

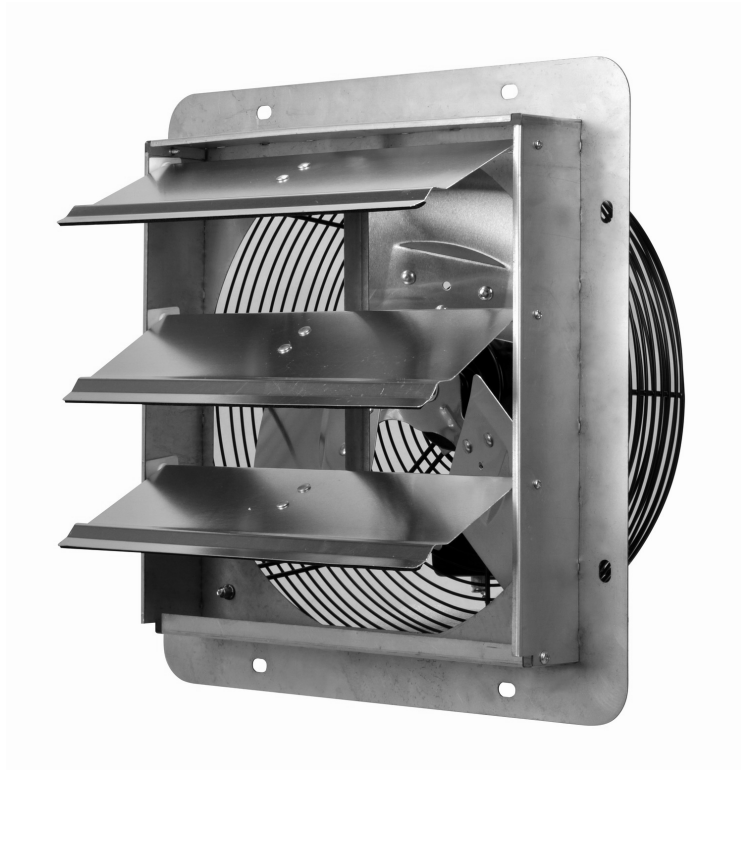
# INSTRUCTION MANUAL



## TORNADO

### Shutter Exhaust Fan

**Models:**  
**HI-FAN-SEF10-1PK**  
**HI-FAN-SEF12-1PK**



**PLEASE READ AND SAVE THIS INSTRUCTION.**

*Attention: Pictures in the IM are for reference only.*

## BEFORE YOU BEGIN

### **⚠ WARNING**

Installation, troubleshooting and parts replacement are to be performed only by qualified personnel.



#### **Electrical Requirements:**

- The motor amperage and voltage ratings must be checked for compatibility to supply voltage prior to final electrical connection. Please refer to the motor's nameplate label.

Wiring must conform to local and national codes.



#### **Tools / Materials Needed:**

- Mounting Fasteners
- Sealant or Caulk
- Regular Screw Driver Set

#### **Recommended Accessories:**

- Speed control (6 Amps, 120VAC, 50/60Hz ) for HI-FAN-SEF10-1PK, HI-FAN-SEF12-1PK.

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## UNPACKING

#### **Contents:**

- Tornado Utility Shutter-Mounted Exhaust Fans(1)
- Operating Instructions and Parts Manual (1)



#### **Inspect:**

- After unpacking unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. Shipping damage claim must be filed with carrier
- Check all bolts, screws, set-screws, etc. for looseness that may have occurred during transit. Retighten as required. Rotate propeller by hand to be sure it turns freely.



- See General Safety Instructions on page 4, and Cautions and Warnings as shown.

## GENERAL SAFETY INSTRUCTIONS

Fans are UL/cUL Listed, Standard 705.

### **⚠ DANGER**

**Do not depend on any switch as the sole means of disconnecting power when installing or servicing the fan.**

**Always disconnect, lock-out and tag-out power source before installing or servicing. Failure to disconnect power source can result in fire, shock or serious injury. Motor will restart without warning after thermal protector trips. Do not touch operating motor, it may be hot enough to cause injury.**

### **⚠ DANGER**

**Do not place body parts or objects in fan or motor openings while motor is connected to the power source.**

### **⚠ CAUTION**

**All electrical connections should be made by a qualified electrician.**

### **⚠ WARNING**

**These utility exhaust fans are for general purpose exhaust applications only. Do not use these exhaust fans in explosive or corrosive**

1. Follow all local electrical and safety codes in the United States and Canada, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) in the United States, and the Canadian Electric Code (CEC) in Canada.
2. Always disconnect power source before working on or near a motor or its connected load.
3. Protect the power cable from coming in contact with sharp objects.
4. Do not kink or create tight bends in the power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
5. Make certain that the power source conforms to the requirements of your specific exhaust fan model.
6. The fan frame and motor must be electrically grounded to a suitable electrical ground, such as a grounded water pipe or ground wire system.
7. To reduce the risk of fire or electrical shock, do not expose to water or rain.
8. To reduce the risk of fire or electrical shock, do not use this fan with any solid state speed control device.
9. Automatically operated device - To reduce the risk of injury, disconnect from power supply before servicing.
10. If the power supply cord is damaged, contact your local service center or a qualified electrician to install an appropriate replacement cord to prevent any injury or damage.
11. The appliance does not apply to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere ( dust, vapour or gas ).
12. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
13. Children should be supervised to ensure that they do not play with the appliance.

### **⚠ CAUTION**

**To reduce the risk of injury to persons, observe the following:**

**In United States to reduce the risk of injury to persons, OSHA complying guards are required when fan is installed within 7 feet of floor or working level.**

**In Canada to reduce the risk of injury to persons, CSA complying guards are required when fan is installed below 2.5 meters (8.2 feet) above floor or grade level.**

## GENERAL SPECIFICATIONS

Power source	120V~ 60Hz
Mounting Position	Vertical
Frame Material	Galvanized Steel
Shutter Blade Material	Aluminum Profile
Propeller Material	Aluminum Alloy and Galvanized Steel
Agency Compliance	UL/cUL 705

### Dimensions(Inches)

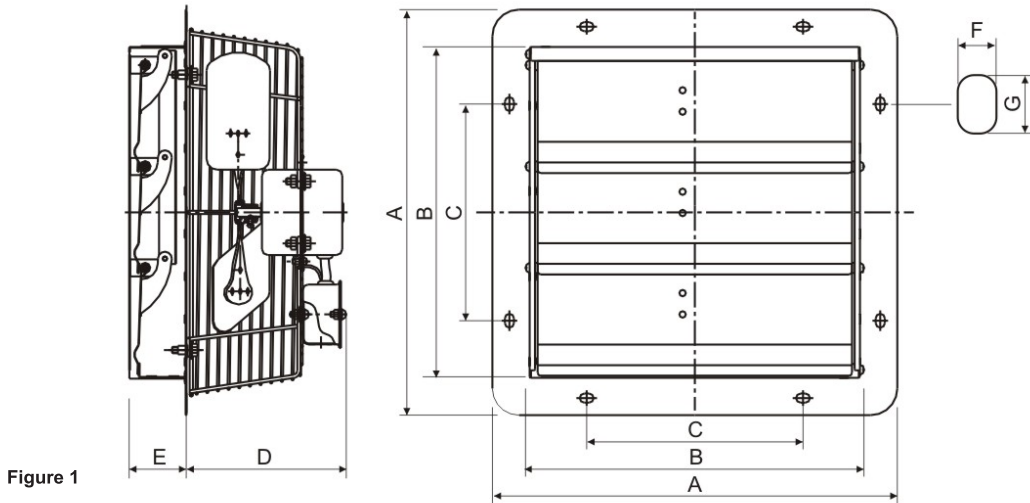


Figure 1

ITEM NO.	Prop. Dia	A	B	C	D	E	F	G	Suggested Wall opening (Sq)
HI-FAN-SEF10-1PK	10"	12-5/8"	10-1/8"	6"	5-7/8"	2-1/8"	9/32"	1/2"	10-1/2"
HI-FAN-SEF12-1PK	12"	15"	12-1/8"	8"	5-7/8"	2-7/8"	9/32"	1/2"	13"

### **WARNING**

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING.

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- Use OSHA approved lock-out tag-out devices on power supply to prevent shock and/or electrocution.
- Sufficient air is needed for proper combustion and exhausting of gases through the flue(chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline 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.
- When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
- To reduce the risk of fire or electrical shock, do not use an extension cord, unit is intended to be permanently hard wired to properly rated electrical service outlet (120V 60Hz).
- The fan frame and motor must be electrically grounded to a suitable electrical ground, such as a grounded water pipe or ground wire system.

## PERFORMANCE

ITEM NO.	Prop. Dia	Amps	Nom. RPM	Watts	CFM	Noise dB(A)	Bearing Type
HI-FAN-SEF10-1PK	10"	0.52	1600	63	620	56	Ball Bearing
HI-FAN-SEF12-1PK	12"	0.65	1550	72	812	56	Ball Bearing

## INSTALLATION INSTRUCTION

1. The unit should be securely mounted in a rigid framework.

**NOTE:** Allowing the fan frame to flex or move will result in undue vibrations and possible premature motor, propeller, or shutter failure.

2. Install any auxiliary components such as thermostats, switches, or speed controls.

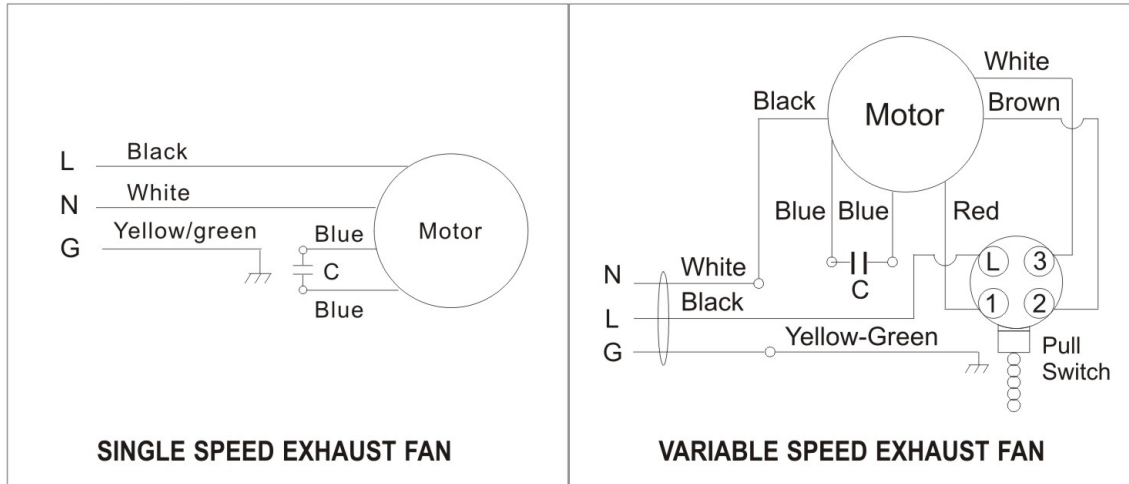
3. Connect power to the motor, using an approved wiring method.

Refer to the following wiring diagrams:



Fan frame and motor must be securely and adequately grounded to a suitable electrical ground, such as a ground water pipe or ground wiring system.

## Wiring Diagram



## OPERATION

1. Keep the area free of objects that could impede air flow on both the intake and exhaust side of fan.
2. For proper exhaust operation, a window, door, or louver should be opened for fresh air intake on the opposite side of the area to be ventilated.
3. Turn the fan ON, the shutter will open automatically. When the unit is turned OFF, the shutter will close.
4. Speed controllable units are designed to operate at a minimum of fifty percent line voltage.

## MAINTAINANCE

1. Disconnect power source before servicing.
2. Periodically clean the propeller, guard, motor, and shutter of any accumulated dirt.

### **⚠ DANGER**

Do not depend on any switch as sole means of disconnecting power when installing or servicing. If power disconnect is not visible utilize OSHA Lock out /Tag out procedure.

Failure to do so may result in fatal electrical shock .

Employ proper lock-out/tag-out procedur es when performing maintenance.

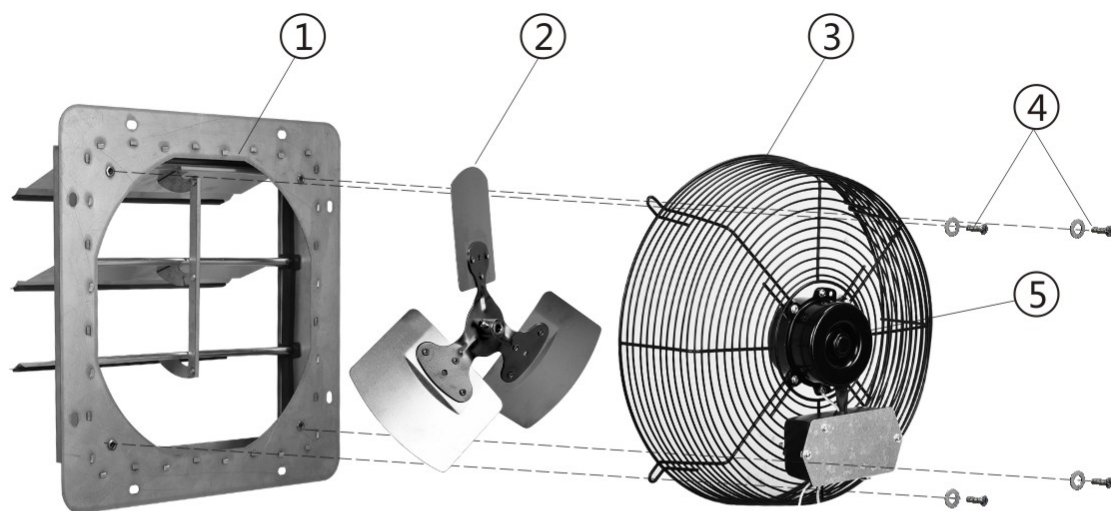
## REPAIR PARTS AND DISASSEMBLY

1. Disconnect power before servicing.
2. Refer to illustration of parts placement.
3. Remove the four screws holding the guard to the venturi panel. Remove the guard/motor/propeller assembly.
4. Loosen the set screw on propeller hub and remove the propeller.

## TROUBLESHOOTING GUIDE

Symptom	Possible Cause(s)	Corrective Action
Excessive noise	<ol style="list-style-type: none"><li>1. Dry motor bearings</li><li>2. Loose propeller</li><li>3. Bent or damaged propeller</li><li>4. Loose guard assembly or motor fasteners.</li></ol>	<ol style="list-style-type: none"><li>1. Relubricate motor bearings as per instructions or replace motor.</li><li>2. Tighten set screws on propeller hub.</li><li>3. Replace propeller</li><li>4. Tighten as required to 15-20 inch lbs.</li></ol>
Fan inoperative	<ol style="list-style-type: none"><li>1. Blown fuse or open circuit breaker</li><li>2. Defective motor</li><li>3. Speed control off or too low or inoperative</li></ol>	<ol style="list-style-type: none"><li>1. Replace fuse or reset circuit breaker</li><li>2. Replace motor (see Figure 5)</li><li>3. Turn controller on. if not working replace Speed controller</li></ol>
Insufficient air flow	<ol style="list-style-type: none"><li>1. Blocked intake or exhaust opening</li><li>2. Low voltage</li><li>3. Speed control set too low</li></ol>	<ol style="list-style-type: none"><li>1. Clear intake and exhaust openings of any obstructions. Clean, motor, guard, propeller, and shutter assembly. Increase fresh air intake opening size.</li><li>2. Determine cause and correct</li><li>3. Increase speed with controller</li></ol>

## REPAIR PARTS ILLUSTRATION FOR Models HI-FAN-SEF10-1PK, HI-FAN-SEF12-1PK



### PARTS LIST

Ref. No.	Description	Qty.
1	Shutter	1
2	Fan Blade	1
3	Guard	1
4	Washer & Screws (M5x14mm)	4
5	Motor	1

We are happy to help, contact us : [info@tornadofans.com](mailto:info@tornadofans.com)

## LIMITED ONE-YEAR WARRANTY

Hexago LLC warrants this product to be free of defects in material and workmanship for the applications specified in the Owner's Manual for a period of 12 months for the whole fan from date of purchase. This warranty only applies to the original purchaser of this product.

This warranty excludes damage, accidental or otherwise, to the unit not caused by a defect in material or workmanship.


The warranty also excludes damage caused by misuse, tampering, modification, missassembly, repairs or alternations, or failure to adequately maintain and care for the unit. Operating this product under any conditions others than those recommended or at voltages other than indicated will also void this warranty. For warranty issues, contact the place of purchase for repair/ replacement opportunities. The original dated receipt or proof of purchase must accompany all returns.

All warranties, expressed or implied, are limited for 12 months for the whole fan from the date of purchase. Please contact us at [www.tornadofans.com](http://www.tornadofans.com) if you have any questions. Tornado is a registered trademark of Hexago LLC.

Some states do not allow for the limitation or exclusion of incidental or consequential damages, or do not allow limitation on implied warranties. The above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and may also include other rights that vary state by state.

**Customer service email: [info@tornadofans.com](mailto:info@tornadofans.com)**

**Website: [www.tornadofans.com](http://www.tornadofans.com)**

**FOR CALIFORNIA CONSUMERS  WARNING:** This product can expose you to chemicals including lead and phthalates, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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