

# **WARRIOR**

## **ASSEMBLY INSTRUCTIONS**

Hud-Son Forest Equipment  
8201 State Route 12, Barneveld, NY 13304 • 800-765-SAWS • [www.Hud-Son.com](http://www.Hud-Son.com)

# Tools Required

## WRENCHES

2 - 9/16"  
2 - 3/4"  
7/16"  
5/8"  
1/2"

## ALLEN WRENCHES

3/16"  
5/32"

## SOCKETS

3/4"  
1 3/8"  
1 1/8"  
9/16"  
5/16"  
1/2"

13mm  
10mm  
8mm

## DRILL BITS

1/4"  
1/8"

**Impact Gun**  
**Vice Grips**  
**Cutting Dikes**  
**Torque Wrench**  
**Hammer**  
**Rubber Mallet**



**CAUTION:** Always use safety gear and take precautions when handling sharp or heavy equipment.

*We recommend assembly with two people.  
Its safe, quicker and a lot more fun!*

# Warrior Sawmill ASSEMBLY INSTRUCTIONS

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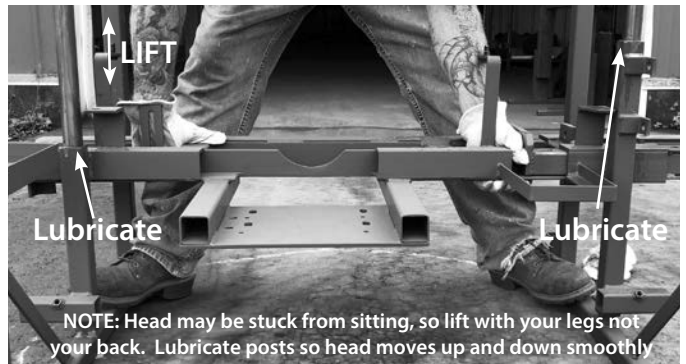
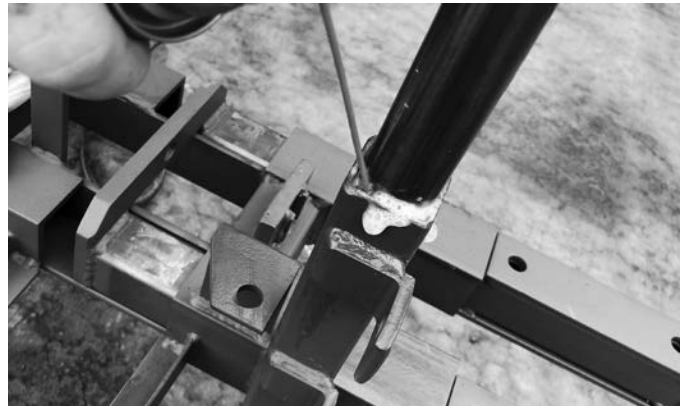
1. Unpack crate.
2. Separate all boxes.
3. USE A LARGE AREA where parts can be laid out and seen plainly.
4. Open boxes one by one and lay parts out.
5. Take the (PARTS BOX) First.
  - a. All bags are marked with parts inside.
  - b. Clearly lay out all parts bags
6. Release frame from the crate
7. Lubricate head frame posts liberally on both sides of the mill.
8. Mill Head may be stuck from sitting. Brace the frame with feet and lift up and down
9. Remember to regularly lubricate post.

*With all Parts Boxes open, and parts in sight, we are ready to start assembly.*

## Step 1

### Installing the winch on the frame.

- A. Place the winch onto the frame, drawing it to the rear. Parts include: (3 MOUNTING HARDWARE BOLTS) (6 FLAT WASHERS) (3 LOCK WASHERS) (3 NUTS). This is all 3/8" hardware. Tighten nuts and bolts.
- B. Install Handle to crank: Use vice grips to hold crank bar secure. Remove bolt from the winch, screw the handle on, replace bolt and tighten. Release the vice grips.





## Step 2

### Installing the 3 Cable Pulleys

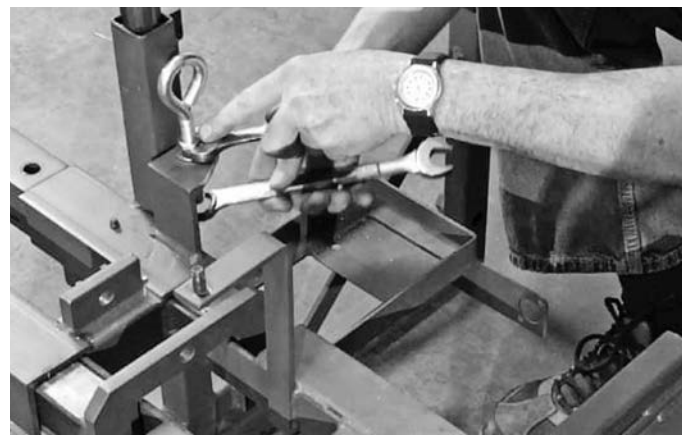
- A.** There are 2 single wheel assemblies and 1 double wheel assembly.
- B.** Assemble and disassemble wheel pulley before installation. Remove nut and bolt. Place into bracket and secure. (Double B Pulley on Discharge Side)
- C.** The two (SINGLE CABLE) Pulleys will be mounted on the opposite side of the winch, starting with the lower bracket.
- D.** Once in place, tighten down securely and move on to the top pulley. You'll need a larger washer first, then a standard washer, lock washer, and nut.



## Step 3

### Installing the Eye Bolts

Put the Two Eye Bolts into their places on the frame. Add the nut, washer, washer underneath the bracket, and your lock washer. Tighten securely.



## Step 4

### Installing the Winch and Lift Cables

- A.** Take long cable with Eye Loop and mount on winch. Once installed, run cable through winch (on inside), then through the top pulley across from winch, over to the left side pulley (double pulley, right side roller). Then run the cable down to



eye bolt. Attach with 2 cable clamps to hold in place. Make sure both clamps are tight. Tighten cable from crank.

