

## *Read and Save These Instructions*

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# INSTALLATION & ASSEMBLY INSTRUCTIONS

## Grease Trough and Curb Hinge Assembly For Belt Drive Exhaust Fans

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### RECEIVING AND INSPECTION

Immediately upon receipt of a shipment, carefully inspect for damage and shortage. If any damage and/or shortage is detected or suspected the carrier must be asked to conduct an inspection. The consignee's representative should not accept shipment without a notation on the delivery receipt indicating items not delivered or apparent extent of damage.

When a shipment is opened and damage is found which was not evident externally (concealed damage), it is mandatory that the consignee request an immediate inspection by the carrier. Report damage to the carrier within 15 days. Failure to report damage within the above time limit will cause rejection of a claim.

### HANDLING

When handling fans and their accessories, always use equipment and methods that will not cause damage. Fans should be lifted using slings and padding or spreaders to avoid damage.

**CAUTION!** Always make sure that all lifting and handling equipment and techniques conform to current safety standards.

Avoid lifting fans in a way that will bend or distort fan parts. Never pass slings or timbers through the orifices of fan.

**CAUTION! Do not** lift by the fan hood. Fans with special coatings or paints must be protected in handling to prevent damage.

### STORAGE

Fans are protected against damage during shipment. If they cannot be installed and put into operation immediately upon receipt certain precautions are necessary to prevent deterioration during storage. Responsibility for integrity of fans and accessories during storage must be assumed by the user. The manufacturer will not be responsible for damage during storage. These suggestions are provided solely as a convenience to the user, who shall make his own decision as to whether to use any or all of them.

**INDOOR:** The ideal storage environment for fans and accessories is indoors, above grade, in a low humidity atmosphere which is sealed to prevent the entry of blowing dust, rain, or snow. Temperatures should be evenly maintained at between 70°F and 105°F (wide temperature swings may cause condensation and "sweating" of metal parts). Windows should be covered to prevent temperature variations caused by sunlight. Provide thermometers and humidity indicators at several points and maintain the atmosphere at 40% relative humidity, or lower.

It may be necessary to use trays of renewable desiccant or portable dehumidifier to remove moisture from the air in the storage enclosure.

Thermostatically controlled portable heaters (vented to outdoors) may be required to maintain even temperatures inside the enclosure.

**CAUTION!** Provide fire extinguishers, or fire alarms, or telephone to protect building and equipment against fire damage. Be sure that building and storage practices meet all local, state and federal fire and safety codes.

The following fans or accessories must be stored indoors, in a clean dry atmosphere:

- a. Propeller Wall Fans not in Wall Housings.
- b. Any fan which is protected by a cardboard carton.
- c. Motors dismantled from fans.
- d. Spare wheels or propellers.
- e. The belts, sheaves, bushings and other parts when not mounted on fan.
- f. Boxes, bags or cartons of hardware.
- g. Curbs
- h. Shutters

Remove any accumulations of dirt, water, ice or snow and wipe dry before moving to indoor storage. Allow cold parts to reach room temperature to avoid "sweating" of metal parts. Open boxes or cartons. Remove any accumulated moisture; if necessary use portable electric heaters to dry parts and packages. Leave coverings loose to permit air circulation and to permit periodic inspection.

Rotate wheels or propellers by hand to distribute bearing grease over the entire bearing surfaces.

Store at least 3½" off the floor on wood blocks covered with moisture proof paper or polyethylene sheathing. Provide aisles between parts and along all walls, to permit air circulation and space for inspection.

**OUTDOOR:** Fans designed for outdoor use may be stored outdoors, if absolutely necessary. The storage area should be reasonably level and drained or ditched to prevent accumulation of water. Fencing and lighting for security are desirable. Roads or aisles for portable cranes and hauling equipment are needed. Consider the use of drift fencing to minimize accumulation of blowing snow or dirt.

The following fans may be stored outdoors, if dry indoor storage space is not available:

- a. Fans intended for outdoor use that are crated in wood.
- b. Wall fans where installed in wall housings.

