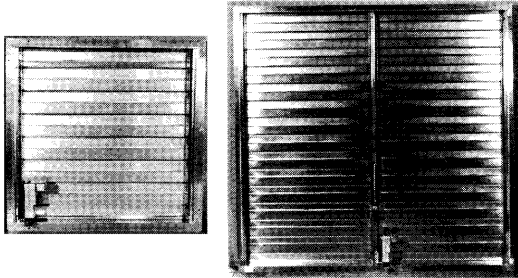




Assembly Instructions For Motorizing WAG, WAA, WAGC & WAAC Single & Double Panel Backdraft Dampers

This CAM motor operation package consists of four major components; motor with base, CAM assembly (with pull spring, CAM pulley and spring retainer) and hardware. Follow steps in sequence for best results.



Make all electric connections using good wiring practices and in accordance with National Electric Code and any local codes.

HINTS (A) On new installations, assembly of the motorizing kit would be more easily done prior to installing the damper.

(B) DO NOT ATTACH THE CAM OPERATOR TO THE MOTOR UNTIL THE CAM ASSEMBLY IS ATTACHED TO THE BACKDRAFT DAMPER LADDER BAR AND THE MOTOR IS ATTACHED TO THE BACKDRAFT DAMPER FRAME.

SINGLE PANEL INSTRUCTIONS

1. Refer to Chart 2 on page 5 for proper retainer hole location. Attach the pull spring retainer to the backdraft damper ladder bar using two (2) bolts and lock nuts. Opening the unit will give easy access to the ladder bar.
2. Mount the motor and base using three (3) No. 8 screws (and three (3) speed nuts on aluminum frames) by aligning the slots in the motor with the three (3) holes in the frame. (Note: On some models the backdraft damper frame is not pre-drilled. In this case, use the motor base as a template to locate the proper locations. For single panel units, the motor base should fit in the lower left corner of the backdraft damper as viewed from the inlet side. The motor base should be square to the backdraft damper. Self drilling screws can be used to secure the motor base to the backdraft damper frame. As an alternate to the self drilling screws, .125" diameter holes can be pre-drilled to use the #8 screws provided in the motor kit.
3. Attach the CAM pulley to the motor shaft. Position the CAM assembly so that approximately 1/8" of the motor shaft is showing through the CAM pulley, then tighten the cam clamp bolt.
4. Check to see that all other bolts in the assembly are tight.

Step 1 **TOP VIEW**

IMPORTANT
ASSEMBLE IN THIS MANNER:
Bolt through ladder bar first, then retainer, then lock nut.

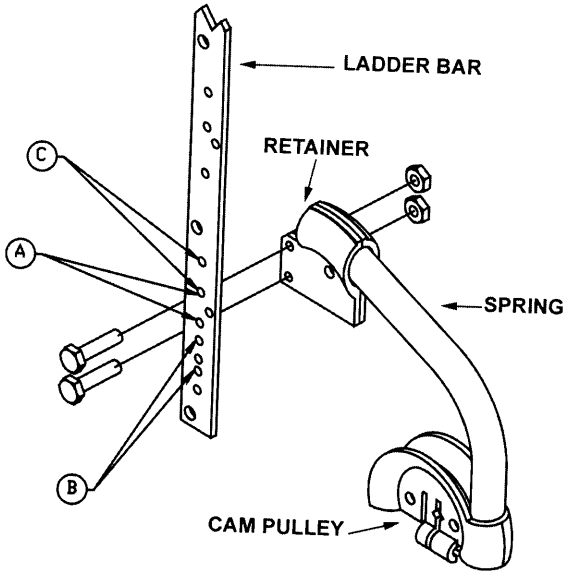
Step 2

Step 3

DOUBLE PANEL INSTALLATION - WAGC & WAAC

Step 1

Refer to chart 1 for proper retainer hole location. Attach the pull spring retainer to the backdraft damper ladder bar using two (2) bolts and lock nuts. Opening the unit will give easy access to the ladder bar.



