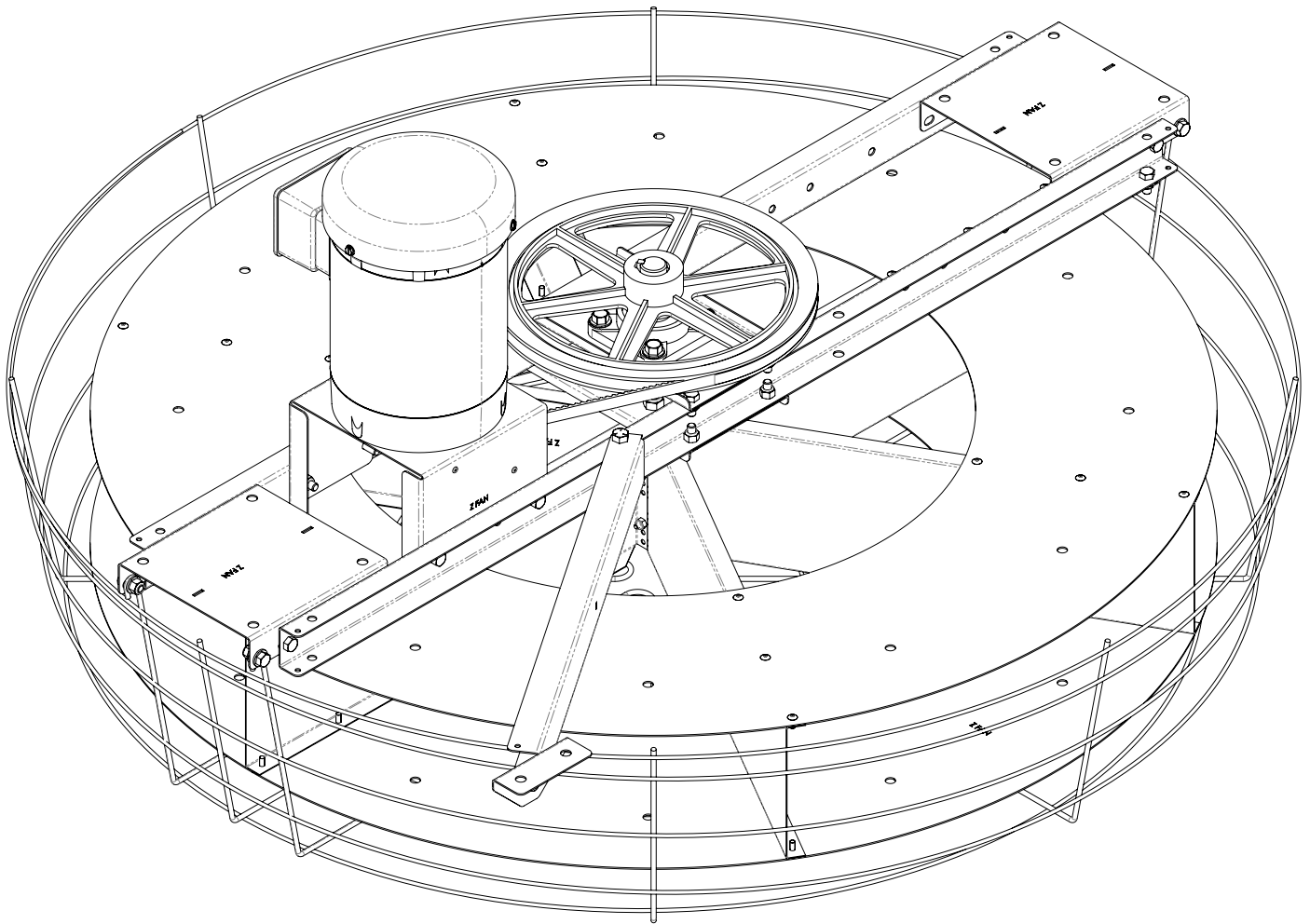




# Z-PRO™ HEMISPHERE® FAN

972200, 972200-SC, 972220, 972220-SC

Installation Manual



990195

REV (B)

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## VAL PRODUCTS, INC. WARRANTIES

For Warranty claims information, please see the “Manufactured Products Standard Warranty” form QMS101 available from Val Products, Inc. by:

- Phone: 1-800-998-2526
- Email: [marcom@val-co.com](mailto:marcom@val-co.com)
- Online: <https://www.val-co.com/doc/382/warranty/16368/qms101-warranty.pdf>

Conditions and Limitations:

- Products and Systems involved in a warranty claim under the “Manufactured Products Standard Warranty” shall have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Val Products, Inc.
- Malfunction or failure resulting from misuse, abuse, negligence, alteration, accident or lack of proper installation or maintenance shall not be considered a defect under the Warranty.

## Introduction

Z-Pro Fans come pre-assembled. (Except for mounting brackets, motor, motor pulley, belt, and guard)

***Please check your shipment for correct parts and condition.***

- Read all safety information, instructions and illustrations before starting to install your new fan. Please review the complete assembly manual before starting and be sure to check your shipment with the packing list for any shortages. Please report shortages promptly.
- Fan does not come with hardware required to mount to ceiling.
- Metric measurements are shown in millimeters and in parenthesis throughout the manual. Example: 13” [330mm]

## Symbols

Our concern is for your safety. The safety warnings are included in this manual as a guide to help and encourage the safe operation of your equipment. It is your responsibility to evaluate the hazards of each operation and implement the safest method of protecting yourself as owner and/or operator.



= CHECK - the details of all requirements, processes or procedures of instructions listed.



= STOP - before you go further check the details of all requirements, processes or procedures of instructions listed.



= NOTE - take notice this may help you!



= IMPORTANT INFORMATION - be sure to read!



= WARNING - The safety alert symbol is always used on warning signs that involve your safety or has extra significance since it is describing the importance of a feature or explaining a step to which you should pay close attention to avoid problems.

**DANGER**

Imminent hazard, if ignored serious injury or death WILL occur.