All fans must be supported on wooden blocks or timbers above water or normal snow levels. Provide enough blocking to prevent settling into soft ground. Fans should be set in place using the directional arrow markings on the crate as a guide.

Locate pieces far enough apart to permit air circulation, sunlight, and space for periodic inspection. Place all parts on their supports so that rain water will run off, or to minimize water accumulation. **Do not** cover parts with plastic film or tarps—these cause condensation of moisture from the air passing through heating and cooling cycles.

Fan wheels and propellers should be blocked to prevent spinning caused by strong winds.

### INSPECTION AND MAINTENANCE DURING STORAGE

Inspect fans and accessories at least once per month, while in storage. Log results of inspection and maintenance performed. A typical log entry should include the following:

- a. Date
- b. Inspector's Name
- c. Name of Fan
- d. Location
- e. Condition of Paint or Coating
- f. Is moisture present?
- g. Is dirt accumulated?
- h. Corrective steps taken?

If moisture or dirt accumulations are found on parts, the source should be located and eliminated. Fans should be rotated at each inspection by hand ten to fifteen revolutions to redistribute the motor and bearing lubricant.

If paint deterioration begins, consideration should be given to touch-up or repainting. Fans with special coatings may require special techniques for touch-up or repair.

Machined parts coated with rust preventive should be restored to good condition promptly if signs of rust occur. The most critical items are pulleys, shafts and bearing locking collars. At the first sign of rusting on any of the above parts, remove the original rust preventive coating with petroleum solvent and clean lint-free cloths. Polish any remaining rust from surfaces with crocus cloth or fine emery paper and oil. **Do not** destroy the continuity of the surfaces. Wipe clean with lint-free cloths and recoat surfaces evenly and thoroughly with Tectly 506 (Ashland Oil Company) or equal. For hard to reach internal surfaces or for occasional use, consider using Tectly 511M Rust Preventive or WD40 or equal.

### REMOVING FROM STORAGE

As fans are removed from storage to be installed in their final location, they should be protected and maintained in similar fashion, until the fan equipment goes into operation.

### GREASE TROUGH INSTALLATION (Roof Fan)

1. Place grease trough assembly in position on curb as shown in Figure A. The hole in the center of the grease trough top should be directly under the downspout. Mark the position of the two key holes in the grease trough top on the fan curbcap or on the roof curb depending on the desired location.

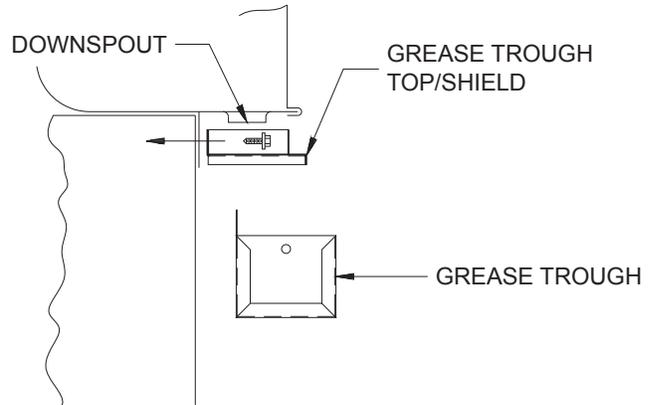


FIGURE A

2. Drill 5/16" (8 mm) holes at the locations marked on the curbcap or roof curb.
3. Thread the speed nut up to within 1/4" (6 mm) of the head of the 1/4 - 20 x 3/4" round head machine screw and insert into the hole. Thread the standard 1/4" nut onto the screw on the inside of the curb and tighten.
4. Install the grease trough and its top on these two screws as shown in Figure B.

