

Installation Guide

Made In America

2017 TigerStop, LLC®



TigerStop®
fast and accurate...every time

TigerRack



Register warranty and enable TigerRack Optimizer BEFORE installation!

See Page 15!

Serial Number



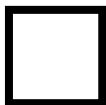
I/O Panel



Controller



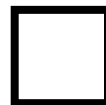
Controller Stand



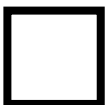
Universal Bracket



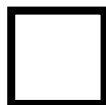
Controller Cable



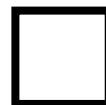
Power Cable



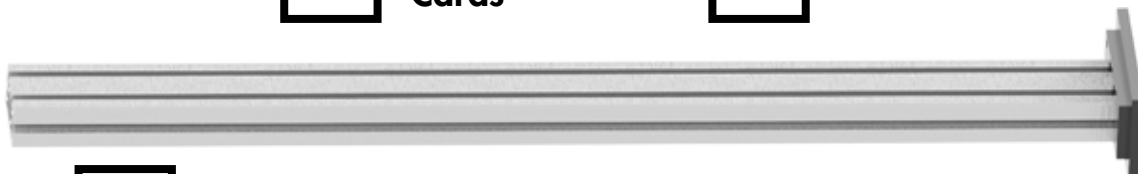
Nut Pack



Quick Reference Cards



Standard Interconnect Kit



Pusher Attachment

Safety First!

IMPORTANT SAFETY INFORMATION. READ ALL WARNINGS BEFORE OPERATING THIS PRODUCT.



GENERAL WARNINGS

WARNING: Installation of your TigerStop Product must be done by a person trained in the safe design and installation of automation products, and in the safe operation of power equipment. Ensure that such installation meets all legally required safety requirements and guidelines, and that proper guarding and safety devices are provided on all sides of the equipment to preclude unintended access during operation. Consult with and follow the recommendations of a qualified safety engineer.

WARNING: TigerStop Products are components intended for use in conjunction with potentially dangerous machinery. The use of TigerStop Products does not make other machinery safe. TigerStop Products are not intended to substitute, in any manner, for safe operating practices in general, or for safety features present in other machines designed to make those machines as safe as possible. **TIGERSTOP PRODUCTS, IF USED OR INSTALLED IMPROPERLY, MAY CAUSE PERSONAL INJURY OR DEATH AND SHOULD ONLY BE OPERATED BY PERSONS TRAINED IN THEIR SAFE OPERATING PROCEDURES.** Illustrations of TigerStop Products in use do not show, and are not intended to show, all safety features and practices necessary for their safe operation.



INSTALLATION WARNINGS

WARNING: TigerStop Products must be installed in accordance with all local, state, and federal regulations. Only personnel properly trained in the safe design and installation of automation machinery and related power equipment should install TigerStop Products onto other equipment, to ensure a safe and proper work station. TigerStop Products should not be operated without proper training, both in the operation of TigerStop Products, and in the operation of related equipment.

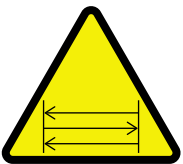
IMPORTANT CAUTION:

The motor box (compartment) contains DC voltage with potentially FATAL amperage. NEVER attempt any unauthorized actions inside the motor box.



INTERCONNECTS

WARNING: Using a TigerStop interconnect does not relieve you of the responsibility for making sure that your saw or other tool has all the necessary safety equipment in place. All installations must meet all legally required safety requirements and guidelines. Installation and training should be done following the recommendations of a qualified safety engineer.



OPERATION

DANGER: This machine can start, move and stop automatically. Keep hands and loose clothing clear of moving parts while operating. Moving parts can crush and cut. When used with a saw or other cutting equipment, bodily injury and death may result if operated without safety guards on all machines. Do not operate with guards removed. Operators must wear adequate eye and ear protection.

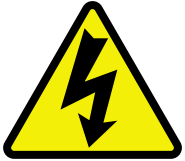


DANGER! Don't get pinched by the push feeder. Keep your hands away when in motion!

IMPORTANT SAFETY INFORMATION. READ ALL WARNINGS BEFORE OPERATING THIS PRODUCT.



Keep the work area clean and well lighted to avoid accidental injury.



Do not use TigerStop machines in a dangerous environment. Using power tools in damp or wet locations or in rain can cause shock or electrocution.



Do not operate near flammable liquids or in gaseous or explosive atmospheres!



Wear proper apparel, no loose clothes, long hair or jewelry which could get pulled into moving machinery or materials.
Wear non slip footwear, safety glasses, ear protection and a dust mask.



Use only 3- wire extension cords that have 3-prong grounding type plugs and 3-pole receptacles that accept the tools plug for 120VAC. Use only 5-wire cords and plugs when using 3 phase.



Do not open motor compartment or controller keypad. DC Voltage with potentially FATAL amperage!
Disconnect power before servicing. No user-serviceable parts inside.

DO NOT operate this or any machine under the influence of drugs or alcohol!



No one should operate this machine except for fully qualified personnel.
Read the manual!

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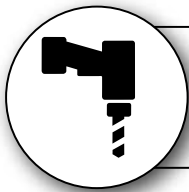
Installation Requirements

TigerRack Power Requirements

208 VAC	20 Amps
240 VAC	20 Amps

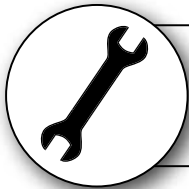
TigerRack must have a dedicated circuit. No other equipment or devices should be on the same circuit. TigerRack must be properly grounded. TigerStop recommends a qualified electrician perform the grounding of the system.

WARNING! Do NOT use a high leg delta circuit to power TigerRack.
If you are not sure what kind of circuit you are using, STOP! Have a qualified electrician confirm the main power circuit.



Do **NOT** drill or tap into the TigerRack beam!

Drilling holes into the TigerRack beam may damage the drive system. All fastening or attachment to the fence beam must be made by inserting T-bolts or T-nuts with washers.



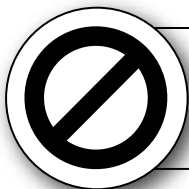
Do **NOT** over tighten mounting hardware!

It is critical, especially if not using the TigerStop Universal Attachment brackets, that the bolts are prevented from over tightening and driving into the fence beam. Always use washers.



ALWAYS evenly tighten mounting hardware!

Uneven tightening of mounting hardware can introduce a slight twist or other deformation in the beam. This will result in inaccurate measurement and premature failure of the drive or other components.

