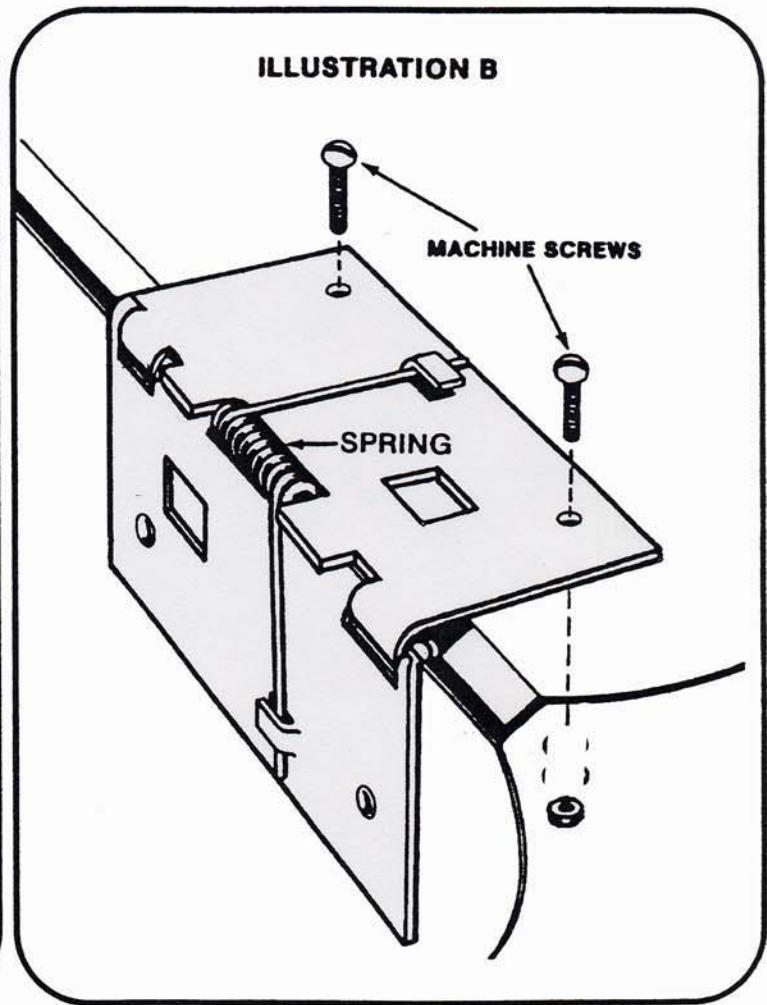
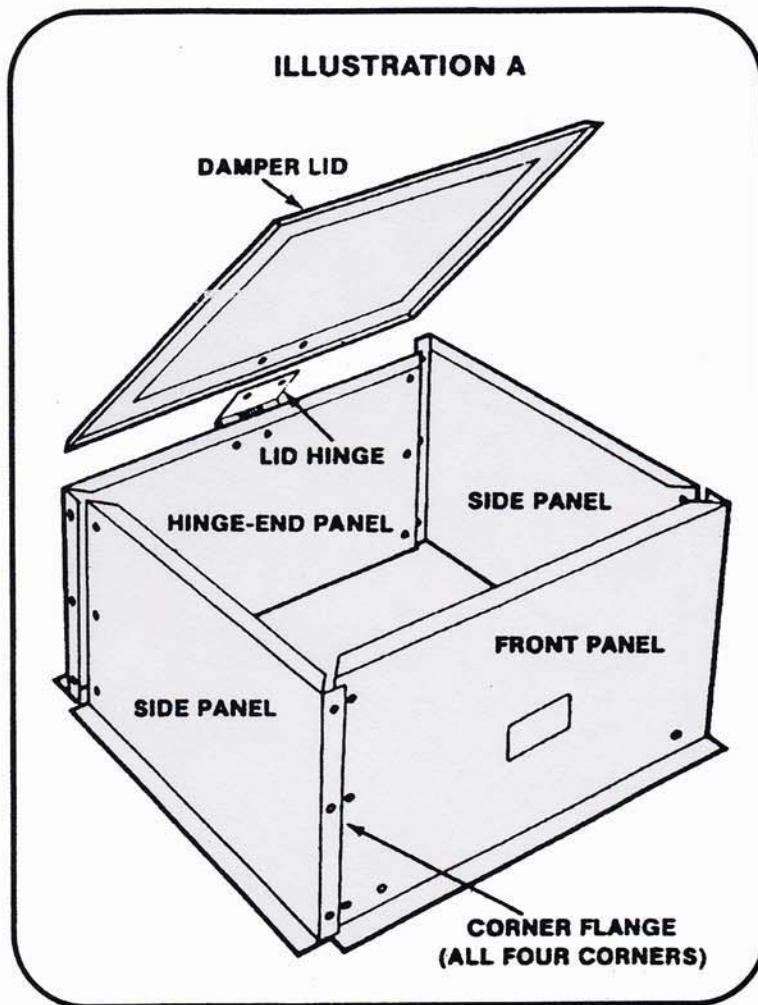


