






EFH Exhaust Fan

USA

CAN



-  **Product Information Chapter 1 + 2**
-  **Mechanical Installation Chapter 3**
-  **Electrical Installation Chapter 4**
-  **Start Up and Configuration Chapter 5**
-  **Maintenance and Troubleshooting Chapter 6**



Intertek

READ AND SAVE THESE INSTRUCTIONS

Job Name: _____

Installer: _____

Installation Date: _____



1. Product Information	
1.1 Function	3
1.2 Shipping	3
1.3 Warranty	3
2. Specifications	
2.1 Dimensions and Capacities.....	4
3. Mechanical Installation	
3.1 Intalling a Single Fan on a Roof Curb	5
4. Electrical Installation	
4.1 General	6
4.2 Single Fan with Fan Speed Control	6
4.3 Single Fan with MEC 18.....	7
5. Start-Up and Configuration	
5.1 System Testing.....	8
5.2 Adjusting the Fan Speed.....	8
6. Maintenance & Troubleshooting	
6.1 Care and Cleaning	9
6.2 Troubleshooting	9

Symbol Legend:

The following terms are used throughout this manual to bring attention to the presence of potential hazards or to important information concerning the product.



Danger: Indicates an imminent hazardous situation which, if not avoided, will result in death, serious injury or substantial property damage.



Caution: Indicates an imminent hazardous situation which, if not avoided, may result in personal injury or property damage.



TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed on the front of the manual.
2. Before servicing or cleaning the unit, switch off at service panel and lock service panel to prevent power from being switched on accidentally.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with applicable codes and standards.
4. Follow the appliance manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. This unit must be grounded.

How to use this manual

This installation manual does not contain any system design documentation. System design documentation is available from any authorized EXHAUSTO representative.

Accessories and controls are not covered by this manual. Please refer to these component's individual manuals.



1. Product Information

1.1 Function

- Description** The EXHAUSTO model EFH Exhaust Fan is designed to provide exhaust in multi-story buildings. The fan assures that a neutral or negative pressure is maintained in the entire duct system. This product is designed to prevent draft problems from occurring by creating mechanical draft in venting systems and thereby increasing the capacity and efficiency of a venting system. The fan discharges horizontally at a high velocity. The top of the fan housing can be opened for easy service and access to duct. The fan must be mounted at the duct termination, in the vertical position. The fan is typically mounted on a roof curb and cap.
- Use** The EXHAUSTO EFH fan is designed to provide exhaust to kitchens, bathrooms, and other building exhaust applications where the duct temperature does not exceed 175°F.
- Code** Installations must conform to requirements of the authority having jurisdiction. Where required by the authority having jurisdiction, the installation must also conform to the Standard for Draft Equipment and The National Fuel Gas Code, ANSI Z223.1/NFPA 54. All electrical wiring must be in accordance with the requirements of authority having jurisdiction or, in the absence of such requirements, with the National Electrical Code, NFPA70.
- Listing** EXHAUSTO Model EFH meets the requirements of UL Standard 705, Standard for Power Ventilators. The fan is manufactured at an ISO 9001 certified plant and bears the European CE compliance label.

1.2 Shipping

The packing list (attached to one of the packages) lists all items in the shipment and each package has a label showing the contents. Check the list against all materials on the job site before installation.

NOTE:

All single phase fans are shipped with a capacitor and junction box connected via conduit. The capacitor is located INSIDE the junction box. Please do not discard.

1.3 Warranty

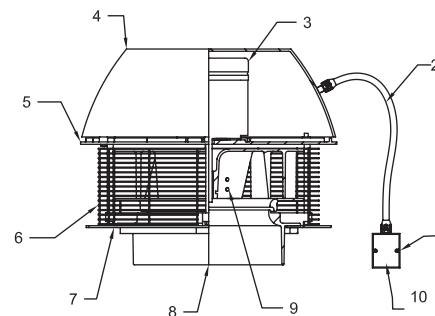
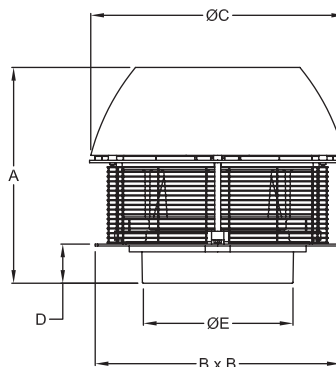
EXHAUSTO products are warranted for a period of two (2) years following the date of invoice. Replacement or repair will be at EXHAUSTO's discretion, provided factory inspection shows a defect in material or workmanship.