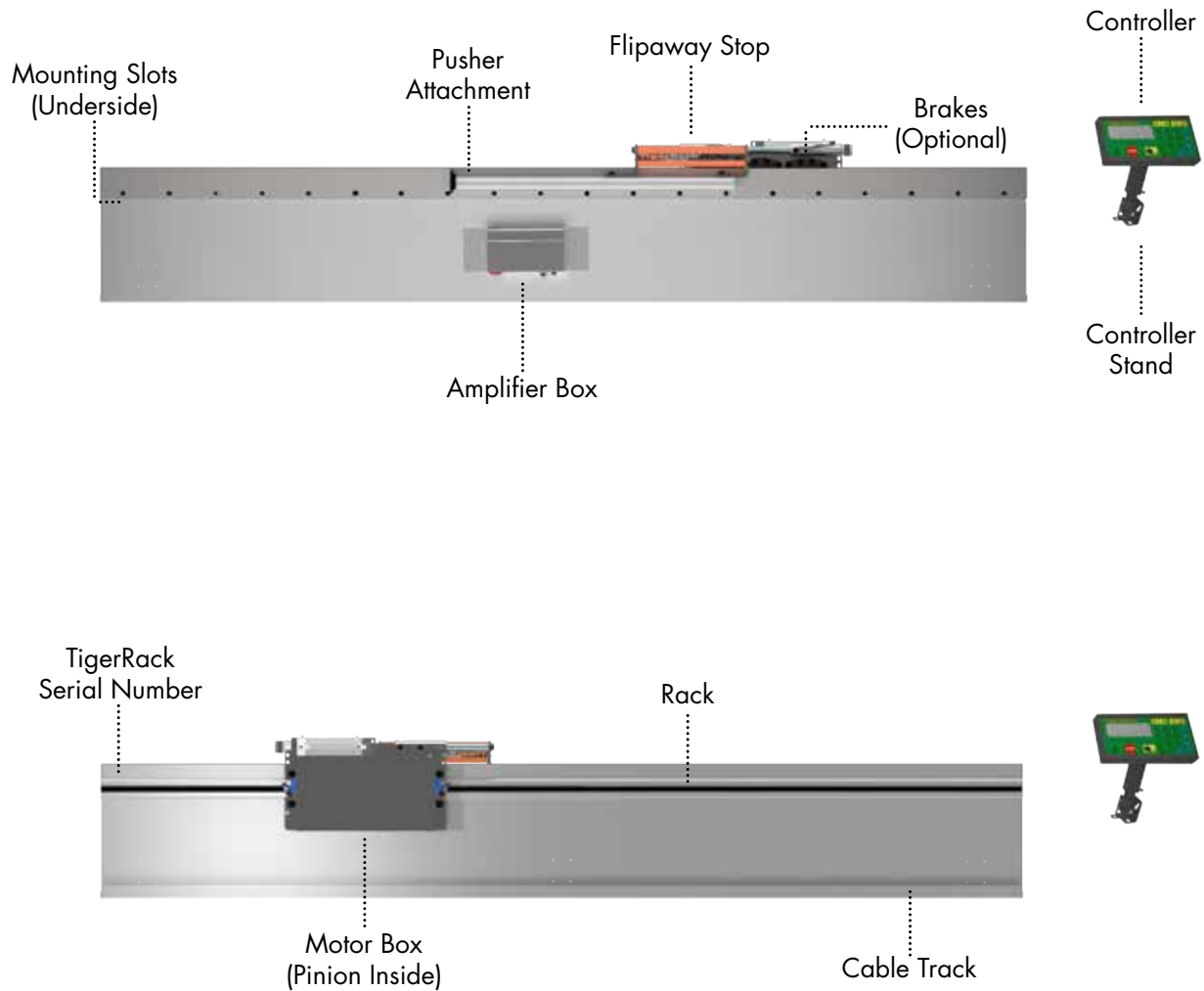


NEVER open TigerRack Amplifier Box!

The amplifier compartment contains DC voltage with potentially FATAL amperage.
NEVER attempt any unauthorized actions inside the amplifier box!

TigerRack Installation

TigerRack Anatomy

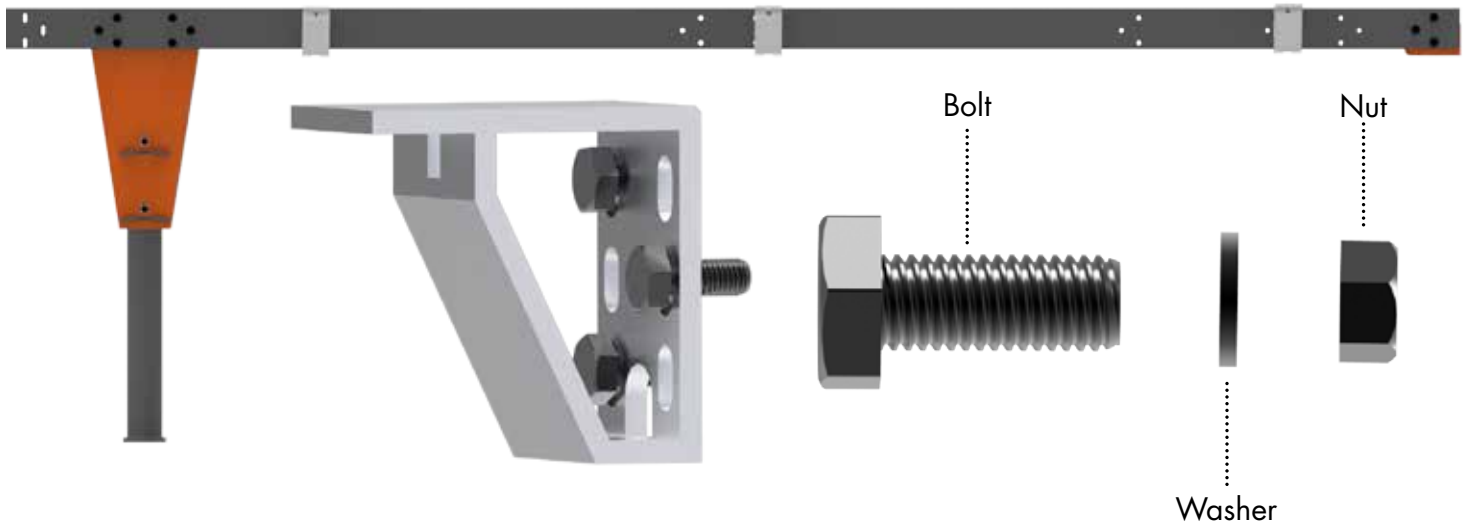


Installation

1. Each TigerRack comes with an appropriate number of Universal Mounting Brackets (UBR). Mount these to the back of the mounting surface.

Note: Space mounting brackets approximately 3 feet apart.



