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FAN INSTALLATION INSTRUCTIONS

A decorative graphic of several overlapping, dashed lines in a light gray color, forming a complex, swirling pattern that resembles a stylized fan or a series of curved paths. The lines are of varying thickness and curve, creating a sense of movement and depth.

**(AFTER FAN IS INSTALLED, GIVE
INSTALLATION INSTRUCTIONS TO OWNER!!)**

*Fabricators & Suppliers Of
Kitchen Ventilation Products*

Installation & Maintenance Instructions Model ARS Supply Fan



Installation

The supply fan curb should be placed as required by the project specifications.

CAUTION: NFPA 96 requires that the fresh air intake be a minimum of 10' from the exhaust outlet.

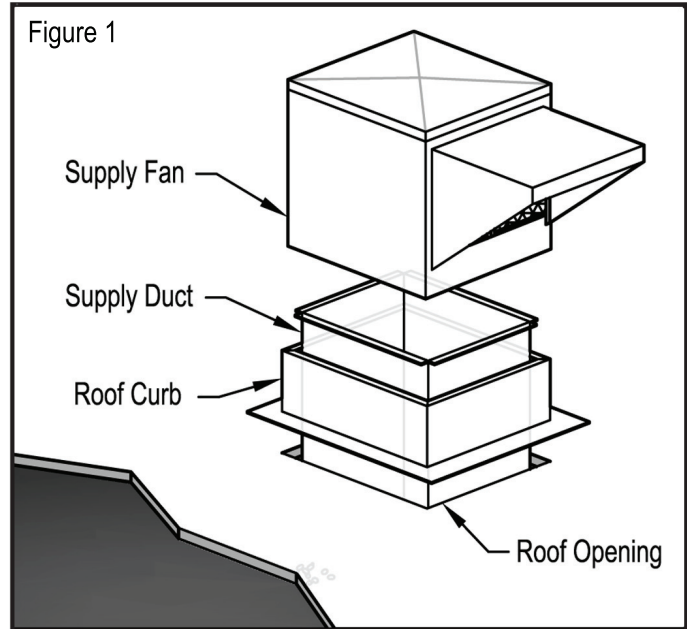
As in the case of the exhaust fan, extreme care should be taken in the event that the roof system is bonded. After installing the supply curb, install the supply duct down through the curb and set the fan, securing it to the curb with screws, anchor bolts or other fasteners. (Figure 1) When unit is mounted, check all fasteners to see that all are secure. Wheel must have clearance from inlet and rotate freely.

Motor and blower pulley should be aligned and motor mounted securely. Motor must be adjusted until about 1/2" deflection of the belt is noted with finger pressure in the middle of the belt. (Figure 2)

All wiring must be done in conformance with the National Electric Code and local ordinances involved. Check for proper voltage & phase.

Unit should be started momentarily to check rotation of blower wheel, as the unit will deliver some air, even with the motor running backwards. (Figure 3)

Adjust motor pulley for required CFM. Compare motor amperage with name plate on motor. Unit should be rechecked after 3 days of operation for proper amperage of motor, belt tension, belt alignment, rotation & to ensure all bolts & set screws are tight & blower is still properly aligned.

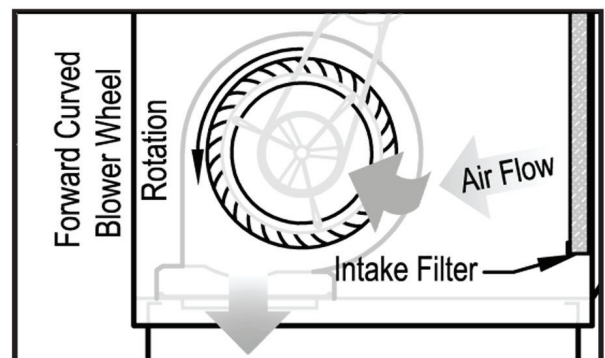
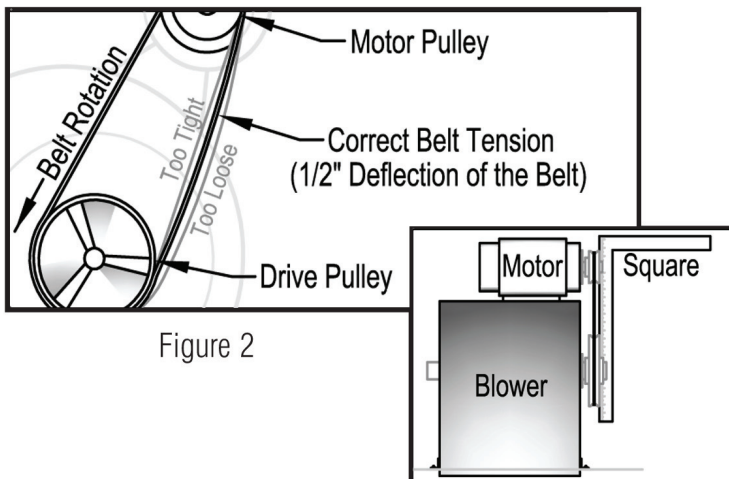


