



INSTALLATION & MAINTENANCE INSTRUCTIONS WINDMASTER MODEL DCA

INSTALLATION

1. This unit has rotating parts and safety precautions should be exercised during installation, operation and maintenance.
2. **WARNING!** Do not use fans in hazardous environments where the fan's electrical system could provide ignition to combustible or flammable materials, unless built specifically for that environment.
3. Guards must be installed when fan is within reach of personnel or within seven (7) feet of working level or when deemed advisable for safety.

Installation With Slant Wall Housing

4. To install a fan mounted in a galvanized steel slant wall housing when the wall thickness is 4" or less, provide a rectangular opening in the wall equal to dimension in Fig. 1. It is preferable to frame the opening with 2 X 4 material or a metal frame in metal building or greenhouses. When the wall thickness is more than 4", the height of the rectangular opening should be 1 inch less than the height shown in the table below and the opening should be slanted approximately 15° as shown in Fig. 1. **Note:** If wall thickness is less than 4", framed opening height can be reduced 1/4" for each inch less than 4" thick.
5. Slide the fan wall housing through the inside of the framed opening in the wall. Fasten with bolts or screws provided by the installer. Position the box so the top panel slants down from horizontal. Caulk between the top flanges and the wall (see Fig. 1). Fan wall housing can also be attached to outside of framed opening utilizing the mounting flanges.
6. Mount automatic shutter to inside of fan wall housing by inserting bottom edge of shutter behind the bottom shutter angle with the top edge of shutter in front of the top shutter angle (see Fig. 2) and then securing with the snap clips on the top shutter angle. An optional inside guard can be mounted with the shutter in the same manner.

FAN SIZE	WALL HOUSING MODEL	WT	FRAMED OPENING	
			WIDTH	HEIGHT
24"	WS24DCA	35	28 ³ / ₄ "	30 ³ / ₄ "
30"	WS30DCA	42	34 ³ / ₄ "	36 ¹ / ₂ "
36"	WS36DCA	46	40 ³ / ₄ "	42 ³ / ₄ "
42"	WS42DCA	53	46 ³ / ₄ "	49"
48"	WS48DCA	78	54 ³ / ₄ "	57 ¹ / ₄ "
54"	WS54DCA	106	60 ³ / ₄ "	63 ¹ / ₂ "

Figure 1.

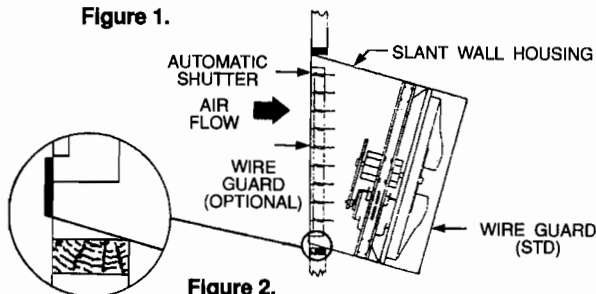


Figure 2.