- B.** Second (shorter) winch cable is to be run from the bottom side of the left pulley, up and over attaching to the main cable with 3 cable clamps, all facing the same direction. Make sure they are all secure. Run the balance of the cable, over to the lower pulley opposite the winch and then down to the eye bolt, securing it with 2 cable clamps. Now you are ready to crank the winch and pull the machine head.



## Step 5

### Mounting track wheels on frame

- A.** Mount track wheels on machine with washers in correct order. Repeat on all 4 sides of mill. Wheels must be measured from outside of 1 wheel to inside of other. Measurement will be  $34 \frac{3}{4}$ ". If this measurement is not correct, it will not fit on track correctly. Measurement can be changed by either adding or subtracting washers on wheel bolts.

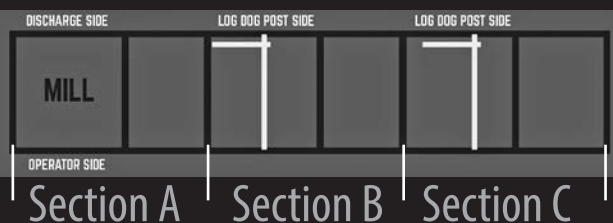
## Step 6

### Track Install & Putting Mill on track

*\* You can use just one section to assemble mill*

- A.** Use flat and level surface before setting up; if not, mill will roll off track.  
**B.** Lay track on ground and line up the track

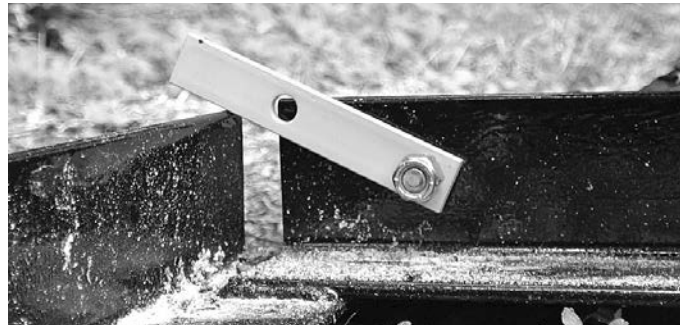
Track comes in 3 - 5ft sections



**\*NOTE:** Just Section A can be used for assembly. Complete track can be assembled at final location of mill.

and holes where the track gets bolted together.

- C.** Use the four 1/2" bolts that come in the kit to bolt the three pieces of track together.
- D.** Make sure the rails on the track are lined up with each other when tightening.
- E.** Install the log dog and backstop using the 3/8" hardware from the kit. Make sure the backstops are on the same side of the track that the tabs are sticking up off the center rail. Make sure the log dog is facing toward the inside of the track. The piece that holds the log in place should be facing where the log would sit.
- F.** With two people lift mill head onto track.
- G.** If mill does not run smooth, add or subtract washers on your track wheels.
- H.** Using vice grips, clamp around mill head frame to track so that mill head will not move while installing other parts.



## Step 7

### Installing the 1" off deck bolts

- A.** Crank winch up so the head will be roughly in the middle of the mill.
- B.** Place the 1" off deck bolts in the bracket, with about 1 1/2" between bottom of bolt and machine frame. *This will be adjusted later.*

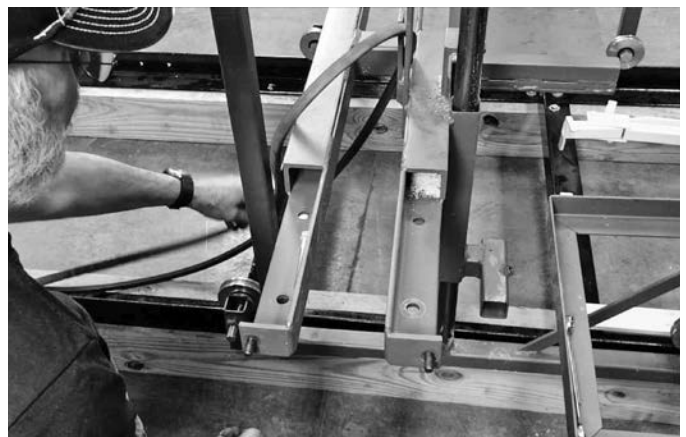
## Step 8

### Adding the main bearing & band wheels



We are now ready to install main bearings and band wheels to machine. Lay out all your parts and get started:

- A.** Start on the side the winch is mounted on.
- B.** Bring pre-set wheel and bearing unit with clear white belting on wheel up to mounting area. Wheel bushing need to be facing the motor on both sides.
- C.** Add the 4 long bolts in, bringing your wheel assembly up from the bottom, putting your washers in the correct order. Tighten the 4 bolts that hold the wheel assembly on. This is 1/2 hardware.
- D.** Make sure wheel assembly moves freely.
- E.** Using a level, make sure wheel is straight vertical. You may need to add shims under bearing to straighten the wheel.

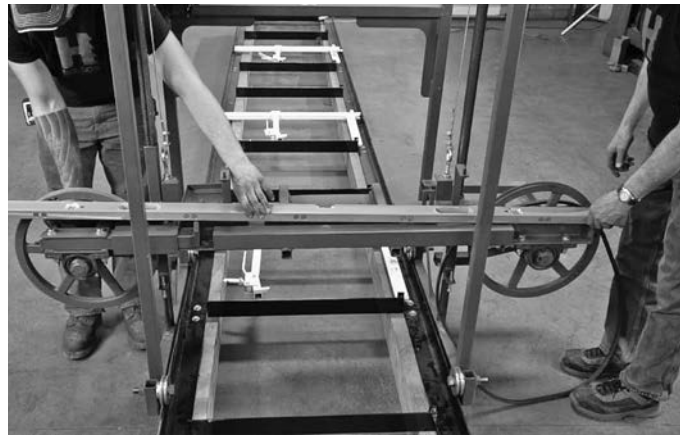


## Step 9

### Move to opposite side of mill

- A.** Before wheel assembly is put on, place drive belt in between wheel mounting arms before putting bearing into place.
- B.** We will now be mounting our main bearing locking bolt, on the discharge side of the mill. **(Do not tighten)** Just set them up loose. There will be a total of 2 bolt assemblies on the discharge side.
- C.** Mount preset bearing and wheel unit. Tighten bolts.
- D.** Repeat Step 8 adding the wheel bearing. You may have to add shims under bearing to straighten wheel.