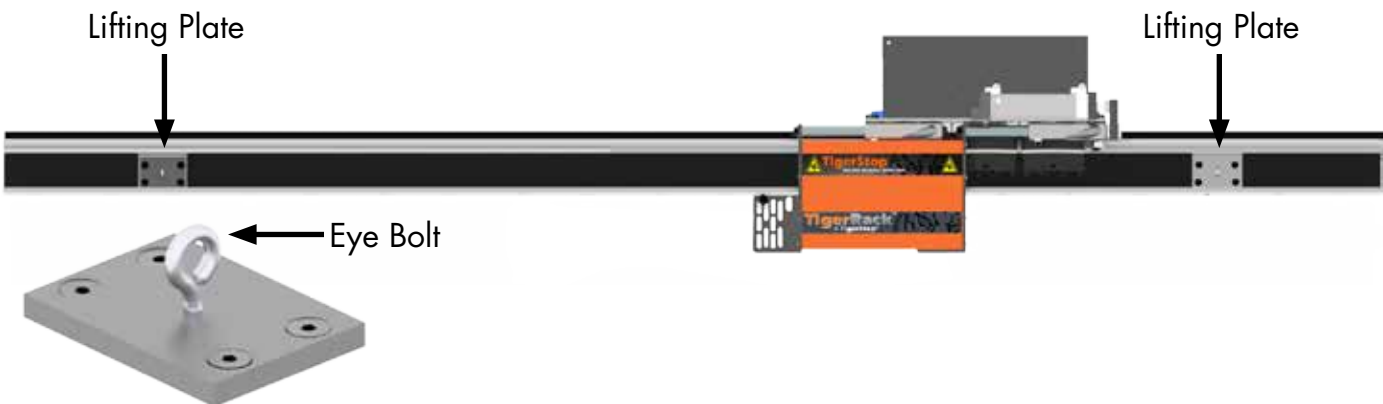


Lifting TigerRack

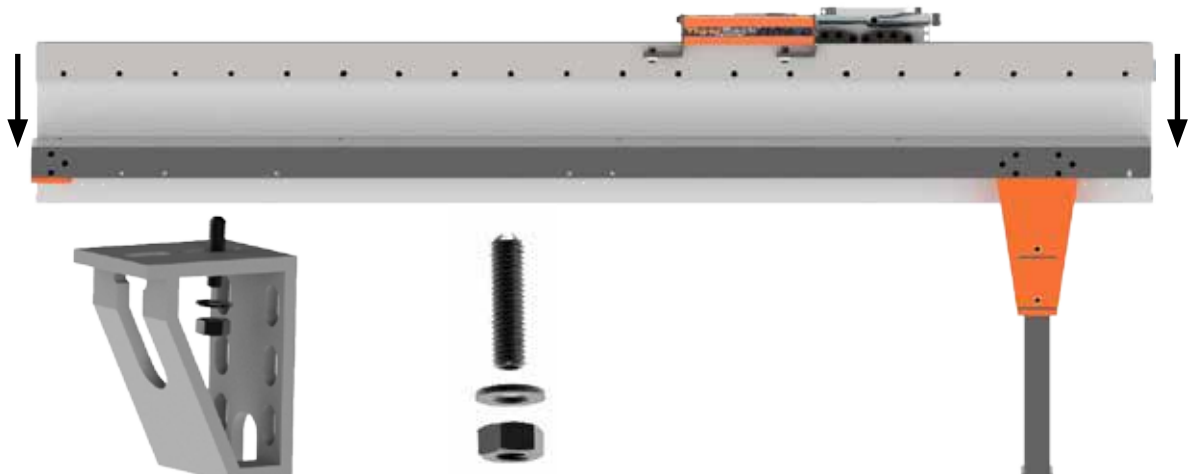
TigerRack is shipped with lifting hardware installed on the top of the beam. You must use these lifting points any time TigerRack needs to be moved. Failure to use the pre-determined lifting points could result in damage to TigerRack. Lifting requires a forklift equipped with a lifting beam.

1. Attach the lifting beam to each eye bolt in a way that ensures even tension on all eye bolts.
2. Ensure that the tension on the eye bolt is straight up. Do not apply side tension to the lifting bolts.

Note: Proper tension on each eye bolt is essential. Failure to do so could result in damage to TigerRack during lifting.



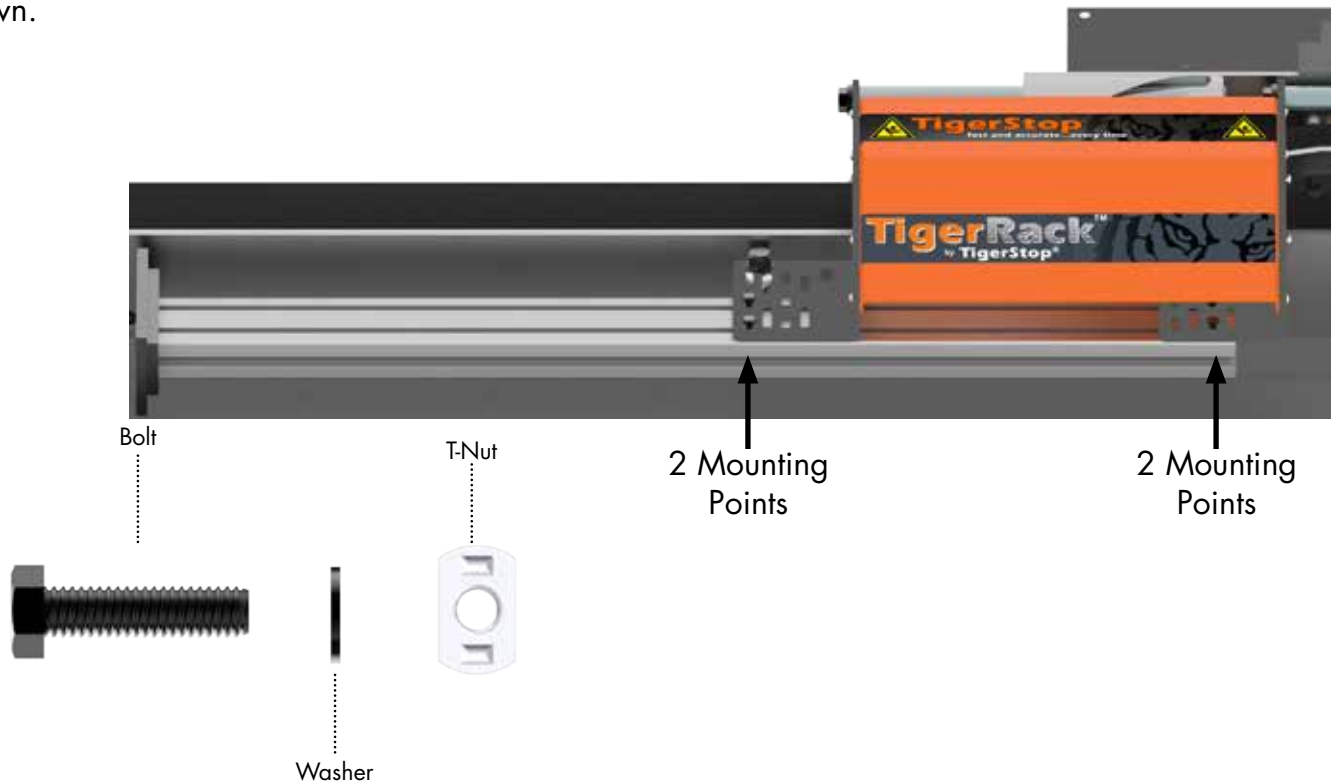
3. Lower TigerRack into position over the universal brackets.



4. Attach TigerRack using the supplied hardware. T-Nuts are inserted into mounting slots on the bottom of TigerRack from the factory.
5. Remove the eye bolts when attachment is complete. Leave the lifting plates in place.
Note: Do NOT power up TigerRack with the eye bolts in place.

Install Pusher Attachment

1. Insert T-Nuts into slots on the Pusher Attachment.
2. Place Pusher Attachment on the flip away stop and insert the bolt and washer from the top, as shown.

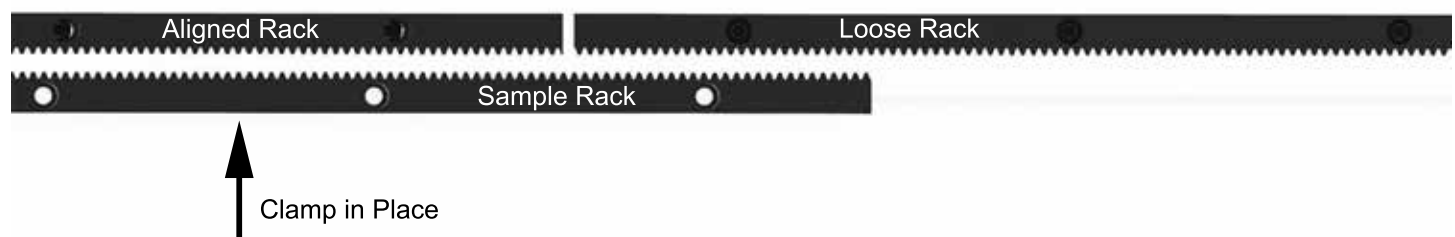


Align the Rack

The rack is separated into sections on the back of TigerRack. The rack must remain properly aligned to maintain accuracy. It is important to adjust the rack during installation.