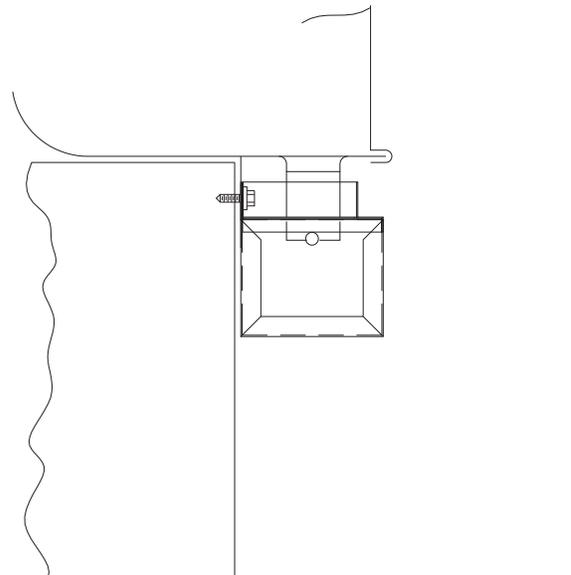


FIGURE B

### GREASE TROUGH INSTALLATION (Wall Fan)

1. The grease trough should line up just below the windband lip as shown in Figure C. It should be centered below the fan when viewed from the outlet side of the fan.

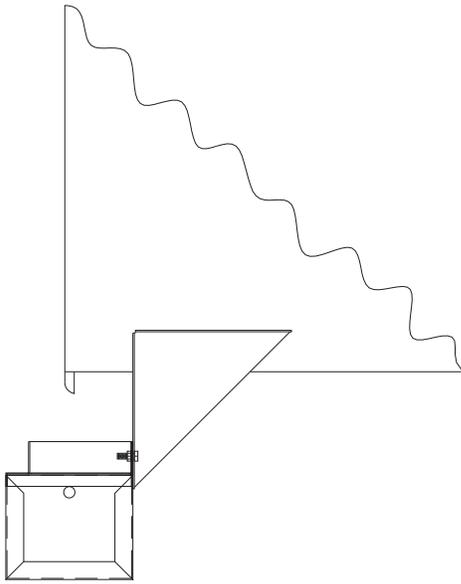


FIGURE C

2. Attach grease trough bracket supports to fan windband.
3. Attach grease trough bracket between supports using supplied bolts as shown in Figure D.

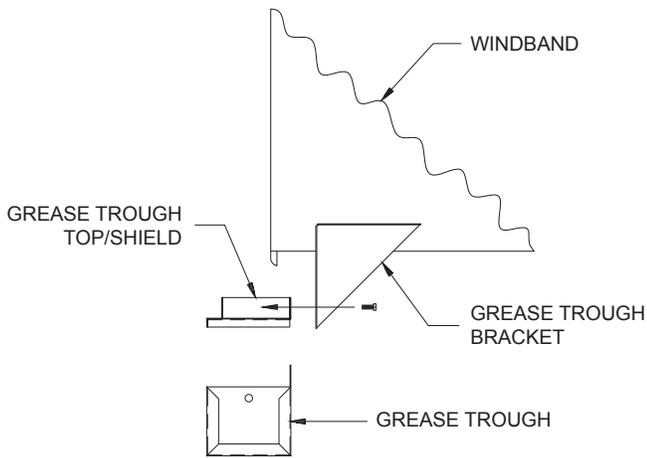


FIGURE D

4. Drill four (4) holes in the fan windband. Loosely assemble all parts. Position grease trough and mark holes of grease trough bracket. Mount to fan with supplied hardware.
5. Tighten two supplied 1/4" bolts into the grease trough bracket so that the grease trough and grease trough lid may be hung on the bolt heads.

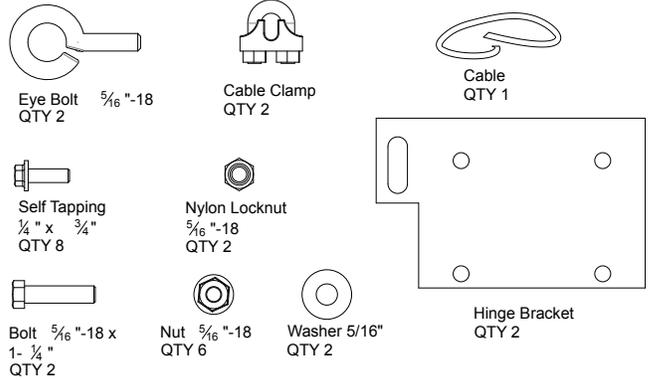
### GREASE TROUGH NOTE (Roof and Wall)

This grease trough has been designed with two chambers. One for collecting grease and the other for an escape channel for rain water. For proper operation, the grease level must be kept above the bottom of the baffle plate which separates the chambers. If your operation produces a lot of grease, then **1 1/4" (32 mm) of water in the bottom of the grease trough should keep the grease from overflowing** until you clean the trough. If you are in an arid area and produce little grease, then 2" (51 mm) to 3" (76 mm) of water may be required.

