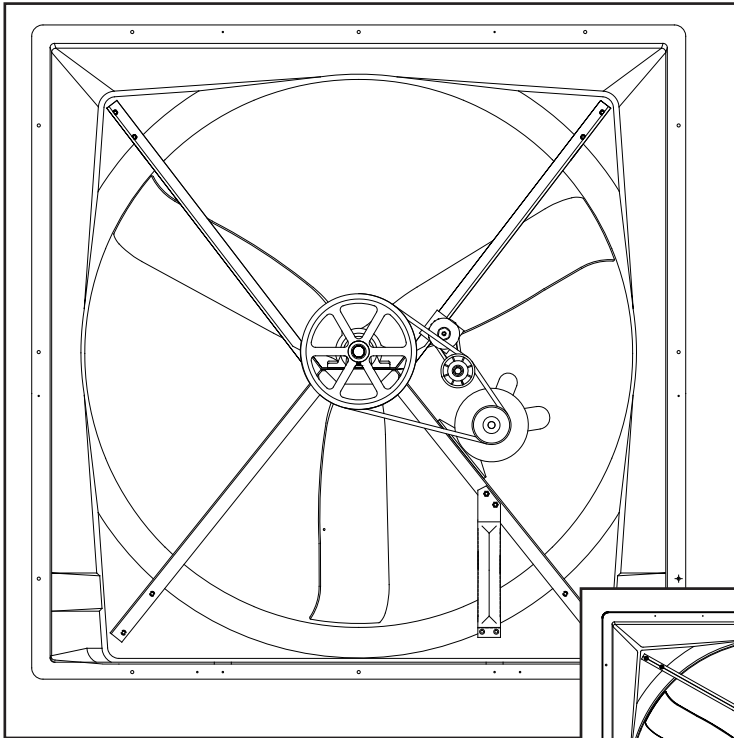
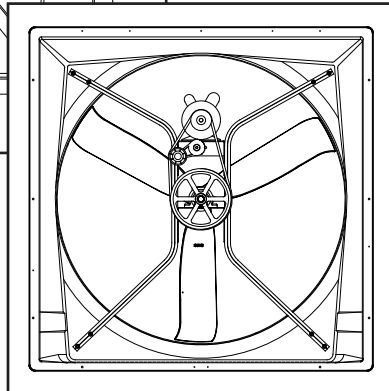


# Instruction Manual

Converting  
36"-48" AT  
Belt Drive Fans  
X-Strut to H-Strut



*X-Struts for AT481Z1*



*H-Struts for AT481Z1/VX481F1*

## X-Strut to H-Strut Conversion

36"-48" AT Belt Drive Fans

48" fans built before July 11, 2003

36" fans built before March 15, 2004

Models: FH1945 • FH1950



# X-Strut to H-Strut Conversion 36"-48" AT BD Fans

## Instructions for Use and Maintenance

### Thank You:

Thank you for purchasing a Munters X-Strut to H-Strut Conversion Kit. Munters equipment is designed to be the highest performing, highest quality equipment you can buy. With the proper installation and maintenance it will provide many years of service.

### Please Note:

To achieve maximum performance and insure long life from your Munters product it is essential that it be installed and maintained properly. Please read all instructions carefully before beginning installation.

### Warranty:

For Warranty claims information see the "Warranty Claims and Return Policy" form QM1021 available from the [Munters Corporation office at 1-800-227-2376](http://Munters Corporation office at 1-800-227-2376) or by e-mail at [aghort.info@munters.com](mailto:aghort.info@munters.com).

### Conditions and Limitations:

- Products and Systems involved in a warranty claim under the "Warranty Claims and Return Policy" shall have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Munters Corporation.
- 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.

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# Unpacking the Equipment

# 1.

Before beginning installation, check the overall condition of the equipment. Remove packing materials, and examine all components for signs of shipping damage. Any shipping damage is the customer's responsibility and should be reported immediately to your freight carrier.