To align the rack...

1. Loosen the rack section to be aligned.
2. TigerRack comes with a sample rack piece for alignment. Clamp the sample rack piece, upside down, to an adjacent aligned rack section.



3. Set the loose rack in place and tighten down to a torque specification of 380 in-lbs.

Adjust the Pinion

The pinion gear rides along the rack and moves the carriage. The pinion must be checked to ensure it is properly adjusted before putting TigerRack into service.

To check the pinion tension...

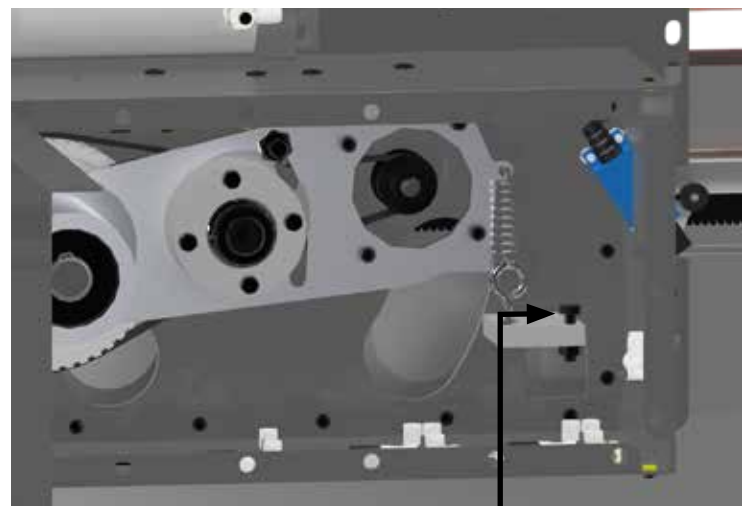
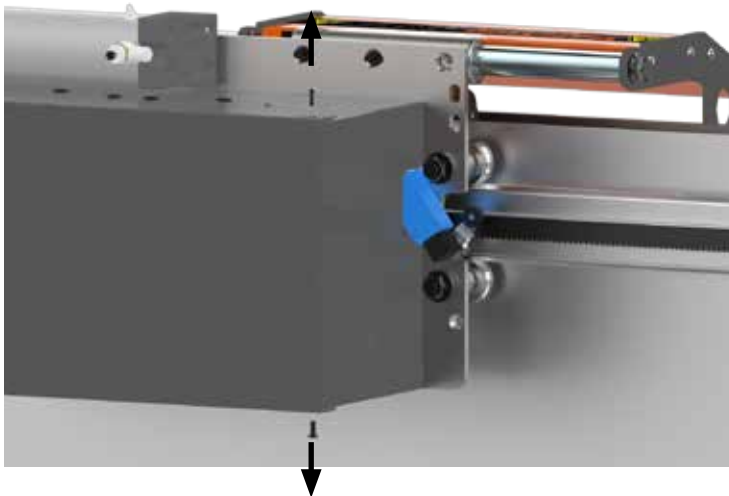
Note: Ensure TigerRack is powered down before adjusting the pinion gear.

1. Remove the screws holding the motor box cover in place.
2. Swing open the motor box cover.
3. Lower the pinion gear by hand.
4. Insert a piece of paper between the pinion and the rack.
5. Slowly release the pinion and allow it to push the paper into the rack.
6. Remove the paper. The paper should be embossed by the rack, but not ripped or torn.
7. If the paper is not embossed, or if its torn you will need to adjust the pinion.

To adjust the pinion...

Note: Ensure TigerRack is powered down before adjusting the pinion gear.

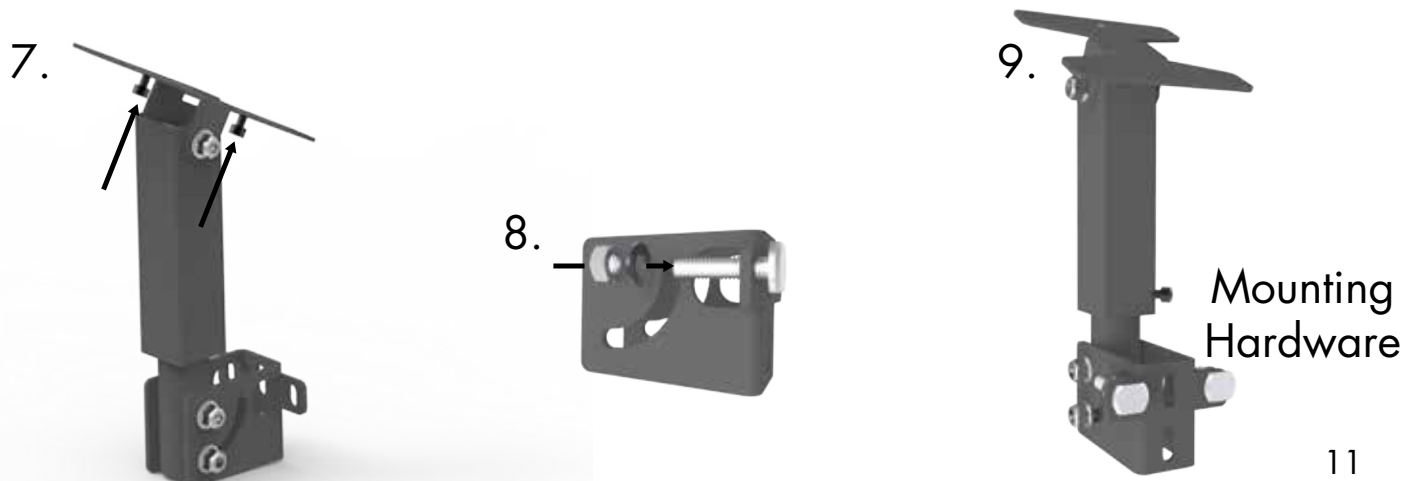
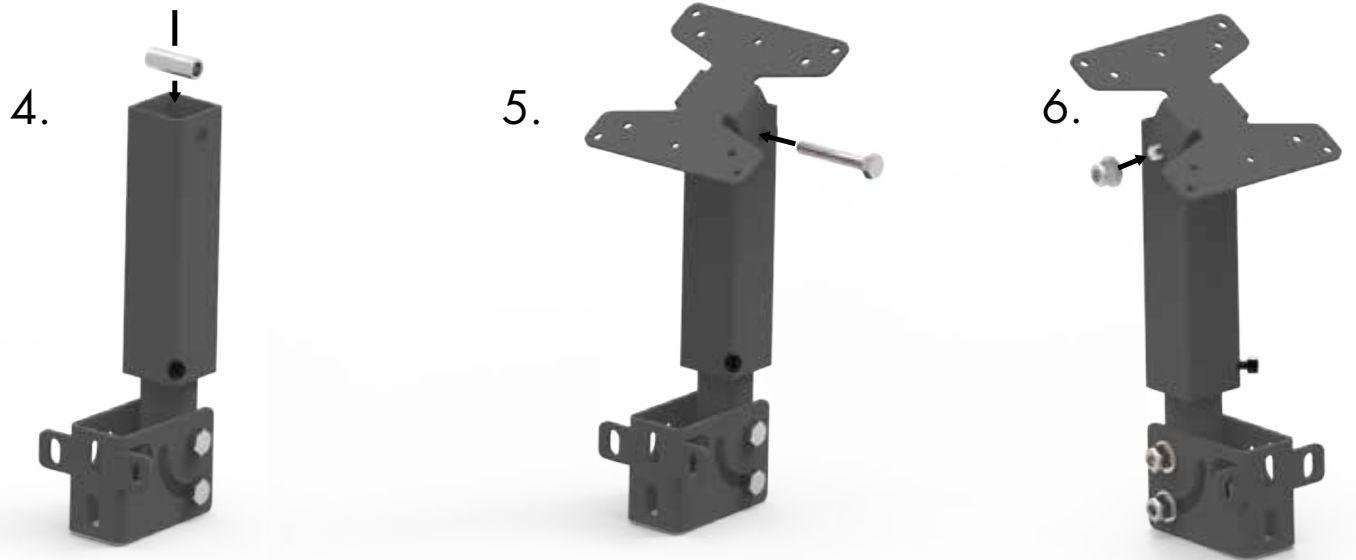
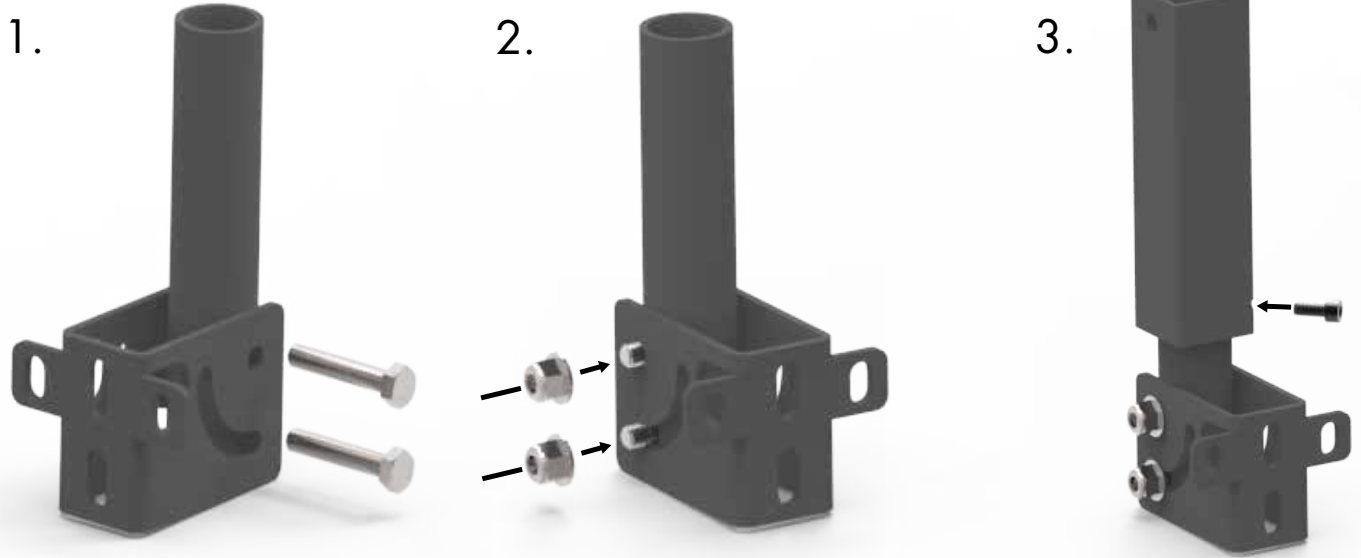
1. Remove the screws holding the motor box cover in place.
2. Swing open the motor box cover.
3. Tighten the pinion spring by tightening the spring bolt.
4. Check the pinion tension and modify tension as necessary.