Frequent inspections should be made of the grease trough until you can determine the level of water to be used and the frequency of cleaning. **To begin, fill the trough with 2" (51mm) of water just before start up and check the trough the next morning.**

### FAN-TO-CURB HINGE KIT (TYPE A) INSTALLATION

#### Hardware Supplied



**WARNING:** Disconnect power to fan and observe lock out tag out procedures per OSHA regulation. Make sure wiring to fan is long enough to allow the fan to tilt back using a flexible connection.

1. See Figure E and Figure F. Install one bolt 5/16-18 x 1-1/4 and one 5/16" washer through pivot hole (Figure A) on fan curb cap opposite of drain on fan. Install one Nut 5/16-18 onto bolt and tighten (Figure B). Repeat for other side.

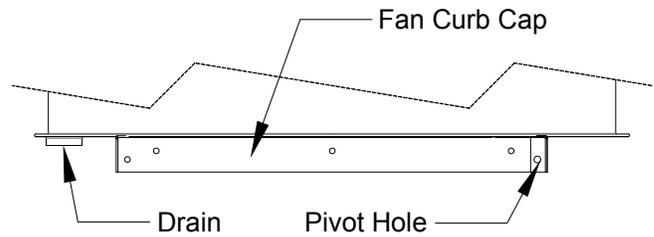


FIGURE E

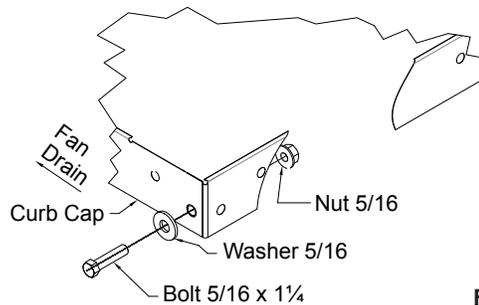


FIGURE F

- See Figure G and Figure H. Locate long slot opening on hinge bracket and slide onto bolt. **NOTE: Insure the 4 holes in the hinge bracket face towards the drain on the fan (See Figure G).** Install one Nylon Locknut 5/16-18 onto bolt (**Do not** tighten the locknut on the bolt more than one thread into the nylon material of the Locknut). Repeat for other side. Locknut is used to hold assembly together during attachment of hinge bracket to curb. Hinge bracket final assembly view Figure H.

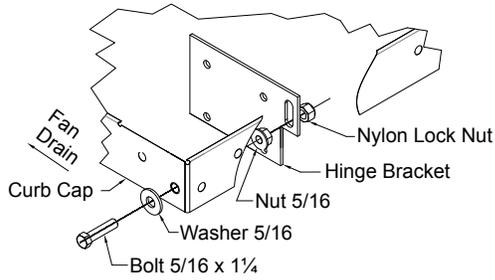


FIGURE G

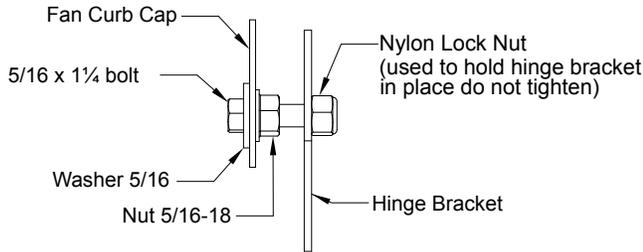


FIGURE H

- Place fan on curb and center the fan to the curb. Move hinge bracket up until the bottom of the long slot on hinge bracket is in contact with the bolt. Then rotate hinge bracket until it is parallel to the bottom of the curb cap and sitting against curb (Figure J). Install (2) Stainless Steel 1/4" self tapping screws on bottom two openings. Repeat for other side. Note: If locknut prevents hinge bracket from sitting flush against curb it can be loosened.

