

INSTALLATION & MAINTENANCE INSTRUCTIONS

Propeller Wall Fan, Belt Drive

INSTALLATION

- CAUTION!** This unit has rotating parts and safety precautions should be exercised during installation, operation and maintenance.
- WARNING! Do not** use fans in hazardous environments where the fan's electrical system could provide ignition to combustible or flammable materials, unless the unit is specifically built for that hazardous environment.
- CAUTION!** Guards must be installed when fan is within reach of personnel or within seven (7) (2.134 m) feet of working level or when deemed advisable for safety.

Installation With Slant Wall Housing

- 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 Fig. 1 and the opening should be slanted approximately 15° as shown in Fig. 2.
- 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 box so the top panel slants down from horizontal. Caulk between the top flanges and the wall (see Fig. 2). Fan wall housing can also be attached to outside of framed opening utilizing the mounting flanges.
- Mount automatic damper to inside of fan wall housing by inserting bottom edge of damper behind the bottom damper angle with the top edge of damper in front of the top damper angle (see Fig. 3) and then securing with the snap clips on the top damper angle. An optional inside guard can be mounted with the damper in the same manner.

FAN SIZE	WALL HOUSING MODEL	WT	FRAMED OPENING DINEN. FOR 4" WALL	
			WIDTH	HEIGHT
24"	WS24	35	28 3/4"	30 3/4"
30"	WS30	42	34 3/4"	36 1/2"
36"	WS36	46	40 3/4"	42 3/4"
42"	WS42	53	46 3/4"	49"
48"	WS48	78	54 3/4"	57 1/4"

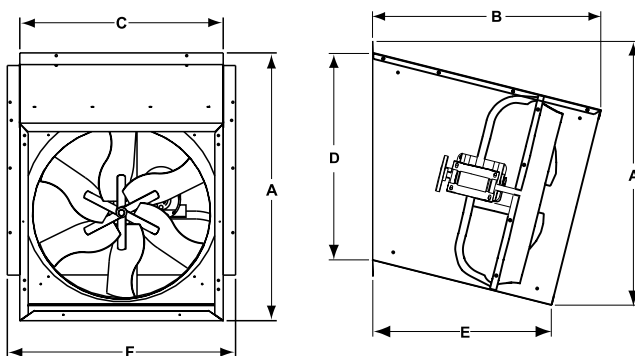


Figure 2

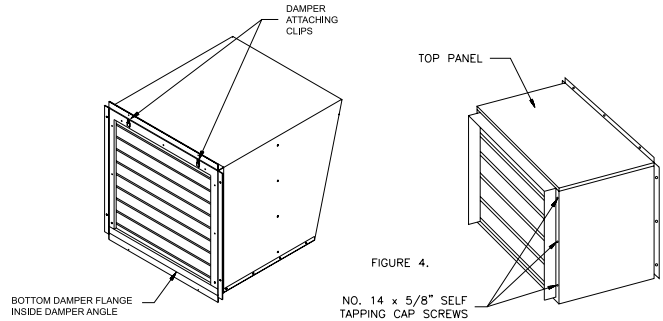


FIGURE 3.

FIGURE 4.

- Continue with Step 22.

Installation With Square Wall Housing

- To install a fan mounted in a galvanized steel wall housing, provide a square opening in the wall equal to the dimensions in Fig. 5. It is preferable to frame in the opening with 2 X 4 material, or a metal frame in metal buildings or greenhouses.
- 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. 6). Fan wall housing can also be attached to outside of framed opening utilizing the mounting flanges.
- Mount automatic damper to outside of fan wall housing with number 14 x 5/8" self tapping hex headed cap screws furnished. Insert top edge of damper frame under top flange of fan box (see Fig. 4).
- Continue with Step 22.

FAN SIZE	WALL HOUSING MODEL	NOMINAL DIMENSIONS		WT
		B	C	
24"	WBP24	32 5/8"	28 3/16"	91
30"	WBP30	35 9/16"	34 3/16"	118
36"	WBP36	36 1/16"	40 3/16"	140
42"	WBP42	42 3/8"	48 3/16"	190
48"	WBP48	43 7/16"	54 3/16"	218
54"	WBP54	44 1/2"	60 3/16"	247
60"	WBP60"	50 1/2"	68 3/16"	309

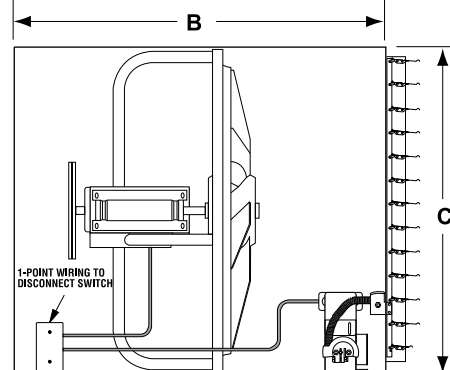


Figure 6

Installation With Fan Shipping Crate

12. To install to inside of building wall using the shipping crate as a mounting frame. (See Fig. 7).
13. Remove the boards nailed across the front and back of the fan.
14. Provide a square opening in the wall of the building equal to the inside "C" dimension of the fan crate. (See Fig.8). It is preferable to frame in the opening with 2 x 6 material. (See Fig. 7).
15. Attach the fan crate securely to the wall.
16. Close up all cracks or openings between the fan crate and the wall of the building. In case the fan is mounted outside of the building wall to operate as an exhaust fan, it is **absolutely** necessary to enclose **all 4** sides of the fan crate in order for the fan to draw air out of the building.
17. Continue with Step 22.