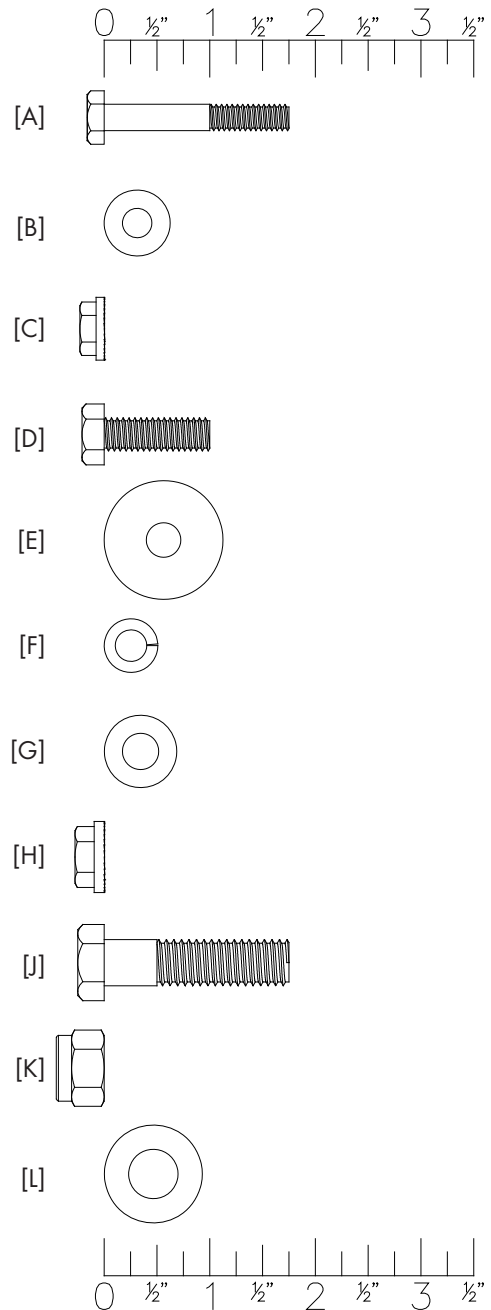
## 1.1 Parts List

### Each Kit includes:

- 1 - Left Tube Strut with Inserts, AL
- 1 - Right Tube Strut with Inserts, AL
- 1 - Motor Base Bracket, CTD-GZ
- 1 - Bearing Bracket, CTD-GZ
- 1 - Hardware Package (HP1120) includes:

### HP1120 - FH1945/FH1950 Conversion Kit

ID	Qty.	Cat. No.	Description
[A]	12	KS1006	1/4"-20 x 1.75" Hex Bolt, SS
[B]	12	KW3002	1/4" Type-A Narrow Flat Washer, SS
[C]	12	KN0702	1/4"-20 Serrated Flange Hex Nut, SS
[D]	12	KS1018	5/16"-18 x 1" Hex Bolt, SS
[E]	8	KW3011	5/16" x 1 1/4" OD Flat Washer, SS
[F]	8	KW3504	5/16" Splitlock Washer, SS
[G]	8	KW3004	5/16" Type-A Narrow Flat Washer, SS
[H]	4	KN0704	5/16"-18 Serrated Flange Hex Nut, SS
[J]	4	KS1024	7/16"-14 x 1.75" Hex Bolt, ZP
[K]	4	KN1707	7/16"-14 Nylock Nut, ZP
[L]	12	KW3019	7/16" Type-A Narrow Flat Washer, SS