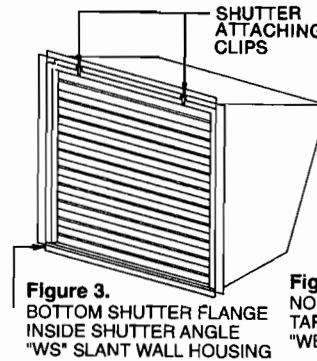


Figure 3.
BOTTOM SHUTTER FLANGE
INSIDE SHUTTER ANGLE
"WS" SLANT WALL HOUSING

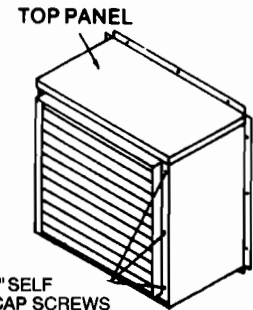


Figure 4.
NO 14 X 5/8" SELF
TAPPING CAP SCREWS
"WB" SQUARE WALL HOUSING

7. Continue with Step 13.

Installation With Square Wall Housing

8. To install a fan mounted in a galvanized steel wall housing, provide a square opening in the wall equal to the dimensions in the table below. It is preferable to frame in the opening with 2 X 4 material or a metal frame in metal buildings or greenhouses.
9. Slide the fan wall housing through the inside of the framed opening in the wall. Fasten with bolts or screws provided by the installer. Position the box so the top panel, having both sides turned down, is on top. Caulk between the top flanges and the wall (see Fig. 4). Fan wall housing can also be attached to outside of framed opening utilizing the mounting flanges.

FAN SIZE	WALL HOUSING MODEL	NOMINAL DIMENSIONS		WT
		A	B	
24"	WB24DCA	28 ³ / ₄ "	24"	30
30"	WB30DCA	34 ³ / ₄ "	24"	36
36"	WB36DCA	40 ³ / ₄ "	24"	38
42"	WB42DCA	46 ³ / ₄ "	24"	40
48"	WB48DCA	54 ³ / ₄ "	25"	70
54"	WB54DCA	60 ³ / ₄ "	29"	96

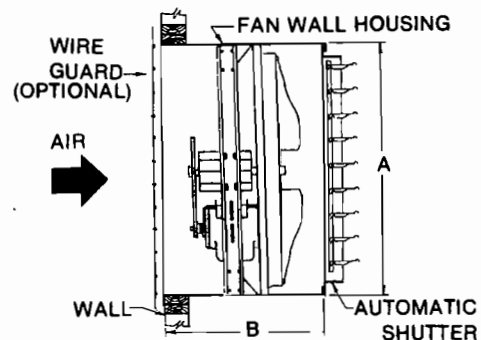


Figure 6

10. Mount automatic shutter to outside of fan wall housing with number 14 x 5/8" self tapping hex headed cap screws furnished. Insert top edge of shutter frame under top flange of fan box (see Fig. 4).
11. Continue with Step 13.

Installation With Fan Shipping Crate

12. A distance of at least one and one-half times the diameter of the fan should be allowed between the fan inlet or discharge opening and any adjacent wall or large obstruction.
13. CAUTION: Before proceeding, make sure electrical service to fan is locked in "OFF" position.
14. All wiring should be in accordance with local ordinances and the National Electric code.
15. Before starting, check all fasteners for tightness particularly in the propeller hub. Turn the propeller by hand to make sure it rotates freely and that the blades do not strike the orifice.
16. WARNING! Check voltage being supplied to the fan to see that it corresponds with the motor nameplate voltage; high or low voltage can seriously damage the motor. On multi-voltage motors, check motor terminal connections to make sure motor is internally connected for voltage being supplied. Motor wiring diagram is located on the side of the motor or in the motor wiring compartment. Extra care should be taken when wiring two speed motors since improper connections will damage motor and void motor warranty. Leave enough slack in wiring to allow for motor movement when adjusting belt tension.
17. Operate under power and compare propeller rotation with directional arrow on fan. In the case of three phase motors, the direction can be changed by inter-changing any two of the three motor leads. In the case of single phase motors, the reversing instructions will appear on the wiring diagram in the motor wiring compartment.

SET SCREW TIGHTENING SCHEDULE

1. Before initial operation of the fan, tighten set screws according to the procedure outlined below.
2. After 500 operating hours or three months, whichever comes first, tighten set screws to the full recommended torque.
3. At least once a year, tighten set screws to the full recommended torque.

PROCEDURE FOR TIGHTENING SET SCREWS IN BEARINGS AND HUBS

One Set Screw Application

Using a torque wrench, tighten the set screw to the torque recommended in Table 1.

Two Set Screw Application

1. Using a torque wrench, tighten one set screw to half of the torque recommended in Table 1.
2. Tighten the second set screw to the full recommended torque.
3. Tighten the first set screw to the full recommended torque.