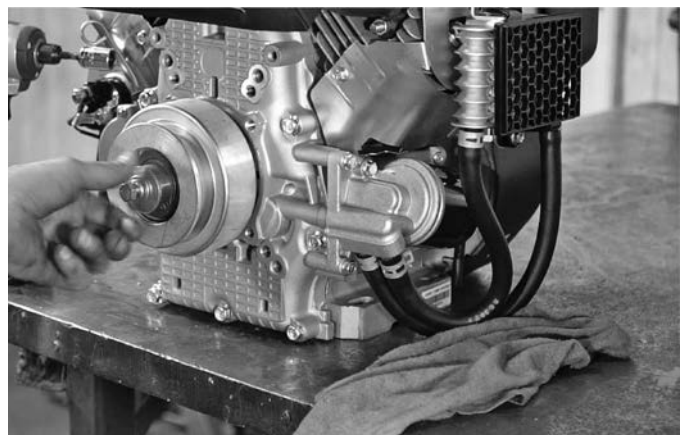
- E.** With long and straight edge run from drive wheel to wheel, making sure drive wheels will be in correct alignment. If it is off, tap the flat base of the bearing in order to bring it into alignment. DO NOT Tap the Casting holding the bearing.
- F.** Install Grease Fitting Nipple: Tap into pre drilled holes on each side of wheel. Fill with grease. Repeat on opposite side.



## Step 10

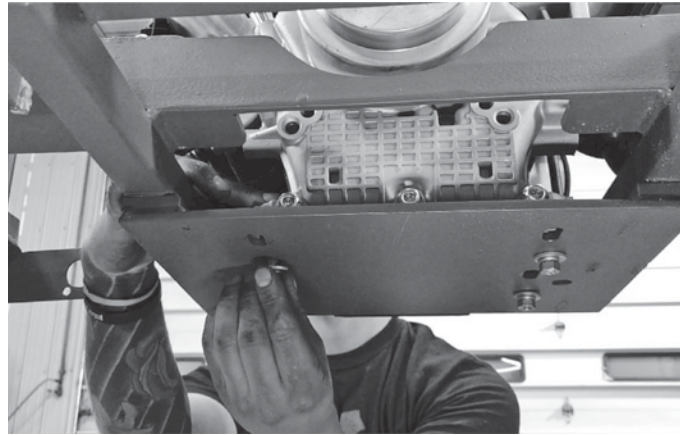
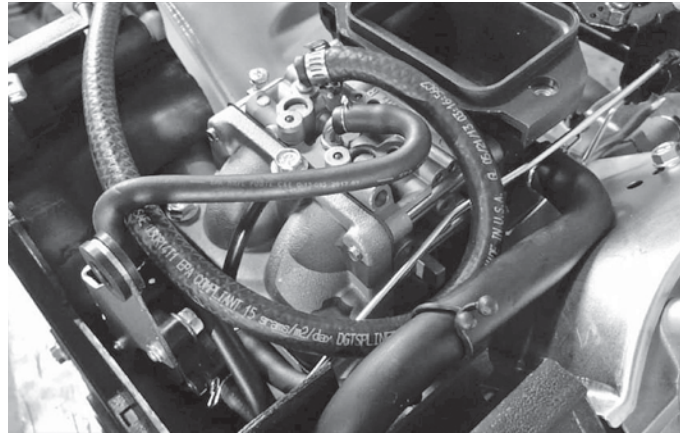
### Motor Preparation & Install

- A.** Add Exhaust Gaskets to the engine.
- B.** Install muffler on motor using existing hardware and tighten on both sides. Add oil. You will use just over a quart. Make sure to check it on a stick to ensure the correct amount.
- C.** Remove motor from board.
- D.** Installing the clutch: Start by wiping down the shaft to remove excess oil. Next, add 2 washers onto the shaft. Add the keyway first before finally adding the clutch itself. To finish up, add the bolt lock washer, flat washer and serrated washer, add Loctite and tighten. Do not over tighten.
- E.** Remove engine cover and take filter out. Take off the side cover from the engine. Take out 4 bolts underneath air filter and pull off plate.



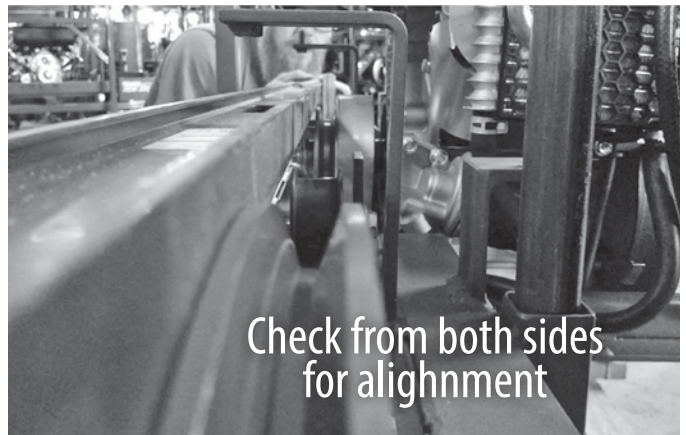


- F.** Connect the vacuum hose and clamp, then thread through down underneath and out the backside of the engine.
- G.** Replace plate, air filter, top cover and side cover.
- H.** Connect your gas line to the existing gas line on the motor, install your small clamp and tighten.
- I.** Use zip ties to secure lines together for the full length of the hose.



