

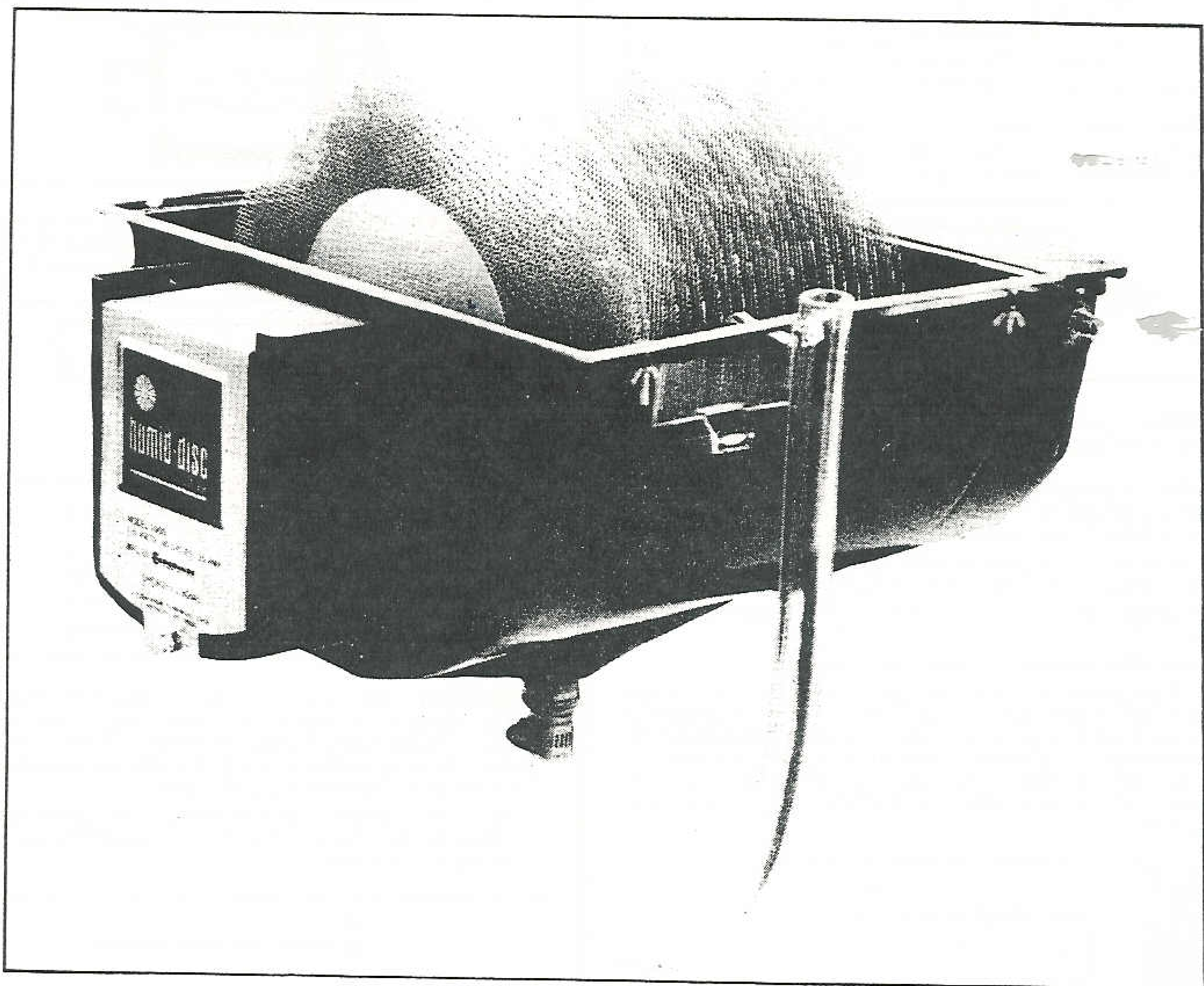


ADAMS

HUMID AIRE®

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Model FH-1000 Series
Model FH-16 Series



ADAMS MANUFACTURING CO.

