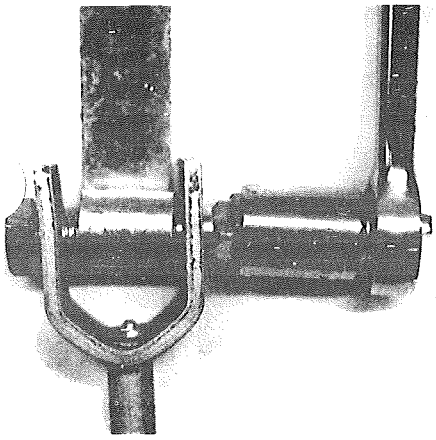
1. Insert bolt into head; attach nut loosely.



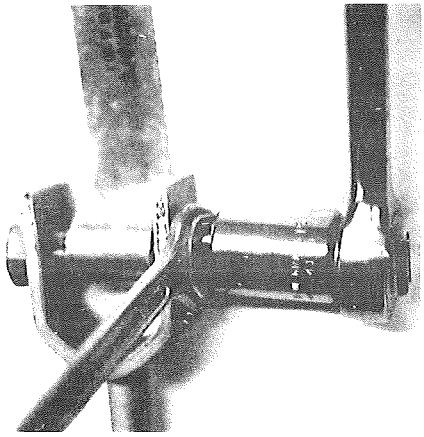
2. Insert strap in slot of bolt 5/8", or until strap is flush with far side of bolt.



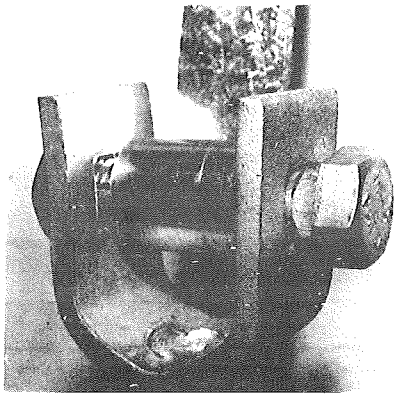
3. Bend strap 90° and take at least four complete turns on bolt until strap is taut.



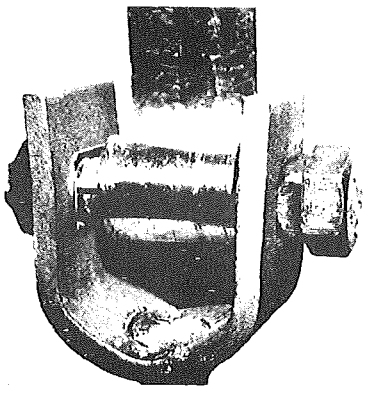
4. Bolt is turned with $^{15}/_{16}$" socket wrench, or adjustable wrench, on hex head.



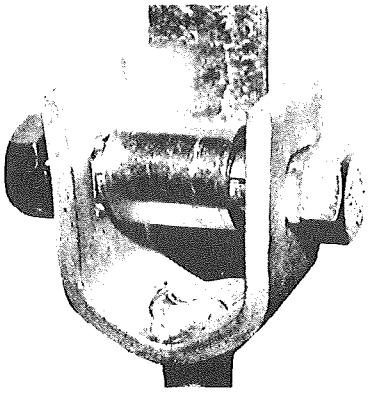
5. To hold bolt under tension while repositioning wrench, an open-end wrench is placed on $^{5}/_{8}$" square shoulders of bolt.



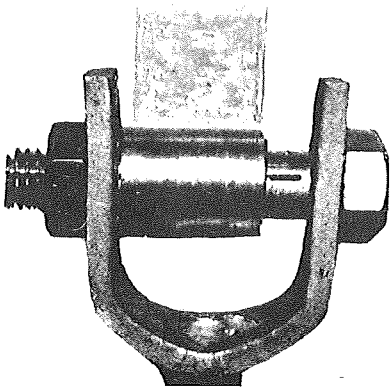
6. Align square shoulders of bolt with square hole in anchor head.