Spring
Bolt

Install Controller Stand

The TigerRack controller stand will hold the TigerRack controller at a comfortable angle and height during Backboard Defecting & Optimizing. The stand can be adjusted for a straight base or any angle up to 90 degrees.



Install Standard Interconnect Kit

The Standard Interconnect Kit integrates TigerRack with your tool. Once installed, TigerRack will know when the tool is cycling and when the cycle is completed. This has a number of benefits;

Safety

When installed, TigerRack will be able to prevent the tool from cycling while it is in motion. TigerRack is also prevented from moving when the tool is in mid-cycle.

Automation

An additional benefit is partial automation of the tool, when using TigerStop's Dynamic Optimization. Once installed, TigerRack will read when the saw cycle is complete and will then move to the next part size automatically, instead of waiting for the operator to signal for the next move. This dramatically speeds up part throughput and lowers material waste when performing Backboard Defecting & Optimizing using TigerStop's Dynamic Optimization upgrade.

WARNING! Using a TigerStop Standard Interconnect Kit does NOT relieve you of the responsibility for making sure your saw or other tool has all the necessary safety equipment in place.



The TigerStop Standard Interconnect Kit has two components that integrate into your tool;

Mechanical Limit Switch

Mounted on the tool, this switch tells TigerRack if the tool is cycling.

Pneumatic Solenoid Valve

Plumbed into the air line that activates your tool, this solenoid valve will cut off air to the tool when TigerRack is moving.

Mount the limit switch anywhere on the tool so that when the tool is at its resting position, the switch is pressed.

Note: When the tool is cycled, the switch should become unpressed. When the tool returns from the cycle, the switch should return to the pressed position.



The Standard Interconnect Kit pneumatic solenoid must be mounted inside your tool and integrated with the air supply. The function of the air valve is to cut off air and disable the tool while TigerRack is moving.

1. Find the air line that directly cycles your tool.
2. Cut this air line.
3. Put one side of the cut air line to the air input on the solenoid valve.
4. Put the other side of the cut air line to the air output on the solenoid valve.
5. Connect the solenoid valve to the Standard Interconnect cable.



Final Connections

Once TigerRack and all TigerRack accessories are installed, its time to make the final connections.

1. Connect one TigerRack Controller Cable from the controller to the I/O panel plug marked "Controller".
Note: The TigerStop Controller Cable is a proprietary cable. DO NOT use an "off the shelf" cable. Doing so can cause damage to TigerRack.
2. Connect the other TigerRack Controller cable from the amplifier box to the I/O Panel cable marked "Amp".
3. Connect the TigerRack power cable from your power drop to the TigerRack incoming power plug.

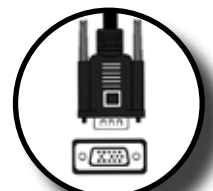


Controller

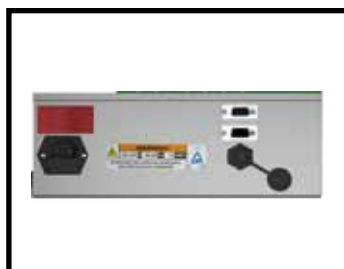


I/O Panel (Controller Plug)

White End (I/O Panel)
Black End (Controller)



15 Pin

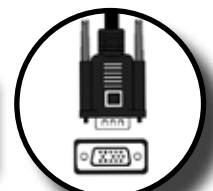


Amplifier Box



I/O Panel (Amp Plug)

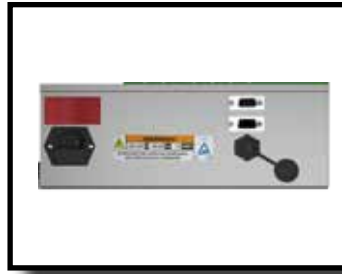
White End (Amplifier)
Black End (I/O Panel)