HUMID AIRE® DIVISION

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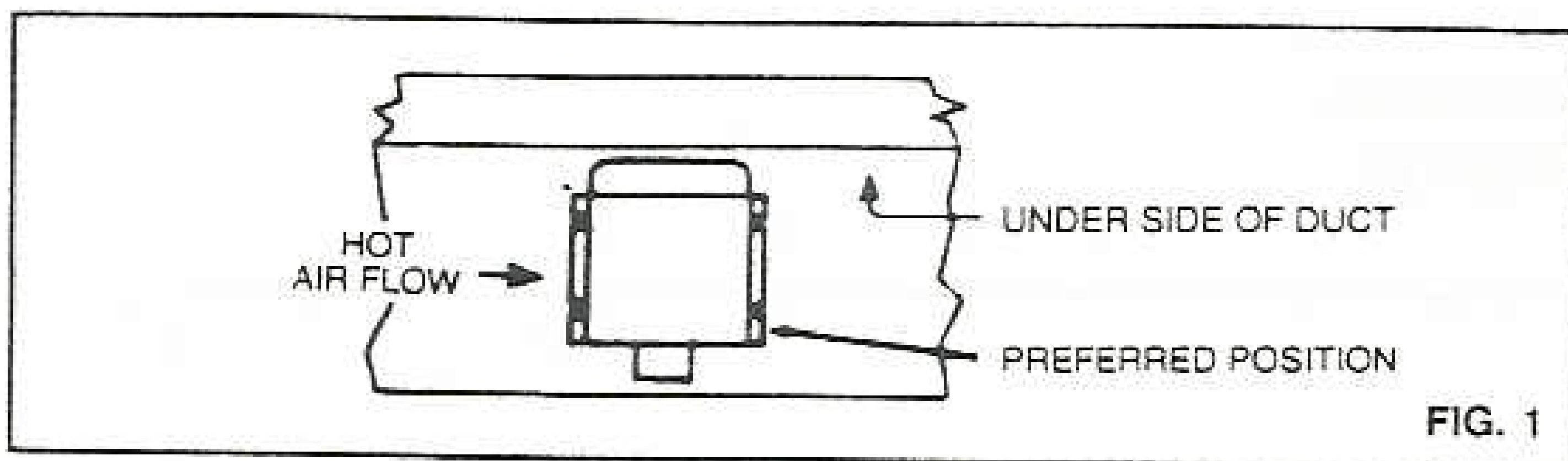
HUMIDIFIER INSTALLATION

Instructions and Service Guide

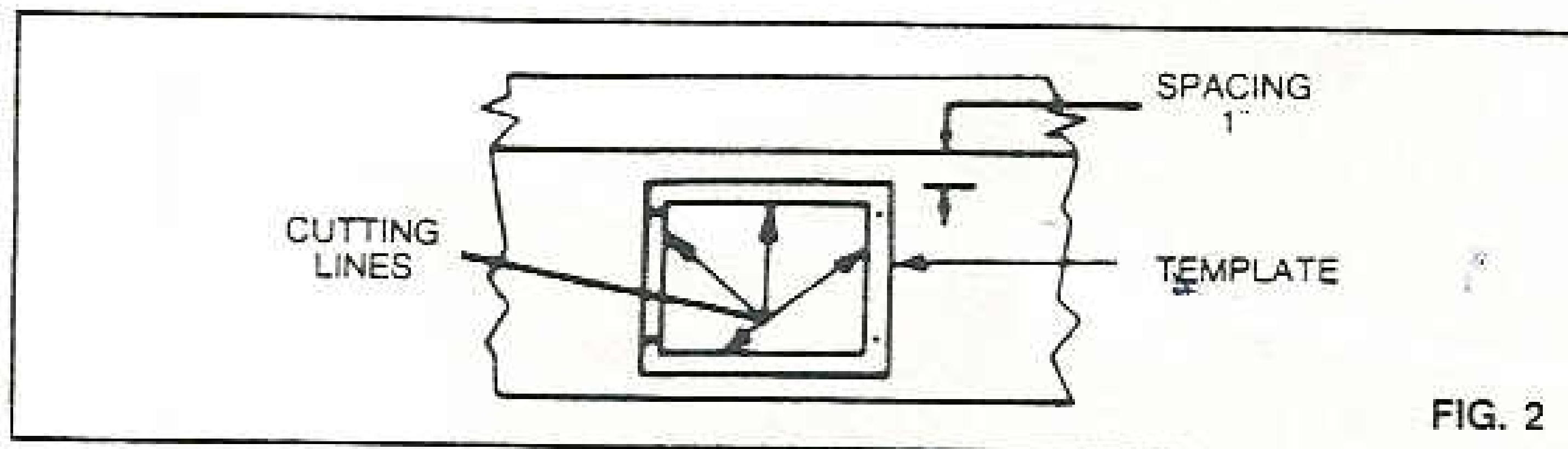
Installation instructions for installing on warm air Ducts

Step One The humidifier is designed for installation in any HOT AIR DUCT of your forced air furnace. Examine the duct-work leading horizontally from your furnace and select a hot air duct at least 12 inches wide and as close to the furnace proper as you can conveniently work. Recirculation by the furnace blower will keep an even humidity throughout your home regardless of the duct used.

Fig. 1 Illustrates a view of the duct from beneath it, looking up. Position at right angle to the direction of the hot air flow.



Step Two Attach the paper template, supplied with this unit, to the duct by duct tape, masking tape or other suitable material. Position the template at the right angle position as shown in Fig. 2.



Step Three Center punch and drill the 4 holes as indicated in Fig. 2. A 1/4" or larger drill is required. Holes can be as large as 1/2" diameter.