IMPORTANT

ASSEMBLE IN THIS MANNER:

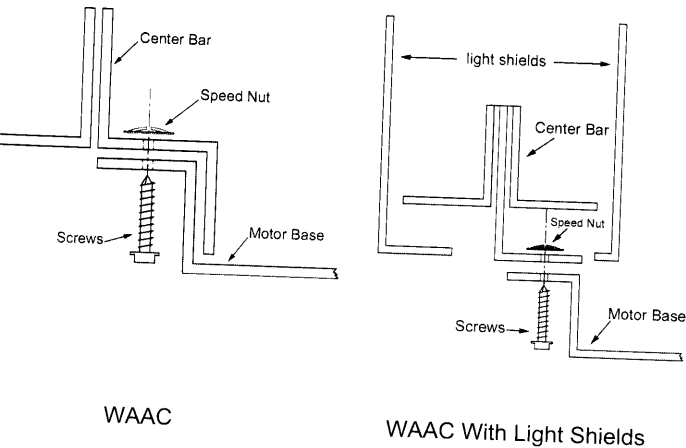
Bolt through the ladder bar first, then retainer, then lock nuts.

CHART 1
MATCH RETAINER HOLE LOCATION TO BACKDRAFT DAMPER MODEL SIZE BELOW

A	B	C	C
	4040	4141	4242
4343	4444	4545	4646
4747	4848	4949	5050
5151	5252	5353	5454
5555	5656	5757	5858
5959	6060	6161	6318
6363	6340	6565	6362
6767	6464	6969	6262
7171	6868		6666
	7272		7070

Step 2

Mount the motor and base as shown using three (3) No. 8 screws (and three (3) speed nuts on aluminum frames) by aligning the slots in the base with the three (3) holes in the frame and center bar.



WAAC

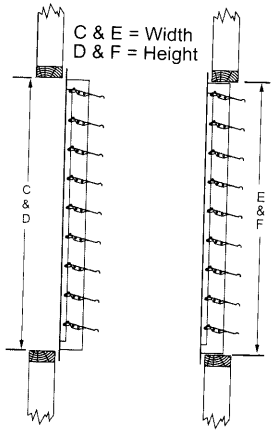
WAAC With Light Shields



Step 3

Attach the CAM pulley to the motor shaft. Position the CAM assembly so that approximately 1/8" of the motor shaft is showing through the CAM pulley then tighten the Cam clamp bolt.

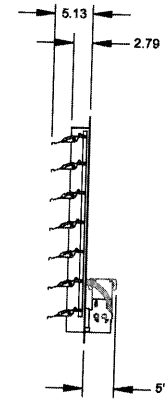
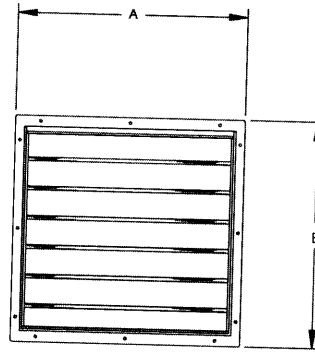
BACKDRAFT DAMPER INSTALLATION - WAGC, WAAC, WAA & WAG



Outside Wall

Thru Wall

Be sure the bottom blade does not rub the framing.