**WARNING**

Hazard is very possible and care should be given as injury or product function could be compromised.



**CAUTION**

Potential hazard, if ignored minor or moderate injury MAY occur.

## Hardware

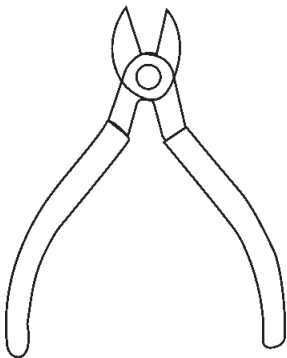
3/8" & 5/16" assembly hardware provided.

Tools, and fasteners (lag screws or nut and bolt combination, depending on mounting surface) required to mount fan to ceiling not provided.

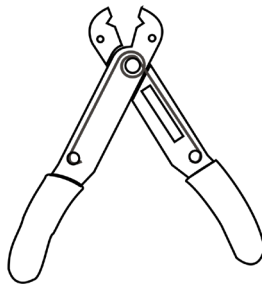
## Tools

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Wire Cutters</li><li>• Wire Strippers</li><li>• Allen Wrench (5/32")</li><li>• Straight Screwdriver</li><li>• Straight Edge</li><li>• Drill with 1/4" Drill Bit</li></ul> | <ul style="list-style-type: none"><li>• Driver/Socket/Wrench Set with 6" extension OR</li><li>• Open End Wrenches (1/2", 9/16", 15/16") OR</li><li>• Adjustable Wrench</li></ul> |
|---|--|

**Wire Cutters**



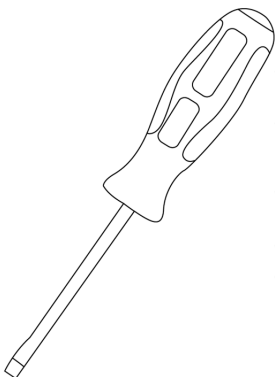
**Wire Strippers**



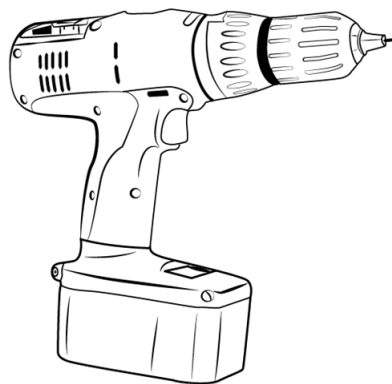
**Allen Wrench (5/32")**



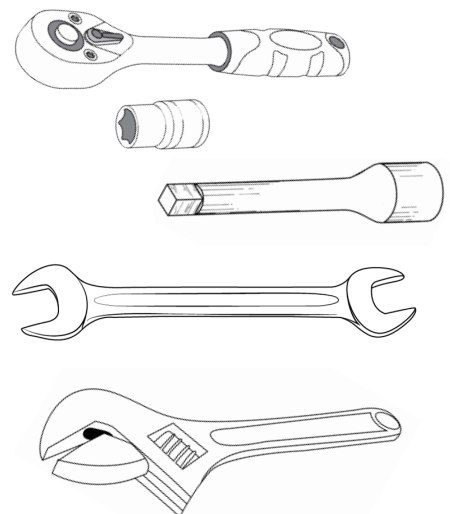
**Small Straight Screwdriver**



**Drill with 1/4" Drill Bit**



**Socket Set, Open End Wrench, or Adjustable Wrench**



# Installation Instructions: Frame Assembly

Assemble frame as shown below. Refer to 990194 if installing optional attic inlet (812305). If not, install a 15-3/4" tall enclosure from bottom of truss with inside dimensions of 32-1/2" X 35" to close the rough opening in the attic.  
**Note:** Motor must have 1-1/2" clearance above it - See Figure 2.