Complete warranty conditions are available from EXHAUSTO.

2. Specifications

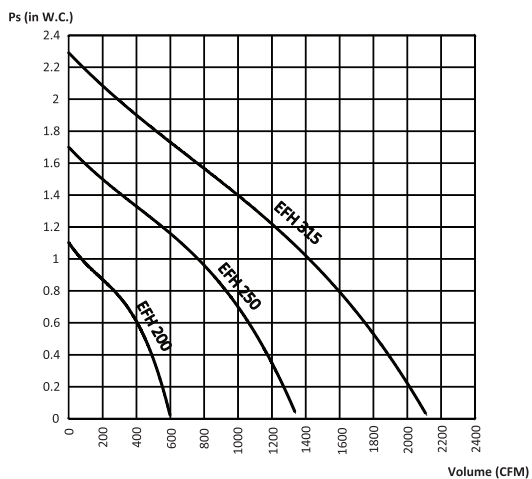
2.1 Dimensions & Capacities

Model		EFH 200	EFH 250	EFH 315	
Discharge		Horizontal			
Fan Type		Backward Curved Impeller			
Motor Type		TEFC, Variable speed, Class F			
Voltage	V AC	1x120			
RPM		1600			
Amperage	Amps	1.4	2.9	5.8	
Motor Output	HP	1/7	1/5	1/2	
	kW	0.1	0.16	0.35	
Weight	lbs.	29	46	62	
	kg	13	21	28	
Dimensions	A	in	10.2	12.6	14.4
		mm	260	320	365
	B	in	15.2	17.1	19.7
		mm	385	435	500
	Ø C	in	13.6	17.3	20.7
		mm	345	440	525
	D	in	2.6	3.0	3.0
		mm	65	75	75
	Ø E	in	7.9	9.8	12.4
		mm	200	250	315
	Temperature Rating		175°F / 80°C		



- 1 Junction Box
- 2 Conduit/cord
- 3 Motor
- 4 Motor Housing
- 5 Cooling Plates
- 6 Bird Screen
- 7 Base Plate
- 8 Inlet
- 9 Impeller
- 10 Capacitor (inside junction box)

Capacity



Sound Diagrams

Model	Lw dB (measured in accordance with ISO 3744)							Lp dB(A)
	125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	8000Hz	
EFH 200	60	65	62	64	62	53	48	68
EFH 250	54	57	57	61	57	46	40	64
EFH 315	67	73	68	74	68	61	56	76



3. Mechanical Installation

Generally, a mechanical venting system must be installed a minimum of 3 feet away from any forced air inlet located within 10 feet and a minimum of 4 feet away from any door or window. For complete information, consult EXHAUSTO or the local building codes.

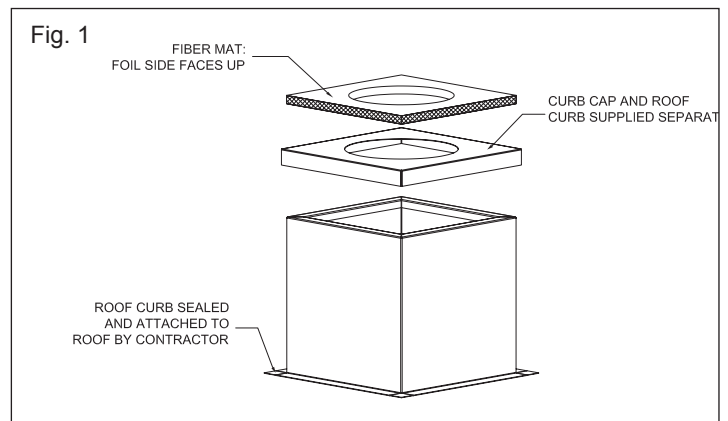
This fan is for vertical installation only. DO NOT side-wall vent this fan.

3.1 Installing a Single Fan on a Roof Curb

The EFH fan should be mounted on a roof curb and curb cap. Before installing the fan, verify the roof curb is properly attached and sealed to the roof. Place the curb cap on top of the roof curb. Roof curb and curb cap are supplied separately by EXHAUSTO.