MODEL	A	B	Outside Wall		Thru-Wall		Number of Panels	Number of Motors
			C	D	E	F		
	IN	IN	IN	IN	IN	IN		
1212	12.00	12.00	9.00	9.00	9.75	10.32	1	1
1313	13.00	13.00	10.00	10.00	10.75	11.32	1	1
1414	14.00	14.00	11.00	11.00	11.75	12.32	1	1
1515	15.00	15.00	12.00	12.00	12.75	13.32	1	1
1616	16.00	16.00	13.00	13.00	13.75	14.32	1	1
1717	17.00	17.00	14.00	14.00	14.75	15.32	1	1
1818	18.00	18.00	15.00	15.00	15.75	16.32	1	1
1919	19.00	19.00	16.00	16.00	16.75	17.32	1	1
2020	20.00	20.00	17.00	17.00	17.75	18.32	1	1
2121	21.00	21.00	18.00	18.00	18.75	19.32	1	1
2222	22.00	22.00	19.00	19.00	19.75	20.32	1	1
2323	23.00	23.00	20.00	20.00	20.75	21.32	1	1
2424	24.00	24.00	21.00	21.00	21.75	22.32	1	1
2525	25.00	25.00	22.00	22.00	22.75	23.32	1	1
2626	26.00	26.00	23.00	23.00	23.75	24.32	1	1
2727	27.00	27.00	24.00	24.00	24.75	25.32	1	1
2828	28.00	28.00	25.00	25.00	25.75	26.32	1	1
2929	29.00	29.00	26.00	26.00	26.75	27.32	1	1
3030	30.00	30.00	27.00	27.00	27.75	28.32	1	1
3131	31.00	31.00	28.00	28.00	28.75	29.32	1	1
3232	32.00	32.00	29.00	29.00	29.75	30.32	1	1
3333	33.00	33.00	30.00	30.00	30.75	31.32	1	1
3434	34.00	34.00	31.00	31.00	31.75	32.32	1	1
3535	35.00	35.00	32.00	32.00	32.75	33.32	1	1
3636	36.00	36.00	33.00	33.00	33.75	34.32	1	1
3737	37.00	37.00	34.00	34.00	34.75	35.32	1	1
3838	38.00	38.00	35.00	35.00	35.75	36.32	1	1
3939	39.00	39.00	36.00	36.00	36.75	37.32	1	1
4040	40.00	40.00	37.00	37.00	37.75	38.32	1	1
4141	41.00	41.00	38.00	38.00	38.75	39.32	2	1
4242	42.00	42.00	39.00	39.00	39.75	40.32	2	1
4343	43.00	43.00	40.00	40.00	40.75	41.32	2	1
4444	44.00	44.00	41.00	41.00	41.75	42.32	2	1
4545	45.00	45.00	42.00	42.00	42.75	43.32	2	1
4646	46.00	46.00	43.00	43.00	43.75	44.32	2	1
4747	47.00	47.00	44.00	44.00	44.75	45.32	2	1
4848	48.00	48.00	45.00	45.00	45.75	46.32	2	1
4949	49.00	49.00	46.00	46.00	46.75	47.32	2	1
5050	50.00	50.00	47.00	47.00	47.75	48.32	2	1
5151	51.00	51.00	48.00	48.00	48.75	49.32	2	1
5252	52.00	52.00	49.00	49.00	49.75	50.32	2	1
5353	53.00	53.00	50.00	50.00	50.75	51.32	2	1
5454	54.00	54.00	51.00	51.00	51.75	52.32	2	1
5555	55.00	55.00	52.00	52.00	52.75	53.32	2	1
5656	56.00	56.00	53.00	53.00	53.75	54.32	2	1
5757	57.00	57.00	54.00	54.00	54.75	55.32	2	1
5858	58.00	58.00	55.00	55.00	55.75	56.32	2	1
5959	59.00	59.00	56.00	56.00	56.75	57.32	2	1
6060	60.00	60.00	57.00	57.00	57.75	58.32	2	1
6161	61.00	61.00	58.00	58.00	58.75	59.32	2	1
6262	62.00	62.00	59.00	59.00	59.75	60.32	2	1
6318	63.00	18.00	60.00	15.00	60.75	16.32	2	1
6340	63.00	40.00	60.00	37.00	60.75	38.32	2	1
6362	63.00	62.00	60.00	59.00	60.75	60.32	2	1
6363	63.00	63.00	60.00	60.00	60.75	61.32	2	1

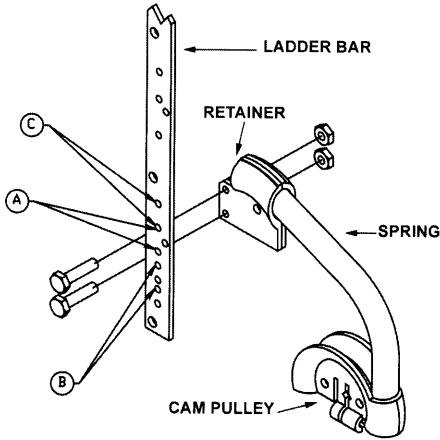
The framed opening can be calculated for backdraft damper sizes not shown. For units mounted outside the wall, subtract 3 inches from the width and height dimension of the backdraft damper. For units mounted through the wall, subtract 2.25 inches from the width and subtract 1.68 inches from the height. Be sure the bottom blade does not rub the framing.