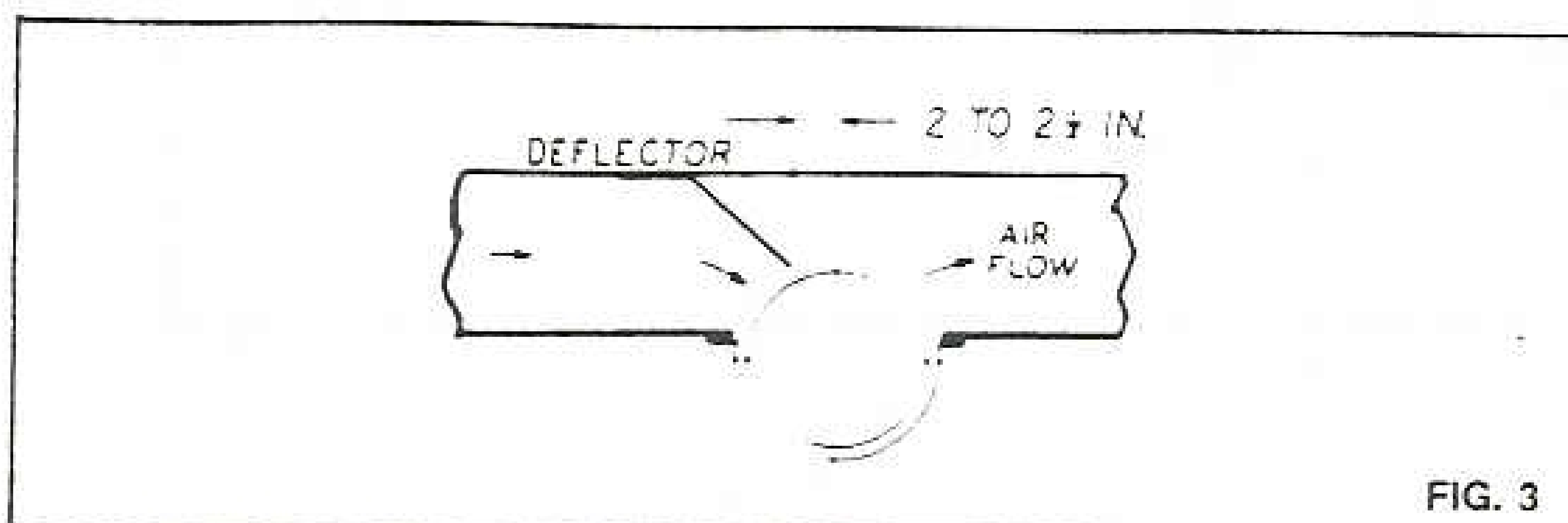
Step Four If they are available, use both left and right hand tin snips to cut the rectangular opening in the duct. The opening may be cut with regular snips, but it's easier to use the right and left hand snips.

To start cutting, drill a hole large enough to accept the point of the tin snips inside the rectangular shape indicated by the dotted line.

Proceed cutting on the dotted line. Save this piece of metal for use in the next step.

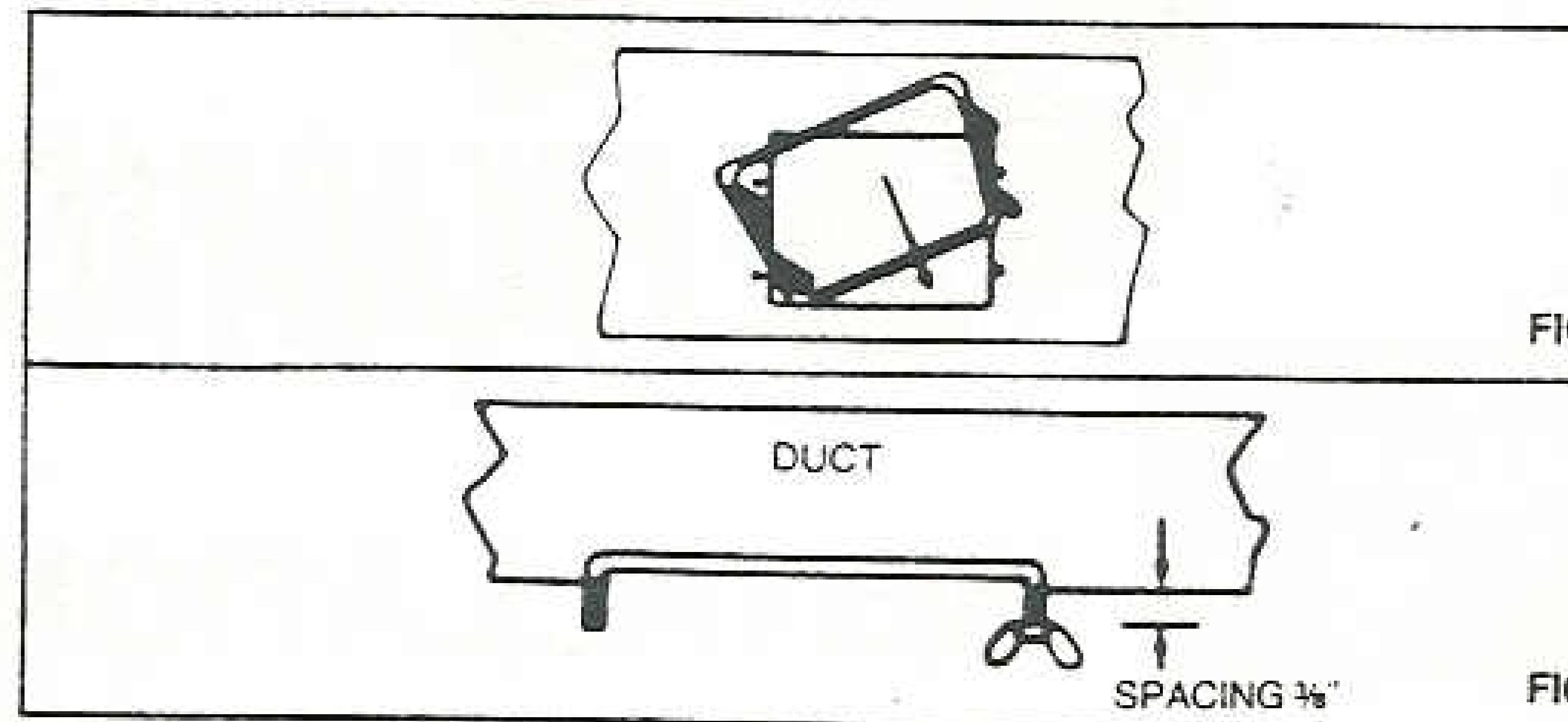
You are now at the most important point of the installation!