Table 1. Recommended Tightening Torque for Set Screws

Set Screw Diameter	Torque (in-lbs)
#10	35
1/4	80
5/16	126
3/8	240
7/16	384
1/2	744
9/16	1080
5/8	1500
3/4	2580
7/8	3600
1	5400

VARIABLE FREQUENCY DRIVES AND MOTORS

There are occasions when a Variable Frequency Drive (VFD) will cause poor motor performance and possible damage. To avoid these problems, the Company recommends the following:

1. Select compatible motor and VFD converter; if possible, the motor and the converter should be from the same manufacturer or at least the converter selected should be recommended by the motor manufacturer.
2. A motor shaft grounding system should be used to prevent motor bearing damage from eddy currents.

NOTE: The Company will not honor motor warranty claims if the customer fails to follow these recommendations.

MAINTENANCE

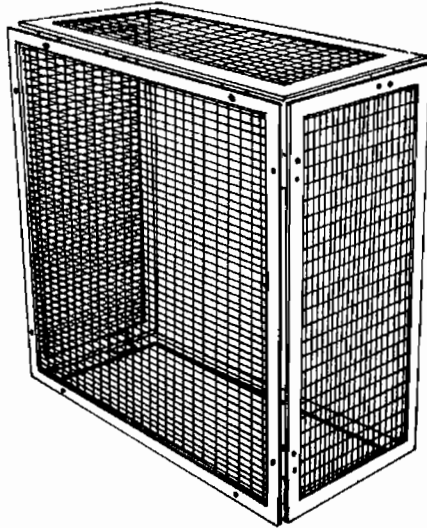
1. Motor bearings are prelubricated. Consult information printed on motor for lubrication instructions.
2. Propeller shaft bearings are prelubricated, sealed and require no service.
3. Check belt tension after first 48 hours of operation and thereafter annually. Belt should depress its width when pressed firmly inward at midway point between the pulleys. Too much tension will damage bearings; belt should be tight enough to prevent slippage. When replacing worn belt, replace motor pulley if "shoulder" is worn in groove. WARNING! Do not operate at higher speeds than rated. Do not replace motor pulley with a larger diameter pulley. Do not replace the fan pulley with one smaller in diameter. The pulley ratios are set so that the motor will not be overloaded.
4. If motor requires replacement, a comparable one to the original with the same service factor and enclosure must be used.
5. If propeller shaft bearing need replacement, replace with bearings comparable to original equipment. For die formed type support housing, install new bearings into neoprene rings, check correct position of propeller with orifice position bearings in die formed recess and tighten set screws. Replace die formed bearing cap and tighten four bolts.

NOTE: If locking collar type bearing is used, collar must first be positioned against inner race on bearing nearest propeller and turned in direction of propeller rotation with drift pin and hammer until it locks. Locking collars must be on inboard (facing) sides of the bearing. Secure bearing to shaft with set screw. Lock and secure other bearing to shaft in the same manner.

OPTIONAL SAFETY GUARDS FOR DC

- Extruded aluminum framed guards model BA for back (motor side) and model FA for front of fan.
- Constructed of 1/2" x 1" mesh heavy gauge welded galvanized wire.
- Open on all sides for maximum air flow.
- Guards are shipped knocked down, easily assembled with connecting clips.
- Bolts to fan frame.
- Easily removed for servicing fan. Guards are optional but should be installed when fan is within reach of personnel.