Assembly Instructions

Up-dux® Ceiling Vent Economy Model TPS-101

1. After carefully removing packing tape from sleeve sections, use the 1/4" screws to loosely join both SIDE panels to the HINGE-END panel. Then, fasten the FRONT panel into position. **VERY IMPORTANT:** Each of the 4 CORNER FLANGES must lap OVER the OUTSIDE surface of the end of the panel to which it is fastened. See illustration A.
2. With unit resting on flat, level surface, sleeve corners will fall into their proper 90° alignment. All corner screws may now be securely tightened. (Take care, though, NOT to over-tighten!)

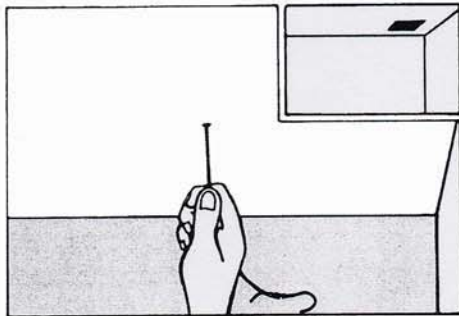


3. Next, referring to illustration B, loosely mount the aluminum barometric damper lid. With the LID HINGE BALANCING SPRING in position, tighten the machine screw nuts. **HINT:** If either of the front lid corners does not seat reasonably well on the rubber gasketing, carefully "tweak" UPWARDLY the diagonally opposing hinge-end lid corner (as is done—if or when necessary—on final quality control inspection of Mission's factory-assembled Up-dux® ceiling vent models).

Reading these instructions before starting the installations will help make the job go faster and easier. All work can ordinarily be done from below, and there should be no necessity for you to go up into the attic!

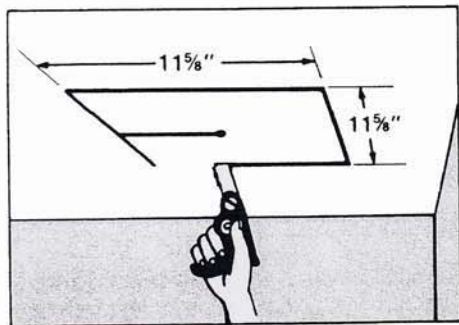
For best air circulation, units should be placed diagonally away from incoming air registers and, depending on the pitch of roof above, position units 18 to 24 inches from the outer house wall.