15 Pin



Incoming Power



Amplifier Box

**Black TigerRack
Power Cable**

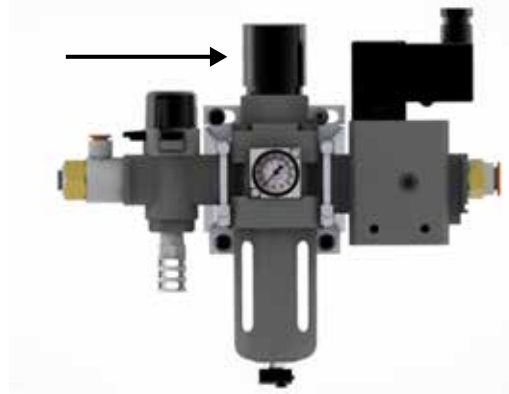


Power Cable

Pneumatic Connections

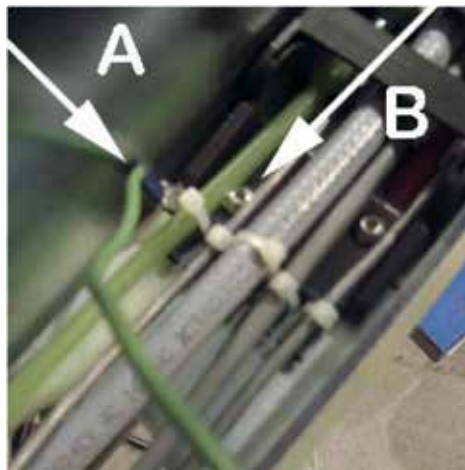
If you have the pneumatic flip away option or the tube and pipe gripper option, you will need to connect the air prep unit that comes with TigerRack to your main air supply.

Twist the top cap of the air prep unit to adjust the air pressure. Air pressure should be at 80 PSI.



Grounding TigerRack

TigerRack is supplied with a ground wire. The wire is connected to the grounding lug on the cable track.



**A - Grounding Wire
B - Grounding Lug**

Ensure the ground is good before using TigerRack. Ensure the table TigerRack is mounted to is also grounded. Ensure the ground is a bus ground and not a serpentine or other ground style.

Note: TigerStop recommends that a qualified electrician performs the grounding of the TigerRack system.

Enable Code

Your new TigerRack will not function until you enter the TigerRack enable code, which is supplied by TigerStop Customer Service.

The enable code notifies TigerStop, LLC when your new TigerRack is about to be put into service. This lets us start the warranty on the exact day you turn it on. The enable code also allows TigerStop to turn on your TigerStop Dynamic Optimization upgrade.

How to Enable TigerRack

1. Fill out the TigerStop Warranty Registration sheet that is shipped with your TigerRack controller.

Fax or email the registration to;

(360) 260-0755
service@tigerstop.com

You may also register your warranty by phone;

TigerStop Customer Service
(360) 254-0661

TigerStop Customer Service will contact you by phone to give you the enable code, within the hour during regular business hours, Monday through Friday 6:00 am - 4:00 pm PST.

TigerStop Warranty Registration	
Please fill in your company information and fax this to TigerStop at (360) 260-0755. Your machine warranty begins on the date that you receive your enable code.	
Company Information	
Name of Company	Email Address
What is the street address of the TigerStop?	PLEASE PRINT AND SIGN AND MAIL TO: TIGERSTOP, LLC Please provide your email address so we can send you important notices. Please do not print your name and email in HTML. Please do not print your name and email in HTML. Please do not print your name and email in HTML.
Contact Name	<input type="checkbox"/> Please call me with an enable code also.
Tel	
Fax	
1. Please select your industry	
Furniture Manufacturing	Wood Industry
Kitchen & Bath Cabinetry	Moldings & Millwork
Commercial Features	Wood Doors & Windows
Doors & Windows	Lumber & Panel Products
Sheet Metal Fabrication	Metal Industry
Other	Other
2. What problem(s) did you purchase the TigerStop to solve?	
Eliminate Setup	Improve Accuracy
Increase Productivity	Improve Material Costs / Optimization
Reduce Labor Costs	Eliminate Rework
Reduce Waste	Increase Reproducibility
3. Where did you first hear about TigerStop?	
Word of mouth	Used in a different job
Trade Show	Dealer recommendation
Internet Search	Mobile Showroom
Reading user	E-mail
4. This TigerStop is being used with (check one)	
Saw, Chop Saw	Brig Machine
Saw, Double Miter	Drill Press
Saw, Miter	Mounter
Saw, Radial Arm	Saw Workbench
Saw, Straightline Rip	Punch Press
Saw, Table	Shaper
Saw, Up Cut	Table Banding
Saw	Table Cutter
Custom Machinery	Other

2. When you have received your enable code, power up TigerRack using the power switch on the amplifier box.
3. TigerRack will ask you to enter your enable code. Enter the code received from TigerStop and press [=].

Your TigerRack has now been enabled.

Enabling Dynamic Optimization

The Dynamic Optimization enable code upgrade is necessary to use TigerRack to its fullest potential. TigerRack can run an optimizing algorithm that will find the mathematically perfect way to cut your material. This can decrease material waste by 25%+. Dynamic Optimization also enables you to defect your material using the Backboard Defecting & Optimization method, shown on page 29, allowing you to cut defects out of your material and optimize the yield of the good material.

Ask TigerStop Customer Service about Dynamic Optimization!

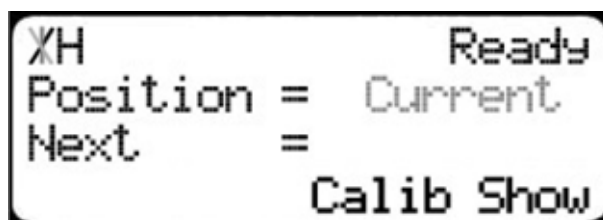
First Power Up

After entering the enable code, TigerRack will ask to run the 'Home Routine'.

Home Routine Explained

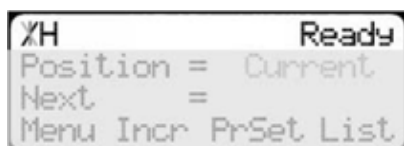
Every time TigerRack is powered up, it performs the 'Home Routine'. The Home Routine is a 3 step process where TigerRack will move to its farthest possible position.

1. Press [Start] to run the Home Routine.
2. When movement stops, TigerRack will display the Ready Screen.



```
XH Ready
Position = Current
Next =
Calib Show
```

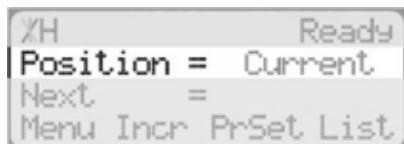
The Ready Screen is the starting point for all TigerRack functions. Let's take a look at the screen, line by line.



```
XH Ready
Position = Current
Next =
Menu Incr PrSet List
```

Line 1 displays the "heartbeat". The heartbeat is a line that rotates and lets you know that TigerRack is functioning normally. The letter next to the heartbeat is the drive indicator. This tells you what the motor is doing.

Drive Indicator	Meaning
H	Holding Still
A	Accelerating
C	Moving at Constant Speed
D	Decelerating
W	Waiting
S	Stopping
T	Waiting for Text Entry
X	E-stop Error
N	Communication Error



```
XH Ready
Position = Current
Next =
Menu Incr PrSet List
```

Line 2 shows the current position of TigerRack. The position will show with 'in' when in inches mode and 'mm' when in metric mode.

```

XH                      Ready
Position = Current
Next      =
Menu Incr PrSet List

```

Line 3 shows the next position of TigerRack. This is where user input is shown.

```

XH                      Ready
Position = Current
Next      =
Menu Incr PrSet List

```

Line 4 displays the soft key prompts. These prompts tell you what the soft key button below it does. These can change when you access different screens.