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

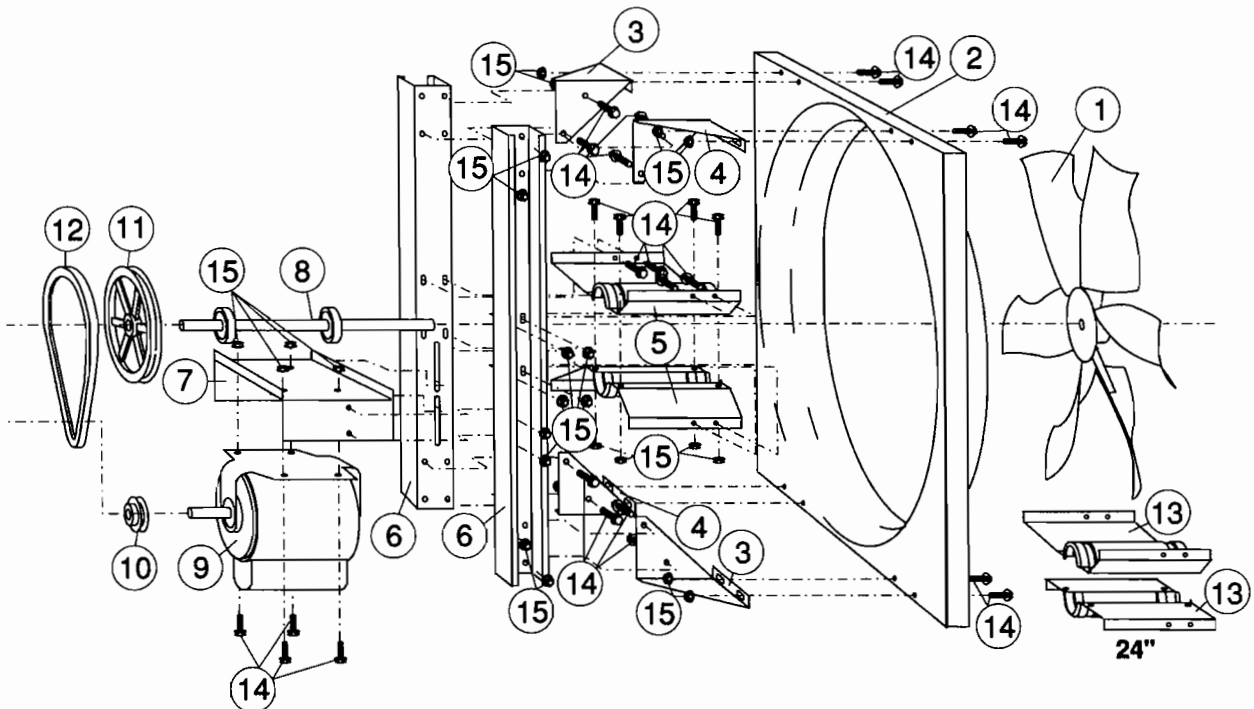
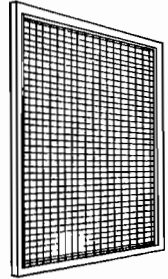


OPTIONAL GUARDS:

Model GD for WB wall housing

Model GS for WS wall housing

Guards are galvanized heavy gauge welded wire in aluminum frames.



WHEN ORDERING REPLACEMENT PARTS - LIST MODEL, DESCRIPTION AND QUANTITY

PARTS LEGEND				
	CODE	DESCRIPTION	CODE	DESCRIPTION
FAN MODEL DCA24 DCA30 DCA36 DCA42 DCA48 DCA54	1	Propeller (4 blades on DCA54)	9	Motor
	2	Orifice	10	Motor Sheave
	3	Right Gusset	11	Fan Sheave
	4	Left Gusset	12	Belt
	5	Bearing Base	13	Bearing Base (for 24" only)
	6	Channel Support	14	5/16 x 3/4 Whiz Lock Bolt
	7	Motor Base	15	5/16 Whiz Lock Nut
	8	Shaft & Bearing Assembly		

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 (in-

cluding 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.

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 dimensions.

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 in the paragraph immediately following), 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. 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 Buyer assumes all risks and liability for results of use of all products.

Acme's exclusive duplex split pillow block bearings and shaft are warranted to be free of defects in materials and workmanship for a period of five years from date of shipment. Belts are warranted to be free of defects in materials and workmanship for a period of one year from date of shipment. Polyethylene tubing is warranted to be free of defects in materials and workman-

ship for a period of 90 days from date of shipment.

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, except 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.



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