# Installation Instructions

## 2.

### 2.1 Disassembling the Fan

#### Step 1

Remove the shutter or inlet guard from fan. *See Figure 1.*

#### Step 2

Disconnect electrical power leads from motor. *See Figure 2.*

#### Step 3

Remove existing drive belt (as necessary). *See Figure 2.*

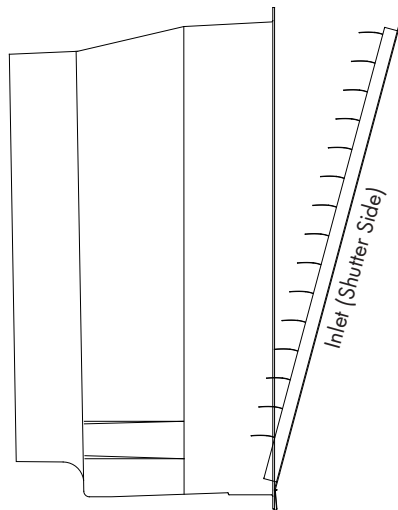


Figure 1

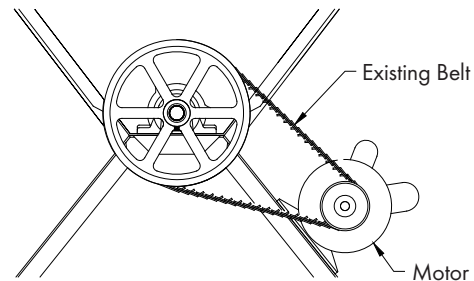


Figure 2

#### Step 4

Before removing Propeller, place an alignment mark on shaft with a marker. This will be used later to reinstall the Propeller to this location. Take Propeller off the shaft, remove belt tensioner and bearing assembly (if applicable). The bearing assembly consists of two (2) bearings, a shaft and drive pulley. *See Figure 3.* Remove the motor from the strut. *See Figure 2.*

#### Step 5

Remove the ten (10) fasteners attaching the X-Strut frame to the housing. Discard the frame and ten fasteners.

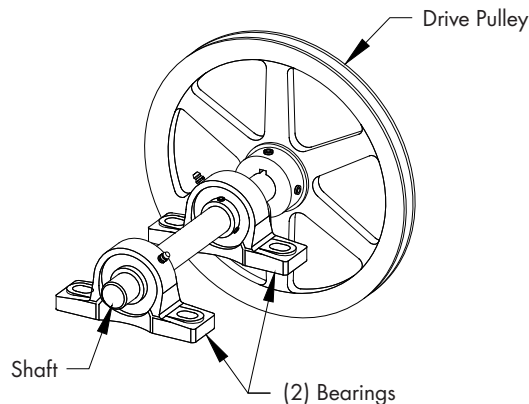


Figure 3

## 2.2 Pre-assembling the H-Strut Frame

### Step 6

Identify/Locate the Left and Right Struts. They can be determined by two steps.

- A) The angle of bend in strut will determine the top/bottom. The larger angle is the top of the strut and the smaller is the bottom. [See Figure 4.](#)
- B) With struts in front of you. The Left strut will have the threaded inserts facing you on the left and the Right strut will have threaded inserts on your right. This is the exhaust side. [See Figure 4.](#)

### Step 7

Identify/Locate the Motor Base and Bearing Base. The Motor Base has a front and 2 side flanges. The Bearing Bracket only has 2 side flanges. [See Figure 5.](#)

