



*better AIRFLOW by DESIGN™*

## ***Installation & Maintenance***



**TF140-EC**  
**TRANQUIL BATHROOM FANS**

# SAFETY INSTRUCTIONS

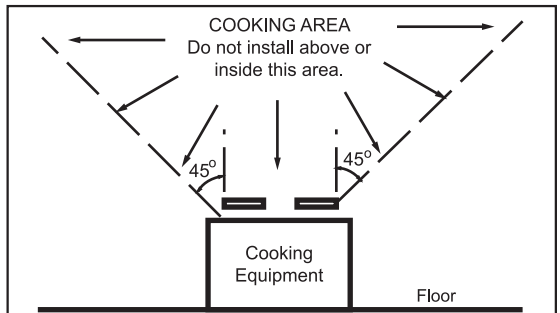
**NOTICE** TF140-EC fan is not explosion proof and should not be used when a potentially explosive situation exists.

**WARNING** To reduce the risk of fire, electric shock, or injury to persons—observe the following:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the factory.
2. Before installing or servicing, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. Do not re-establish power supply until fan and activation device are completely installed. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
3. A qualified person(s) must perform installation work and electrical wiring in accordance with all applicable codes and standards, including fire-rated construction.
4. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guidelines and safety standards as published by the National Fire Protection Association (NFPA), the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), and local code authorities.
5. When cutting or drilling into walls or ceilings, take care not to damage electrical wires or other hidden utilities.
6. Ducted fans must always be vented to the outdoors.
7. TF140-EC fan is suitable for installation over a shower or tub when connected to a GFCI (Ground Fault Circuit Interrupter) protected branch circuit.
8. This unit must be grounded.
9. Do NOT use this fan with any solid-state speed control device.
10. The fan must not be installed in a ceiling that is thermally insulated to a value greater than R40.

**CAUTION**

1. For general ventilation use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. TF140-EC fan is designed for installation in ceilings up to a 12/12 pitch (45 degree angle). Duct connector must point up. DO NOT MOUNT THIS PRODUCT IN A WALL.
3. To avoid motor bearing damage and noisy and/or unbalanced impellers, keep drywall spray, construction dust, etc. off power unit.
4. Check voltage at the fan to see that it corresponds to the motor nameplate.
5. TF140-EC fan is not suitable for use in kitchens or cooking areas.

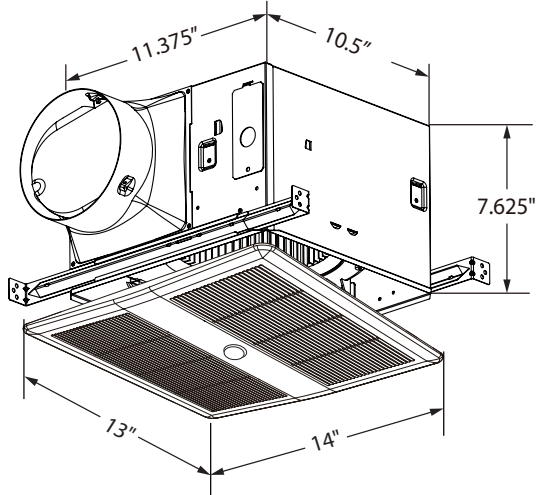
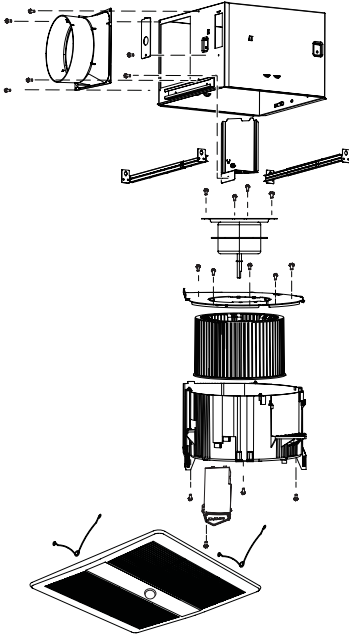