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



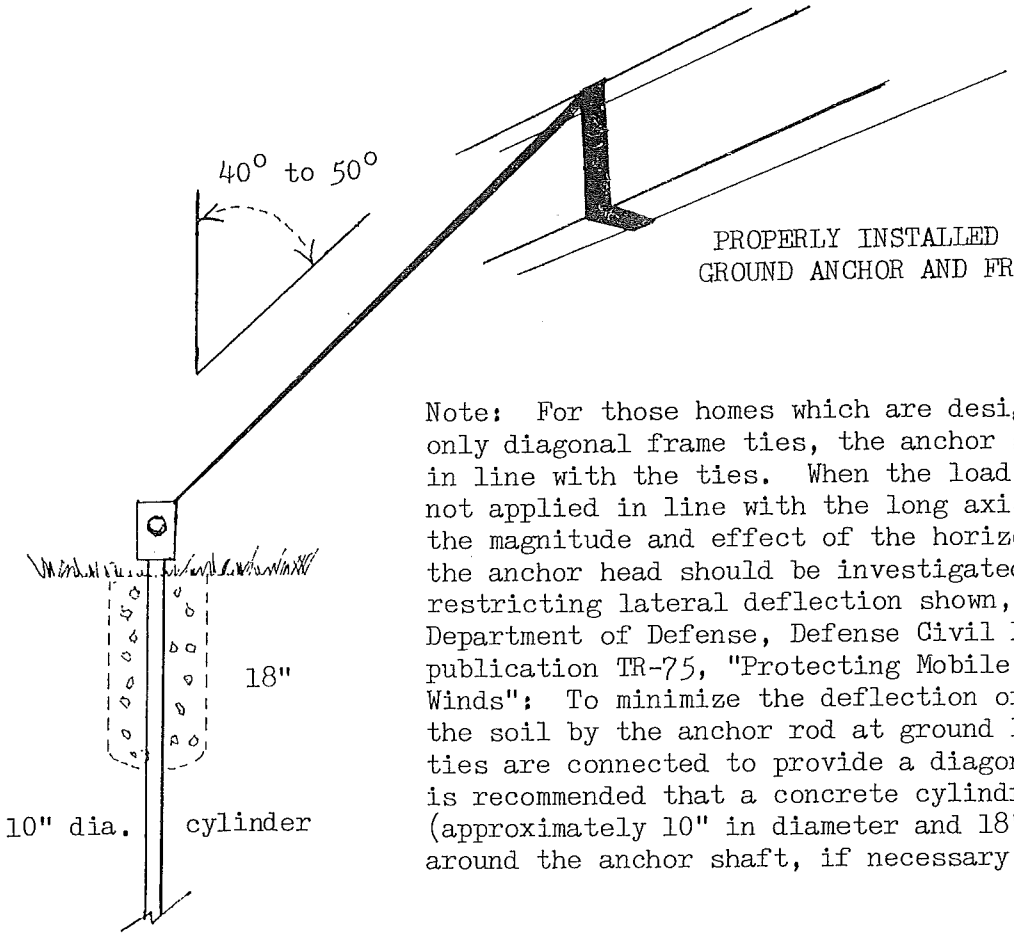
8. Shoulders are now in locking position; continue to tighten nut.



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

For clarity, tools not shown on most photos above.

4.



PROPERLY INSTALLED AND CONNECTED
GROUND ANCHOR AND FRAME CONNECTION.

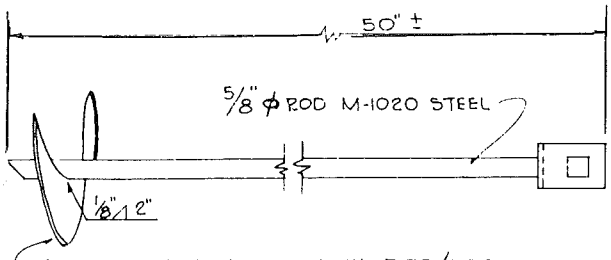
Note: For those homes which are designed to require only diagonal frame ties, the anchor should be installed in line with the ties. When the load on the anchor is not applied in line with the long axis of the anchor, the magnitude and effect of the horizontal movement of the anchor head should be investigated. The method of restricting lateral deflection shown, is from the Department of Defense, Defense Civil Preparedness Agency publication TR-75, "Protecting Mobile Homes From High Winds": To minimize the deflection or slicing through the soil by the anchor rod at ground level when frame ties are connected to provide a diagonal tension, it is recommended that a concrete cylindrical "collar" (approximately 10" in diameter and 18" deep) be poured around the anchor shaft, if necessary.