*WAGC and WAAC 1 Panel

DOUBLE PANEL INSTALLATION - WAG & WAA

Step 1

Refer to chart 2 for proper retainer hole location. Attach the pull spring retainer to the backdraft damper ladder bar using two (2) bolts and lock nuts. Opening the backdraft damper will give easy access to the ladder bar.



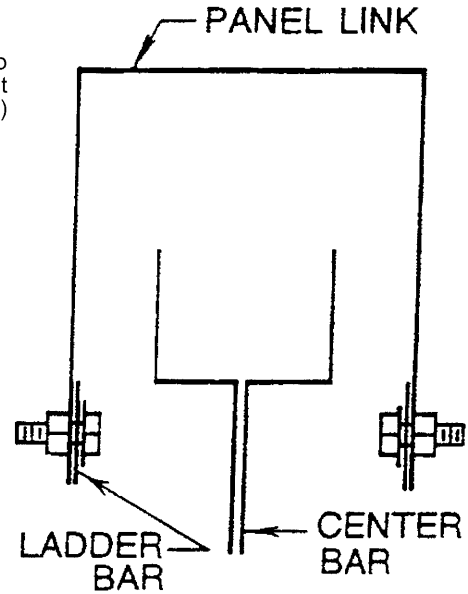
IMPORTANT

ASSEMBLE IN THIS MANNER:

Bolt through the ladder bar first, then retainer, then lock nuts.

Step 4 (For Existing Installation)

Attach the panel connecting link to the two center ladder bars, at holes provided in the ladder bars, using four (4) No. 8 x 5/8" bolts and lock nuts.

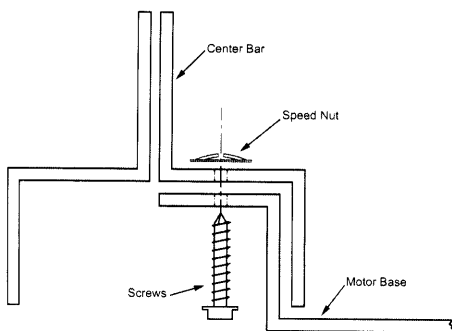


IMPORTANT

Assemble in this manner. Bolt through ladder bar first, then panel link, then lock nuts.