Calibration Settings

Once homed, we will need to set a few settings to ensure TigerRack is measuring properly for your application. Some of these settings are critical for the operation of TigerStop's Dynamic Optimization and Backboard Defecting & Optimizing.

Find the End Limits

```

XH                      Ready
Position = Current
Next      =
Calib Show

```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```

XH                      Ready
Position = Current
Next      =
Menu Incr PrSet List

```

2. Press the [Menu] soft key to display the Menu Select screen.

```

XH                      Menu
Password =

```

3. TigerRack requires a password to access all menu options. Enter your TigerRack password and press [=].

Note: By default, the TigerRack password is set to the serial number.

```

XH  < Select > Menu
A-Setup  C-Options
B-Offset D-PartList
A      B      C      D


```

4. At the Menu Select screen, press the [Setup] soft key to access the Setup Menu.

```

XH  <FindLim> Setup
Find the end limits?
Press START to run

```

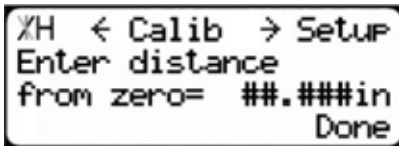
5. Press  to scroll through the settings. Stop when you see FindLim.


6. Press [Start] to run the Find End Limit routine.

Note: Ensure TigerRack can move its entire length without obstruction. TigerRack will move once [Start] is pressed.

When TigerRack has stopped moving, continue to the next set of instructions.

Calibrate TigerRack



1. Press  to scroll through the settings until you get to the Calib setting.

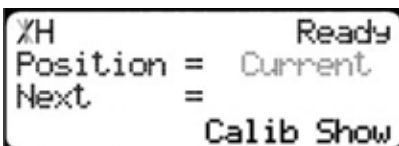
2. Measure how far the TigerRack is from your tool's zero point.

3. Enter this measurement and press the [Done] soft key.

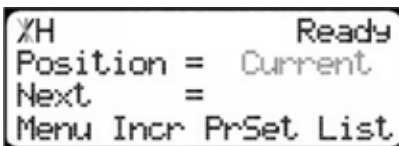
Note: TigerRack has been calibrated and you will be taken back to the Ready Screen.

Set Kerf

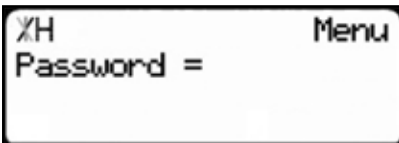
If you have installed TigerRack on a cutting tool, you will need to set the kerf setting. The kerf is the measure of how much material is destroyed by the saw blade during a cut.



1. From the Ready Screen, press the [Show] soft key to show the menu options.

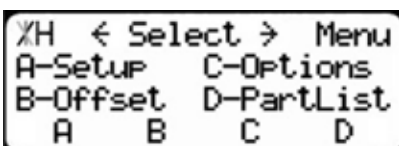


2. Press the [Menu] soft key to display the Menu Select screen.

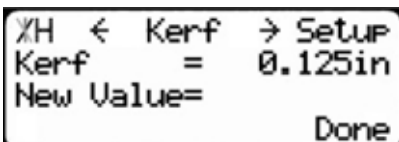



3. TigerRack requires a password to access all menu options. Enter your password and press [=].

Note: By default, the TigerRack password is set to the serial number.



4. At the Menu Select screen, press the [Setup] soft key to access the Setup menu.



5. Press  to scroll through the settings. Stop when you get to the Kerf setting.

To measure kerf...

1. Cut a sample piece and measure it with a caliper. Record your measurement.
2. Cut this piece in half.
3. Put the two pieces together as if they were one piece and re-measure with a caliper.
4. The difference between the measurement on step 1 and the measurement on step 3 will be your kerf value.
5. Enter your kerf value and press the [Done] soft key to save the parameter.

Note: It is important to check and reset the kerf every time the saw blade is changed.

Set Units

TigerRack can display its position in inches or metric. If you do not wish to change the units, skip this step.

```
%H          Ready
Position =   Current
Next      =
          Calib Show
```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```
%H          Ready
Position =   Current
Next      =
Menu Incr PrSet List
```

2. Press the [Menu] soft key to display the Menu Select screen.

```
%H          Menu
Password =
```


3. TigerRack requires a password to access all menu options. Enter your TigerRack password and press [=].

Note: By default, the TigerRack password is set to the serial number.

```
%H  < Select > Menu
A-Setup  C-Options
B-Offset D-PartList
  A      B      C      D
```

4. At the Menu Select screen, press the [Options] soft key to access the Options menu.

```
%H  < Units > Optns
Current units of
measure:  INCHES
         ↑      ↓ Done
```

5. Press  to scroll through the settings. Stop when you get to Units.

6. Press [B] to toggle between inches and metric.

7. Press the [Done] soft key when finished.

Set Interconnect Type

```
%H          Ready
Position =   Current
Next      =
          Calib Show
```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```
%H          Ready
Position =   Current
Next      =
Menu Incr PrSet List
```

2. Press the [Menu] soft key to display the Menu Select screen.

```
%H          Menu
Password =
```

3. TigerRack requires a password to access all menu options. Enter your TigerRack password and press [=].

Note: By default, the TigerRack password is set to the serial number.

```

XH  < Select > Menu
A-Setup  C-Options
B-Offset D-PartList
  A      B      C      D

```

4. At the Menu Select screen, press .

```

XH  < Select > Menu
A-Motion C-SysInfo
B-Timer  D-Laser
  A      B      C      D


```

5. Press the [SysInfo] soft key to access the System Information menu.

```

XH  <Set TIK > Systm
The Tool IK
type is:  NONE
        ↑   ↓   Done

```

6. Press  to scroll through the settings. Stop when you get to the Set TIK setting.

Set TIK has four settings:

None - No interconnect is installed.

Standard - The standard interconnect kit is installed.

Advanced - The advanced interconnect kit is installed, but working in semi-automatic.

Full Auto - The advanced interconnect kit is installed and working in full automatic mode.

To change Set TIK...

1. Press [C].
2. Enter your TigerRack password and press [=].
Note: By default, the TigerRack password is set to the serial number.
3. Press [C] to toggle the setting.
4. Press the [Done] soft key to save the parameter.

Set Brake Type

If your TigerRack is equipped with brakes, you must set the Brake Type setting to tell TigerRack how you want the brakes to function.

```

XH                               Ready
Position = Current
Next      =
                               Calib Show

```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```

XH                               Ready
Position = Current
Next      =
Menu Incr PrSet List

```

2. Press the [Menu] soft key to display the Menu Select screen.

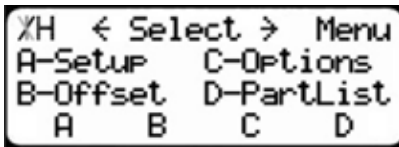
```


XH                               Menu
Password =

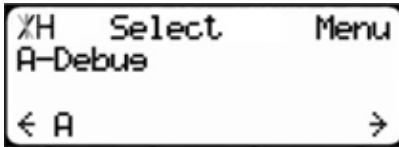
```

3. TigerRack requires a password to access all menu options. Enter your TigerRack password and press [=].

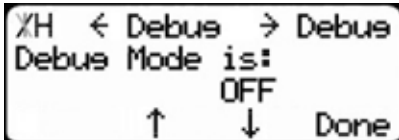
Note: By default, the TigerRack password is set to the serial number.