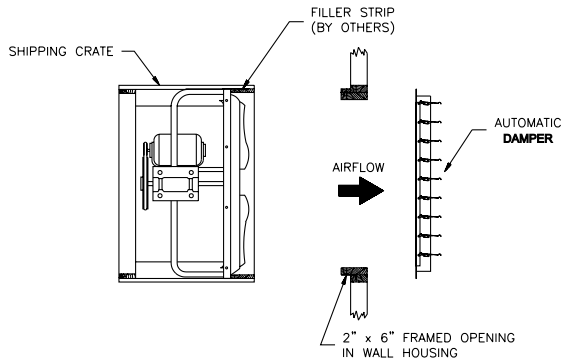


FIGURE 7.

FAN SIZE	WALL HOUSING MODEL	WT	FRAMED OPENING DINEN. FOR 4" WALL	
			WIDTH	HEIGHT
24"	WS24	35	28 3/4"	30 3/4"
30"	WS30	42	34 3/4"	36 1/2"
36"	WS36	46	40 3/4"	42 3/4"
42"	WS42	53	46 3/4"	49"
48"	WS48	78	54 3/4"	57 1/4"

Figure 8.

Installation of Fan without Housing or Crate

18. To install uncrated fan, provide a square opening in the wall equal to the outside dimensions of the fan. It is preferable to frame in the opening with 2 x 4 material, or a metal frame in metal buildings.
19. Slide the fan into the framed opening in the wall, with the motor in the position shown in Fig. 9. Securely fasten with bolts or screws provided by the installer.
20. When using an automatic damper, be sure to position the damper at least 6" from fan blades.

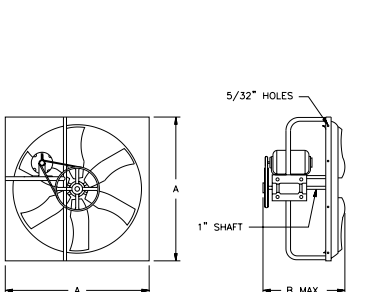


FIGURE 9.

FAN SIZE	A	B
24"	28"	18 1/2"
30"	34"	19 1/8"
36"	40"	17 3/8"
42"	46"	18 3/4"
48"	54"	19 5/8"
54"	60"	22 7/8"

21. 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.
22. **CAUTION!** Before proceeding, make sure electrical service to fan is locked in "OFF" position.
23. All wiring should be in accordance with local ordinances and the National Electric code.
24. 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 stride the orifice.
25. **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.
26. Apply power momentarily and compare the rotation of the impeller with the directional arrow on fan. In the case of three phase motors, the direction can be changed by interchanging any two of the three motor leads. In the case of the single phase motors, the reversing instructions will appear on the wiring diagram in the motor wiring compartment.
27. When supply type fans are used with motorized wall dampers, it is necessary that a time delay switch be used between the power source and the fan motor which will allow the damper to fully open before the fan is activated.

MAINTENANCE

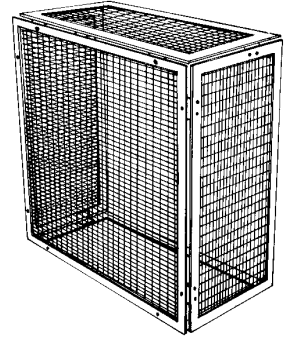
1. Under normal usage, no spare parts are recommended for one year normal service. Recommended spare parts are shown on page 3.
2. **CAUTION!** Before proceeding, make sure electrical service to fan is locked in "OFF" position.
- WINDMILLING:** Even when the power supply is locked out, fans may cause injury or damage if the impeller is subject to "windmilling" which is the turning of the impeller and drive components due to a draft in the system. To guard against this hazard, the impeller should be secured to physically restrict rotational movement.
3. Motor bearings are prelubricated. Consult information printed on motor for lubrication instructions.
4. Propeller shaft bearings are prelubricated, sealed and require no service.
5. On belt driven units, 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. The 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 that cataloged for this equipment. **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.
6. If motor requires replacement, a comparable one to the original with the same service factor and enclosure must be used.

7. 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.