Because of the uneven air flow in some parts of a furnace duct, it is very important to place a deflector in the roof of the duct 2 inches upstream of humidifier as in Fig. 3. Use the two sheet metal screws (packed with the fasteners) to mount such a deflector. Use the metal removed from the duct to form the deflector. The deflector should be at least as long as the humidifier and about 4 to 5 inches wide. Mount the deflector at a right angle to the air flow in the duct.

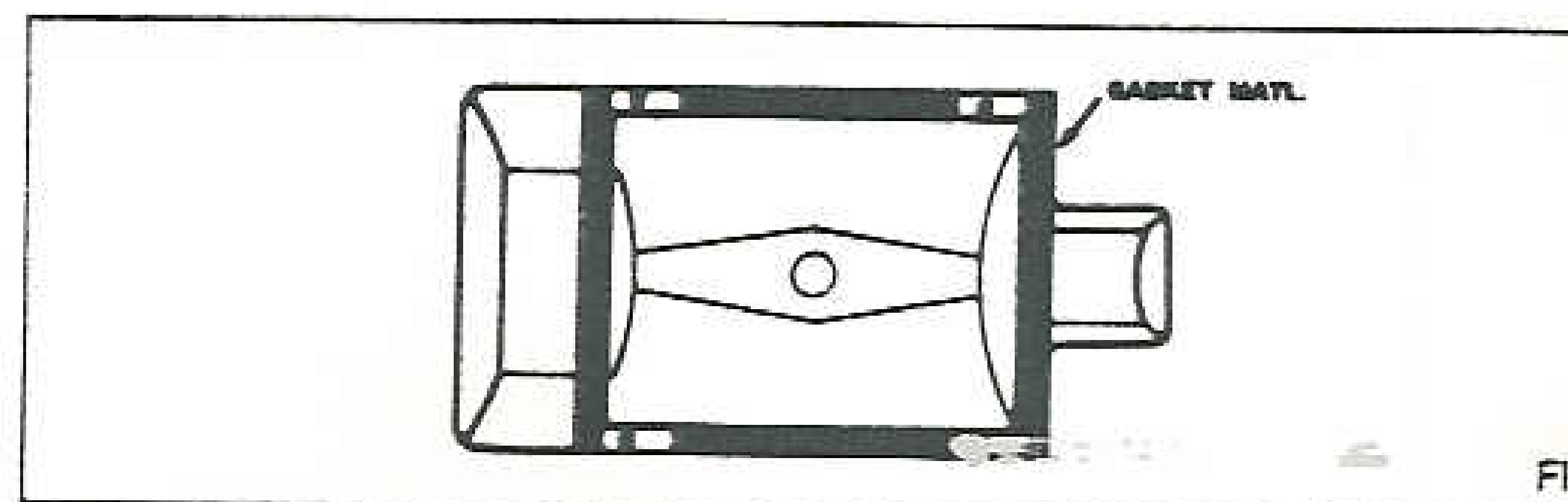


Step Five As shown in Fig. 4, angle the metal frame which fits around the top of your humidifier into the opening and lower it so that the bolts stick down through the 4 holes you drilled previously. Thread on two of the wing nuts (included in the parts bag) to one side of the frame. Leave a space of