Figure 1

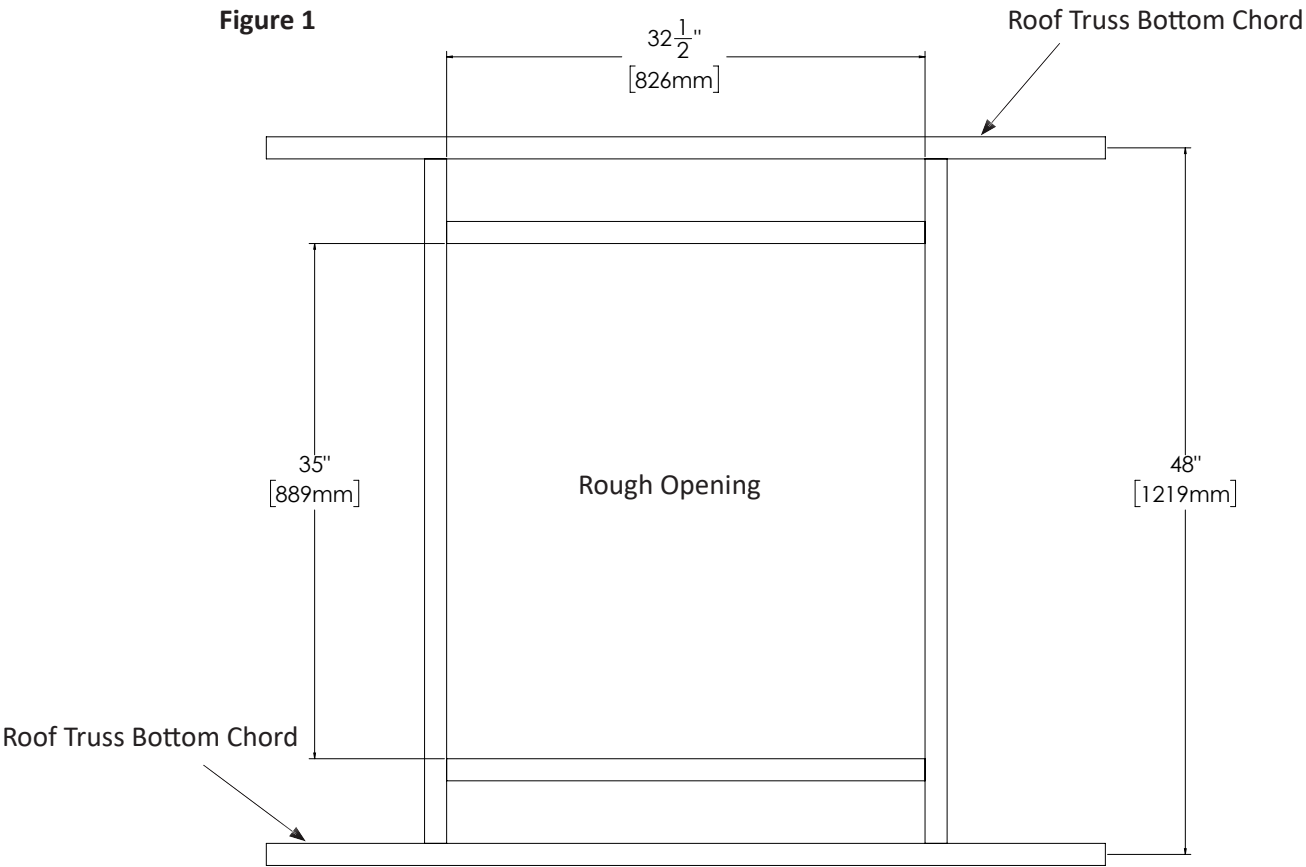
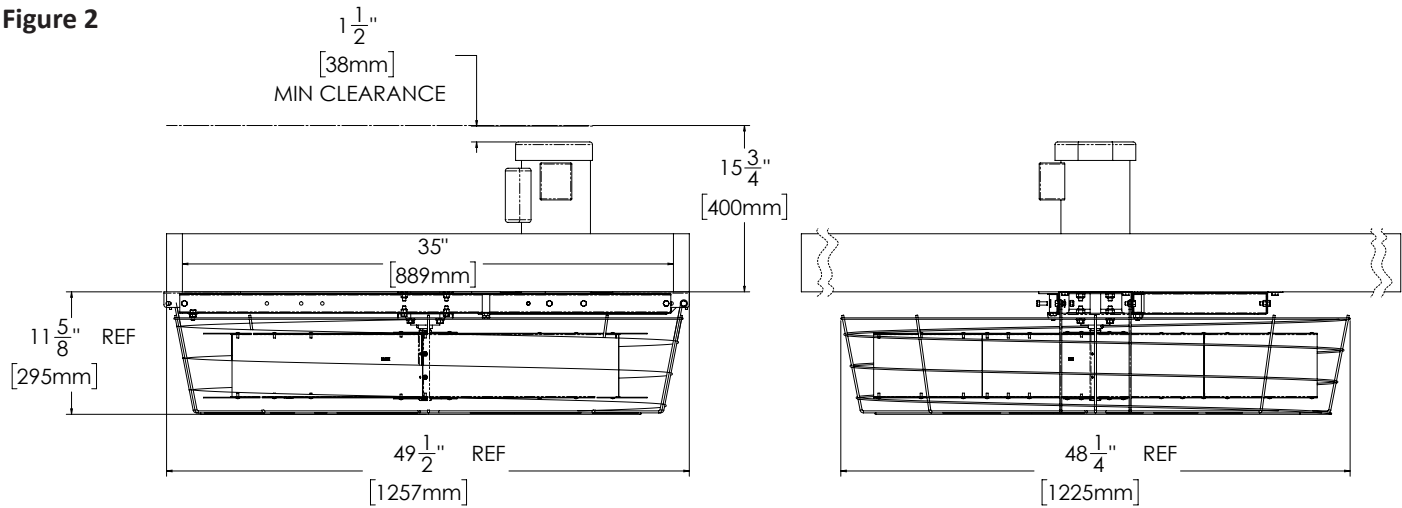


Figure 2



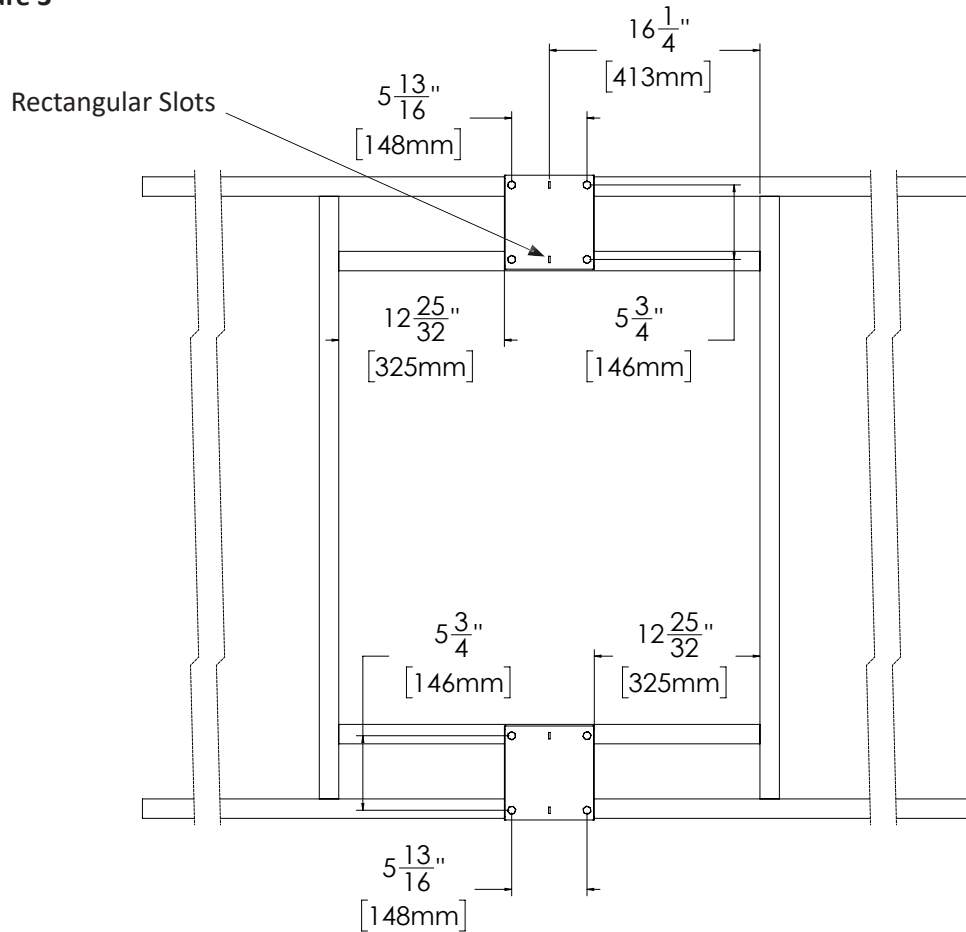
Installation of 972200, 972200-SC, 972220, 972220-SC creates additional loads on the building. The combined weight of the fan & attic inlet is 180 lbs. Consult with a local structural engineer to verify that your building can handle the required loads. VAL-CO is not responsible for building damage or personal injury due to inadequate structural support or improper use of fan.