### **Mounting Engine on plate**

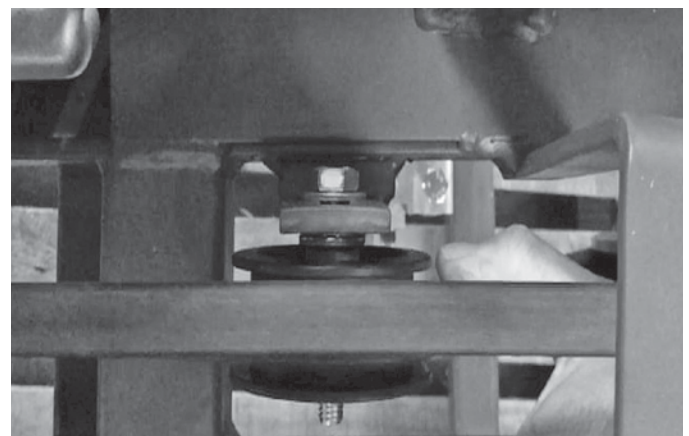
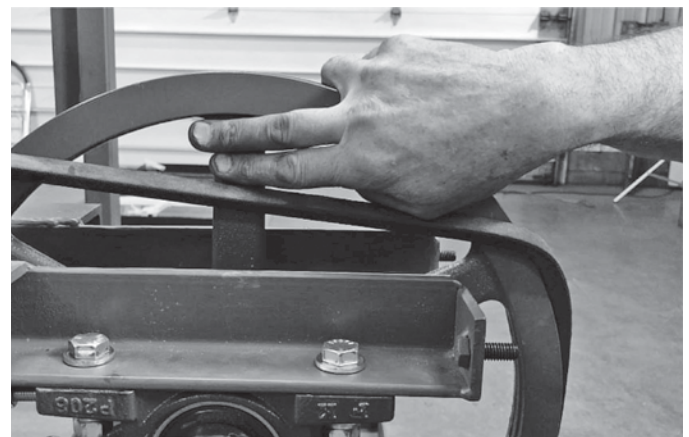
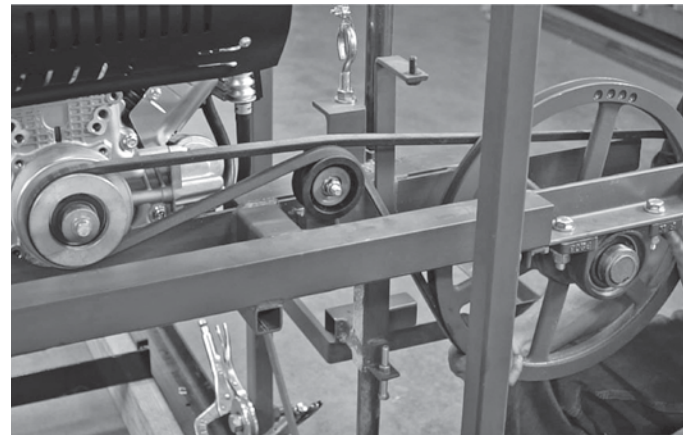
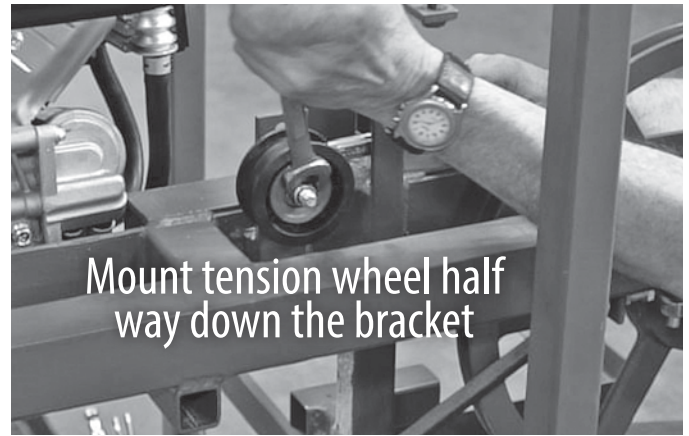
- A.** You need two people to lift the motor onto the frame.
- B.** Install engine on mounting plate on mill. Install all 4 engine bolt units, but do not tighten. Aligning of the wheel and the clutch must happen before bolts can be tightened.
- C.** With the engine loose, run a straight edge from the clutch to the drive wheel for correct belt alignment. Straight edge should be flush with the outside of the clutch to the outside of the drive wheel. Belt tightness can be adjusted by moving bolt tension/black pulley.
- D.** Tighten the motor bolts once alignment is done. Recheck after everything has been tightened. Make sure belt tension is correct.



# Step 11

## Installing the Belt Tension Wheel

- A.** Install the main bolt and 3/8" washer on the back of the bracket. Add 2 more 3/8" washers on the front of the bracket, keeping in mind that you may need to add or subtract washers after putting on the belt to align the belt and the wheel. Add the wheel, the small 3/8" washer and the nut to finish the assembly.
- B.** Put the belt on to check the tension. Start by looping one end around the clutch, over the top of your idler and down on your wheel. Bring it up around the top of the belt and move it so the belt will go onto the wheel itself.
- C.** Adjusting the tension of the belt: Remove the belt from the top of the wheel. Move the wheel and make sure that you have two fingers between the top of the belt and the inside of the wheel. Roll the belt back onto the wheel. Turn it three times to ensure the alignment is good.
- D.** If the belt does slip, you will need to realign the wheel and the clutch. Wheel should be centered under belt when looking from above. You may need to add or remove washers from the assembly for correct alignment.