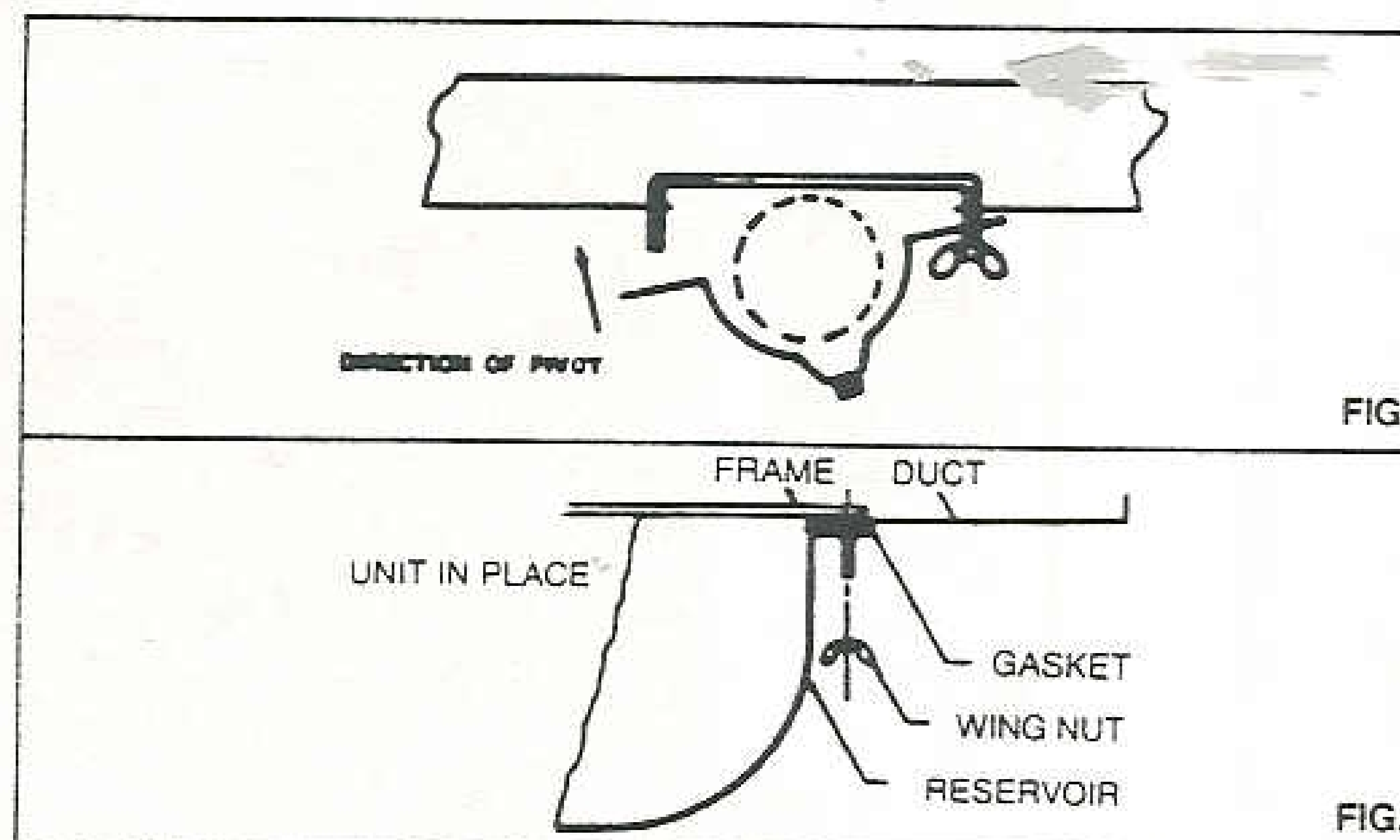
about 3/8" between the wing nut and the furnace duct. (See Fig. 4B). The frame will not only support the water reservoir, but will strengthen the duct



Step Six Four lengths of special gasket material are provided. When the frame is in place, fit each length of gasket material to the flange of the humidifier (see Fig. 5). Note that the gasket has a backing which is a pressure sensitive adhesive. Peel off this backing and place each length of gasket in position.