# TF140-EC TRANQUIL BATHROOM FANS

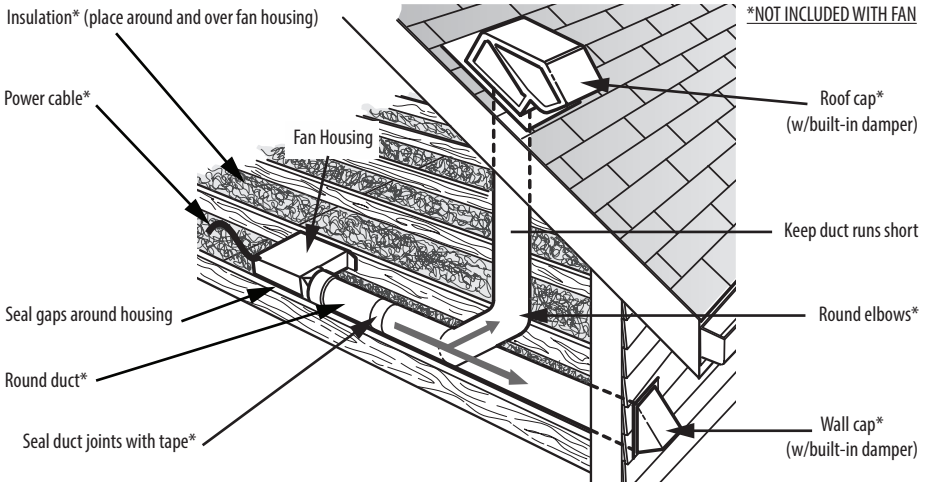
## MODEL: TF140-EC

The delivery set includes:

- Housing
- Duct assembly
- Grille
- Mounting hardware
- Blower assembly
- Power box knobs



## TWO WAYS TO CONNECT DUCTWORK TO A UNIT



Ducting has a strong effect on the airflow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ducts than recommended. Insulation around the ducts can reduce energy loss and inhibit mold growth. Fans installed with existing ducts may not achieve their rated airflow.

# FAN INSTALLATION

**⚠ WARNING** Disconnect and lock out power supply before performing any installation work. Working on or near energized equipment could result in death or serious injury.

## STEP 1. INSTALL HOUSING

Hanger bars span up to 24 inches and can be used on all types of framing. Slide hanger bars onto the housing and adjust to fit between framing (Figure 1). Position the tabs of the hanger bars flush with bottom of framing. Secure the hanger bars to framing using one screw on each end of hanger bar. Next select a proper hole and secure hanger bars together with one screw (Figure 2).

## STEP 2. INSTALL DUCT

Using the recommended duct size, connect round ductwork (not included) to the damper/duct connector (Figure 3), and run duct to an exterior roof or wall cap using the shortest, straightest duct routing possible for best performance. Secure all the ductwork connections with tape (not included), ensuring all duct connections are airtight.

**Note:** Ducting has a strong effect on the airflow, noise and energy use of the fan. Use the shortest, straightest duct routing possible for best performance, and avoid installing the fan with smaller ductwork than recommended. Fans installed with existing ductwork may not achieve their rated airflow. Insulation around the ductwork can reduce energy loss and inhibit mold growth.

## STEP 3. CONNECT WIRING

Refer to wiring diagrams on page 5. Reattach all electrical box covers before applying power.

## STEP 4. INSTALL GRILLE

Insert sensor plug into the plug base on the power box before installing the grille. Pinch the springs on the sides of grille and insert them into the slots in the housing. Firmly push the grille against the ceiling to secure (Figure 4).

## NOTICE

Before applying power, ensure all electrical box covers are installed.

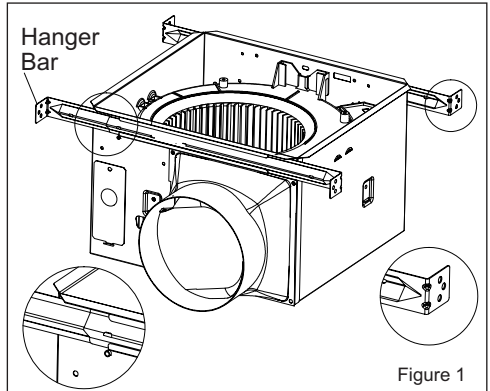


Figure 1

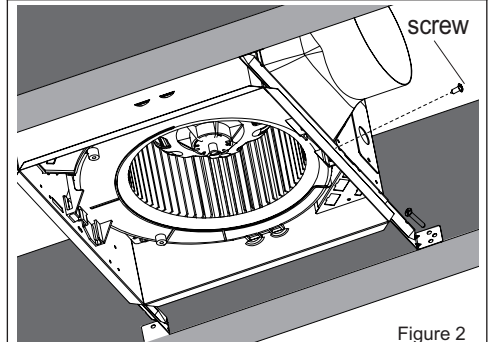


Figure 2

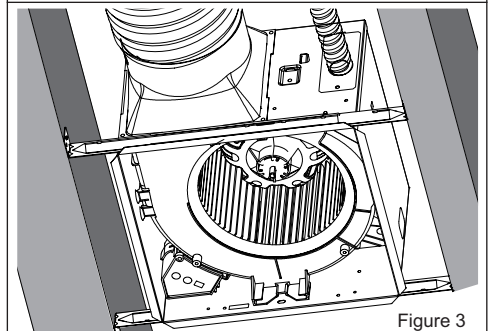


Figure 3

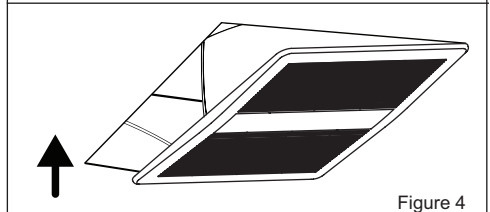
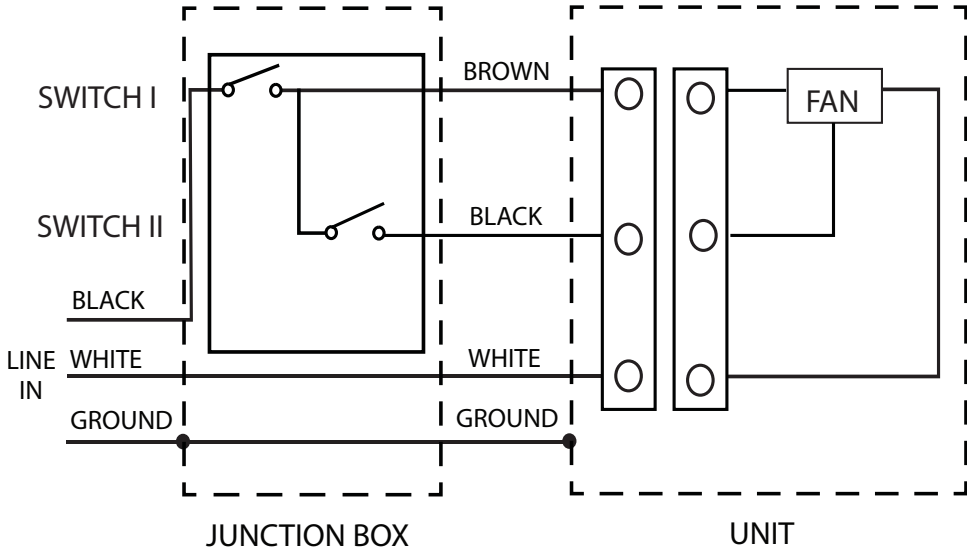


Figure 4

# WIRING DIAGRAM

MODEL: TF140-EC






Note: Switch I and switch II are supplied by others.

Run 120V AC house wiring to the location of the fan. Use only UL-approved connectors (not included) to attach the house wiring to the wiring plate.

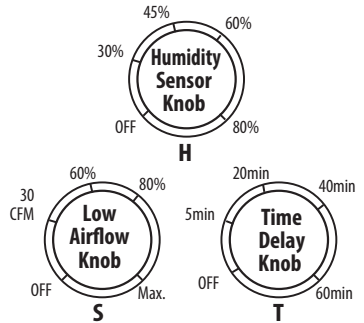
## FAN CONTROLS

The **Power Box**, located inside the fan housing, has four separate adjustments:

- a. **Toggle Switch** positions determine the maximum airflow rate (factory set to 110 cfm). To select the desired airflow (80, 110 or 140 cfm), set toggle switch 1 & 2 according to one of three switch positions in the table.
- b. **Low Airflow Knob "S"** adjusts the low airflow rate from 30 cfm up to the maximum airflow rate set with the toggle switch. The low airflow is deactivated (fan stops after pre-set time delay) when set between OFF and 30 cfm.
- c. **Humidity Sensor Knob "H"** is adjustable from OFF to 80%. The humidity sensor is deactivated when set between OFF and 30%.
- d. **Time Delay Knob "T"** is adjustable from 5 to 60 minutes. The time delay will switch the fan to the low speed setting after Switch II is turned OFF for the set period of time. The time delay is deactivated when set between OFF and 5 minutes.

Toggle Switch Position			
Airflow (CFM)	140	110	80

To change the pre-selected airflow, adjust toggle switch positions as per the table above. ■ is the position of switch.



The above knobs have been factory set to OFF. To adjust a knob's settings, observe the follow:

- a. Disconnect power at service entrance.
- b. Remove the grille and locate the slot marked "S" (Low Airflow), "H" (Humidity Sensor) or "T" (Time Delay) on the control box inside the fan.
- c. Carefully rotate the knob adjustment toward the preferred setting.
- d. Turn on power.

After an adjustment to the slot marked "H" (Humidity Sensor), check operation by running a shower or other humidity source until the fan turns on. Repeat above steps if necessary. Humidity sensor response may deviate depending on air temperature change.

## FAN OPERATION

When the fan is OFF, by turning ON both **Switch I** and **Switch II**, the fan will start and run at the maximum airflow rate pre-set by the Toggle Switch. This function is independent of the pre-set Low Airflow, Time Delay, and Humidity Sensor.

If turning OFF **Switch II**, the fan will continue to run for the number of minutes pre-set on the Time Delay Knob and then it will automatically switch to the low airflow rate or OFF.

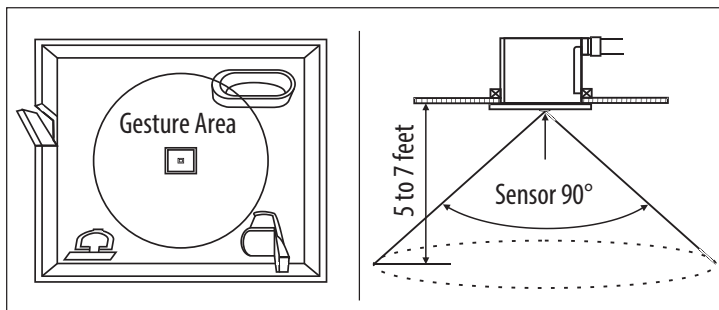
With only **Switch I** ON, the fan will automatically start if any of the following conditions are met:

- If the Low Airflow Knob position is anywhere above 30 cfm, the fan will run continuously at the pre-set low airflow rate.
- If the Humidity Sensor detects a relative humidity above the pre-set value or a rapid increase in humidity, the fan will run at the maximum pre-set airflow rate. When the pre-set humidity level is reached, the fan will continue to run for the selected number of minutes set on the Time Delay Knob. After that, the fan will switch to the pre-set low airflow rate (if set above 30 cfm) or stop (if set OFF or below 30 cfm).
- If the optional motion sensor is installed and detecting motion, the fan will run at the maximum pre-set airflow rate until after the last detection of motion and the pre-set time delay has elapsed. After that, the fan will switch to the pre-set low airflow rate (if above 30 cfm) or stop (if OFF or below 30 cfm).

Turning OFF **Switch I** will stop the fan from any of the operating situations above.

## MOTION SENSOR OPERATION

If the optional motion sensor grille is installed and motion is detected, the fan shifts automatically to the maximum pre-set airflow rate. After the last detection of motion, the fan will continue to operate at the maximum pre-set speed until the user-set time delay has passed. At the end of the time delay, the fan speed will return to its previous state.



## TROUBLESHOOTING

**⚠ WARNING** Only qualified personnel should work on electrical equipment. Working on or near energized equipment could result in death or serious injury.

1. If the fan fails to start, consult wiring diagram to ensure proper connection.
2. Check the incoming supply for proper voltage.
3. Ensure that the electrical service to the fan is locked in the "OFF" position.
4. Use a meter to test for continuity across the fan motor leads.
5. If the motor leads show continuity, rewire the fan.
6. Turn on the electrical supply and restart.
7. If the fan fails to start, please contact factory.

## RECOMMENDED MAINTENANCE

**⚠ WARNING** Disconnect and lock out power supply before performing any maintenance. Working on or near energized equipment could result in death or serious injury.

1. The motor is permanently lubricated. No additional lubrication is necessary.
2. Periodic inspection, based upon usage, should be performed to ensure that the fan impeller is not obstructed.
3. Excessive fan noise or vibration may indicate an obstructed impeller.
4. To inspect and clean impeller:
  - a. Remove the grille from the fan and remove any obstruction from the impeller.
  - b. Vacuum the interior of the unit.
  - c. Reconnect the grille to the fan.
  - d. Turn power supply on.

## ACCEPTANCE CERTIFICATE

The TF140-EC fan has been duly certified as serviceable.

Manufactured on (date): \_\_\_\_\_

Date of sale: \_\_\_\_\_

Sold by: \_\_\_\_\_

(name of trading enterprise, stamp of store)

## CONNECTION CERTIFICATE

Company name: \_\_\_\_\_

Electrician name: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Due to constant product improvements, some models may differ slightly from those portrayed in this manual.

TF140-EC-I&M-2304



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