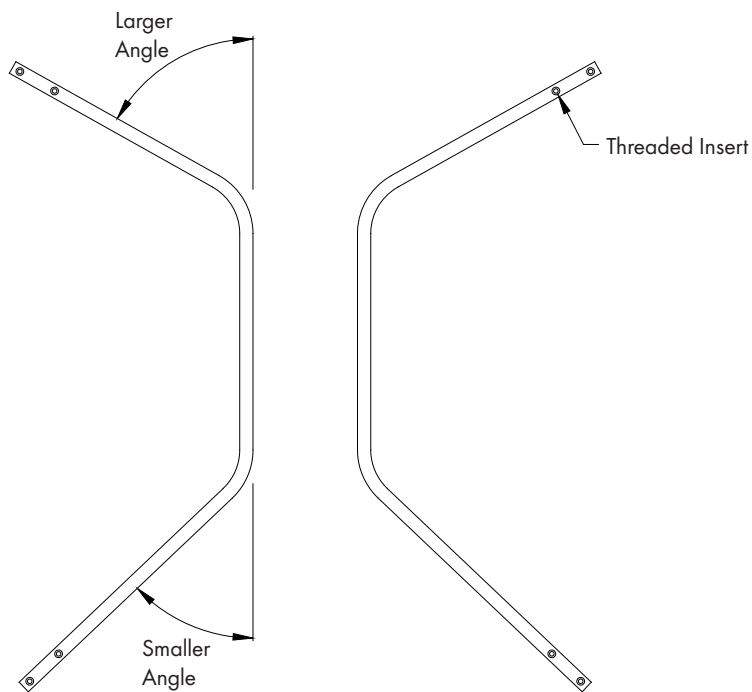


Figure 4

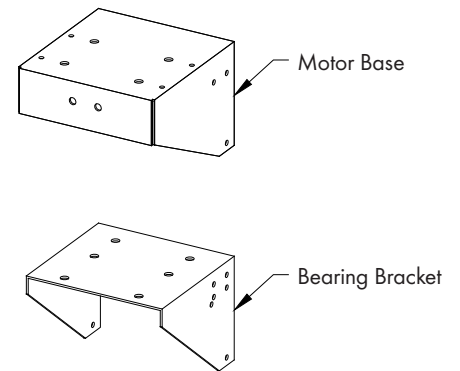


Figure 5

**Step 8**

With the Struts in front of you (same as Step 6B) fasten the Motor Base to Struts using (6) 1 3/4" Bolts [A], Flat Washer [B] and Flange Nut [C]. The flanges on the Motor Base point downward and the front flange will be away from the Threaded Inserts. *See Figure 6A and 6B.*

**Step 9**

Fasten Bearing Bracket to Struts using (6) 1/4" x 1 3/4" Bolts [A], Flat Washer [B] and Flange Nut [C]. Bearing Bracket only has flanges on 2 sides, which should point downward. *See Figure 6A and 6B.* Be sure to finger tighten only.

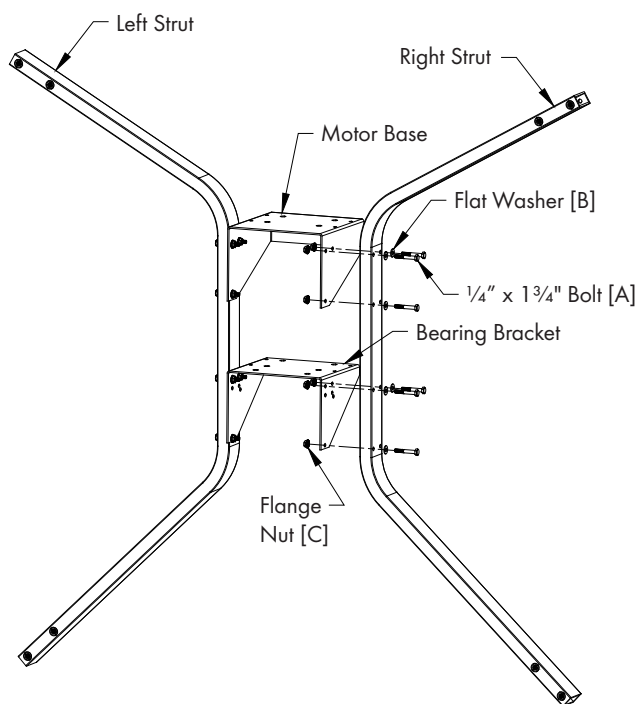


Figure 6A

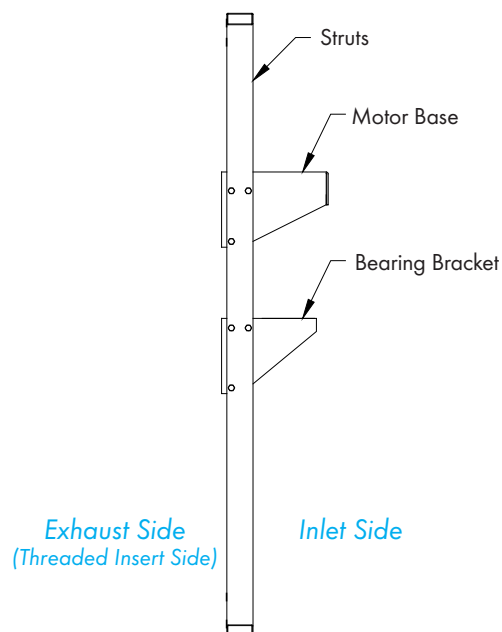


Figure 6B

**Step 10**

Position assembled H-Strut Assembly into fan housing with the Exhaust Side (threaded inserts) against the housing. See Figure 7.

**Step 11**

Align outermost hole in the top Left Strut to outermost hole in the corner of fan housing and fasten using (1) 1" Bolt [D], Splitlock Washer [F] and Flat Washer [E] from the outside of fan. Be sure Flat Washer [E] is against Fan Housing. Finger tighten only. See Figure 7.