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.

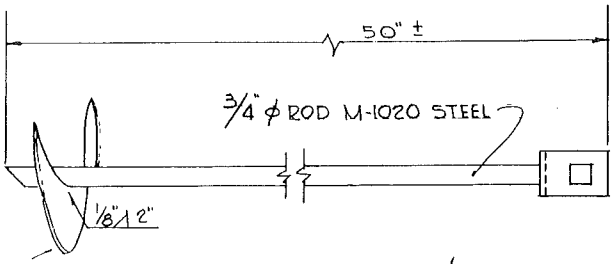
1. Sound hard rock.
2. Very-dense and/or cemented sands, coarse gravel and cobbles, preloaded silts, clays, and corals.
3. Medium-dense coarse sands, sandy gravels, very-stiff silts and clays.
4. Loose to medium dense sands, firm to stiff clays and silts, aluvian fill.

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



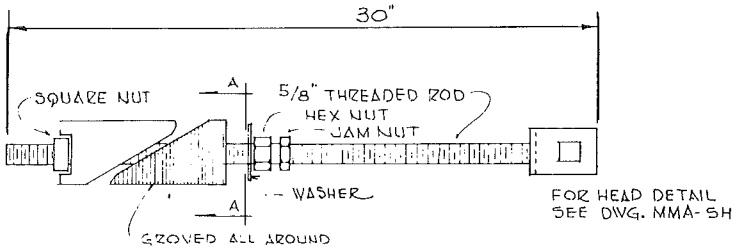
DISC - 8 GA BEVELED HELIX 5.98/6.02
M-1020 STEEL WELDED

650-S



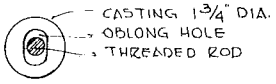
DISC - 8 GA BEVELED HELIX 5.98/6.02

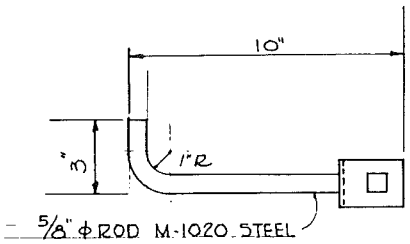
650H-S



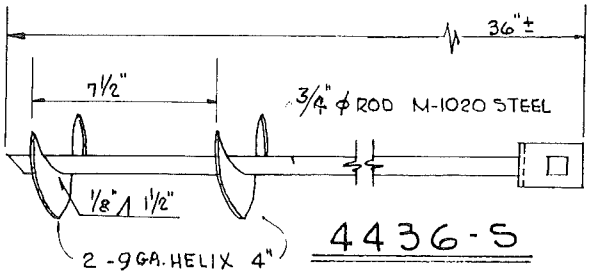
CASTINGS 25,000 PSI
SEMI-STEEL 1 3/4" x 5"
ALL STEEL USED IN ANCHOR ASSEMBLY
CONFORMS TO ASTM A-36