1. Within the area of the installation location selected, drill a small hole in the ceiling a few inches from the nearest ceiling joist. Through this hole, with a small thin probe such



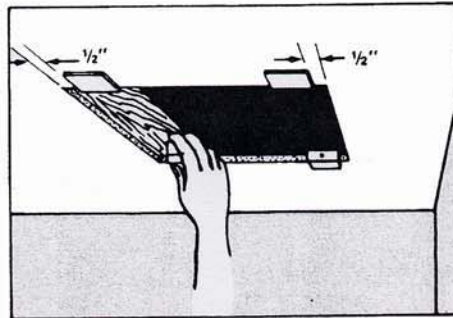
can be formed from a wire coat hanger, check to be certain you will avoid any attic obstruction within the 12" minimum attic clearance limit.

2. From the probe hole, cut to the edge of—but NOT into—the ceiling joist. Next, using the joist as a guide, make a smooth cut 11-5/8" along its length as one of the sides of the square opening into which your unit will be installed. From each end of the base line cut, now measure out

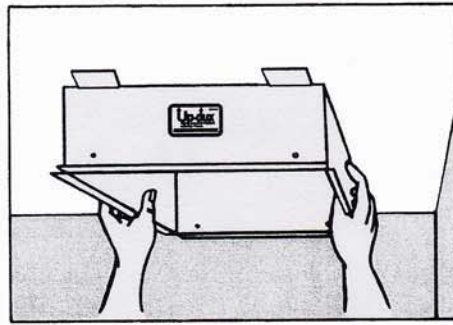


and away from the ceiling joist a distance of 11-5/8". Then, recheck all of your measurements and right angles and scribe the cutting lines. Now, cut out the square. (Height of ceiling insulation around the opening MUST NOT EXCEED 6".)

3. Included with each unit are four 2" wide "L" shaped installation clips, pre-punched with screw holes. One clip is required to properly support each corner of the unit. The front

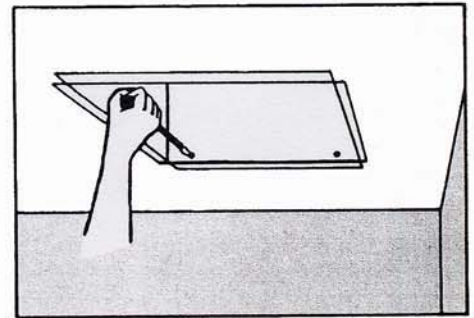


and back panels of the unit have also been pre-punched with matching guide holes. Position and form each clip as follows: With the edge of the clip exactly 1/2" in from the corner of the ceiling opening, as illustrated, and with the bottom of the "L" held firmly up against the ceiling, press the top edge forward and downward, thereby bending the clip to tightly fit the thickness of the plaster board ceiling panel.

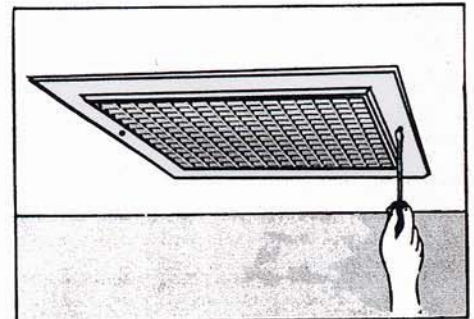


4. Being careful not to damage the aluminum lid, slide the unit into the opening—with hinged end toward the outside house wall, as shown. Now, from the plastic envelope packed with your unit, remove the four 1/4" mounting clip screws.

5. Very carefully align the holes in the installation clips with the guide holes in the unit's front and back panels. Insert mounting clip screws to secure the unit in position.



6. Remove the protective packing from grille. Using the 1/2" long screws provided, mount the grille in position on the unit, taking care to allow only minimal tension between mounting screw heads and the grille. DO NOT overtighten the mounting screws since this will cause the permanent warping of the entire grille frame (which cannot be considered for factory warranty adjustment OR the replacement of your grille.)



IMPORTANT! PLEASE NOTE!

A slide-in ThermaPanel™ has been included with each grille for your use during periods when the cooler is not in operation. (The grille and Therma-Panel™ may be cleaned with a mild detergent in COOL water.)