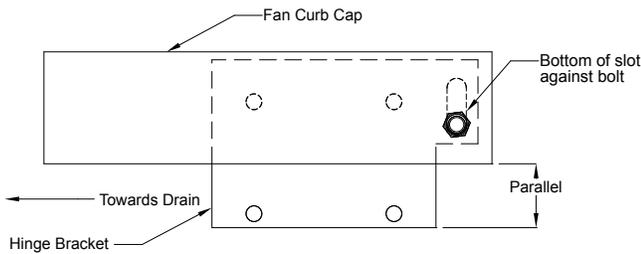


FIGURE J

- Have an assistant tilt fan back and install the remaining self tapping screws into hinge bracket. Do not allow fan to rest against the curb without support damage to curb cap may happen.

- Install one eye bolt in the fans curb cap location shown in Figure K. In the location shown use two nuts to secure eye bolt to curb cap. Do not extend the eye bolt more than one thread past the nut on the inside of the curb cap see Figure L.

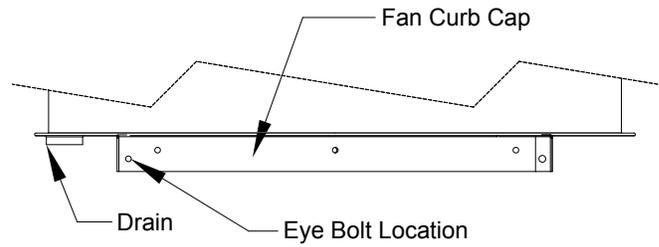


FIGURE K

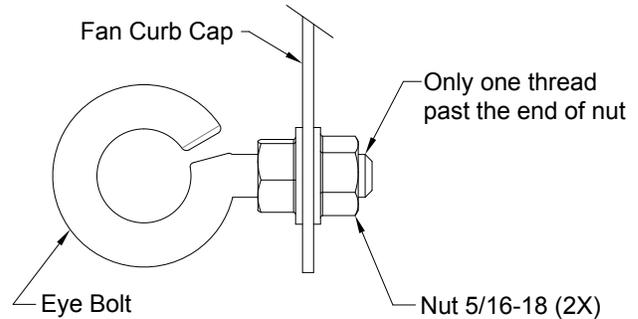


FIGURE L

- Drill a 11/32" diameter hole into curb on the fans drain side as shown in Figure M. Install one eye bolt and 2 5/16-18 nuts as shown in Figure N.

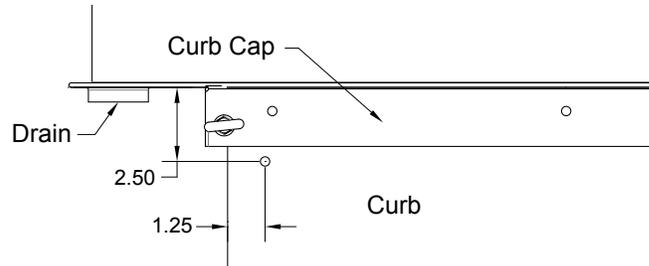


FIGURE M

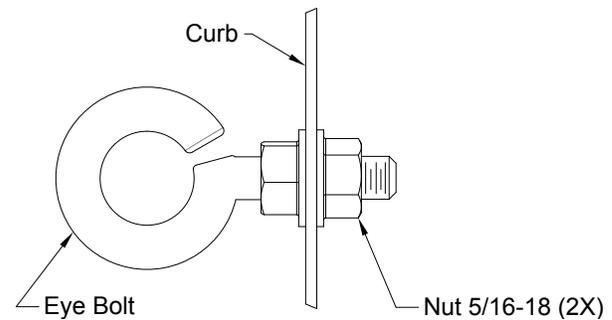


FIGURE N

- See Figure P. Using the provided cable and one cable clamp insert cable into eye bolt on fan and make a small loop. Install the wire clip around both cables leaving about an inch of cable sticking out. Tighten nuts on cable clamp.