Maintenance

1. Check belt alignment and tension within 5 days after start up. Reset if necessary.
2. Belt should be checked a minimum of 2 times a year for alignment and tension.
3. Check and wash filters as required.
4. Inspect periodically to make sure that the unit is still soundly mounted, set screws are tight, and bearings lubricated where required. Clean wheel where necessary to prevent imbalance and loss of air.

Warranty

Larkin Model ARS supply fans are guaranteed for a period of one year in accordance with the warranty set forth in the section entitled One-Year Warranty.



Installation & Maintenance Instructions Model ARS-P Supply Fan Package



Installation

The supply fan package curb should be placed as required by the project specifications. Extreme care should be taken in the event that the roof system is bonded. After installing the package curb, install the curb cap, securing it to the curb with screws, anchor bolts or other fasteners (insure the supply section is on the correct end of the curb). After installing the curb cap, install the supply duct down through the curb and set the supply unit, securing it to the curb with screws, anchor bolts or other fasteners. Supply unit opening should be facing outward. (Figure 1)

Next install the exhaust duct down thru the curb cap & weld into place with a welding plate or transition, set the exhaust fan onto fan package on exhaust fan curb adaptor (if needed). Secure to the fan package with screws, anchor bolts, or other fasteners. Next, secure the provided supply air trunkline to the fan package. Then, screw or bolt the support leg to the end of the supply trunkline. When unit is mounted, check all fasteners to see that all is secure. Wheel must have clearance from inlet and rotate freely. Motor and blower pulley should be aligned and motor mounted securely. Motor must be adjusted until about 1/2" deflection of the belt is noted with finger pressure in the middle of the belt. (Figure 2)

All wiring must be done in conformance with the National Electric Code and local ordinances involved. Check for proper voltage & phase.

Supply fan package & exhaust fan should be started momentarily to check rotation of blower wheel, as the unit will deliver some air even with the motor running backwards. (Figure 3) Filters furnished and mounted at factory are aluminum high velocity type. They will require periodic cleaning. Adjust motor pulley for required CFM.

Compare motor amperage with name plate on motor. Unit should be rechecked after 3 days of operation for proper amperage of motor, belt tension, belt alignment, rotation & to ensure all bolts & set screws are tight & that blower is still properly aligned.