**Step 12**

Repeat Step 11 for other 3 corners of Fan Housing and Strut.

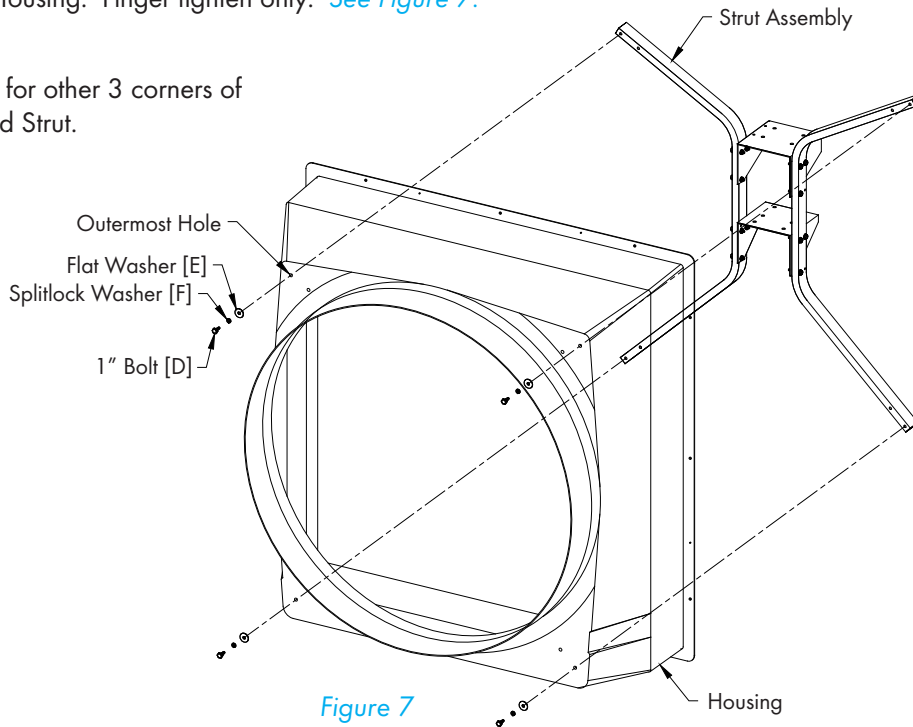


Figure 7

**Step 13**

From inside of Fan Housing, use a drill and 1/8" bit to drill a pilot hole in each corner of Fan Housing using inner most holes in each strut as a guide. Be sure to center pilot holes. See Figure 8.

**Step 14**

From outside of Fan Housing, drill (4) 1 5/32" holes in Housing using pilot holes from previous step as a guide. See Figure 9. Be very careful as to NOT drill into Threaded Insert. It is recommended that the bolts installed in outermost holes be loosened or removed to move Strut Assembly away from Housing before drilling.

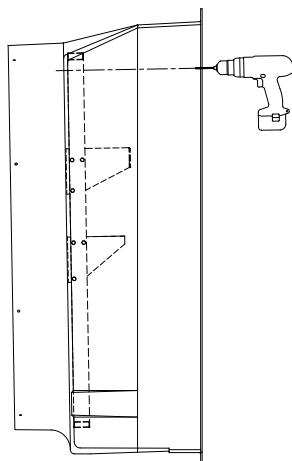


Figure 8  
Inside of Housing

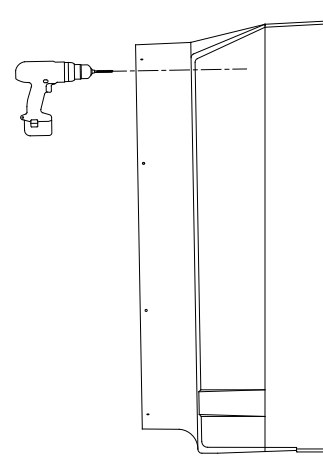


Figure 9  
Outside of Housing



**Step 15**

If Strut Assembly was removed or loosened in Step 14, replace Strut Assembly and tighten fasteners finger tight. In the (4) holes just drilled in housing, secure with (1) 1" Bolt [D], Splitlock Washer [F] and Flat Washer [E], making sure Flat Washer [E] is against Fan Housing and finger tighten.