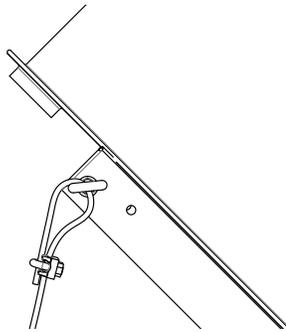


FIGURE P

- See Figure Q. With an assistant tilt fan back till the back of the fan curb cap just touches the curb. **Do not** allow the fan to rest against curb damage to curb cap may happen. Loop the other end of the cable to the curb eyelet and fasten with cable clamp. Make sure to pull all slack out of cable before securing wire clip.

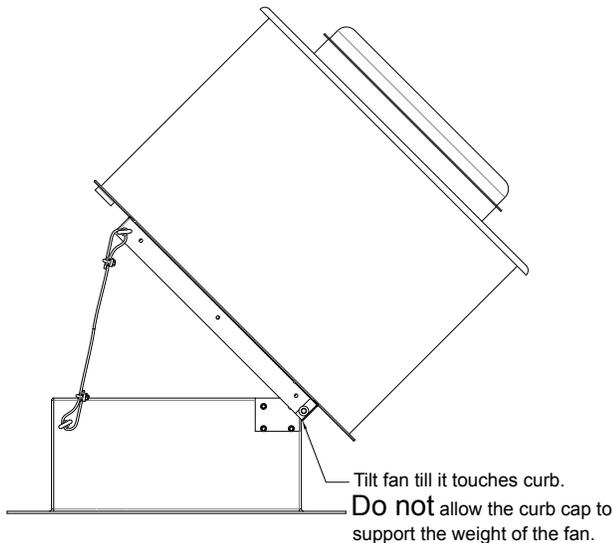


FIGURE Q

- Check if cable holds fan back without the fans curb cap resting against the curb. Adjust the cable if necessary.
- Close and secure fan to curb with appropriate fasteners to prevent unit from opening in high wind events.

## FULL PERIMETER HINGED BASE (TYPE B) INSTALLATION

- Attach hinge brackets to the fan curb cap as shown in Figure R using (3) 5/16 x 1" bolts and nuts per side. Place bolt heads to the inside of fan curb cap.
- Attach hinge bracket/fan assembly to roof curb base using (1) 5/16 x 1" bolt, bushing, and nut per side as shown in Figure S.
- Place the fan/roof curb base assembly onto roof curb.

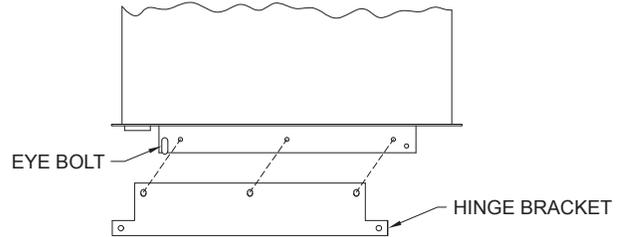


FIGURE R

- Using hole pattern in roof curb base drill holes in roof curb. Bolt roof curb base to roof curb using (3) 5/16 x 1" bolts and nuts per side.

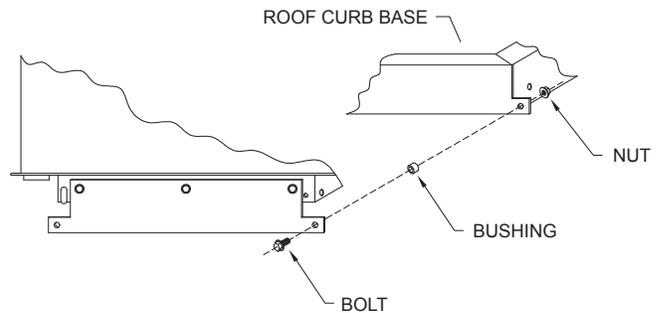


FIGURE S

- Install (1) eyebolt in the fan curb cap as shown in Figures Q and R. Use (2) nuts to capture the fan curb cap as shown in Figure L.
- Install the other eyebolt in the roof curb below the eyebolt in the fan curb cap as shown in Figure Q. Use (2) nuts to capture the roof curb as shown in Figure L.
- Using the cable and connectors provided, connect the cable to the eyebolts so that the fan is supported after the fan is hinged as shown in Figure Q.