## Installation Instructions: Mount Ceiling Brackets

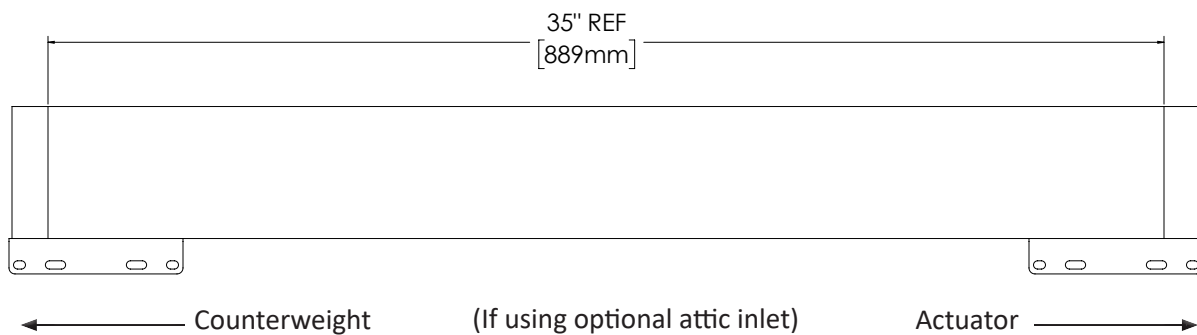
Mount ceiling brackets as shown below. Mark hole locations according to markings shown in Figure 3. Rectangular slots are used to center ceiling mounting plate. Drill (8) 1/4" pilot holes into center of studs according to markings.

\*Optional drill template (972219) available for positioning ceiling brackets.

**Figure 3**



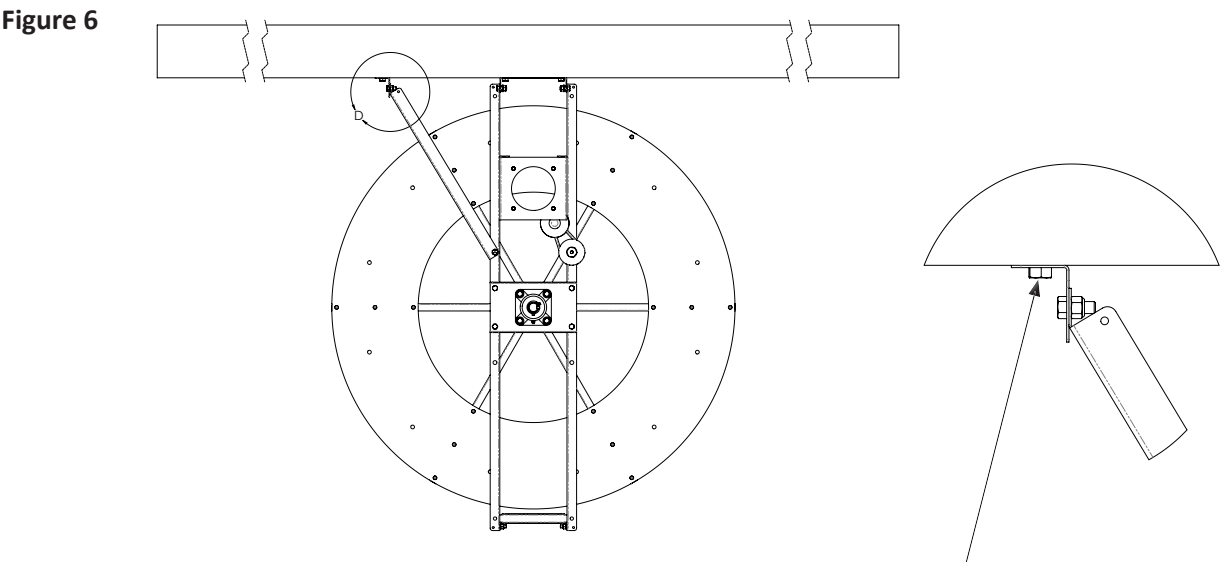
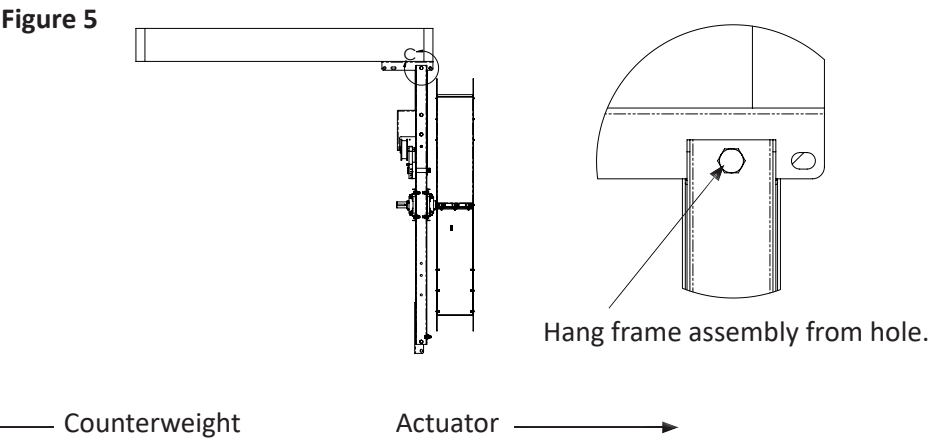
**Figure 4**