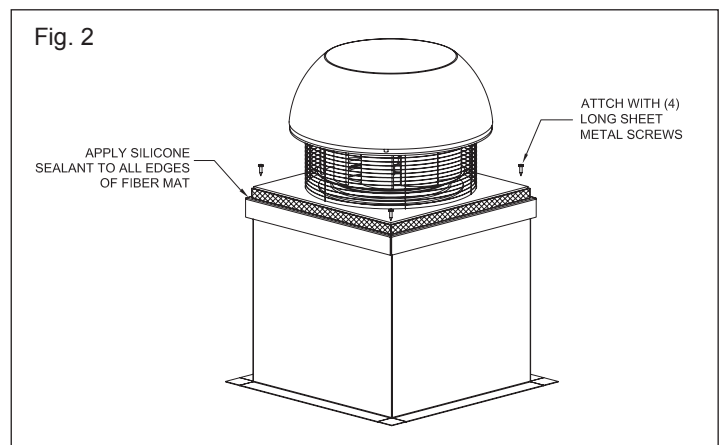
Cut a hole in the silicone gasket to correspond to the hole in the curb cap. The hole should be sized so there is least 3/4" between it and any edge of the silicone gasket.

Place the silicone mat on the curb cap.



Place the fan on the silicone gasket. Apply high temperature silicone around all edges of the gasket to prevent water from leaking into the curb and/or duct.

Attach the fan base to the curb cap with long sheet metal screws. The screws should be long enough to clear the fan base, silicone gasket and curb cap. Seal bolt heads with silicone.



4. Electrical Installation

4.1 General



Danger: Turn off electrical power before servicing. Contact with live electric components can cause shock or death.

All electrical wiring must be in accordance with requirements of authority having jurisdiction or, in absence of such requirements, with National Electrical Code NFPA 70 — latest edition. If an external electrical source is utilized, system must be electrically grounded in accordance with requirements of the authority having jurisdiction or, in the absence of such requirements, with the National Electrical Code NFPA 70 — latest edition.

Power requirements for the system depends on the fan size. Electrical requirements are:

EFH 200	1 x 120 V / 60 Hz	1.4 Amps
EFH 250	1 x 120 V / 60 Hz	2.9 Amps
EFH 315	1 x 120 V / 60 Hz	5.8 Amps

The exhaust fans have a split capacitor motor with infinitely variable speed.

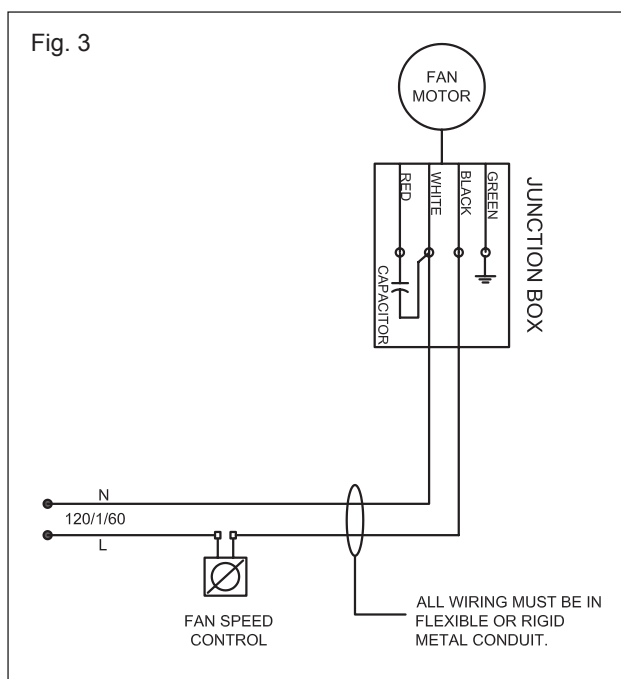
The fan speed control supplied is rated 1x120V/60 Hz and 5 Amps. It has an adjustable low voltage set point of min. 65 V +/- 5 V.



Notice: If any of the original wire supplied with the system must be replaced, use similar wire of the same temperature rating. Otherwise, insulation may melt or degrade, exposing bare wire.