## TERMS AND CONDITIONS OF SALE

THESE TERMS AND CONDITIONS OF SALE ("TERMS") CONTAIN VERY IMPORTANT INFORMATION REGARDING YOUR PURCHASE, AS WELL AS CONDITIONS, LIMITATIONS, AND EXCLUSIONS THAT APPLY TO YOU AND YOUR PURCHASE. PLEASE READ THEM CAREFULLY. YOUR PURCHASE IS EXPRESSLY LIMITED TO AND MADE CONDITIONAL UPON THE EXCLUSIVITY OF THESE TERMS. ANY PROPOSAL FOR DIFFERENT TERMS OR ANY ATTEMPT TO VARY, IN ANY DEGREE, ANY OF THESE TERMS IS EXPRESSLY REJECTED.

1. **Acceptance.** These Terms govern any purchase made from North American Kitchen Solutions Incorporated ("NAKS"). These Terms, the Manual in which they are contained, installation and maintenance instructions, the applicable invoice, and any documents incorporated or referred to herein or therein, including any future paper or electronic releases issued by NAKS, constitute the "Order." The Order is the entire contract between you, the buyer, and NAKS, the seller, for products purchased from NAKS. These Terms apply to the Order unless expressly modified or waived by an officer of NAKS. An Order may only be cancelled by you upon payment of reasonable cancellation charges for expenses incurred or commitments made by NAKS. Captions in these Terms are for convenience only.
2. **Pricing.** The price for NAKS' goods, material, equipment, or items ("Products") is complete, and no deductions, credits, or offsets may be made without NAKS' express written consent. Prices are subject to change and surcharges in the event of cost increases in materials and transportation. All complete component accessory material manufactured by others and furnished with Products such as motors, drives, vibration equipment, controls, or other completely assembled component structures, are subject to adjustment to the price at time of shipment regardless of the date of original order entry.
3. **Sales and Similar Taxes.** NAKS' prices do not include sales, use, excise, or similar taxes. Present or future sales, use, excise, or other similar tax applicable to the sale of Products shall be paid you, unless an acceptable tax exemption certificate is provided to NAKS.
4. **Payment.** NAKS reserves the right to require full or partial payment in advance of any order. Pro-rata payments are due as shipments are made. Each shipment or delivery shall constitute a separate sale, and the default of any shipment or delivery shall constitute a separate sale, and the default of any shipment or delivery shall not vitiate the contract as to other shipments or deliveries.
5. **Delivery.** Shipping and delivery dates are estimates only. No delay in delivery will subject NAKS to any costs, damages or fees for late delivery. Delivery of Products is made F.O.B. point of shipment, unless otherwise stated. NAKS shall not be liable for delay due to causes beyond its reasonable control (i.e., force majeure events). In the event of such a delay, the date of delivery shall be extended for a period equal to the time lost by reason of the delay.
6. **Changes.** NAKS may make changes, including improvements and additions, in the technical requirements, specifications, designs, materials, packaging, and place of delivery, method of transportation, quantities, or delivery schedules of the Products by notifying you.
7. **Safety.** The Products may be designed to serve multiple applications. NAKS offers a range of safety equipment, including guards and other devices, as may be required to meet customer specifications. Without exception, NAKS recommends that all orders include applicable safety devices. Use of Products ordered without applicable safety devices are your sole responsibility. You warrant that you have determined and acquired any and all safety devices required for the Products. 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.
8. **Title.** Title and right of possession of Products remains with NAKS until all payments (including deferred payments whether evidenced by notes or otherwise) shall have been received to the satisfaction of NAKS and you agree to do all acts necessary to perfect and maintain such title and right in NAKS and not to subject any Products to any liens or encumbrances until such payment is made in full.
9. **Governing Law.** This Order shall be governed by and construed according to the laws of the State of Ohio (excluding the conflict of law provisions thereof). At NAKS' discretion, any action relating directly or indirectly to the Order shall be brought exclusively in the Common Pleas Court of Cuyahoga County, Ohio or the United States District Court for the Northern District of Ohio, Eastern Division, and you irrevocably waive any objection to the jurisdiction of, or venue in, either of these courts and agree that the acceptance of the Order constitutes doing business in the State of Ohio.
10. **Arbitration.** At NAKS' discretion, any dispute arising under or in connection with any Order may be submitted to binding arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules, and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The dispute shall be resolved by one neutral arbitrator who shall have no affiliation with either you as the buyer or with NAKS and shall be selected by the American Arbitration Association office, and held in, Cleveland, Ohio.