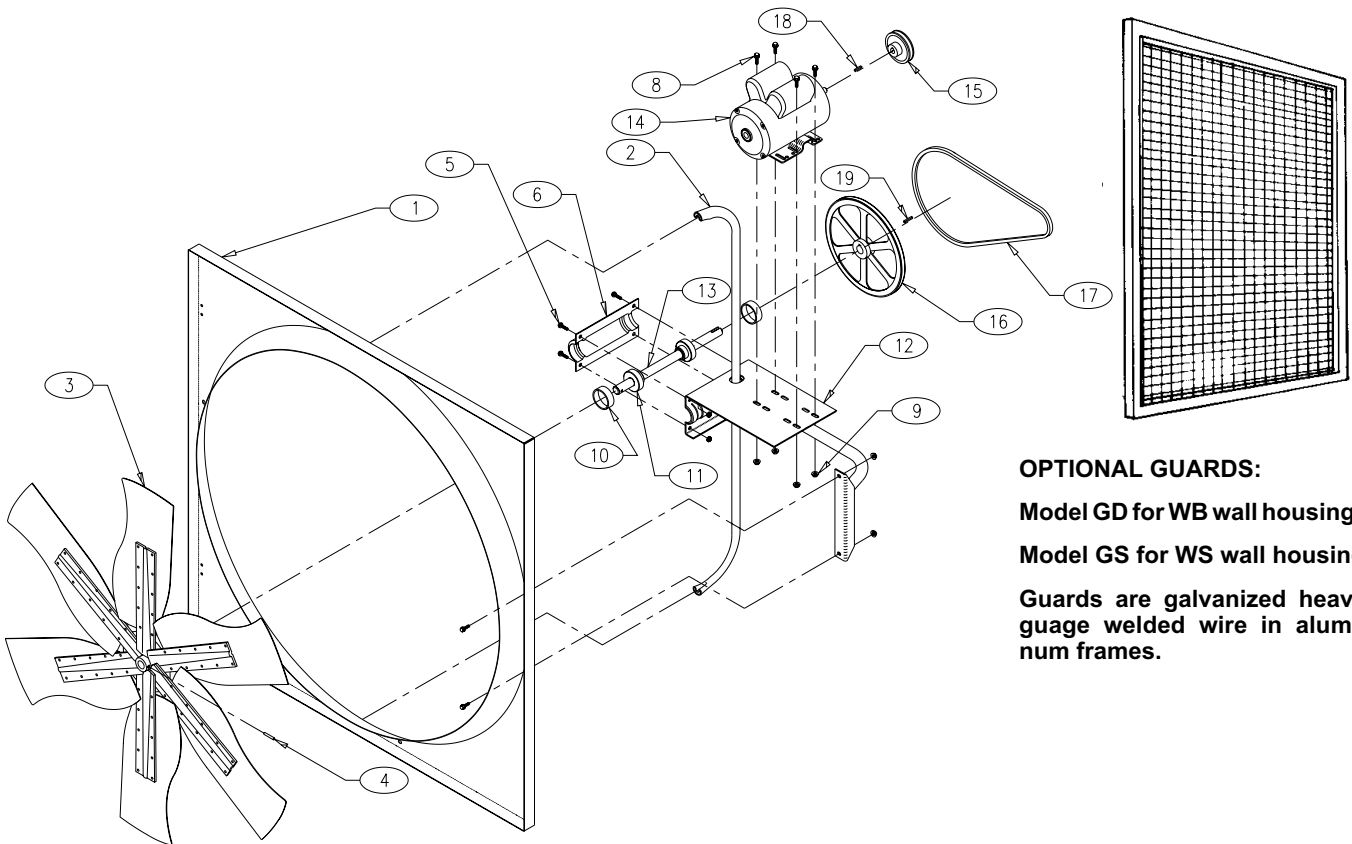
NOTE: If locking collar type bearing is used, collar must first be positioned against inner race on bearing nearest propeller and turned in direction of propeller rotation with drift pin and hammer until it locks. Locking collars must be on inboard (facing) sides of the bearing. Secure bearing to shaft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

OPTIONAL SAFETY GUARDS

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						
FAN MODEL	CODE	DESCRIPTION	QTY.	CODE	DESCRIPTION	QTY.
	1	Orifice Assembly	1	10	Rubber Ring W/Staple*	2
24	2	Frame Assembly	1	11	1" Bearings*	2
30	3	Propeller*	1	12	Motor Base	1
36	4	1/4" Roll Pin	1	13	Fan Shaft*	1
42	5	5/16" - 18" x 3/4" Whizlock Bolt	4	14	Motor	1
48	6	Bearing Cap*	1	15	Motor Pulley	1
54	7	5/16" - 18" Whizlock Bolt	4	16	Fan Pulley	1
	8	5/16" - 18" x 3/4" Whizlock Bolt	4	17	Fan Belt	1
	9	5/16" - Whizlock Nut	4	18	3/16" X 1" Key	1
				19	1/4" X 1 1/4" Key	1

*Recommended spare parts

TERMS AND CONDITIONS

DESIGN CHANGES The Company 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 The Company 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: The Company extends this limited warranty to the original buyer and warrants that products manufactured by the Company shall be free from original defects in workmanship and materials for two years from date of shipment, unless otherwise noted (see specific product literature), provided same have been properly 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 the products. Warranties on purchased parts, such as but not limited to bearings, sheaves, belts, couplings, electric motors, pumps and controls are limited to the terms of warranty extended by our supplier.

Polyethylene tubing and cooling pads are warranted to be free of defects in material and workmanship for a period of 90 days from date of shipment and a like warranty applies to the cross fluted cellular type cooling cells 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.

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 the warranty period from the date of ship-

ment 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 un-

der 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.