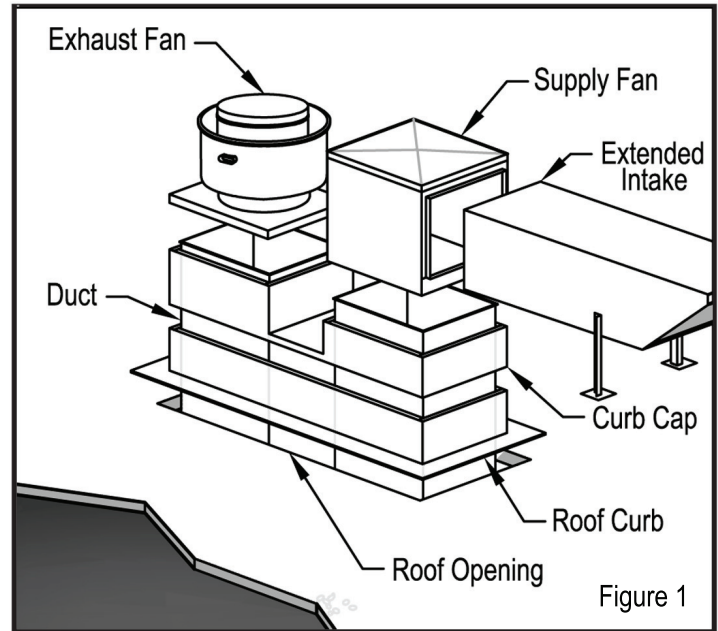


Figure 1

Maintenance

1. Check belt alignment and tension within 5 days after start up. Reset if necessary.
2. Belt should be checked a minimum of 2 times a year for alignment and tension.
3. Check and wash filters as required.
4. Inspect periodically to make sure that the unit is still soundly mounted, set screws are tight, and bearings lubricated where required. Clean wheel where necessary to prevent imbalance and loss of air.

Warranty

Larkin Model ARS-P supply fan packages are guaranteed for a period of one year in accordance with the warranty set forth in the section entitled One Year Warranty.

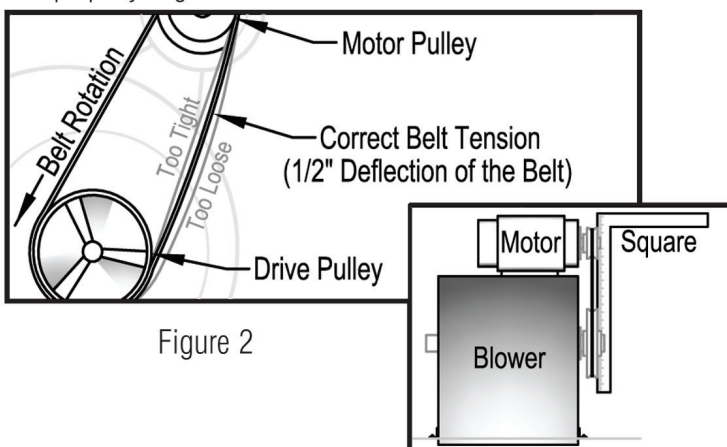
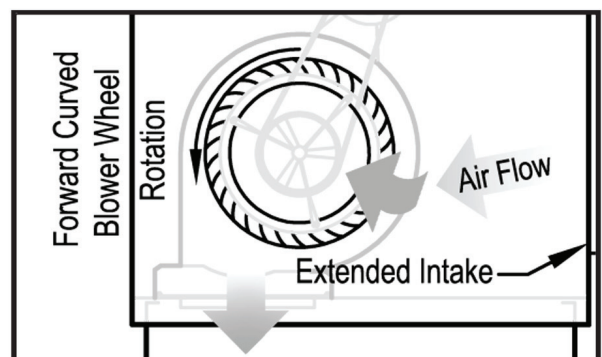


Figure 2



Exhaust Fan



Installation

If exhaust fan is included in the Rooftop Package, refer to that section.

When exhaust fan is separately mounted, every effort should be made to place the exhaust fan curb directly over the exhaust opening in the hood.

If the roofing is bonded, care should be taken to insure that the bond on the roof is still valid.

After installing the roof curb, install the exhaust duct before mounting the exhaust fan.

CAUTION: Check local codes or governing ordinances. NFPA 96 states that the exhaust duct will terminate "with the discharge at least 40" clearance from the outlet to the roof surface."

Most jurisdictions will permit the exhaust fan outlet to satisfy this requirement, which is permissible to NFPA 96 when the curb is at least 18" above the roof.

If stationary conduit passage is through the roof outside roof curb, it is not permissible to feed power supply lines through cooling tubes of exhaust fan.