30-ER-S

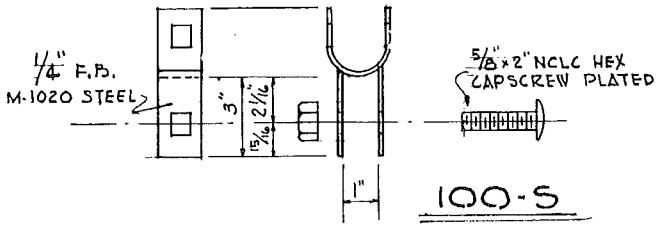




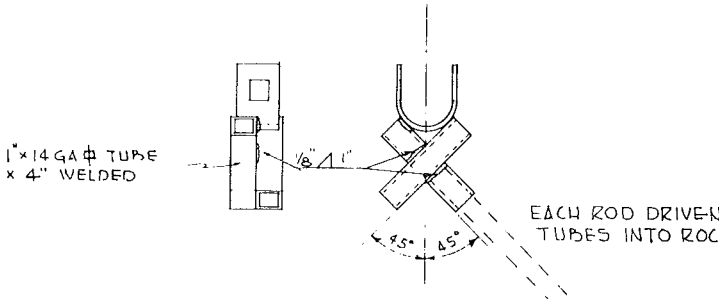
210-P-S

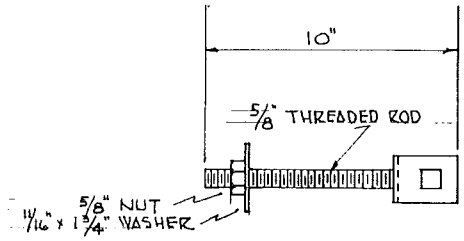


4436-S



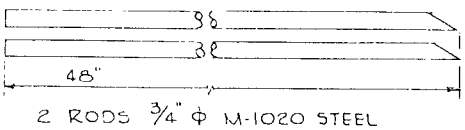
100-S





210-S

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



2 RODS 3/4" ϕ M-1020 STEEL

48X-S

ALL ANCHORS & ADAPTERS ALSO AVAILABLE WITH DOUBLE HEADS

Minute Mananchors®

6.

MATHESON, HINTZ & ASSOCIATES, INC.

CONSULTING ENGINEERS AND LAND SURVEYORS

ASHEVILLE AIRPORT ROAD FLETCHER, N. C. 28732

JOE K. MATHESON, JR., P. E.
WILLARD A. HINTZ, R. L. S.
HARRY E. BYAS, JR., P. E., R. L. S.
H. C. ABERNETHY, P. E.

PHONES: CODE 704
ASHEVILLE 253-8692
ARDEN 684-7417

April 23, 1976

Mr. C. Denson Hutchinson
Minute Man Anchors, Inc.
305 W. Walker Street
East Flat Rock, North Carolina 28726

Dear Mr. Hutchinson:

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 axially applied withdrawal load. For the anchors listed on the attached sheet the ultimate holding power is not less than 4,725 pounds when installed in accordance with manufacturer instructions in the soil types indicated in the 'table'. If these anchors are to be installed vertically to resist other than direct withdrawal loads the magnitude and effect of horizontal movement of the anchor head should be investigated.

Very truly yours,

MATHESON, HINTZ & ASSOCIATES, INC.

H. C. Abernethy

H. C. Abernethy, P. E.

Attachment

HCA:ps

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

1. Sound hard rock.
2. Very-dence and/or cemented sands, coarse gravel and cobbles, pre-loaded 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 add silts, aluvian fill. (Probe torque value range - 200 - 349 inch pounds)

MARK	MODEL	DESCRIPTION	USE IN SOIL TYPE *
MMA-1	650-S	Single Head, Earth Auger Anchor 5/8" shaft.	2,3,4
MMA-2	650-DH-S	Double Head, Earth Auger Anchor 5/8" shaft.	2,3,4
MMA-3	650-H-S	Single Head, Earth Auger Anchor 3/4" shaft.	2,3,4
MMA-4	650-H-DH-S	Double Head, Earth Auger Anchor 3/4" shaft.	2,3,4
MMA-5	4436-S	Single Head, Double Disk, Earth Auger Anchor 5/8" shaft.	2
MMA-6	4436-DH-S	Double Head, Double Disk, Earth Auger Anchor 5/8" shaft	2
MMA-7	48-X-S	Single Head Drive Anchor	2
MMA-8	48-X-DH-S	Double Head Drive Anchor	2
MMA-9	36-S	Single Head Coral Anchor	CORAL
MMA-10	36-DH-S	Double Head Coral Anchor	CORAL
MMA-11	210-S	Single Head Tension Device for Slab	SLAB
MMA-12	210-DH-S	Double Head Tension Device for Slab	SLAB
MMA-13	210-P-S	Single Head Tension Device for Concrete	SLAB
MMA-14	210-P-DH-S	Double Head Tension Device for Concrete	SLAB
MMA-15	30-ER-S	Single Head Expand Rock Anchor	1
MMA-16	30-ER-DH-S	Double Head Expand Rock Anchor	1
MMA-17	TH-S	Single Tension Head	SLAB
MMA-18	TH-DH-S	Double Tension Head	SLAB
MMA-21	100-S	Single Head Tension Device Adapter	CONNECT
MMA-22	100-DH-S	Double Head Tension Device Adapter	CONNECT