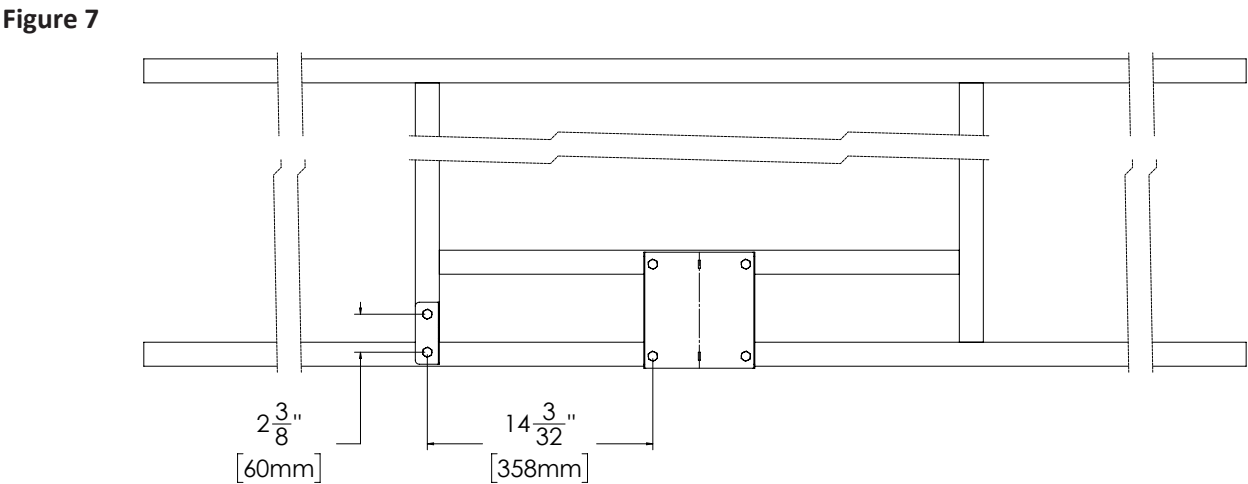
Mount ceiling brackets using (8) 3/8" lag bolts.

Installation Instructions: Mount Ceiling Brackets - continued

Hang fan from hole shown in detail view of Figure 5. Use (2) 5/16-18 X 3/4" hex bolts and (2) 5/16-18 nylock nuts.



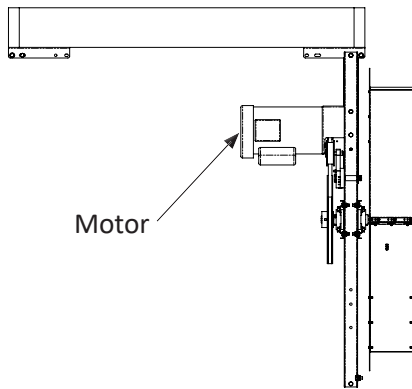
Rotate fan arm out. Drill (2) 1/4" pilot holes and secure using (2) 3/8" lag bolts. Refer to Figure 7.



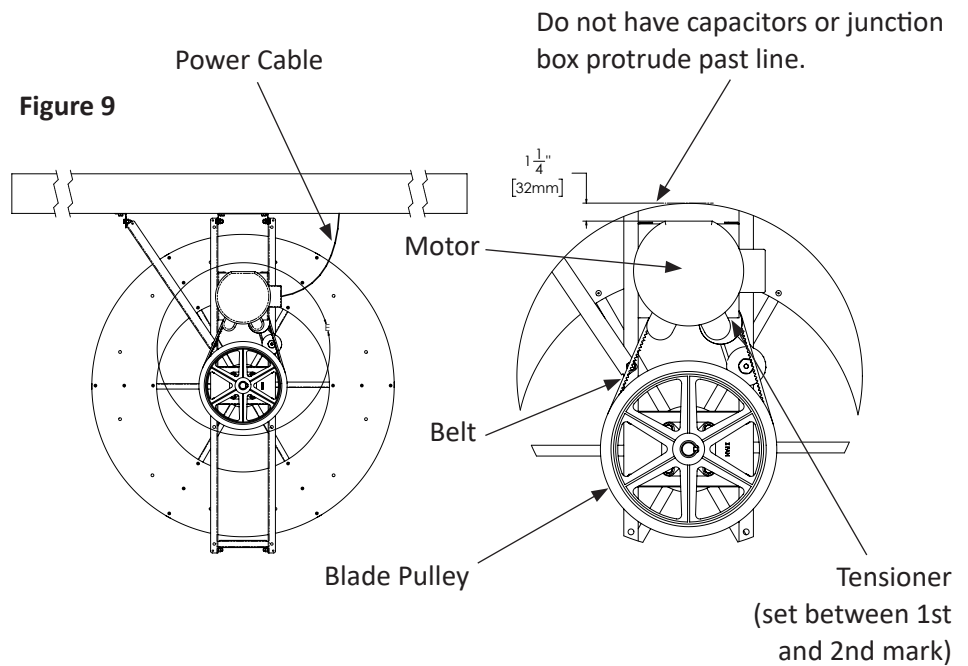
## Installation Instructions: Motor, Motor Pulley, and Belt

Consider fan rotation when routing power cable to motor. Keep cable clear of moving components and provide service loop for the ability to rotate down.