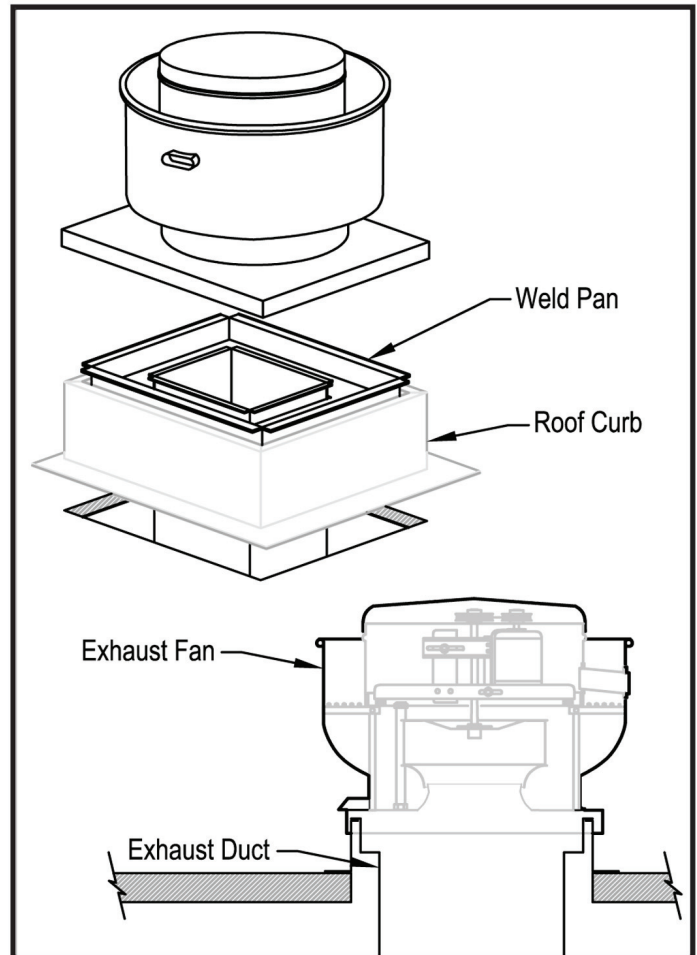
Secure the exhaust fan to the curb through the vertical portion of the ventilator base assembly flange by means of lag screws anchor bolts or other suitable fasteners.

Start Up

The exhaust fan should be wired in accordance with the National Electric Code and project plans and specifications.

1. Tighten all set screws in wheel.
2. Tighten all set screws in bearings. Repeat after 8 hours of operation. Check periodically under normal maintenance inspection.
3. Rotate impeller to insure free movement.
4. Check drive assembly for sheave alignment and belt tightness.
5. Check motor volts and phase against field supply voltage and phase. See name plate on motor for changing voltage.
6. Check fan rotation and motor amp draw against name plate on motor.

Adjustments to fan speed effect motor load. If fan RPM is changed, the motor current should be checked to be sure it is not exceeding motor nameplate AMPS.



Maintenance

Belts tend to stretch during the initial period of operation & should be inspected monthly.

Properly adjusted belt tension will allow approximately 1/2" deflection on each side of the belt, midway between the pulley centers with slight finger pressure.

Overly tightened belts will cause wear, motor overloading, bearing wear & noise.

Under tightened belts will cause belt wear, pulley wear, & poor fan performance.

A monthly cleaning of exhaust wheel & interior of fan housing is required.

Heavy grease build-up is a fire hazard & can also cause wheels to be unbalanced. This leads to bearing wear & undue noise.

At least every six months, all electrical connections should be inspected & checked for tightness.

Oil and/or grease all motors & bearings every six months or as conditions dictate.

At least once a year, check motor & fan shafts. Clean & check tightness & alignment.

Start-Up



Determine that the installation is complete and in accordance with the project plans and specifications, that the duct system is complete and that all electrical connections have been made.

Make sure that all motors have been provided with overload protection devices or have built-in overloads.

Electrical systems should be installed with disconnecting means, proper fusing and proper grounding system to protect against hazardous shock.

Check all motors, coils, etc., for proper voltage and connection.

See that all electrical components have adequate accessibility and that all connections are tight.

Place the system into operation as provided for in the control sequence.

By physical observation, check the supply and exhaust fans for proper operation by checking voltage, motor overload, noise level, amperage, rotation, etc.

Verify that motors and bearings have proper lubrication and that the belts have proper tension.

Deflection in belt tension should not exceed 1/2".

Check that the air intake filters are in place & clean & that the inlet damper in the hood supply collar is open.