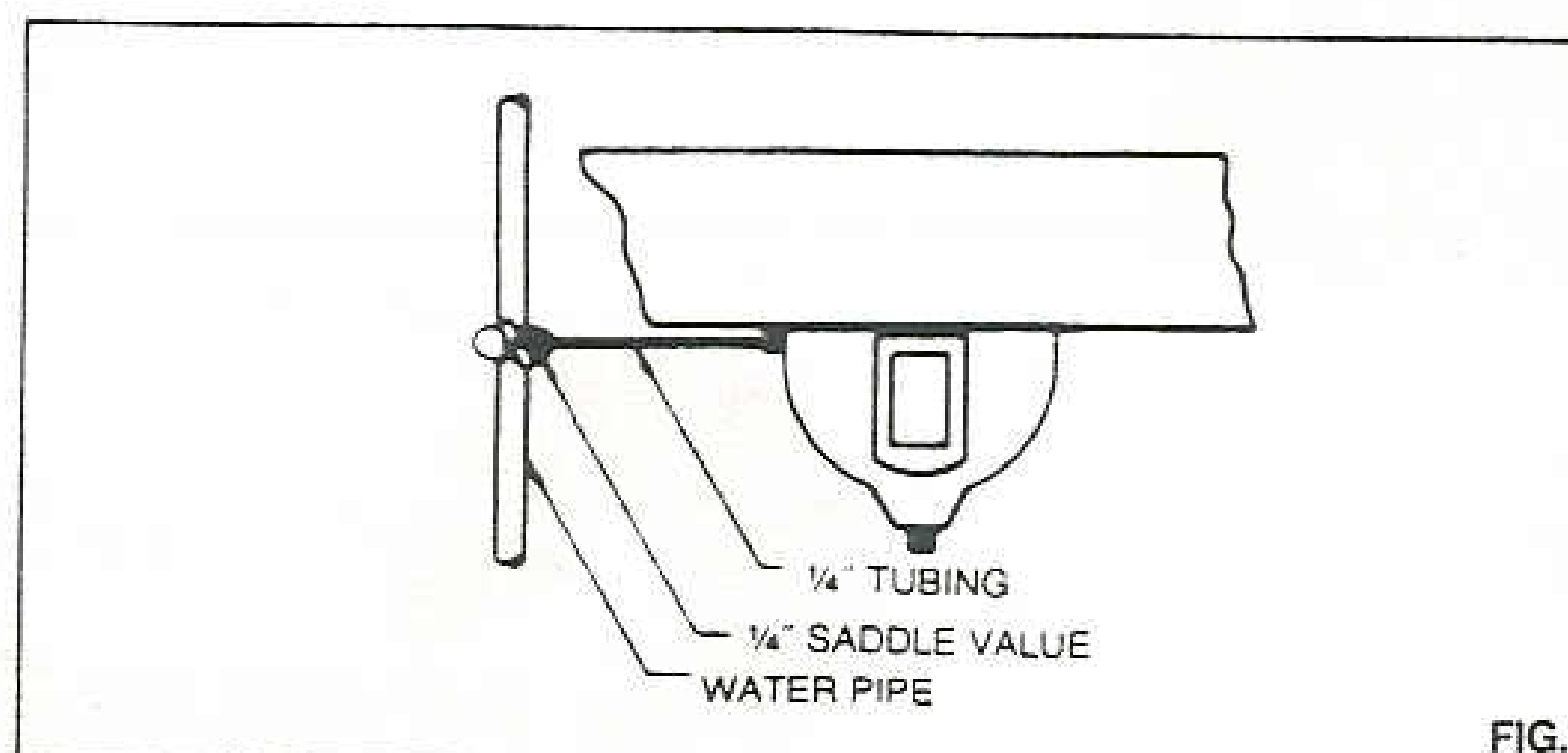


Step Seven Carefully lift the humidifier flange into the space between the wing nuts (which were previously threaded on) and the duct. Now push the reservoir into its final position and tighten all wing nuts. (Fig. 6A and



Step Eight Attach the saddle-valve included to the nearest cold water pipe available and run copper tubing from the saddle-valve to the water inlet on your humidifier. A wing nut type compression nut and ring for attaching tubing to the water inlet are provided. (The required length of tubing can be purchased at any hardware or plumbing store.)

NOTE: If, under extremely high water pressures an overflow condition exists, the Model FH-1000 has an adjustable float. Loosen the knurled nut at the fitting, and adjust as required.



TIPS ON SERVICING YOUR HUMIDIFIER

1. Draining The Unit

Regular draining of your humidifier is important. During the first two weeks of operation, the unit's output is extremely high. A considerable amount of lime and other residue is left suspended in the water in the reservoir. After two weeks, remove the drain cap on the bottom of the unit, and drain approximately one bucketful of water. After this original draining, follow this draining schedule:

- 0- 5 grains hard water — once per heating season*
- 5-10 grains hard water — twice per heating season*
- 10-20 grains hard water — four times per heating season*
- 20 and above — one each month during the heating season*

This draining process should be followed even though your home has a water softener. Regular draining removes the excess lime deposits which are washed off in the reservoir, and will lengthen the life of the discs.

*Contact your water department for the grains of hardness of your local water supply.

2. Cleaning The Unit

First, unless the discs are thicker than approximately $\frac{1}{8}$ " we suggest they not be cleaned. They may well be working more efficiently with the extra surface created by the lime. The only time the reservoir needs cleaning is when the layer of lime on the inside surface has thickened to the point where the discs touch or when the discs appear to be limed thicker than $\frac{1}{8}$ ".

For cleaning either the reservoir, the disc assembly, or both, first remove the unit from its mounting and fill it to the normal level with water. Second, if it is possible to set it somewhere near the furnace, plug the unit in with the furnace fan running so that the discs are turning.

If the unit cannot be plugged in so that the discs are turning during the cleaning, manually remove them and turn them over several times during the cleaning.

(a) For ALUMINUM disc units.

Pour two pints of household vinegar or regular residential humidifier cleaner into the reservoir. Allow the discs to turn for about fifteen minutes or until the mineral deposits have dissolved.

(b) For BRONZE disc units ONLY.

Pour from two to four pints of Muriatic Acid into the unit. This acid is inexpensive and obtainable at most hardware stores. It cannot damage any part of the humidifier. In most cases, the cleaning process is complete in from five to ten minutes. Rather irritating fumes can be generated, so be sure the area is well ventilated.

If the unit cannot be plugged in so that the discs are turning during the cleaning, manually remove them and turn them over several times during the cleaning.

Muriatic Acid is a weak solution of hydrochloric acid. You weaken it even further when you dilute it with the water in the reservoir. However, IT IS AN ACID and must be considered dangerous for children.

The straight Muriatic Acid can damage clothing and any spilled directly on your hands should be washed off immediately. We also suggest that you discard any surplus that you do not use.