**Step 16**

Fully tighten Motor Base and Bearing Bracket bolts first and then tighten the Strut and Housing Bolts.

**2.3 Installing Drive Components and Propeller****Step 17**

Install Bearing Assembly, removed in Step 4, to Bearing Bracket (lower base) using (4)  $\frac{7}{16}$ " x  $1\frac{3}{4}$ " Bolts [J], (12) Flat Washers [L] and (4) Nylock Nuts [K]. DO NOT tighten bolts at this time. To allow for proper alignment of bearings, loosen set screws on bearing closest to pulley and move as needed. *See Figure 10.*

Retighten bearing set screws to 75 in-lbs. [8.5 N-m] of torque.

**Step 18**

Install Motor, removed in Step 3, to Motor Base, using (4) 1" Bolts [D], Flat Washers [G] and Flange Nuts [H], insuring the Motor Frame is square with Motor Base. Using straight edge, align motor pulley with propeller pulley and tighten motor bolts. *See Figure 11A and 11B.*

**Step 19**

Slide Propeller onto shaft to its original position as marked in Step 4 and tighten set screws to 150 in-lbs. [17 N-m] of torque. Check to be sure Propeller is centered in orifice.

**Step 20**

If optional Belt Tensioner was purchased, proceed to Step 22. If reinstalling existing link belt, proceed to Step 21.