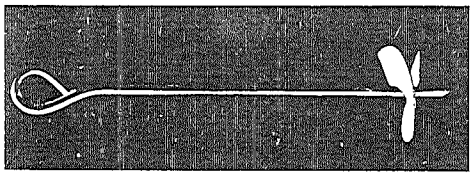
* NOTE: Many anchors are designed for particular soil conditions and are unacceptable for use in other type soils. We have therefore, listed the soils for which each anchor is designed and approved. Soil classifications are taken from the "STANDARD FOR THE INSTALLATION OF MOBILE HOMES" NFPA 501A 1975/ANSI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

Minute Man® anchors

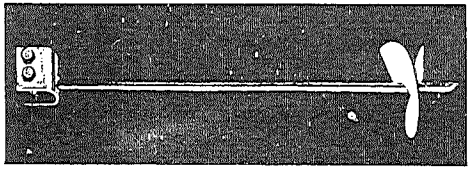
All anchors are "DH" type for use with either one or two tension bolts. Anchors are priced without tension bolt and nut — they must be ordered separately. Tension bolts and nuts will be packed separately from anchors.

SBN Strap Bolt. ⅜" × 2¾" zinc plated slotted strap bolt with ⅜" hex nut. US Patent 3416763

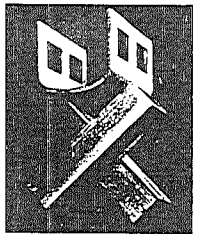
CBN Cable Bolt. ⅜" × 2¾" zinc plated drilled cable bolt with ⅜" hex nut. US Patent 3416763



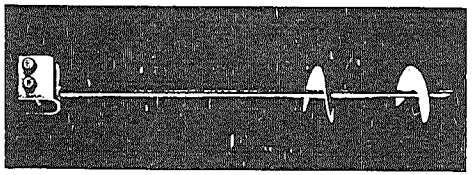
No. 650I Minute Man solid eye earth anchors, 6" screw plate, 50" overall length, 1½" solid eye on ⅝" rod.
No. 448, 4" auger plate, 48" overall length, 1½" solid eye on ⅝" rod.
No. 330, 3" auger plate, 30" overall length, 1¼" solid eye on 7/16" rod.
No. 315, 3" auger plate, 15" overall length, 1¼" solid eye on 7/16" rod.



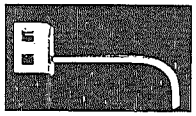
No. 650DH (⅝" rod), No. 650HDH (¾" rod) No. 636 (¾" rod only 36" long), Minute Man 50" earth anchor with 6" disk and patented double fastening and tensioning head.



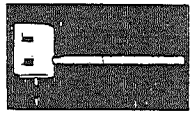
No. 48XDH Minute Man drive anchor with patented fastening and tensioning head. Welded tubing guides the two 48" long drive rods. Designed to be driven into extremely hard, rocky soil where auger anchors will not suffice. This anchor must be field tested for holding strength.



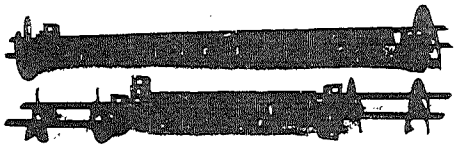
No. 4436DH (⅝" rod), No. 4436HDH (¾" rod) Minute Man 36" double 4" disk earth anchor with patented double fastening and tensioning head for use with straps. Designed to be augered into extremely hard soil where 6" disk anchor will not suffice. This anchor must be field tested for holding strength.



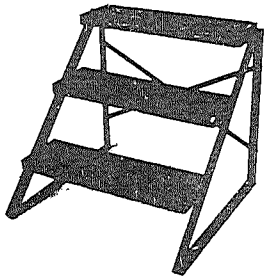
No. 210PDH Minute Man patio slab hooked rod attachment with patented fastening and tensioning head. Installed when pouring concrete slab.