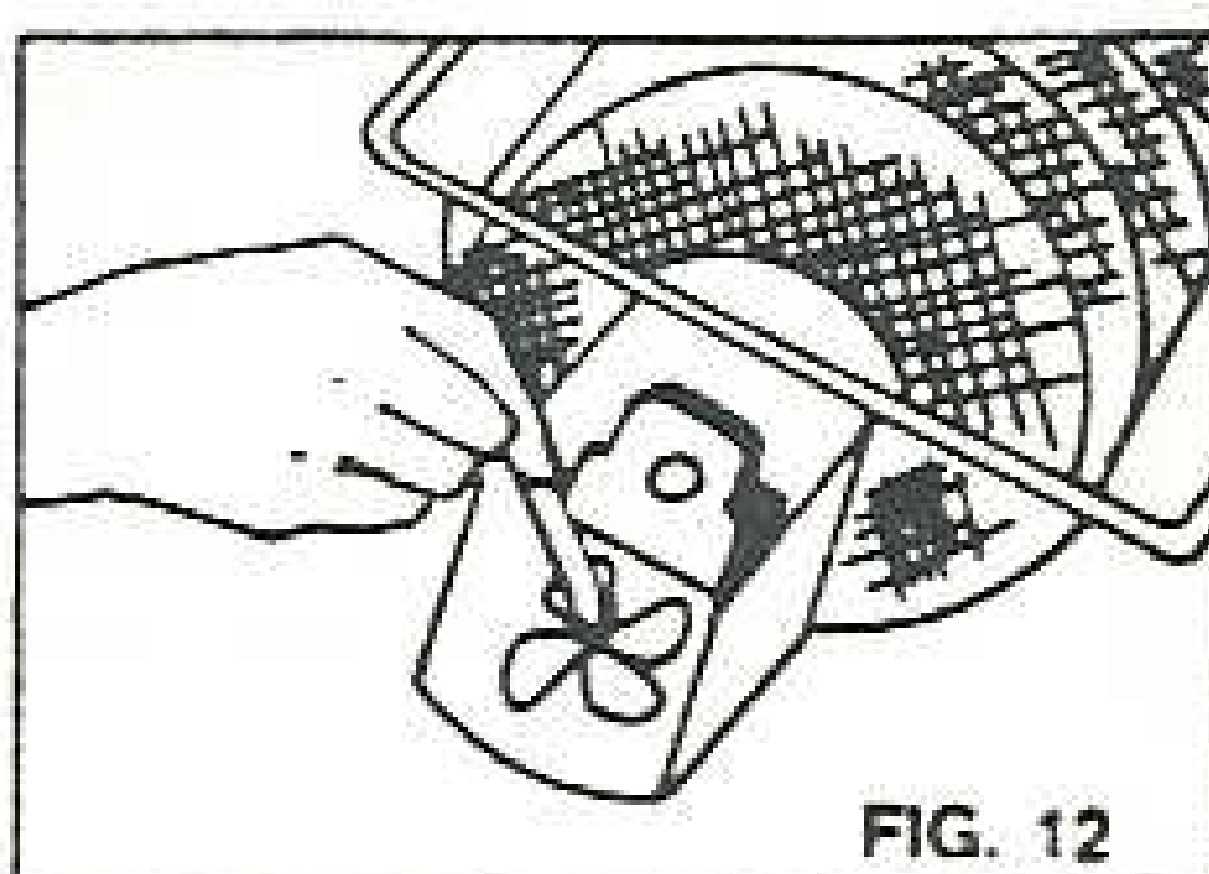
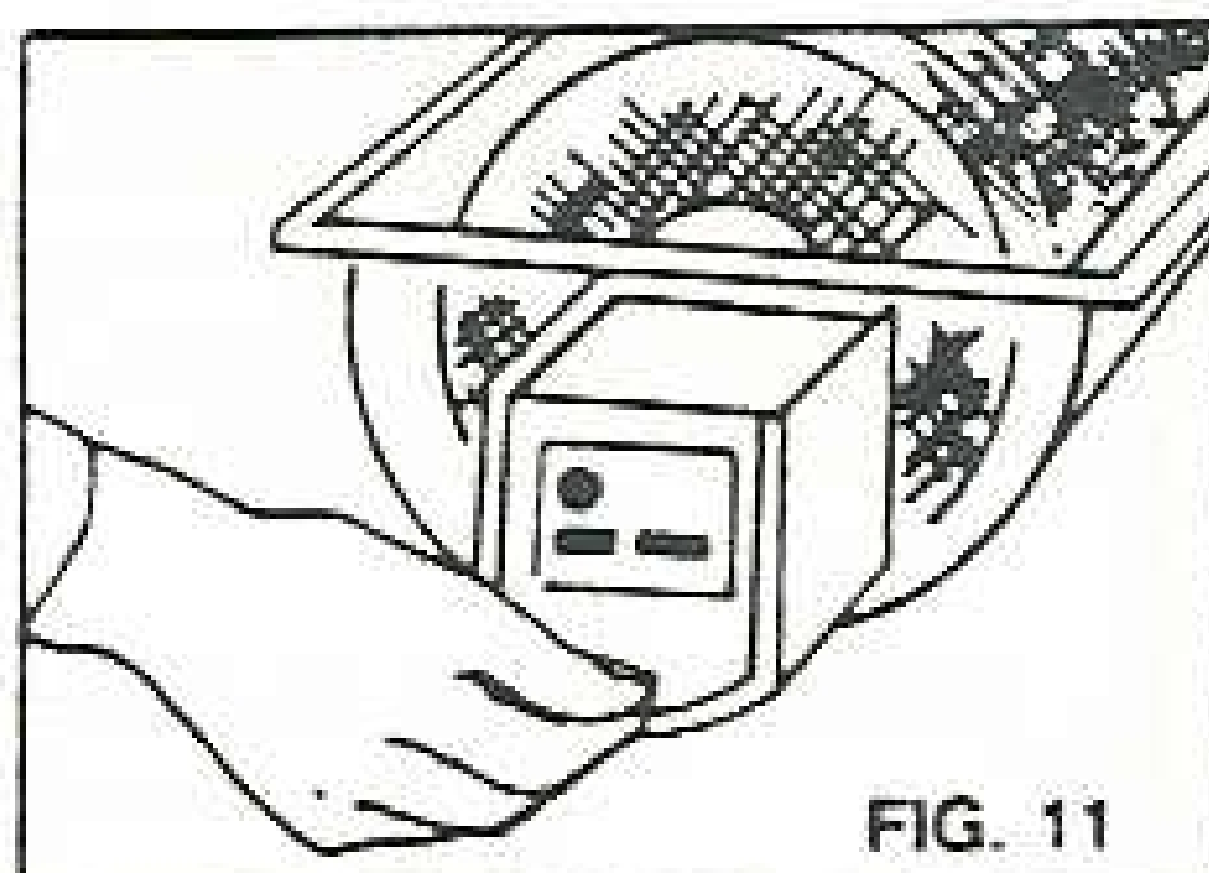
After completing 2(a) OR (2b).