**Figure 8**

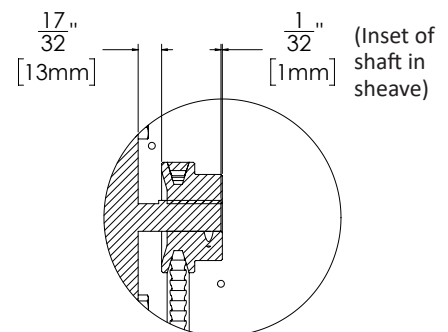
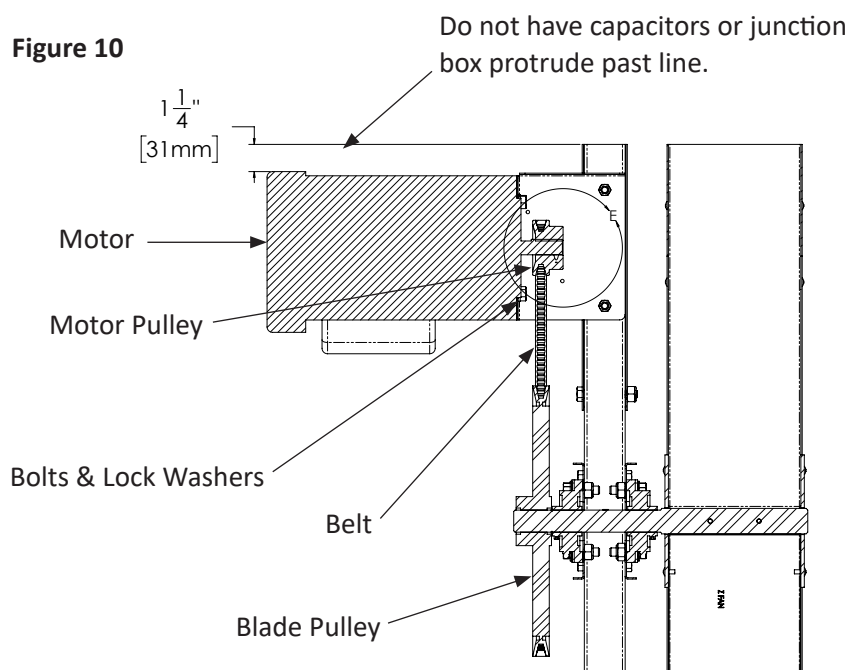


**Figure 9**

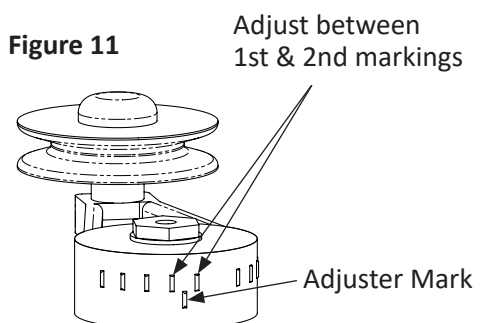


1. Install motor pulley on motor. Use straight edge to align motor pulley with blade pulley and auto tensioner pulley.
2. Orient motor referring to Figures 9 & 10 and mount using (4) 3/8-16 X 3/4" hex bolts and (4) 3/8" lockwashers.
3. Fit belt on motor pulley and large blade pulley.
4. Set belt tension to 1.5 ticks, as shown in Figure 11.

**Figure 10**



**Figure 11**

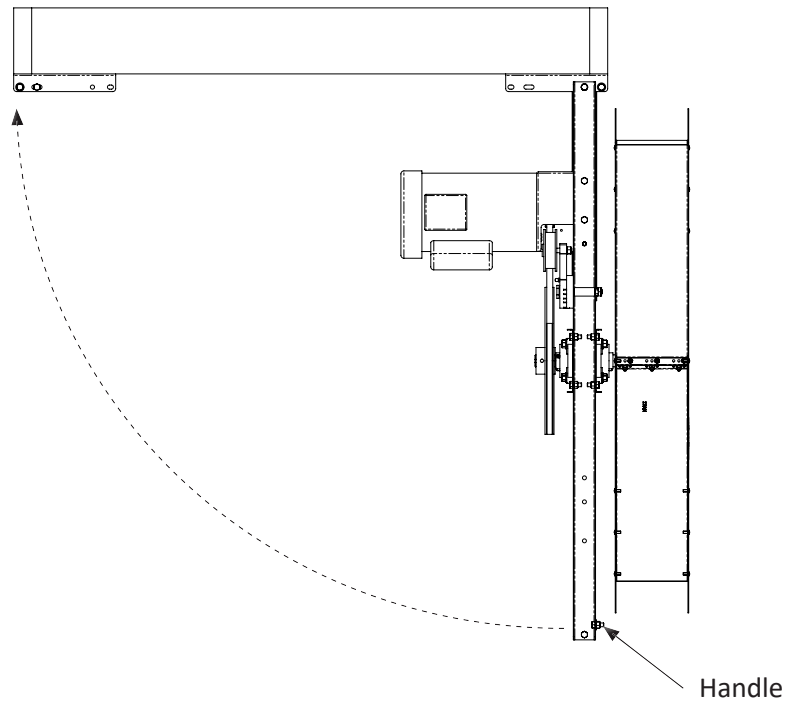




# Installation Instructions: Rotate fan and mount

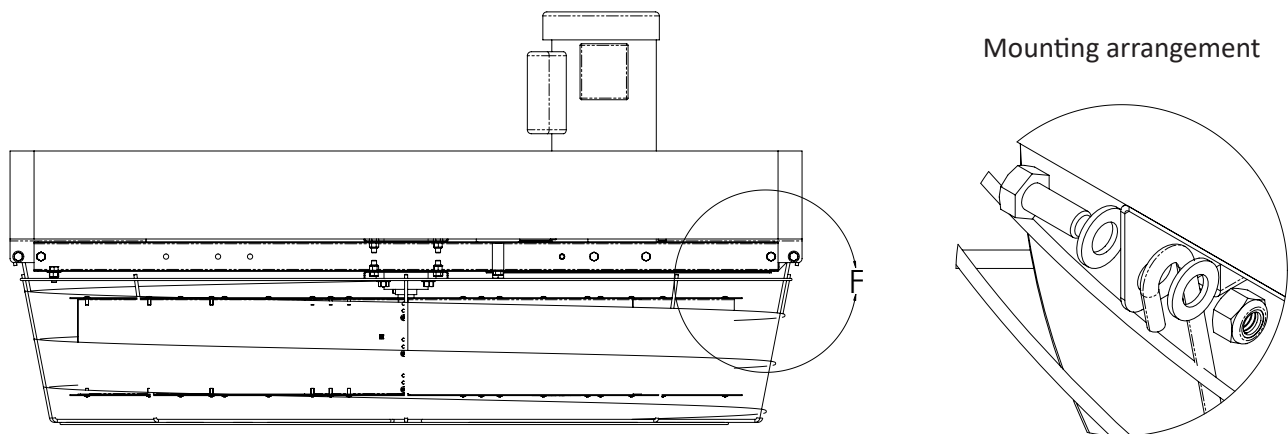
Use handle to rotate fan into place and mount using (2) 5/16-18 X 3/4" hex bolts and (2) 5/16-18 nylock nuts.

Figure 12



Mount fan guard using (4) 5/16-18 X 3/4" hex bolts, (8) 5/16" flat washers & (4) 5/16-18 nylock nuts. Refer to Figure 13.

Figure 13



## Maintenance



### Inspect propeller

Check to see that the propeller is secure on the shaft and that there are no signs of damage. Check the direction of rotation using arrow on sticker mounted on bottom of propeller.

### Proper Tensioning

1. Remove the belt by pulling auto tensioner in and pulling the belts off.
2. Inspect belts for excessive wear. Worn belts will cause fans to slow down.
3. Reinstall the belt(s) on to the large pulley followed by the drive pulley.  
Pull the auto tensioner in and place belt(s) in track.
4. Set auto tensioner to 1.5 ticks. Check belt tension every 6 months.

**Fasteners:** Retighten nuts and bolts on a quarterly basis. Follow the torque specifications as outlined below.

FASTENER / DEVICE	RECOMMENDED TORQUE
10-32 Hex Drive Screws	30-32 IN. LBS. [3.4-3.6 Nm]
5/16" - 18 X 3/4" Hex Head Bolt	11.8 - 12.6 FT. LBS. [16.0-17.1 Nm]
3/8" - 16 X 1- 3/4" Hex Head Bolt	15 - 20 FT LBS [20.3-27.1 Nm]
1/4" Setscrews (Bearings)	6.8 - 7.1 FT. LBS. [9.2-9.6 Nm]
5/16" Setscrews (Pulleys)	6.8 - 7.1 FT. LBS. [9.2-9.6 Nm]

### Lubrication

- Lubricate the bearings on a quarterly basis with a NLGI #2 Lithium type grease.
- Lubricate auto-tensioner on a quarterly basis with a NLGI #2 type grease.

### Clean Fan

**Motor:** Remove any dust accumulation from motor using a brush or cloth every 6 months. (DO NOT USE A PRESSURE WASHER ON THE MOTOR) A clean motor will run cooler and last longer. Check if the motor is secure in its mount.

**Guard:** Clean any dust or dirt buildup from fan guards using a brush. Dirty guards can also reduce airflow.

**Belt:** Check belt for cracks & wear every month. Replace with cogged (AX) V-Belt only. Refer to parts section for belt size.

### Framing

Remove dust and dirt accumulations from framing with a pressure washer. Do not wash or spray motor directly.

## Maintenance - continued



If any portion of the fan is cleaned with a power washer or any liquid it is highly recommended to run the fan for a minimum of 15 minutes to allow the fan and motor to dry before it is left idle for any length of time.

### **Inspect Fan Controls:**

All controls should be inspected every six months to assure optimum protection of your ventilation system.

- Check all covers for a tight fit.
- Wipe enclosures with a damp rag to remove dirt and dust.
- Clean sensors with a damp rag to remove dirt and dust. Be very careful not to damage sensors.



### **IMPORTANT!**

1. NEVER SPRAY ELECTRICAL EQUIPMENT WITH A POWER WASHER!
2. Motor overload protection should be provided for each fan (unless 3 phase)
3. A SAFETY CUT-OFF SWITCH SHOULD BE LOCATED ADJACENT TO THE FAN.