YOUR SATISFACTION IS MOST IMPORTANT! FOR BEST RESULTS WITH HIGH SPEED COOLER OPERATION, YOU WILL NEED ONE UP-DUX® VENT FOR EACH 900 CFM OF COOLER'S RATED CAPACITY. ALLOW 100 SQUARE INCHES OF ROOFTOP OR GABLE-END ATTIC VENTING FOR EACH UP-DUX® PRODUCT INSTALLED. GARAGE INSTALLATIONS ARE NOT CODE-APPROVED!

ATTIC VENTILATION RECOMMENDATIONS FOR BEST EVAPORATIVE COOLER OPERATING PERFORMANCE

Instructions: (A) Measure home's total living area. (B) Calculate gross square footage of attic ventilation louvers. (C) Apply data from chart.

Approximate overall square footage of living areas of structure = outside W. x L. (with typical 8' ceilings)	1,030 Gross Sq-Ft	1,250 Gross Sq-Ft	1,400 Gross Sq-Ft	1,500 Gross Sq-Ft	1,800 Gross Sq-Ft	2,400 Gross Sq-Ft	2,700 Gross Sq-Ft
Approximate net square foot area of home (inside living space after deducting walls, closets, etc.)	850 Net Sq-Ft	1,030 Net Sq-Ft	1,180 Net Sq-Ft	1,280 Net Sq-Ft	1,565 Net Sq-Ft	2,060 Net Sq-Ft	2,400 Net Sq-Ft
Indicated nominal gross capacity of existing or proposed evaporative cooling unit(s)	3,300 Nom.Hi-Spd C-F-M	4,000 Nom.Hi-Spd C-F-M	4,500 Nom.Hi-Spd C-F-M	5,500 Nom.Hi-Spd C-F-M	6,500 Nom.Hi-Spd C-F-M	7,500 Nom.Hi-Spd C-F-M	8,500 Nom.Hi-Spd C-F-M
Approximate net capacity of cooler at .3" external static pressure (or "air friction.")	2,800 Net Hi-Spd C-F-M	3,380 Net Hi-Spd C-F-M	3,900 Net Hi-Spd C-F-M	4,240 Net Hi-Spd C-F-M	5,160 Net Hi-Spd C-F-M	6,800 Net Hi-Spd C-F-M	7,860 Net Hi-Spd C-F-M
Approximate cubic foot per minute per square foot of net home area	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Number of minutes required for complete change of home air	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Square feet of 60% free-air attic louver face area required for adequate attic ventilation	5.7	6.8	7.8	8.5	10.3	13.6	15.7
Possible minimum existing square foot face area of 60% free-air attic venting	3.1	3.7	4.2	4.5	5.4	7.2	8.1
Possible square foot deficiency of existing attic ventilation of 60% free-air face area louvers	2.6	3.1	3.6	4.0	4.9	6.4	7.6

SUGGESTED OPTIONS FOR THE IMPROVEMENT OF ATTIC VENTILATION

Increase sq. ft. face area of existing 60% free-air gable-end or other attic venting louvers	2.6 Sq-Ft	3.1 Sq-Ft	3.6 Sq-Ft	4.0 Sq-Ft	4.9 Sq-Ft	6.4 Sq-Ft	7.6 Sq-Ft
<u>OR</u> add rotary roof ventilators to compensate for inadequate existing ventilation louver area	2 - 12"	3 - 12"	3 - 12"	3 - 12"	4 - 12"	5 - 12"	6 - 12"

NOTE: Guidelines suggested may not reflect specific conditions of any individual home or the performance of any specific evaporative cooling unit since data is based on factors calculated from presumed overall averages, assumed to be typical. INSTALL 1 UP-DUX CEILING VENT FOR EACH 900 C.F.M. OF COOLER'S NOMINALLY RATED HIGH SPEED AIR FLOW CAPACITY!