**WARNING.** NAKS' 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 buyer and all end users. If Products are used in life support ventilation systems where failure could result in loss or injury, the buyer and all end users 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. **DO NOT USE IN HAZARDOUS ENVIRONMENTS** where a 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 eight (8) feet (2.5 m) of working level or when deemed advisable for safety.

**DISCLAIMER.** NAKS has made a diligent effort to illustrate and describe the Products accurately in all materials; however, such illustrations and descriptions are for the sole purpose of identification and do not express or imply any warranty.

## LIMITED WARRANTY

**WARRANTY AND DISCLAIMER.** This limited warranty extends to you the original purchaser only with proof of purchase. NAKS warrants that Products shall be free from original defects in workmanship and materials for one year from date of shipment (except for the warranty periods noted for products listed below), provided the Products have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to Products which have been altered or repaired without NAKS' express authorization, or altered or repaired in any way so as, in NAKS' judgment, to affect performance or reliability, nor which have been improperly installed or subjected to misuse, negligence, or accident, or incorrectly used in combination with other substances. You assume 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 one year 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 Order.

**LIMITATION OF REMEDY AND DAMAGES.** All claims under this warranty must be made in writing and delivered by U.S. Mail to:

North American Kitchen Solutions  
172 Reaser Court  
Elyria, OH 44035  
Attn: WARRANTY CLAIMS DEPARTMENT

All Product claims must be made within 15 days after discovery of the defect and prior to the expiration of one year from the date of shipment. Claims made beyond that period are barred. Within 30 days after receipt of a timely claim, NAKS shall have the option either to inspect the Product at its location or request its return to NAKS at your expense. NAKS 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 you F.O.B. point of shipment; provided, however, if in NAKS' judgment circumstances are such to prohibit repair or replacement to remedy the warranted defects, your sole and exclusive remedy shall be a refund of any part of the invoice price, paid to NAKS, for the defective Product or part.

NAKS 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 the installation of the repaired or replaced Product or part.

The warranties set forth above do not apply to any components, accessories, parts or attachments manufactured by other manufacturers; such being subject to the manufacturer's warranty, if any. To the extent not prohibited by the manufacturer's warranty, NAKS shall pass to you such manufacturer's warranty.

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**LIMITATION OF LIABILITY.** NAKS' cumulative liability to you and any other persons for all claims in any way relating to or arising out of the Products, including, but not limited to, any cause of action sounding in contract, tort, or strict liability, shall not exceed the total amount of the purchase price paid for those Products which are the subject of any such claim. This limitation of liability is intended to apply without regard to whether other provisions of this agreement have been breached or have proven ineffective even if NAKS has been advised of the possibility of such claims or demands. In no event shall NAKS be liable to you or any other person for any loss of profits or any incidental, special, exemplary, or consequential damages for any claims or demands brought by you or such other persons. BECAUSE SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THIS LIMITATION MAY NOT APPLY TO YOU.

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**REPLACEMENT PARTS.** If replacement parts are ordered, purchaser 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 product 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 NAKS' sole option and may be subject to additional charge(s).

NAKS 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 and the end-user's risk and shall not constitute any warranty or guarantee of such Products or their performance.