## Regulation and Warning

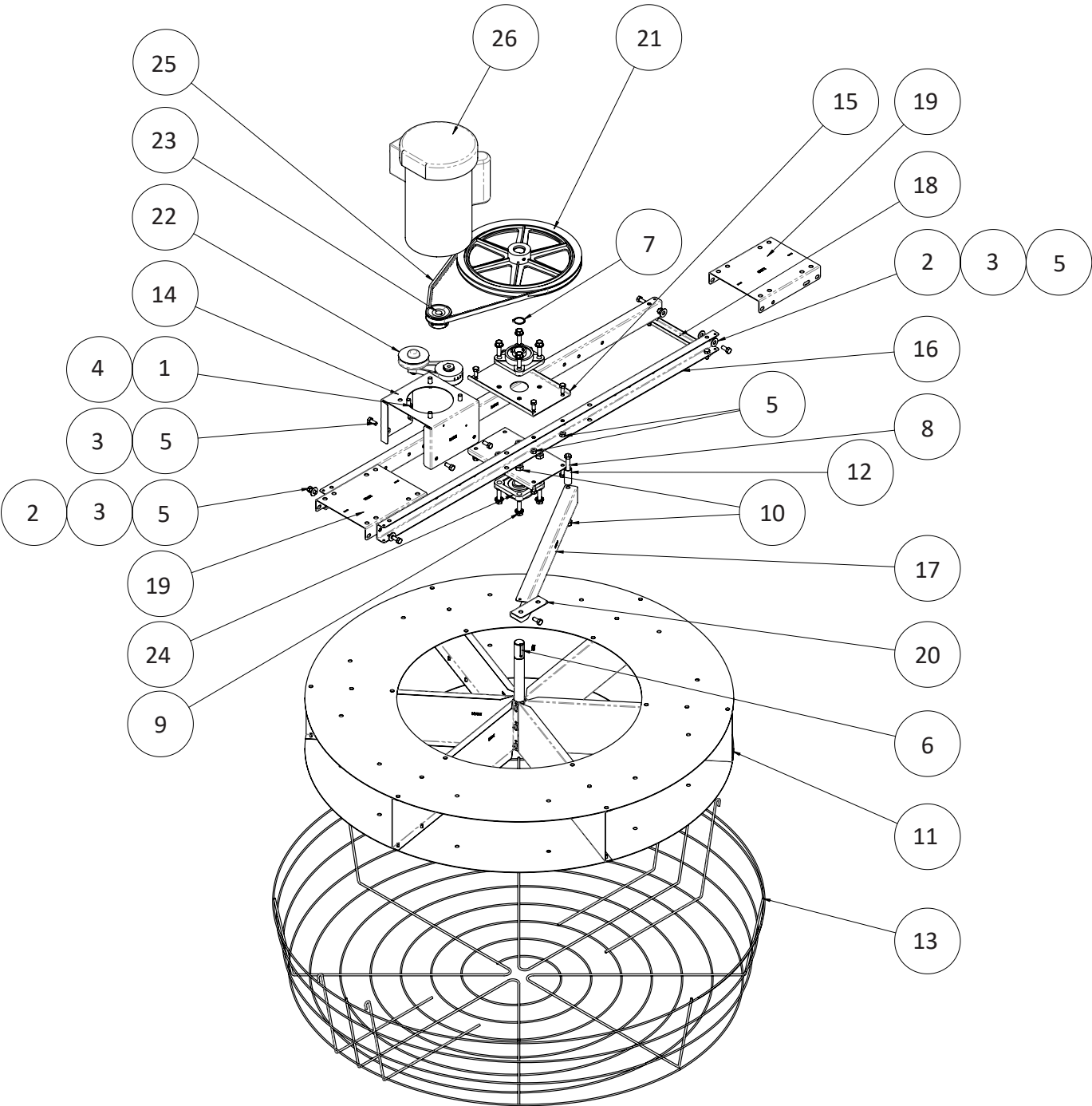


Do not install fan with moving parts within seven feet of floor or grade level without a guard that complies with OSHA Regulations. Do not use unless electrical wiring complies with all applicable codes. **DO NOT WIRE WITHOUT PROVIDING FOR POWER SOURCE DISCONNECT AT THE FAN ITSELF. DO NOT SERVICE EXCEPT BY A QUALIFIED MAINTENANCE TECHNICIAN AND ONLY AFTER DISCONNECTING THE POWER SOURCE.** Do not install in a room where flammable material is stored or flammable vapors might build up. Failure to observe all these precautions can result in serious injury or death.



If these ventilation products are used to support life in agricultural structures where failure of the system could result in loss or injury, the user must provide an adequate backup and alarm system. The user must accept all risks of such loss or injury due to the possible failure of the ventilation system.

Z-Pro Hemisphere Fans: Exploded Parts Drawing



MOTOR TABLE				
Z-PRO PART NUMBER	972200	972200-SC	972220	972220-SC
MOTOR PART NUMBER	980102		980109	



## Z-Pro Hemisphere Fans: Parts List

ITEM #	(ZINC PLATED HW) 972200 & 972220 (PART #)	(STAINLESS HW) 972200-SC & 972220-SC (PART #)	QTY	DESCRIPTION
1	010253	010257	4	3/8" SPLIT LOCK WASHER
2	010426	MH8033	8	5/16" FLAT WASHER
3	010643	MH90172	23	5/16-18 X 3/4" HEX BOLT
4	010662	7702938	4	3/8" X 3/4" HEX HEAD BOLT
5	012789	MH90044	23	5/16-18 NYLOCK NUT
6	410431	410431	1	1/4" X 1/4" X 1-1/4" KEY
7	690295	690295	1	EXTERNAL RETAINING RING
8	690409	690410	2	3/8-16 X 2-1/2 HEX HEAD SCREW
9	936026	MH8124	8	3/8-16 X 1-1/4" FLANGE HEAD BOLT
10	936054	MH90018	9	3/8-16 NYLOK NUT
11	972245	972245-SC	1	BLADE ASSEMBLY
12	972290	972279	2	SPACER, 1/2" CONDUIT, 1.687 LONG
13	972298	972298	1	BASKET GUARD
14	972287-ZM	972287-ZM	1	MOTOR MOUNT
15	972288-ZM	972288-ZM	2	BEARING MOUNT
16	972289-ZM	972289-ZM	2	MAIN SUPPORT CHANNEL
17	812282-ZM	812282-ZM	1	ANGLE BRACE CHANNEL
18	972295-ZM	972295-ZM	1	CROSS BRACE / HANDLE
19	972301-ZM	972301-ZM	2	CEILING MOUNT CHANNEL
20	972299-ZM	972299-ZM	1	ANGLE BRACE BRACKET
21	980024	980024	1	12.25" X 1" BORE BROWNING PULLEY
22	980066	980066	1	AUTO TENSIONER
23	980108	980108	1	2.5" OD PULLEY W/ 5/8" BORE
24	980112	980112	2	1" FLANGE BEARING
25	980030	980030	1	AX48 COG BELT
26	SEE TABLE	SEE TABLE	1	MOTOR

Customer Service

My dealer's name:

\_\_\_\_\_

Street / PO Box \_\_\_\_\_

How to contact my dealer:

City \_\_\_\_\_

State / Province \_\_\_\_\_

**Customer Service**  
210 E. Main Street  
Coldwater, OH 45828  
800.998.2526

Zip / Postal \_\_\_\_\_

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Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Web site \_\_\_\_\_



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