Air flow in the supply make-up duct should be verified by taking a duct traverse if possible. If this is not possible, the average velocity across the supply nozzle should be taken with a rotating vane anemometer, or other instrument.

Determine the supply CFM by multiplying the average velocity by the cross sectional area of the duct in square feet or the net free area of the supply nozzle in square feet.

Capacity of the exhaust system should be determined by a duct traverse if possible and if this is not possible, take an average reading with a rotating vane anemometer across the filter bank.

Multiply the average velocity by the cross sectional area of the duct in square feet or by the net free area of the filter bank.

If the air flow as measured is not in accordance with the

project specifications, adjust the speeds of the respective fans as required and rechecked.

After the system has been placed in operation and balancing of the system has been accomplished, a visual inspection should be made of the entire system.

This inspection should include such things as unusual noises, excessive exhaust or supply air & general operation of the system.

If that smoke is not being exhausted, determine whether the exhaust air is sufficient.

If the air is sufficient, balance the supply air with the damper in the supply collar until all products of combustion are being exhausted.

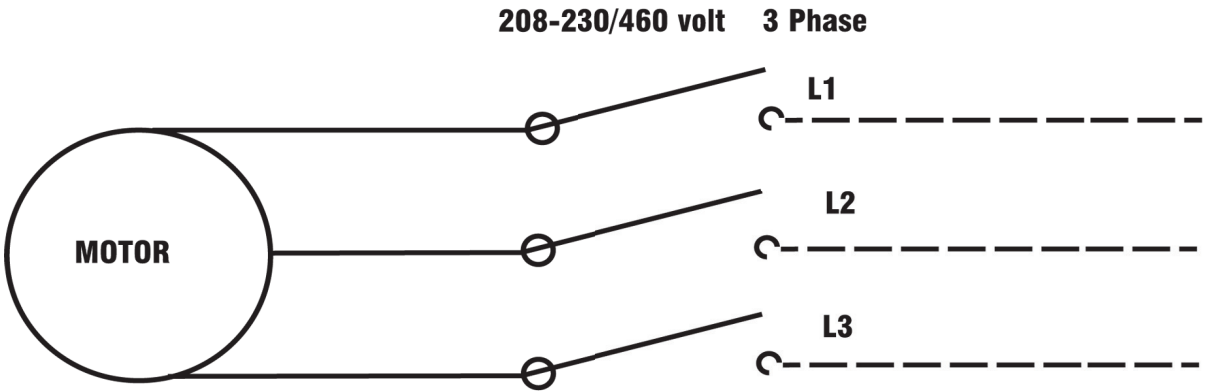
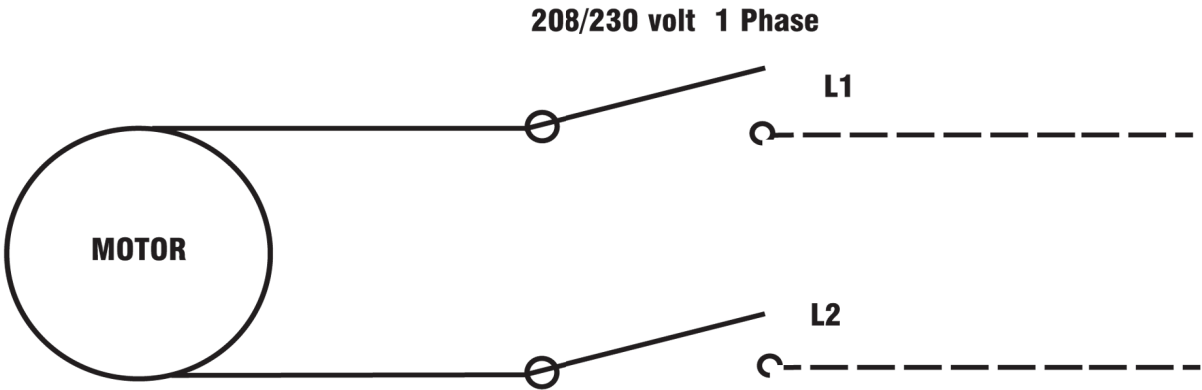
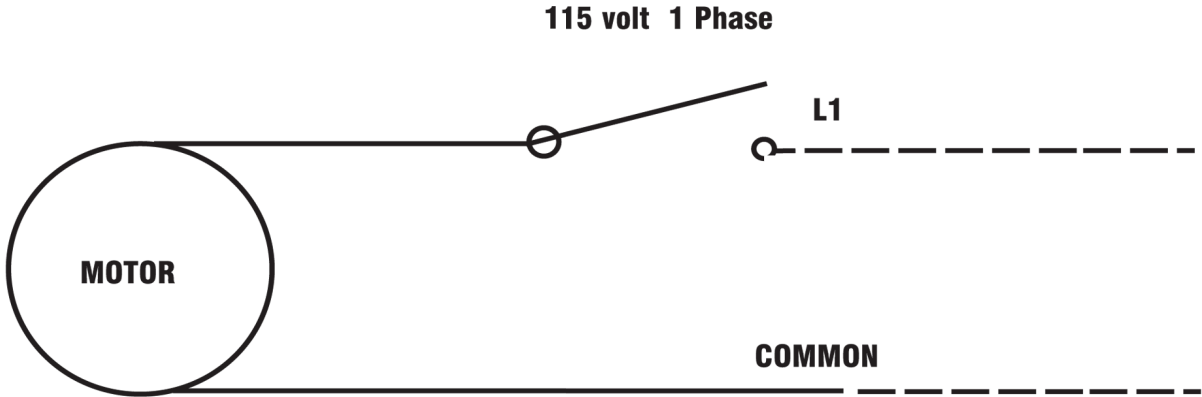
It is extremely important that the system be turned over to the owner in the best possible condition.

All parts of the system should be left in a cleaned and polished condition.

Scratches on the stainless steel hood can be removed by rubbing the affected area with "sta-brite" or similar cloth, being extremely careful to always rub IN THE DIRECTION of the metal grain.

After removing any scratches or imperfections, clean the entire hood with a stainless steel polish such as "Shiela-Shine". Then rub with a dry cloth until dry.

Always instruct the owner/operator in the proper operation and maintenance of the system.



Maintenance



Hood

Inspect the grease extractors each day for grease deposits.

Inspect the grease container every day and empty.

Wipe the interior of the hood each day, if possible, to remove deposits or accumulations of grease.

Clean the interior of the hood & clean the light fixtures.

NOTICE: If a kitchen ventilation hood is cleaned with pressure-washer or steam cleaner, the silicone sealant will be removed from the sealed seams. Also, standard daily cleaning, over time, will loosen the seal and the silicone will be removed from the sealed seams.

The sealant may be replaced, after a thorough cleaning and de-greasing, with a food grade high temperature silicone.

Once each week, wash the grease extractors in a dishwasher or other container and wash with a mild detergent in warm or hot water.

Never use harsh or abrasive cleaners on stainless steel.

Fan Packages

Check cleanliness of intake filters every two weeks for a one-month period to establish a cleaning schedule.

To clean filters, lift off lid of supply section & remove filters. Flush filters with warm soapy water & recoat with a filter coat adhesive. Replace filters & lid.

Check condition of fan drive belts upon initial installation & again after a period of two weeks.

Belts tend to stretch during the initial period of operation & should be inspected monthly.

Properly adjusted belt tension will allow approximately 1/2" deflection on each side of the belt, midway between the pulley centers with slight finger pressure.

Overly tightened belts will cause wear, motor overloading, bearing wear & noise.

Under tightened belts will cause belt wear, pulley wear, & poor fan performance.

A monthly cleaning of exhaust wheel & interior of fan housing is required.

Heavy grease build-up is a fire hazard & can also cause wheels to be unbalanced. This leads to bearing wear & undue noise.

At least every six months, all electrical connections should be inspected and checked for tightness.

Oil and/or grease all motors and bearing every six months- or as conditions dictate.

At least once a year, check motor and fan shafts. Clean and check tightness & alignment.

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One-Year Warranty

Except for motors (see separate warranty on motors), Larkin Industries, Inc. warrants to its purchaser that each ventilator manufactured by Larkin shall be free from defects in material and workmanship for a period of one year from the date of shipment by Larkin to the original purchaser, if the ventilator has been subjected to normal use and service. If it appears within the warranty period that any such ventilator or material used therein does not meet the warranties specified above, the purchaser must notify the Company immediately. Failure to notify within a reasonable time voids the warranty. The Company agrees to remedy any such defect promptly by either repair or replacement, at the Company's sole discretion of any alleged defective part (exclusive of motors covered separately herein). Cost of installation or removal of any failed unit or part thereof will be the sole responsibility of the purchaser.

This warranty does not guarantee the proper design or installation of any ventilator nor is there any warranty concerning the ability of the ventilator to remove smoke, grease, or heat. There is no warranty that the ventilator will be approved by, or meet, any local codes. This is a material warranty only. If the equipment has been altered or repaired in any way, the Company shall have the right, in its sole discretion, to void the warranty. If the equipment has been improperly installed, subjected to misuse, been subjected to negligence, been subjected to accident, or been improperly maintained or lubricated, the Company shall have the right, in its sole discretion, to void the warranty.

Motor Warranty

Electric motors carry the warranty of the motor manufacturer. Larkin Industries, Inc. makes no warranty of any kind whatsoever on electric motors and buyer's sole and exclusive remedy shall consist of whatever warranty the motor manufacturer makes. Larkin makes no warranty as to the MERCHANTABILITY or that the goods will be fit for any particular purpose. Larkin Industries, Inc. shall not be responsible for any incidental or consequential damages, the purchaser's sole and exclusive remedy being the repair or replacement set forth above. Larkin Industries, Inc. shall have no responsibility for loss of use of the equipment, loss of time, down time, inconvenience, commercial loss, consumer loss, loss of profits, or any other injuries or damages beyond the repair or replacement as set forth hereinabove. Larkin Industries, Inc. shall not be responsible to purchaser, or anyone else for any negligence, breach of contract, or damages, except as specifically set forth herein.

This warranty is expressly in lieu of all other warranties, whether expressed or implied, and in lieu of any and all obligations or liabilities on the part of the Company. The Company neither assumes, nor authorizes anyone to assume for it, any liability which is not set forth in the manufacturer's warranty. In the event Larkin Industries, Inc. receives a verbal order, there shall be no warranty that the goods will be shipped as ordered. All such orders are shipped at the risk of the buyer.

Shipping Damage

When receiving the Larkin Industries, Inc. Ventilation System, it should be immediately inspected for shipping damage. If damage is noted, the carrier should be notified, at time of delivery when uncrating, report any concealed damage to the carrier without delay.

Larkin Industries, Inc. cannot and will not accept responsibility for any shipping damage. All systems are thoroughly inspected for scratches, dents, and other possible damage before leaving the factory.

Remember, it is the customer's responsibility to file any claim for damages with the carrier. Once the system leaves the factory, Larkin Industries, Inc. will not be responsible for filing necessary claims.

Forward

A successful Kitchen Ventilation System installation depends on a variety of circumstances. First and foremost, a decision must be made as to the style of hood and type of rooftop equipment to be used. This decision is based on the equipment to be ventilated, national, regional and/or local codes and ordinances, structural requirements, climate, etc. This determination can best be made by a Consulting Engineer, Food Service Consultant, Architect or other professional individual who specializes in this type of application.

After the size, type, and capacity of the system have been determined, the quality of the installation will determine the degree of efficiency of the system and the degree of customer satisfaction. To this end, the installer is cautioned to be careful in handling the product and to make sure that the system is being installed properly to comply with the project criteria & the local code authorities.

Before the Kitchen Ventilation System installation is initiated, the Consulting Engineer, Food Consultant, or Architect may implement changes in fan, duct, or hood locations. The installing contractor must keep in constant communication with these authorities to incorporate these changes into the installation.

The installing contractor for the Kitchen Ventilation System is responsible for verifying field measurements of the constructed kitchen areas. Wall, ceiling, and plenum dimensions and locations must be checked to determine if they conform to the project plans and specifications. The installing contractor must coordinate all work with the other trades to insure proper scheduling. Only current submittal drawings of Larkin Industries, Inc. equipment are to be referenced.