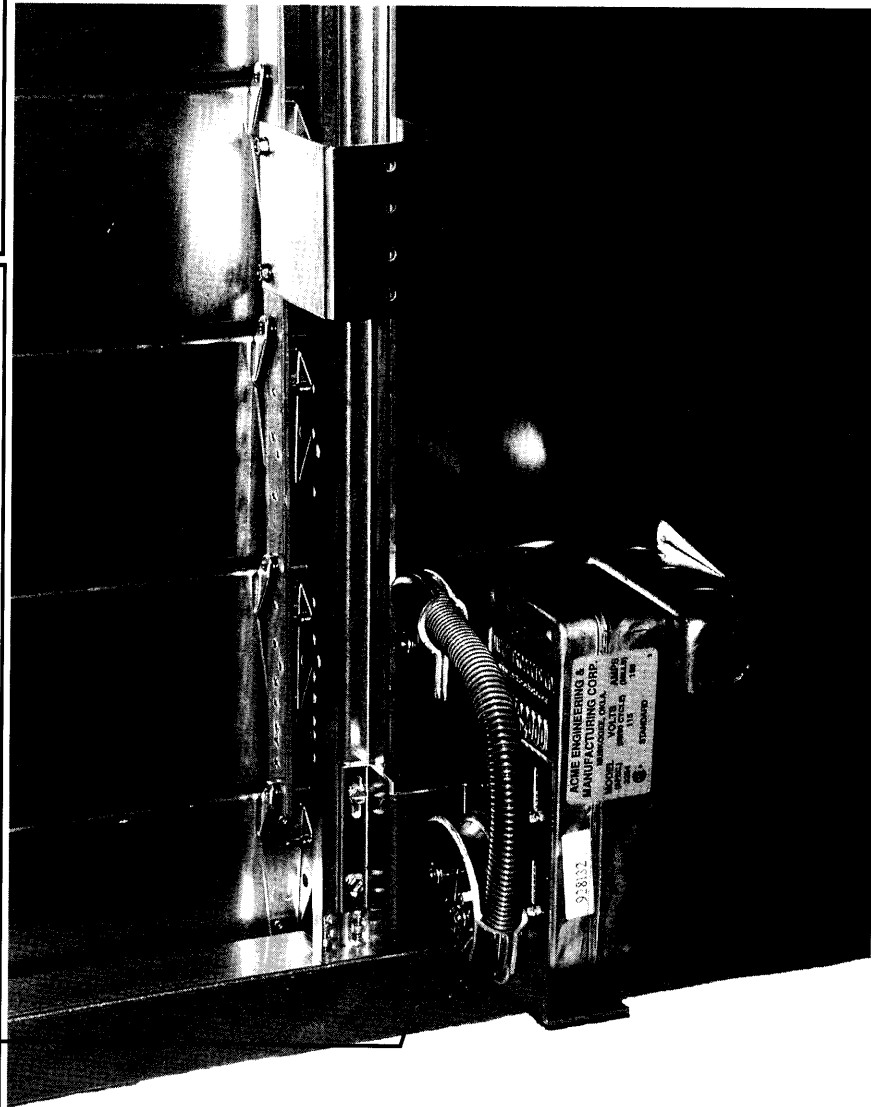
Step 2

Mount the motor and base as shown using three (3) No. 8 screws (and three (3) speed nuts on aluminum frames) by aligning the slots in the base with the three (3) holes in the frame and center bar.



Step 3

Attach the CAM pulley to the motor shaft. Position the CAM assembly so that approximately 1/8" of the motor shaft is showing through the CAM pulley then tighten the CAM clamp bolt.



NOTE: Return Spring is not required on this unit.

BACKDRAFT DAMPER - WAG & WAA

Preparing Backdraft Damper For Existing Installations

Mounting holes need to be provided to the motor base in the backdraft damper frame and center bar (double panel) and for the spring retainer in the ladder bar.

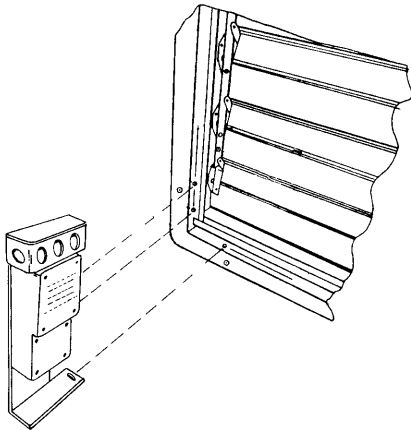
1. USING THE MOTOR BASE AS A TEMPLATE.

A. On single panel units, drill (3) holes in the lower left hand corner of the backdraft damper frame:

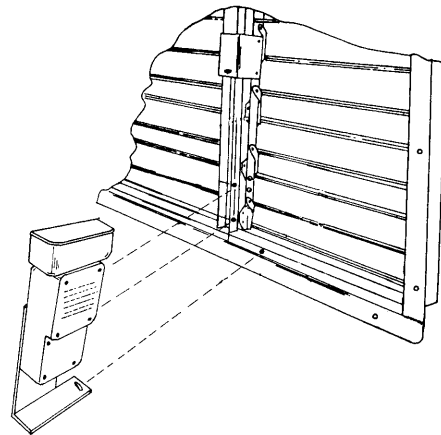
B. On double panel units, drill (2) holes in the center bar on the right hand leg and (1) hole in the backdraft damper frame. Be sure to locate the motor base inside the channel of the center bar. (See step 2, Page 2)

2. Locate the backdraft damper size (outside dimensions) on the chart below and select the proper retainer hole locations. Mark the ladder bar and drill (2) 11/16" holes.