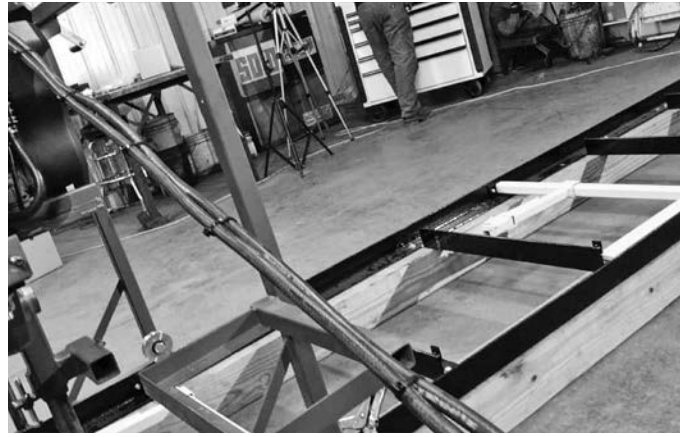




## Step 12

### Installing Fuel Tank

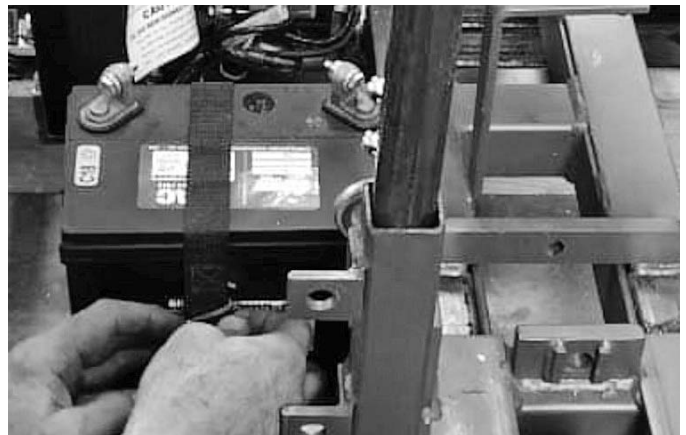
- A.** Finish zip tying the fuel lines together. Trim the excess from the zip ties after fastening the lines. Place your gas tank in the space on the frame and secure with the provided straps.
- B.** Move the mill head to the top. Trim the two hoses - your gas and EPA hoses. Hook them up and make sure they are secure. Trim any excess hose you may have.



## Step 13

### Installing the Battery

- A.** Use the straps to secure the battery to the mill.
- B.** Attach your black (ground) cable to the battery and the bottom of the engine bolt.
- C.** The red (power) cable should be mounted to the electric start and the positive connection on the battery.
- D.** Add fuel and start the motor.
- E.** Using the electric start, pull your choke out and turn the motor over.
- F.** Let the engine run for a while to warm up.
- G.** Once the engine warms up, engage drive wheels before testing to make sure the belt will not flip. If the belt flips, realign the wheel and the clutch.

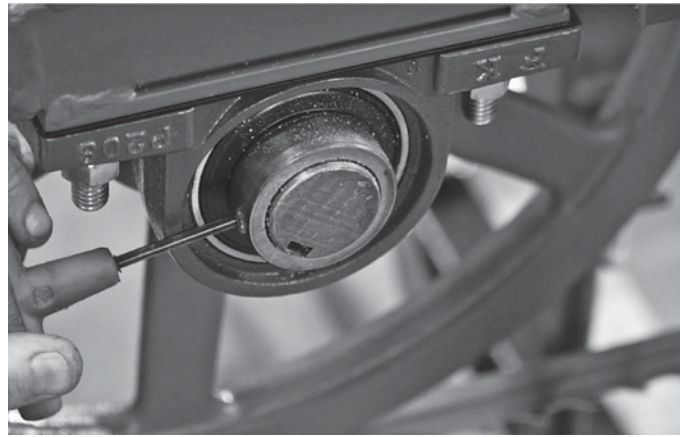




## Step 14

### Drill & install counter sink set screws

- A.** The main bearing shafts must be drilled to counter sink set screws when tightened on shaft with Loctite. Only 1 set screw on each shaft must be done. Take other 2 screws out to clean and Loctite both of them. (Do not drill these 2, just Loctite)

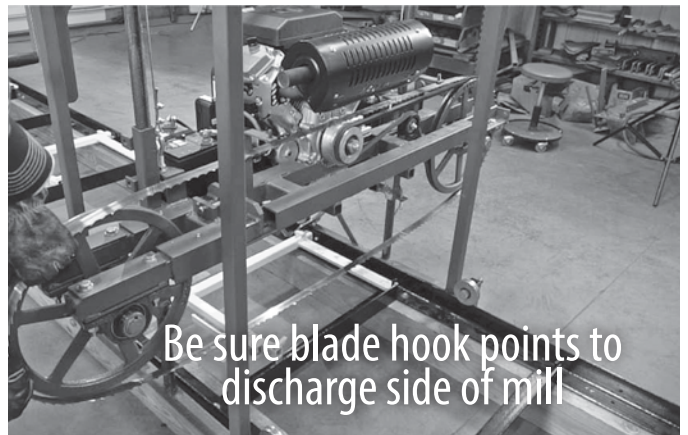
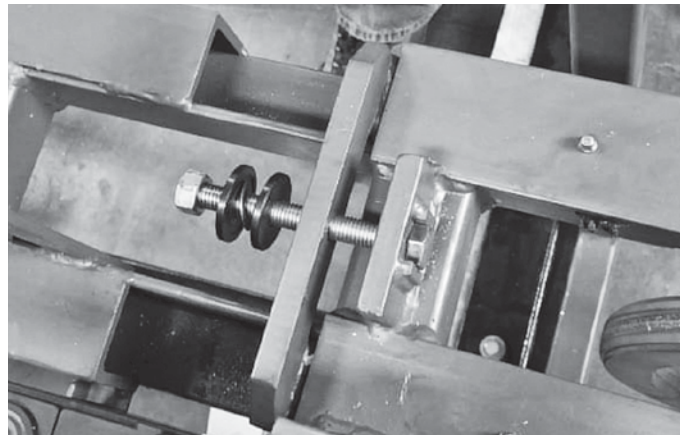