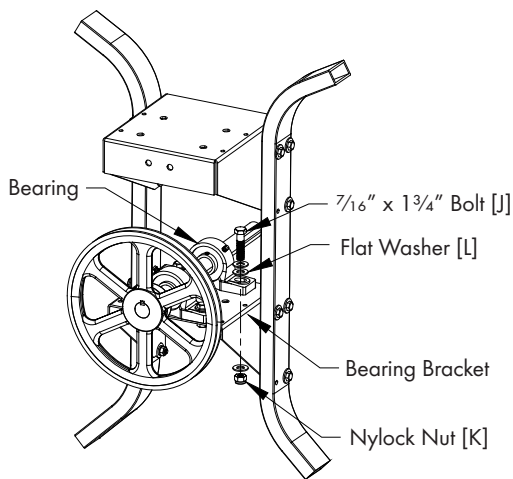


Figure 10

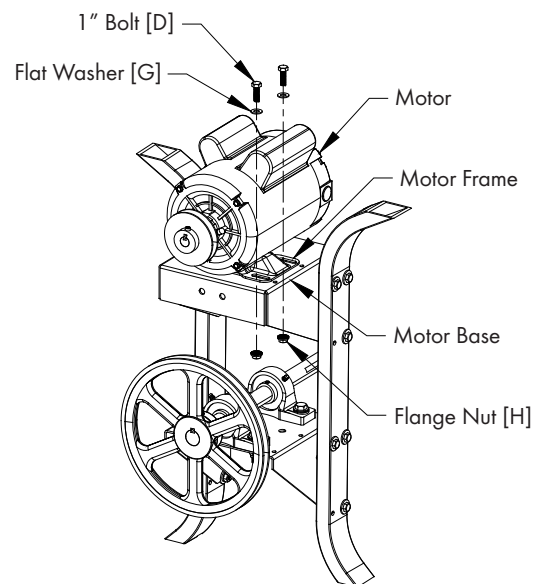


Figure 11A

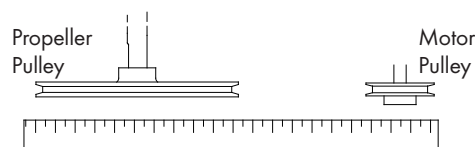


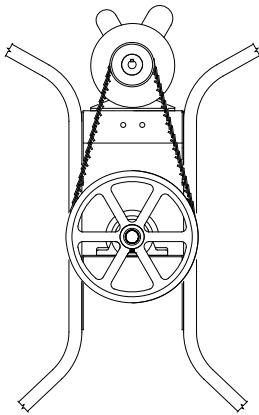
Figure 11B

**Step 21**

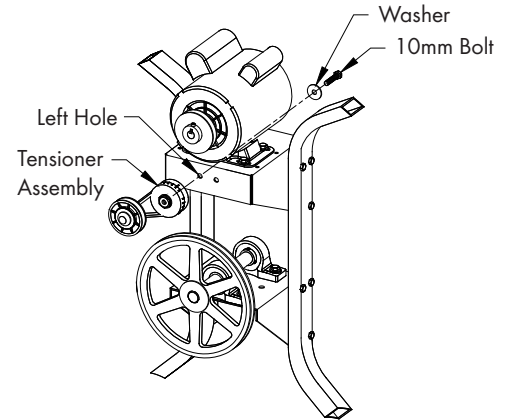
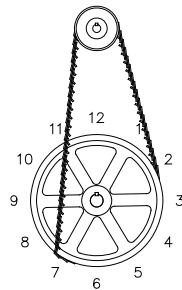
Reinstall the belt by wrapping it around the smaller pulley and then starting it over the larger pulley. As you continue rolling it onto the larger pulley, belt should become taut in position shown in *Figure 12*. If belt becomes taut before reaching the position shown, add one link and try again. If belt is loose when in position shown, remove one link and try again. Proceed to Step 1 of Drive Alignment.

**Step 22**

If optional Belt Tensioner was purchased, install the Belt Tensioner finger tight in the left hole of the Motor Base as viewed from the inlet of fan. See *Figure 13*.



*Figure 12*

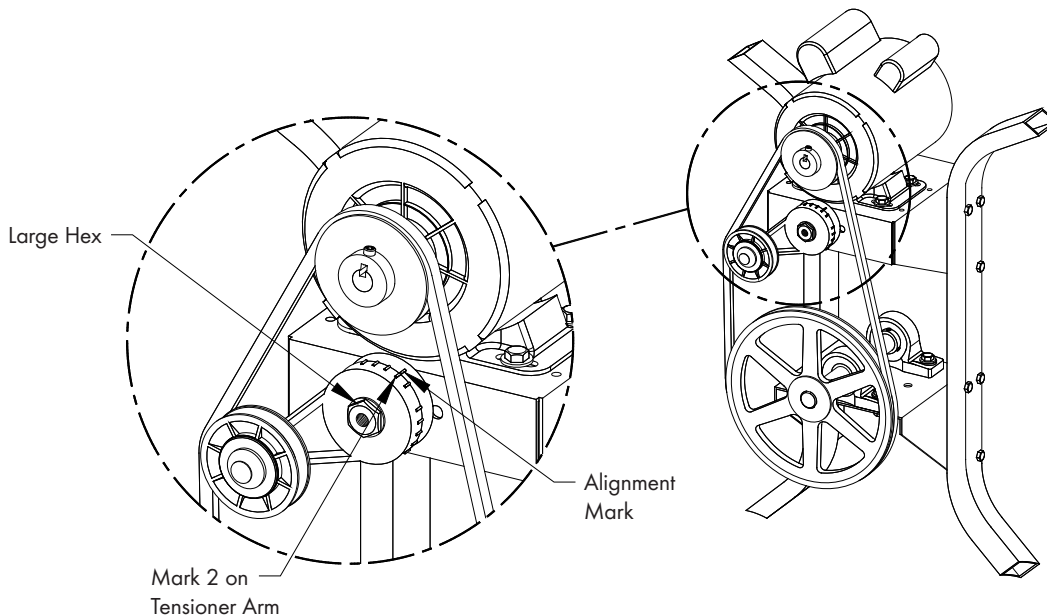


*Figure 13*

**IMPORTANT:**  
DO NOT loosen/move the bearing farthest from pulley. The current position is necessary to maintain correct propeller location.

**Step 23**

To adjust the tensioner, loosen the 10mm bolt fastening the tensioner to the motor base (using 17mm end wrench) to allow tensioner arm to rotate. Place a 27mm (1 1/16") wrench onto the hex on tensioner. Turn the wrench clockwise until the Alignment Mark is at Mark 2 on the tensioner arm. See *Figure 14*. Hold tensioner at this setting and tighten the 10mm bolt to 40 ft. lbs. [54 N-m] torque.



*Figure 14*

## 2.4 Drive Alignment

### Step 1

Use a straight edge to check the alignment of the pulleys. See Figure 15.