1. At the Menu Select screen, press  twice



2. Press the [Debug] soft key to access the Debug menu.



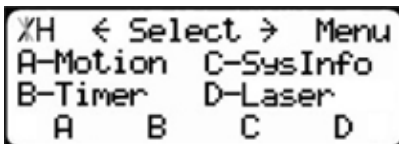
3. Press  to scroll through the settings. Stop when you get to the Debug Mode setting.

4. Press [C].

5. TigerRack will ask for a password. Enter the number 81980 and press [=].

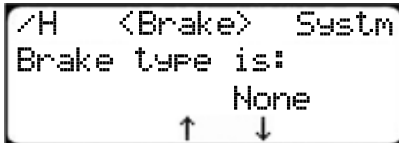
6. Press [C] to turn Debug Mode ON.


7. Press  .



8. Press  twice.

9. Press the [SysInfo] soft key to access the System Information menu.



10. Press  to scroll through the settings. Stop when you get to the Brake setting.

The Brake setting has two options;

Pusher - The brakes will engage after the tool has started its cycle.

Note: Pusher brake mode is only available when using a standard or advanced interconnect kit.

Setpoint - The brakes will engage as soon as TigerRack has stopped moving.

To change Brake...

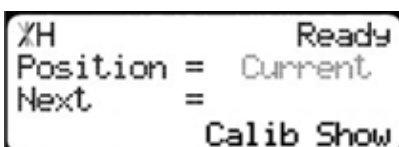
1. Press [B] or [C] to toggle the brake setting.

2. Press the [Done] soft key to save the parameter.

Set Optimizer Settings

TigerStops Dynamic Optimizer is tuned from the factory to give the best overall material yield.

However, the optimizer can be configured differently if you have different requirements.



1. From the Ready Screen, press the [Show] soft key to show the menu options.

```

XH                      Ready
Position = Current
Next      =
Menu Incr PrSet List

```

2. Press the [Menu] soft key to display the Menu Select screen.

```

XH                      Menu
Password =

```

3. TigerRack requires a password to access all menu options. Enter your TigerRack password and press [=].

Note: By default, the TigerRack password is set to the serial number.

```

XH < Select > Menu
A-Setup    C-Options
B-Offset   D-PartList
  A      B      C      D


```

4. At the Menu Select screen, press the [PartList] soft key to access the Part List menu.

```

XH <OptScore> PList
OptScore = 2.000
New Value=
                        Done

```

5. Press  to scroll through the settings until you get to the Opt Score setting.

The Optimizer Score setting sets the score that the optimizer solution must reach to be considered a good solution.

A lower Opt Score setting will give you a better optimized solution, but will take longer to do so.

A higher Opt Score setting will give you a faster solution, but it may give you a lower material yield.


To change Opt Score...

1. Enter the new Opt Score setting.
2. Press [=] to save the parameter.

```

XH <OptTime> PList
OptTime = 2000ms
New Value=
                        Done

```

6. Press  to scroll through the settings until you get to the Opt Time setting.

The Optimizer Time setting sets the amount of time the TigerStop Optimizer has to find a solution. If it takes longer than this time, TigerRack will use the best found optimized solution.

A lower Opt Time setting will give you a faster solution, but it may give you a lower material yield.

A higher Opt Time setting will give you better material yield, but it may take longer to do so.


To change Opt Time...

1. Enter the new Opt Time setting.
2. Press [=] to save the parameter.

```

XH < OptPen > PList
OptPen = 1.000
New Value=
                        Done

```

7. Press  to scroll through the settings until you get to the Opt Pen setting.

The Optimizer Penalty setting sets a penalty for multiple board optimized solutions. This means that the higher this setting, the more TigerRack will try to cut longer parts first.

A lower Opt Pen setting will give you faster optimization with more short parts processed first.

A higher Opt Pen setting will give you a slower optimization with more long parts processed first.

To change Opt Pen...

1. Enter the new Opt Pen setting.
2. Press [=] to save the parameter.

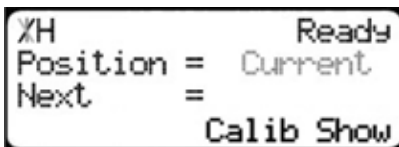
By adjusting these three optimizer settings, you can greatly influence how the TigerStop optimizer works to suit your exact application.

Basic TigerRack Functions

Manual Movement

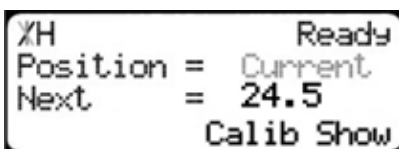
To manually move TigerRack to a position, you must enter the length you want TigerRack to go to. This length can be entered as a decimal or a fractional value.

Entering Decimals



XH Ready
Position = Current
Next =
Calib Show

1. Start at the Ready Screen.

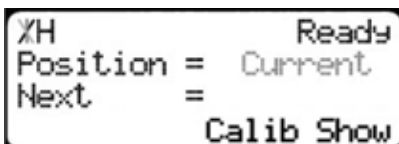


XH Ready
Position = Current
Next = 24.5
Calib Show

2. Enter a length at the controller.
Example: To enter 24 1/2 as a decimal, enter [2] [4] [.] [5].

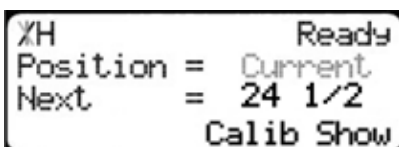
3. Press [Start] to move TigerRack.

Entering Fractions




XH Ready
Position = Current
Next =
Calib Show

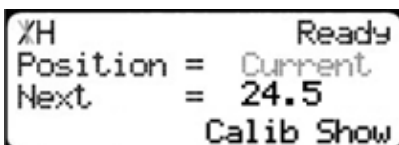
4. Start at the Ready Screen.



XH Ready
Position = Current
Next = 24 1/2
Calib Show

5. Enter a length at the controller.
Example: To enter 24 1/2 as a decimal, enter [2] [4]  [1] [/] [2].

6. Then press [Start] to move TigerRack.

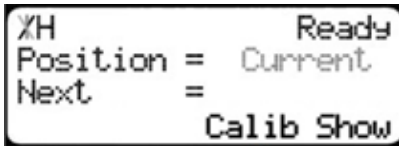


XH Ready
Position = Current
Next = 24.5
Calib Show

Notice that even though you entered a fraction, TigerRack will display the position as a decimal once it has moved. TigerRack cannot display fractions in the 'Position' field.

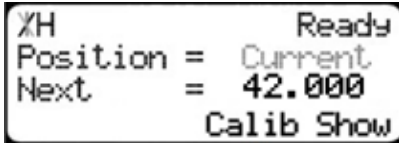
Calculator Mode

TigerRack has a calculator function that can be used to do simple math problems.



%H Ready
Position = Current
Next =
Calib Show

1. Start at the Ready Screen.



%H Ready
Position = Current
Next = 42.000
Calib Show

2. Just like a normal calculator, you can use the math function keys to enter math problems.

Example: I want to add 12 inches to 30 inches.

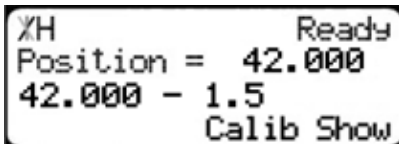
Press [1] [2] [+] [3] [0] [=].

The answer will appear in the 'