



# INDUSTRIAL WALL FANS WALL SHUTTERS FAN GUARDS ELECTRIC SHUTTER OPERATOR



**OWNER'S  
MANUAL**  
Read and save  
these instructions

## INSTALLATION • OPERATION

**IMPORTANT:** Carefully read these instructions before you install or operate your new exhaust fan. Proper installation is important to achieve maximum efficiency.

### CAUTION - SAFETY RULES

**WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:**

Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

Before servicing or cleaning unit, switch power off at service panel and lock service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

Installation Work And Electrical Wiring Must Be Done By Qualified Person(s) In Accordance With All Applicable Codes And Standards, Including Fire-rated Construction.

Permanent Grounding must be used. **DO NOT USE AN EXTENSION CORD.**

**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT USE THIS FAN WITH ANY SOLID - STATE FAN SPEED CONTROL DEVICE.**

If shutter is removed for servicing, replace before normal operation.

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 published by the National Fire Protection Association (NFPA), the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and local code authorities.

When cutting or drilling into wall or ceiling, **DO NOT** damage electrical wiring and other hidden utilities.

**CAUTION** - This Unit Has An Unguarded Impeller. Do Not Use In Locations Readily Accessible To People Or Animals Without Proper Guarding Device.

**CAUTION** - For General Ventilation Only, Do Not Use To Exhaust Hazardous Or Explosive Materials And Vapors.

### **CAUTION- WARNING**

ALTHOUGH THIS PRODUCT IS AVAILABLE WITH AN OPTIONAL EXPLOSION-PROOF MOTOR AND ALUMINUM FAN BLADE, IT IS NOT INTENDED TO CONVEY THE SUITABILITY OF THE OVERALL FINISHED PRODUCT IN AN EXPLOSIVE ATMOSPHERE BUT ONLY THAT THE PRODUCT HAS BEEN SUPPLIED WITH CERTAIN COMPONENTS FOR THIS PURPOSE.

WIRING MUST BE IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL CODES AND BE PERFORMED BY A QUALIFIED ELECTRICIAN.

FOR SUITABILITY INFORMATION, CONTACT THE CUSTOMER SERVICE DEPARTMENT AT 800-255-9014



**INSTALLATION RECORD** Please complete for future use.

Model # \_\_\_\_\_ Serial # \_\_\_\_\_

Purchased from \_\_\_\_\_

Date Purchased \_\_\_\_\_ Date installed \_\_\_\_\_



E-mail: mail@trianglefans.com • Website: www.trianglefans.com

**TRIANGLE ENGINEERING OF ARKANSAS, INC.**

1101 North Redmond Road • Jacksonville, Arkansas 72076 • (501) 982-7558 • Fax (501) 982-5691 • 1-800-255-9014

**NOTICE: READ ALL THE INSTRUCTIONS ON PAGE 3 BEFORE STARTING ANY INSTALLATION AND WIRING.**

**TYPICAL WOOD STRUCTURE INSTALLATION**

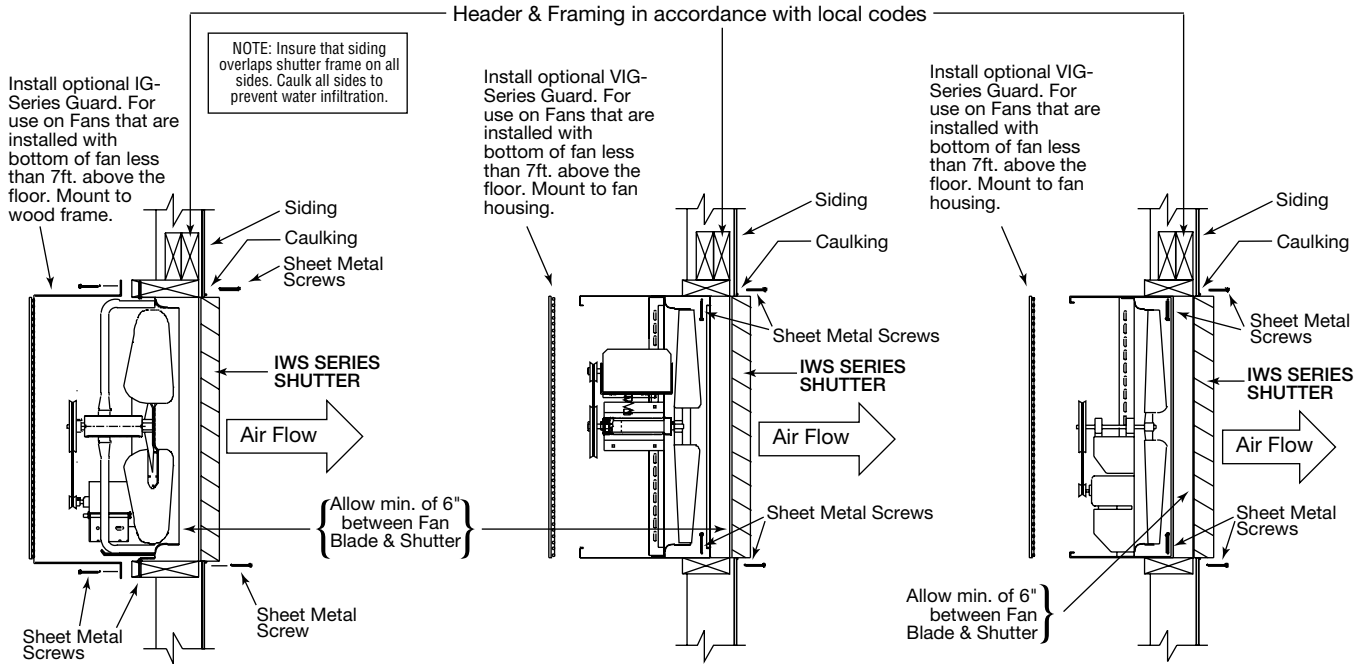


Fig. 1

V-Series Installation shown with optional IWS-Series Shutter and optional IG Fan Guard

Fig. 2

VI-X Wing Series Installation shown with optional IWS-Series Shutter and optional IG Fan Guard

Fig. 3

VI-Pillow Block Series Installation shown with optional IWS-Series Shutter and optional IG Fan Guard

**TYPICAL STEEL STRUCTURE INSTALLATION**

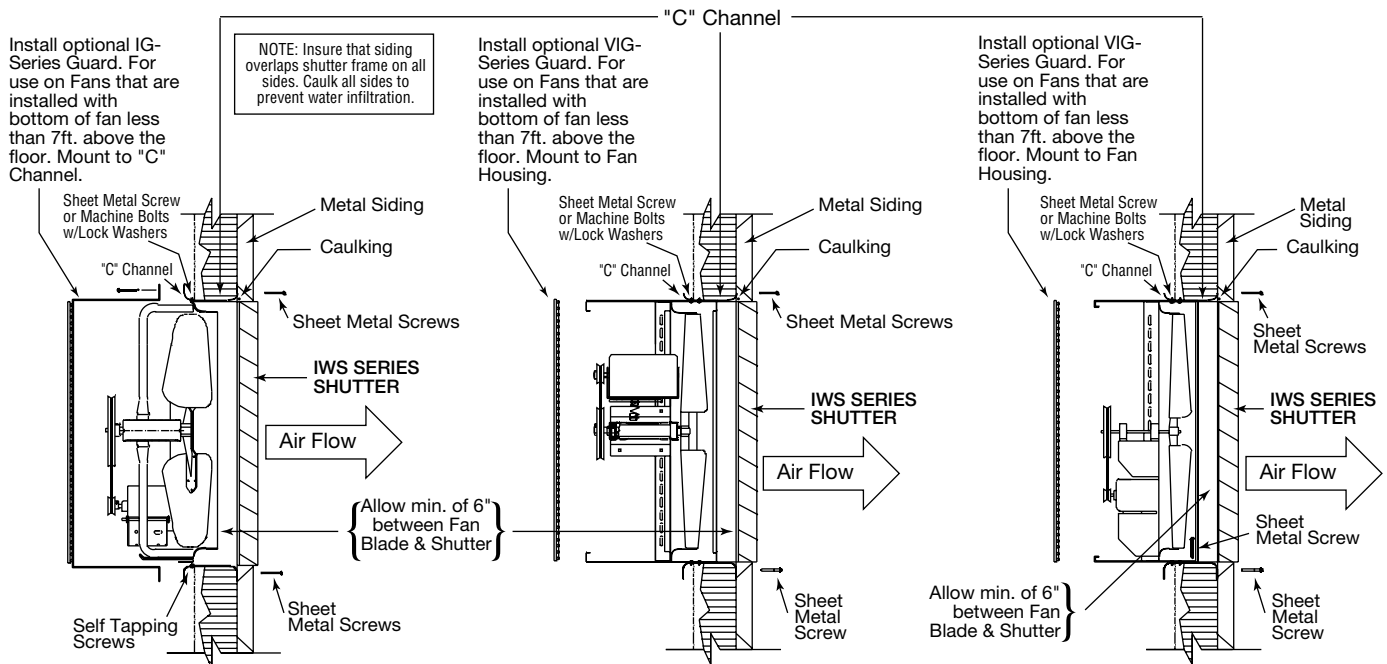


Fig. 4

V-Series Installation shown with optional IWS-Series Shutter and optional IG Fan Guard

Fig. 5

VI-X Wing Series Installation shown with optional IWS-Series Shutter and optional VIG Fan Guard

Fig. 6

VI-Pillow Block Series Installation shown with optional IWS-Series Shutter and optional VIG Fan Guard

## PREPARATION

1. Inspect the area where the fan is to be installed. The area must be free of ANY wiring and plumbing.
2. **PLAN FOR WIRING.** Insure that the fan wiring is compatible to the building wiring. Check and note the motor wiring **BEFORE INSTALLATION.**
3. **PLAN FRAMING AND INSTALLATION.**
  - Add 1/4" to the width and height of the fan housing. These dimensions will be the **INSIDE** measurements of the framing.
  - Plan the installation so that the fan blade is at least 6" from the shutter. (See Page 2)
4. **MASONRY STRUCTURE**
  - Plan the opening in the exterior wall so that block or brick will be clear of the shutter frame.
  - Plan for an angle-iron header to support the block or brick.
  - Use "C" Channel or 2" x lumber to construct the framing and header for the fan.
  - Follow Local Building Codes to plan the construction of the framing and header.
5. **WOOD STRUCTURE**
  - Plan the opening in the exterior wall so that the building siding will overlap the shutter frame lip, and that the shutter will be mounted to the framing. (See Fig. 1 & 2)
  - Use 2" x lumber to construct the header in accordance with local codes.
  - Use sheet metal screws to mount the fan and shutter.
6. **STEEL STRUCTURE**
  - Plan the opening in the exterior wall so that the building siding will overlap the shutter frame lip. (See Fig. 3 & 4)
  - Use a "C" Channel for the fan frame.
  - Use self tapping or sheet metal screws to attach the shutter.
  - Use self tapping screws or machine bolts with lock washers to mount the fan.

## CONSTRUCTION

1. Following all of the Building Codes for your area, cut the opening, and construct the framing and header.
2. Install the wiring needed for the fan. If an Electric Shutter Operator is to be installed, run the wiring at this time. **NOTE: The Operator Uses Only 115/230/60/1 Current.**

## INSTALLATION

1. **INSTALL THE SHUTTER.**
  - Check to make sure the shutter is installed level and square.
  - **DO NOT** tilt or twist the shutter frame.
  - Manually operate the shutter. It should move freely without bind or drag.
2. **REPLACE AND RE-FASTEN THE SIDING.**
  - Caulk all four exterior sides of the shutter.
3. If an Electric Shutter Operator (IWS 3187 or IWS 887) is to be utilized, install and wire it at this time. (See Fig. 5)
4. **IMPORTANT!** Install the fan with a minimum of 6" between the fan blade and the shutter.

## 5. INSTALL THE WIRING.

- **Check the motor label, the motor connections, and the input power to insure proper installation and rotation.**

6. Optional fan guard needs to be installed if the bottom of the fan is less than 7ft above the floor. This is an OSHA requirement.

## TESTING

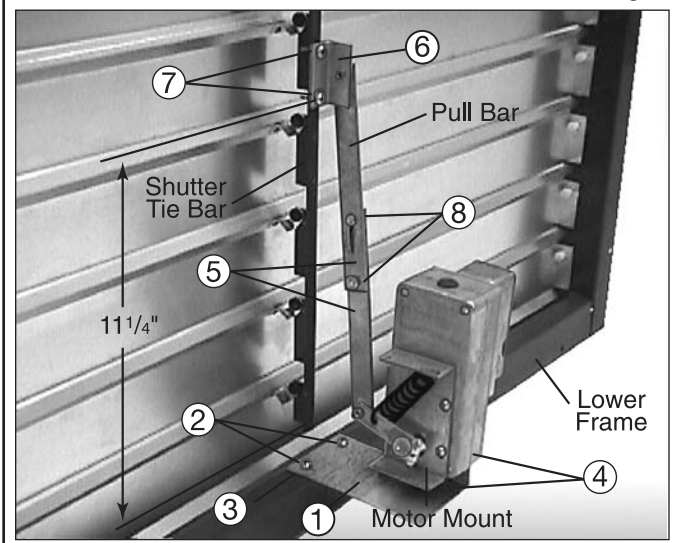
1. **APPLY POWER TO THE FAN.**

- As an **EXHAUST FAN** the blade assembly should rotate Counter-Clockwise, when viewed from the motor side of the fan.
- Test the operation of the Electric Shutter Operator.
- Observe the shutter. It should operate freely.

## ELECTRIC SHUTTER OPERATOR

1. Remove shutter motor mounting bracket from motor assembly.
2. Center mounting bracket on centerline of lower frame. Use motor mounting plate as a template to locate and drill three holes at 5/32" dia. thru.
3. Attach motor mounting bracket to the top and the back surfaces of the lower fame by using (qty 3) #8 x 3/4" self drilling screws.
4. Re-attach shutter motor to mounting bracket.
5. Assemble pull bar arms to the middle of their adjustment slots and tighten firmly.
6. Locate the center of the bottom screw hole in the pull bar bracket 11 1/4" from the bottom of the shutter tie bar as shown. Use bracket to locate & drill 2 holes 5/32" diam.
7. Attach the pull bar bracket to the tie bar by using (qty. 2) #8 x 1/2" self drilling screws.
8. Readjust pull bar adjustment slots to create a firm seal between the shutter blades.

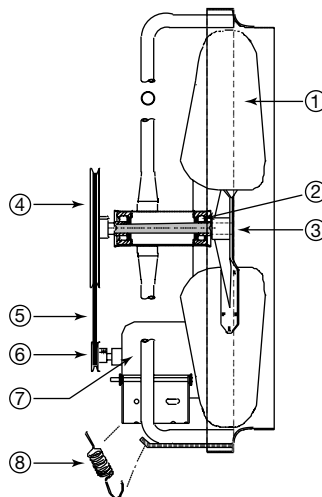
Fig. 5



# REPAIR & REPLACEMENT PARTS

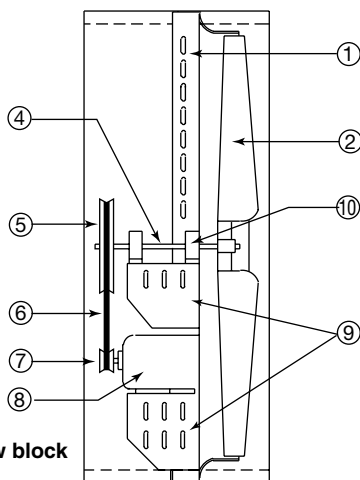
## WHEN ORDERING REPAIR PARTS, GIVE:

- Fan Model no.
- Part Description
- If the fan is equipped with an Explosion Proof Motor, Aluminum Blade, or any other Non-Standard Item, inform customer service when ordering parts.
- VI-SERIES FANS. Insure you identify the model and style of your fan. See Figs 7 & 8.



KEY NO	DESCRIPTION
1	.....Blade Assembly
2	.....Bearing (2 Req'd)
3	.....Fan Shaft
4	.....Blade Pulley
5	.....V-Belt
6	.....Motor Pulley
7	.....Motor
8	.....Motor Spring

Fig. 6



KEY NO	DESCRIPTION
1	..... Mounting Angle
2	..... Blade Assembly
3	.....Bearings (2 Req'd)
4	..... Fan Shaft
5	..... Blade Pulley
6	..... V-Belt
7	..... Motor Pulley
8	..... Motor
9	..... Motor/Bearing Mount
10	..... Pillow Blocks (2 Req'd)
11	..... X-Wing Mount

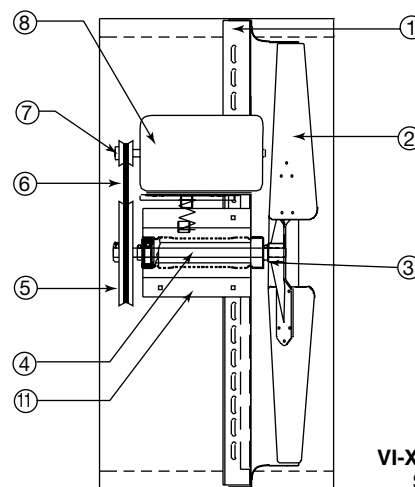


Fig. 7  
VI-Pillow block Series

Fig. 8  
VI-X Wing Series

## LIMITED ONE YEAR WARRANTY

Triangle Engineering of Arkansas, Inc. (Manufacturer) warrants, from the date of purchase, to the original purchaser only, that the product manufactured by Manufacturer is free from defects in material and workmanship for a period of ONE (1) YEAR. Motors, capacitors and switches are excluded from this warranty, but shall have a limited one year warranty from date of purchase to the original purchaser.

If a failure of the product occurs, contact the Manufacturer on the toll free number: **1-800-255-9014** and give the model number of the product, the purchase date, and a description of the problem to the customer service agent.

Once the problem is diagnosed, and proof of purchase date is verified, Manufacturer will have the option of shipping the necessary repair part(s) to the Customer, freight prepaid or having the product returned to Manufacturer for repair or replacement. If the product is returned to the Manufacturer, Customer is responsible for prepayment of all inbound freight

charges. Upon repair or replacement, which shall be at the discretion of Manufacturer, the Manufacturer will prepay all outbound freight charges for the return of the product to the customer. However, if Manufacturer finds product to be in operating condition and no problems are diagnosed, product will be returned to customer freight collect.

This limited warranty does not cover failure of the installer to provide adequate ventilation to meet minimum exhaust requirements as described in the installation and operation instruction, damage resulting from accident, misuse or abuse, lack of proper maintenance, improper installation, affixing of any parts or attachments not authorized by Manufacturer, or loss of parts. In no event shall Manufacturer be liable for any special, incidental, or consequential damages; which may result from any defect in material or workmanship or from the breach of any express or implied warranty.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.