## Step 15

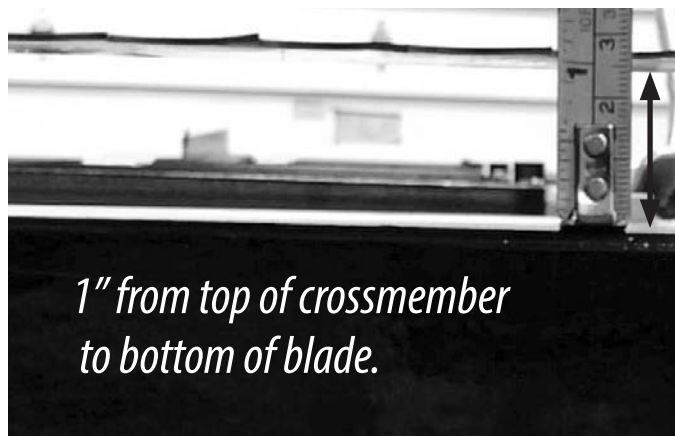
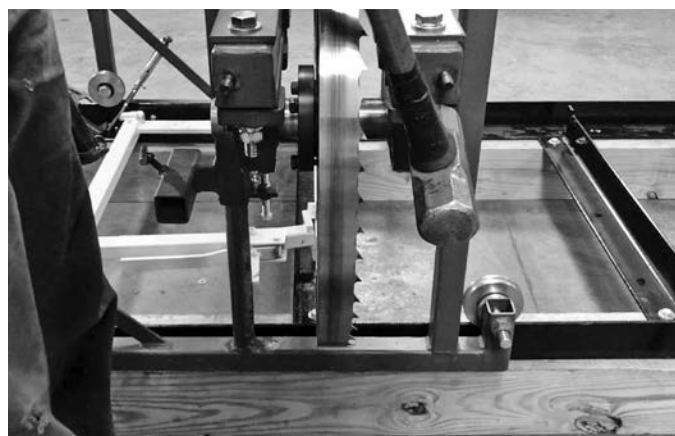
### Install the tension bolt and blades

When alignment is done, time to put the blade on.

- A.** Install blade tension bolt (gold bolt). Insert the bolt from the back to the front of the mill. Add on the cup washer, bearing, and second cup washer, followed by the nut, but do not tighten. Push the wheel unit forward.
- B.** BE CAREFUL – WEAR GLOVES WHEN PUTTING BLADE ON DRIVE WHEELS. BLADES ARE EXTREMELY SHARP. Unravel the blade. Make sure teeth of blade are facing toward discharge side. Insert the blades on the side where the belt is on the wheel. Slide it through the mill. Put it on the edge of the unit and then on the other wheel.
- C.** Make sure edges of blade are smooth with back side of drive wheels
- D.** Tighten blade by tightening blade bolt.



- E.** Blade tightness should be about 35-foot pounds.
- F.** With blade tightened, roll blade in correct direction, about 3 times, if blade moves to one side or other side of blade wheel, adjustment must be made.
- G.** To adjust or move blade on wheel, the direction you want it to move, hit opposite side main bearing. This will move blade in direction you want it to go.
- H.** When one side is done, repeat on other side. When blade alignment is done, and correct tension on blade is done, then you can tighten 2 main bearing locking bolts to make sure main bearings will not move.



## Step 16

### Install the Guide Bars

- A.** Make sure long bar is mounted on side with T handle. The small bar will go on the opposite side, measuring 2  $\frac{3}{4}$ " from the bracket.
- B.** Long bar must be in line with bottom of blade, so it will move correctly when adjusting.
- C.** There will be a 1 $\frac{1}{2}$ " off deck measurement to use as a starting point. Adjust the bolts so the blade is 1" off deck.
- D.** Install measurement bar with correct hardware. Put the bolts through the bracket first, then add your 3/8" washers and locking nuts. Tighten securely. Mount

*1" from top of crossmember  
to bottom of blade.*

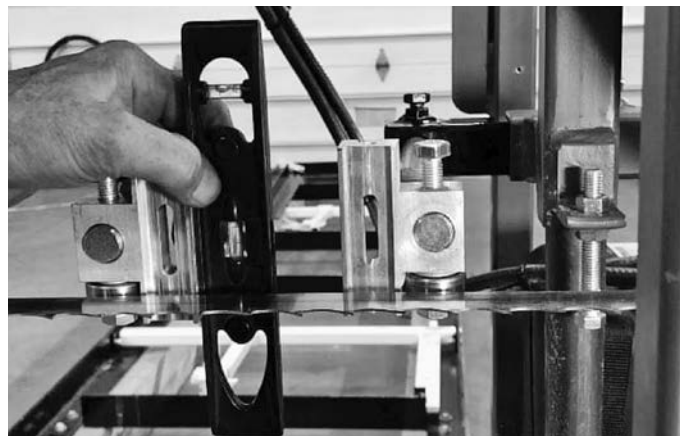


your sight glass unit exactly 1" from the measurement bar. Secure with a zip screw and washer.

**E.** Then lift of head will have to be adjusted using two eye bolts so that the head of the machine will come up even on both sides when cranking winch. Start by adjusting the 2 eye bolts so the mill head will lift straight up. The measurement bar should lift straight up without moving left or right. Adjust eye bolts up or down. If the measurement bar moves sideways, use the eye hooks on the opposite side of the mill (leaning left, loosen the right side bolt, or vice versa) until it raises and lowers straight.

**F.** Install the guide pins and guides: Insert the pins so the L shape is going toward the outside of the mill. Take apart the guides. Install the blade guides onto the pins. Do not tighten fully. There should be 1/8" between the blade guide and the bearing. The blade should fit in the middle of the bearing. Tighten the bolts.

**G.** Make sure guides are level with the frame so that the blade will move freely through the blade guide. Using a level, tap each guide to ensure it is level with the mill frame. Once level, tighten. Add the guide shoes to the guides. Put your Allen screw through with the locking nut behind



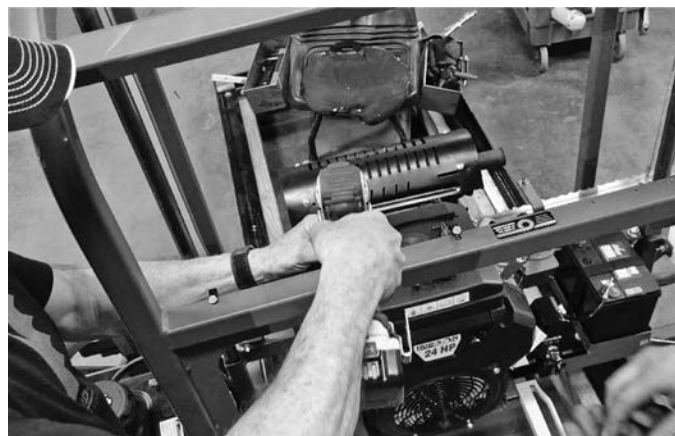


the unit. Tighten with an Allen wrench. Ensure the shoes are not too tight when compressed. Blade should move freely.