### Step 2

If optional Belt Tensioner is installed, check alignment of belt on idler pulley, it should be centered on idler pulley. The Belt Tensioner's idler pulley is fixed in position, therefore, alignment must be obtained by adjusting the motor and propeller pulleys.

### Step 3

If an adjustment is needed, remove belt, then loosen the set screws in the pulleys and move them as necessary to achieve proper alignment.

### Step 4

Remember to tighten the pulley set screws after making an adjustment.

### Step 5

Drive alignment is very important for long belt life and proper operation.

Installation now complete, reconnect power to the motor and reinstall the shutter of inlet guard.

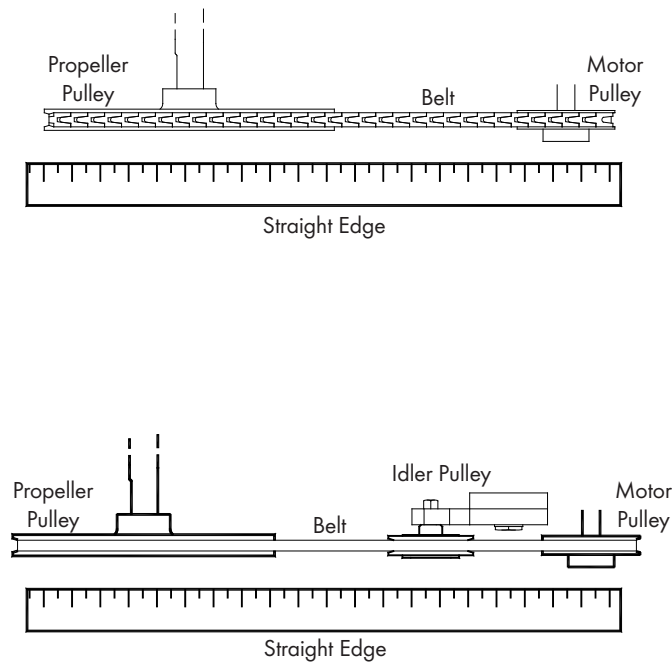
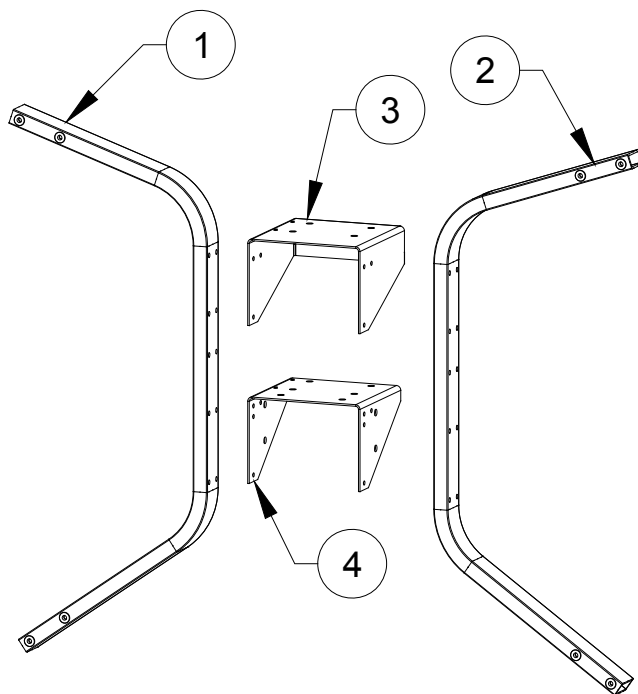


Figure 15

# Exploded View and Parts List

# 3.



Item	Catalog No.		Description	
	VX36	VX48		
1	FH2736	FH2748	Strut, left, VX, w/inserts, AL	1
2	FH2737	FH2749	Strut, right, VX, w/inserts, AL	1
3	FH2820	FH2820	Bracket, BD motor base, coated-galv.	1
4	FH2815	FH2815	Bracket, bearing mount, coated-galv.	1

36" & 48" BD X-Strut to H-Strut Conversion Kit is developed and produced by Munters Corporation, Lansing, Michigan U.S.A. 1-800-227-2376



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