3. Follow assembly instructions on page 1 (single panel) or page 2 (double panel) to complete the installation.



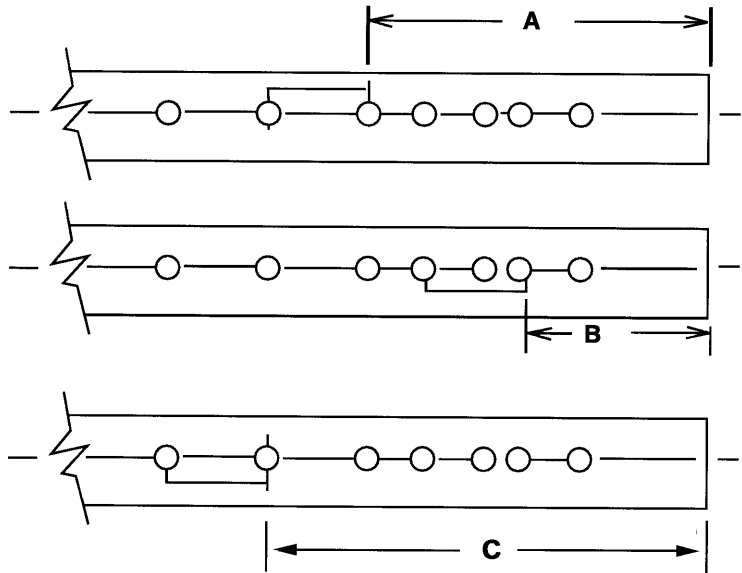
SINGLE PANEL



DOUBLE PANEL

CHART 2
MATCH RETAINER HOLE LOCATION TO BACKDRAFT DAMPER MODEL SIZE BELOW

A	B	C	C
2 9/32"	1 1/4"	2 15/16"	2 15/16"
	1212	1313	1414
1515	1616	1717	1818
1919	2020	2121	2222
2323	2424	2525	2626
2727	2828	2929	3030
3131	3232	3333	3434
3535	3636	3737	3838
3939	4040	4141	4242
4343	4444	4545	4646
4747	4848	4949	5050
5151	5252	5353	5454
5555	5656	5757	5858
5959	6060	6161	6318
6363	6340	6565	6362
6767	6464	6969	6262
7171	6868		6666
	7272		7070



Sizes 12-39 are single panel units and the remaining sizes are double panel units.

ELECTRICAL CONNECTIONS

Make all electrical connections using good wiring practices and in accordance with National Electric Code and any local code.

When using this motor in a moist environment, incorporate a drip loop in the wiring and/or conduit to prevent water from tracking into the junction box.

When wiring is complete, caulk the wire passage from the junction box into the motor. This will extend the life of the motor.

WARNING

To prevent excessive gaps or binding between the backdraft damper frame and the blades, the following must be observed.

1. Backdraft Damper mounting frame surface must be flat and parallel to the mounting surface of the unit.
2. Backdraft Damper sides, top and bottom must be straight and parallel when mounted to the framed mounting surface.

TERMS AND CONDITIONS

DESIGN CHANGES Acme reserves the right to make changes in design, improvements and additions in and to its products any time without imposing any liability or obligations to itself to apply or install the same in any product manufactured by it.

TITLE The title and right of possession of the equipment sold herein shall remain with the Company and such equipment shall remain personal property until all payments herein (includ-

ing deferred payments whether evidenced by notes or otherwise) shall have been made in full in cash and the Purchaser agrees to do all acts necessary to perfect and maintain such right and title in the Company.

SAFETY ACCESSORIES The Company manufactures equipment designed to serve multiple applications and offers a wide range of safety equipment, including guards and other devices, as may be required to meet customer specifica-

tions. Without exception, the Company recommends that all orders include applicable safety devices. Equipment ordered without applicable safety devices is clearly the responsibility of the Purchaser. Further, the Purchaser warrants that he has determined and acquired any and all safety devices required for equipment sold by the Company. Weather covers and guards for motor and V-belt drives, couplings, shafts and bearings, along with inlet and outlet screens, are optional accessories noted in the price list.

These instructions cover the usual installation, operation and maintenance methods for which the product(s) was designed. They do not purport to cover all details or variations in the product(s) nor to provide for every possible contingency that might be met in connection with the installation, operation and maintenance. For any departures from these instructions, or should particular problems arise which are not covered sufficiently for the purchaser's purpose, the matter should be referred to the Company.

WARNING Acme products are designed and manufactured to provide reliable performance but they are not guaranteed to be 100% free of defects. Even reliable products will experience occasional failures and this possibility should be recognized by the User. If these products are used in a life support ventilation system where failure could result in loss or injury, the User should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

WARNING DO NOT use in HAZARDOUS ENVIRONMENTS where fan's electrical system could provide ignition to combustible or flammable materials unless unit is specifically built for hazardous environments. Comply with all local and national safety codes including the National Electrical Code (NEC) and National Fire Protection Act (NFPA).