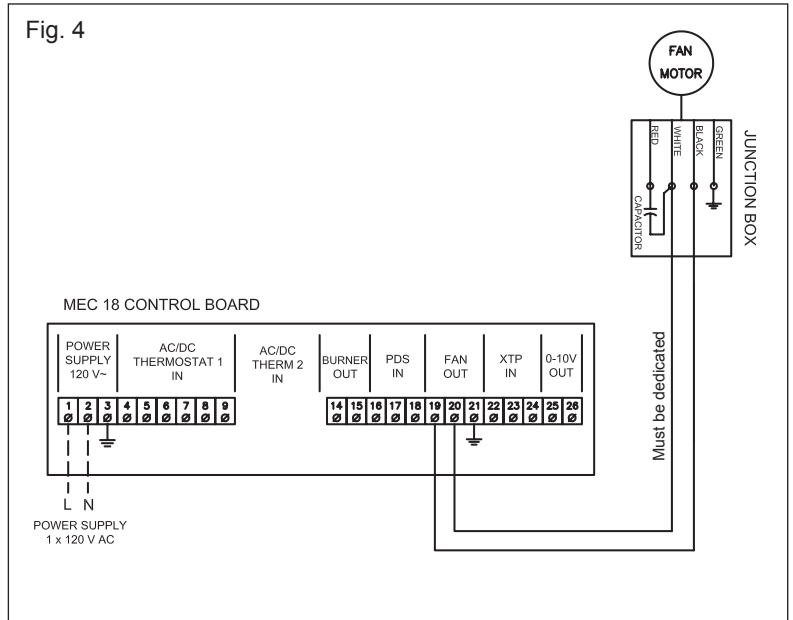
4.2 Single Fan with Fan Speed Control

The wiring diagram shown in Fig. 3 shows the connection of the fan to a fan speed control. Use 2-conductor wire, minimum 14 AWG when connecting the fan. All wiring must be run outside the chimney or stack in flexible or rigid metal conduit.



4.4 Single Fan with MEC 18

The wiring diagram shown in Fig. 4 shows the connection of the fan to a MEC 18 Control. Use 2-conductor wire, minimum 14 AWG, when connecting the fan to the control. All wiring must run outside the chimney or stack in flexible or rigid metal conduit. The MEC 18 Control is for indoor installations only. See the MEC 18 Installation Manual for further instruction.



5. Start-Up and Configuration

5.1 System Testing

Before any adjustments are made to the system, follow these procedures:

1. Turn the chimney fan ON and make sure that it is running. Increase and decrease the speed of the fan by adjusting the fan speed control to make sure it is operating properly.
2. Turn the fan OFF and make sure the pressure switch opens, so the power to the circuit it controls, is disconnected.



Make sure the fan is running in the correct direction; the fact that the fan blows is no guarantee it is doing so. Running the fan in the wrong direction over a longer period of time will damage the motor.



Danger: Check other heating appliances (water heater, furnace, fireplace etc.) for proper operation while the chimney fan is operating. Make sure no flue gases are spilling out as this can lead to carbon monoxide poisoning.

5.2 Adjusting the Fan Speed

Start up all appliances. Use the fan speed control to set the speed of the chimney fan so no back pressure is experienced anywhere in the system. Check the system for flue gas spillage. Mark this setting on the fan speed control cover.

If a MEC 18 Control is used, remove the cover and adjust the fan speed using the potentiometer dial on the display board of the control. See the MEC 18 Installation Manual for further instructions.



6. Maintenance & Troubleshooting

6.1 Care and Cleaning



Warning: Disconnect all power before servicing the fan.

The EXHAUSTO EFH Fan is designed for prolonged use. The impeller should be inspected three months after the initial installation and periodic inspections should take place based on the condition of the fan at that time (a minimum of once a year). Clean the housing and impeller as required. Do not get water on the motor.

The top of the fan is hinged and can be opened in order to ease the cleaning.

The fan motor is equipped with permanently lubricated and sealed ball bearings. No maintenance is required.

6.2 Troubleshooting

Observation	Problem	Solution
There is no power going to the fan	<ul style="list-style-type: none"> - The circuit breaker may be off - Fan speed control is off - Bad electrical connections 	<ul style="list-style-type: none"> - Check the circuit breaker - Turn fan speed control on - Check and correct problem
There is power to the fan but it is not operating	<ul style="list-style-type: none"> - Bad electrical connections - The fan speed control's low voltage setting is too low - The fan speed control is bad 	<ul style="list-style-type: none"> - Check and correct problems with connections. Pay special attention to the wiring in the junction box - Increase the setting with the plastic screw on the fan speed control's front plate - Replace the fan speed control
There is power to the fan but it hums and does not turn	<ul style="list-style-type: none"> - The motor run capacitor may be bad. 	<ul style="list-style-type: none"> - Check capacitor and replace if necessary
The fan seems to work fine, but there is not enough draft	<ul style="list-style-type: none"> - The fan may be undersized 	<ul style="list-style-type: none"> - Replace with a larger fan
The fan vibrates	<ul style="list-style-type: none"> - The motor shaft may be bent - The hinges may be bent 	<ul style="list-style-type: none"> - Replace motor - Straighten out hinges
Mechanical noise can be heard	<ul style="list-style-type: none"> - Foreign matter may be stuck - Motor bearings may be worn out 	<ul style="list-style-type: none"> - Remove matters - Replace bearings