## Step 17

### Install the Lube Tank System

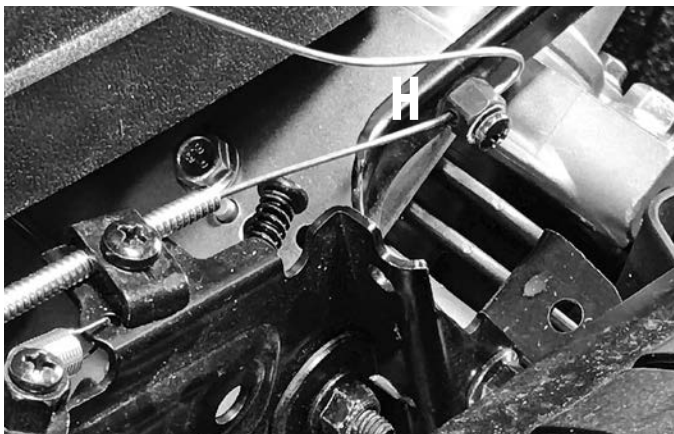
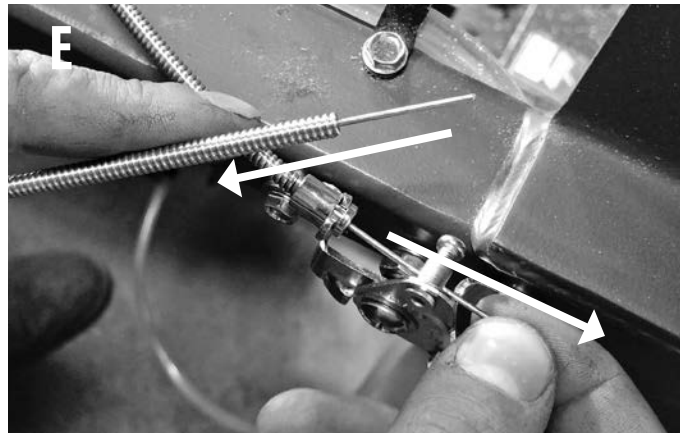
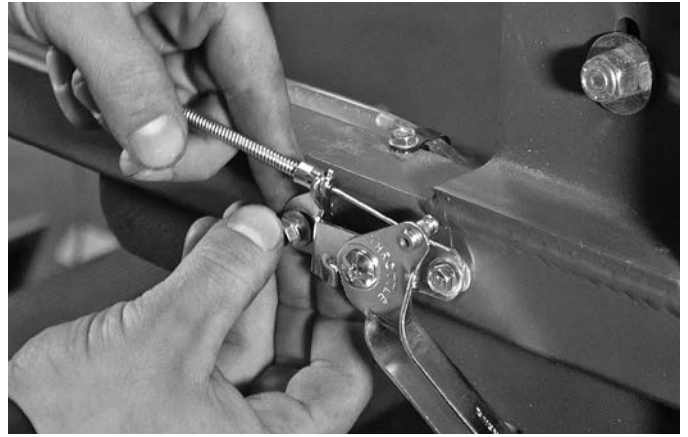
- A.** Install the bracket with the 3/8 x 1" bolts. Secure tightly. Add the lube tank, using the holding strap to secure it to the bracket.
- B.** Drill the holes for the lube line zip screws. You will need approximately 6 holders across the mill.
- C.** Install the shut off with the hose coming from the lube tank. Run the lube line through the holders, up into the lube tank shutoff.
- D.** Install the second shut off from the lube tank halfway past the middle of the frame. Clip the line and attach the shutoff valve. Loosen the zip screws to adjust the line and connect the other side to the valve. This line will run from the shutoff to the black bracket on the blade guide.



## Step 18

### Install Throttle and Cable

- A.** Drill holes on frame near winch.
- B.** Secure throttle to frame
- C.** Lower engine to lowest point
- D.** Feed cable down through to engine
- B.** Mark cable 1" from securing screw
- E.** Pull wire back through to past the mark on cable, then cut cable. Be sure not to cut wire inside cable. Then push back through the wire and secure wire to throttle.
- F.** Feed cable back down to engine, connect to throttle arm and secure to holding bracket.
- G.** Loosen throttle arm on engine, and test the throttle so that it moves freely
- H.** Tighten set screw on arm, bend over wire and cut wire.

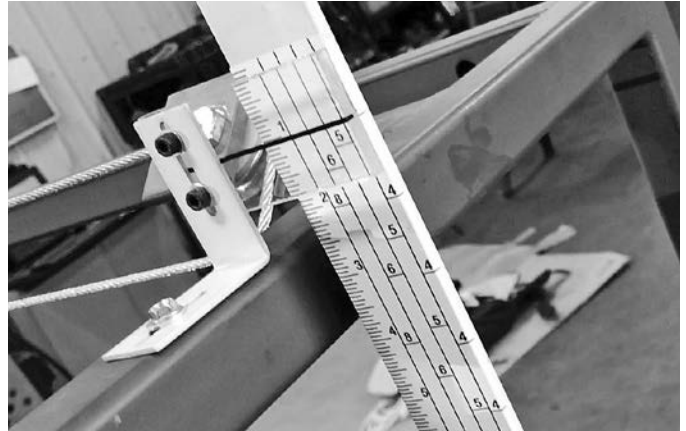
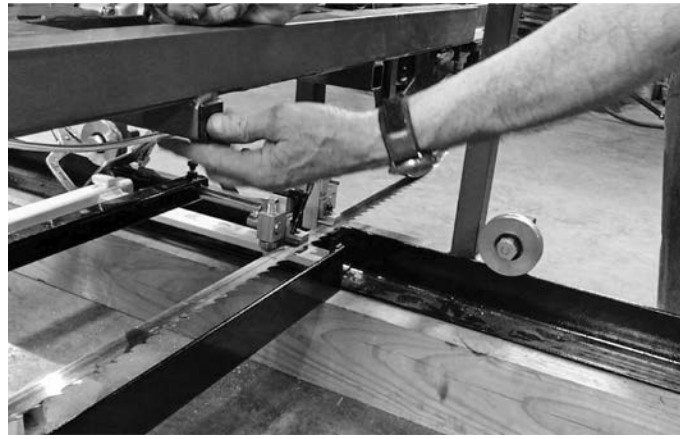