Rinse the discs and reservoir with cold water. Remount the reservoir, reconnect the water and electricity and allow the reservoir to fill with clean water.

3. Oiling The Humidifier Motor

Oil your humidifier motor annually. It takes just a few seconds and will increase the lifespan of your motor by many years.

- A. Remove power cord.
- B. Remove cover gently by turning knurled screw (Fig. 11)
- C. Put 5 drops of good quality electric motor oil at openings indicated by pencil. (Not 3-in-1 oil.) Figure 12.
- D. Replace cover.



4. Over Humidification

Your humidifier will maintain relative humidity between 30 and 45 percent when sized and installed. 35 to 40% is considered perfect at room temperature. Your home may maintain this level without a humidistat through natural law; however a humidistat is recommended. In simple terms, dry air will pick up a lot of moisture swiftly. Moisture will pick up additional moisture at a progressively slower rate. Air passes between discs in about 1/10 of a second. As it begins to approach the optimum 35 to 40% it picks up less and less on each passage through the furnace. Because the burner is constantly taking air from the house and forcing it up the chimney, fresh air is constantly infiltrating the house. This fresh air needs humidity. The net result is a mixture of air passing approximately six times through the humidifier from the time it enters the house until it is forced out through the chimney. This limits the amount of moisture the air has an opportunity to pick up and provides the natural condition mentioned. It is practically impossible for a properly sized and installed humidifier to bring the humidity in a home above 50%.

The humidifier, being a machine, has no way of knowing whether or not the humidity is "take" 35 to 40%. Where there is any surface in the house (the most common example is such a surface as the windows) cooled below the dew point temperature, condensation will result. The cooler that surface gets, the more condensation will take place. If the surface drops below 32 degrees, the condensation freezes and icing results.

In a properly constructed home with Thermo Pane windows or properly fitted windows, research has shown that an outside temperature of zero will just begin condensation on windows. Improper construction, metal casement windows, in fitted storm windows, will start this condensation before zero is reached and may require the installation of a humidistat to cut the inside relative humidity to a tolerable level. Remember that the humidistat is only a device for controlling humidity, not for increasing it. It does not increase the humidifier's capacity.

5. Under-Humidification

If the humidifier is not maintaining a reading somewhere in the range of 30 to 45 percent during average winter weather, look for other causes.

Here are the most common causes of underhumidification in the order of their occurrence:

- A. The water valve has not been turned on, or the waterline is clogged.
- B. A fireplace flue has been left open. This not only increases heating costs, but brings in more fresh air than the humidifier can handle.
- C. The adaptor opening has been cut improperly. (See instructions on installation.)
- D. No deflector has been mounted or the deflector has been mounted in the wrong position.
- E. The wrong size unit has been installed.
- F. The bedroom windows are opened at night. This has the same effect as a fireplace flue being open and contrary to popular belief, actually tends to dry the house more.
- G. A fresh air intake has been installed on the furnace (rare in a home installation). Same effect as E. above.
- H. The motor is inoperative because of lack of oiling.
- I. The discs are limed thicker than $\frac{1}{8}$ " and the entire unit needs cleaning.
- J. A zoned heating system has automatic dampers in the ducts and the humidifier may have been installed on a duct that is closed most of the time.

CAUTION

When a multi-speed blower is in the furnace, a sail-switch humidistat must be used to prevent motor coil burnout as a result of high voltage feedback when the furnace blower operates at high speeds for air conditioning.



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