CAUTION Guards must be installed when fan is within reach of personnel or within seven (7) feet (2.134 m) of working level or when deemed advisable for safety.

DISCLAIMER The Company has made a diligent effort to illustrate and describe the products in this literature accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions or dimension.

LIMITED WARRANTY

WARRANTY AND DISCLAIMER: Acme Engineering and Manufacturing Corporation extends this limited warranty to the original buyer and warrants that products supplied by the Company, shall be free from original defects in workmanship and materials for two years from date of shipment (except for the warranty periods noted for products listed below), provided same have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to products which have been altered or repaired without the Company's express authorization, or altered or repaired in any way so as, in the Company's judgment, to affect its performance or reliability, nor which have been improperly installed or subjected to misuse, negligence, or accident, or incorrectly used in combination with other substances. The Buyer assumes all risks and liability for results of use of all products.

Evaporative cooling pads are warranted to be free of defects in materials and workmanship for a period of two years from date of shipment provided same have been properly handled, stored, installed, serviced, maintained and operated; and further, not subjected to excessive heat, corrosive agents or chemicals, or mechanical abuse that may cause tearing, crushing or undue deterioration, nor used on a system or in a manner other than that for which it was designed as explained in the product literature.

The following products are warranted to be free of defects in materials and workmanship for the periods shown from date of shipment: Acme's exclusive duplex split pillow block bearings and shaft five years, belts one year, Polyethylene tubing 90 days, AIR40 Heater warranty one year, AIR40 Emitter warranty three years and DDP fan lifetime warranty on its propeller, cone, and housing.

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be made in writing and delivered to P. O. Box 978, Muskogee,

Oklahoma, 74402, within 15 days after discovery of the defect and prior to the expiration of two years from the date of shipment by the Company of the product claimed defective, and Buyer shall be barred from any remedy if Buyer fails to make such claim within such period.

Within 30 days after receipt of a timely claim, the Company shall have the option either to inspect the product while in Buyer's possession or to request Buyer to return the product to the Company at Buyer's expense for inspection by the Company. The Company shall replace, or at its option repair, free of charge, any product it determines to be defective, and it shall ship the repaired or replacement product to Buyer F.O.B. point of shipment; provided, however, if circumstances are such as in the Company's judgment to prohibit repair or replacement to remedy the warranted defects, the Buyer's sole and exclusive remedy shall be a refund to the Buyer of any part of the invoice price, paid to the Company, for the defective product or part.

The Company is not responsible for the cost of removal of the defective product or part, damages due to removal, or any expenses incurred in shipping the product or part to or from the Company's plant, or the installation of the repaired or replaced product or part.

Implied warranties, when applicable, shall commence upon the same date as the express warranty provided above, and shall, except for warranties of title, extend only for the duration of the express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. The only remedy provided to you under an applicable implied warranty and the express warranty shall be the remedy provided under the express warranty, subject to the terms and conditions contained therein. The Company shall not be liable for incidental and consequential losses and damages under the express warranty, any applicable implied warranty, or claims for negligence, ex-

cept to the extent that this limitation is found to be unenforceable under applicable state law. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

No employee, agent, dealer, or other person is authorized to give any warranties on behalf of the Company or to assume for the Company any other liability in connection with any of its products except in writing and signed by an officer of the Company.

REPLACEMENT PARTS If replacement parts are ordered, buyer warrants that the original components in which these replacement parts will be placed are in satisfactory working condition, and when said replacement parts are installed, the resultant installation will operate in a safe manner, at speeds and temperatures for which the original equipment was purchased.

TECHNICAL ADVICE AND RECOMMENDATIONS, DISCLAIMER: Notwithstanding any past practice or dealings or any custom of the trade, sales shall not include the furnishing of technical advice or assistance or system design. Any such assistance shall be at the Company's sole option and may be subject to additional charge.

The Company assumes no obligation or liability on account of any recommendations, opinions or advice as to the choice, installation or use of products. Any such recommendations, opinions or advice are given and shall be accepted at your own risk and shall not constitute any warranty or guarantee of such products or their performance.

GENERAL In no event shall any claim for consequential damages be made by either party. The Company will comply with all applicable Federal, State, and local laws.