# Step 19

## Install end guards and middle using correct hardware.

- A.** Insert the plastic caps into the matching holes in the frame and the mill head.
- B.** Install the middle guard using plastic washers on each bolt. Place the center guard on top and add the washer, lock washer, and the nut for each screw. Do not tighten until alignment is complete.
- C.** Add the end guards on either side using the big washers, lock washers, and nuts. Once alignment is done, tighten all nuts.
- D.** Install the measuring guide scale. Start by cleaning all dirt and oil from the bar. Align the black line with the 1" measurement line on the scale. Continue to the bottom, keeping it as straight as possible for accuracy.
- E.** Add the warning and caution stickers, then customize the mill with the Warrior stickers to make it your own.



## Before starting motor make sure:

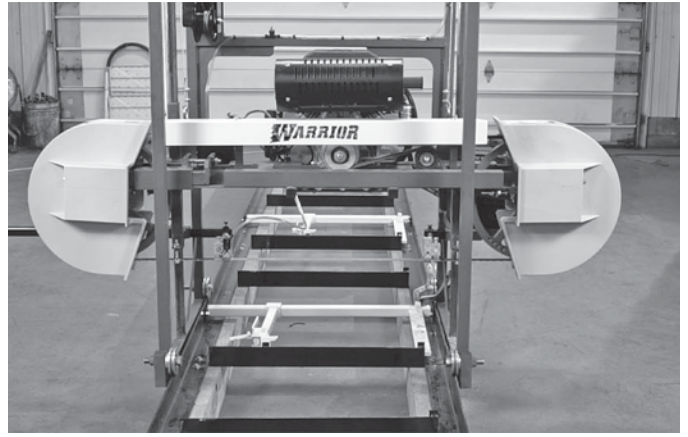
- A.** Blade is tightened and adjusted correctly.
- B.** All bolts and nuts on machine are tight.
- C.** All guards are secure.

## Starting engine:



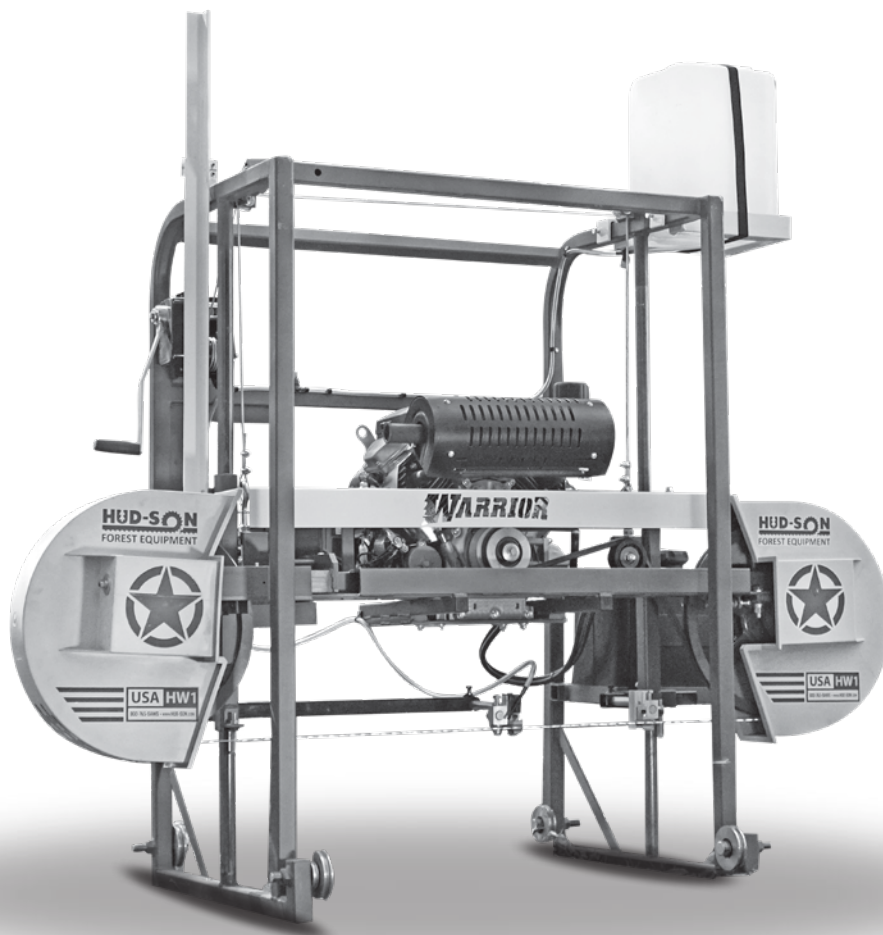


**A.** When starting engine, run slow at first making sure everything is running ok. Slowly bring throttle up to full throttle making sure everything is still running smooth. Let run at full throttle for a short time. Then shut off.



At the end of the day when you are finished with your mill, make sure to loosen the blade until you are ready to use your mill again.

Always remember to make sure blade is tight before starting.



# WE BUILD IT RIGHT!

## SAWMILL LINE

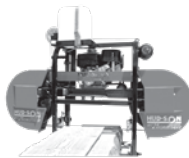
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SAWYER



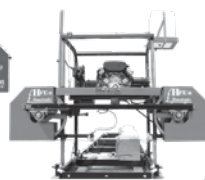
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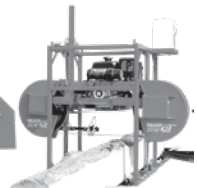
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HFE-30



HFE-36



428



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336



FARM  
BOSS



H360



OSCAR 52

## WOOD PROCESSOR LINE

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WOLVERINE M



WOLVERINE A



BADGER



BRUTE JR



BRUTE-EXT



BRUTE CIRCLE

**WE  
BUILD IT  
RIGHT!**

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