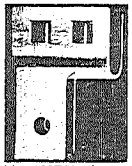
No. 210DH Minute Man patio slab attachment with patented fastening and tensioning head. Fastens through an existing concrete slab.



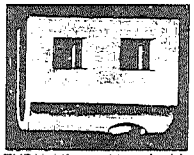
New Minute Man economical four-pack.



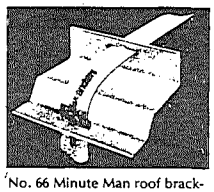
Minute Man 3-step stair features steel frame with three wooden steps, comes in a compact carton ready to assemble in minutes with simple hand tools.



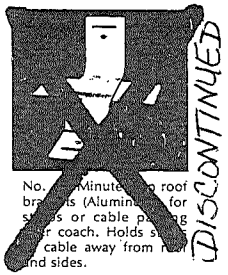
No. 100DH adaptor for solid eye anchor with Minute Man fastening and tension head.



THDH Minute Man double tensioning device for use on existing concrete slabs with ⅝" lag bolt and shield (not furnished).

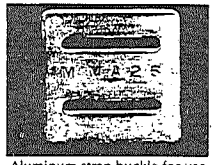


No. 66 Minute Man roof brackets (Aluminum), for straps or cable passing over coach. Holds straps or cable away from roof and sides.

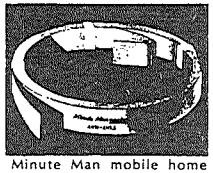


No. [illegible] Minute [illegible] roof br[illegible]ts (Aluminum) for st[illegible]s or cable p[illegible]g [illegible]r coach. Holds s[illegible] cable away from r[illegible]nd sides.

DISCONTINUED

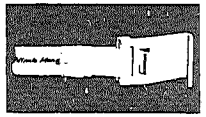


Aluminum strap buckle for use in fastening strap around frame of mobile home.

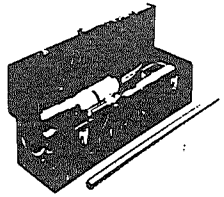


Minute Man mobile home straps, 1¼" wide, Galvanized Strapping exceeds 4725 lbs. breaking strength. Conforms to ANSI-A119.3 standards. Available in cut lengths and 100 lb. coils.

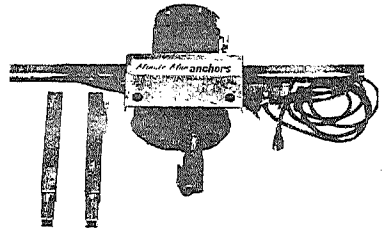
SW/BUC Minute Man 7' Galvanized strap with steel buckle for fastening around mobile home frame.



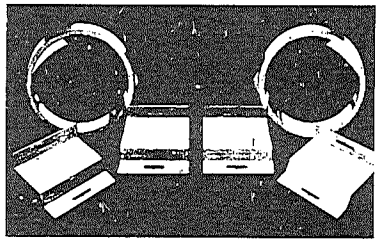
FCW/S Minute Man frame clamp with 7' strap for fastening to bottom flange of mobile home frame. FC (frame clamp without strap) also available.



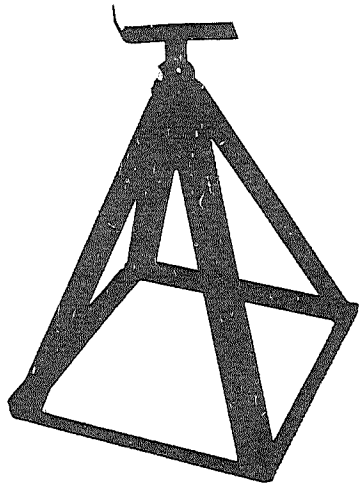
Ideal Earth Auger Drive Machine. Electric, low amp, automatic cut off, light weight, two position leverage bars, and adapter.



Minute Man electric anchor drive machine is the fastest on the market today in its price range. Featuring 12 RPM, ½ HP, 115 volt, 6 cycle, 9 amp motor, on-off, forward-reverse switches. With its 12 RPM's, the Minute Man anchor drive machine far out paces the 6 and 9 RPM units.



No. 2 Kit. All material needed for 2 over the roof ties.



Minute Man Minute Stand.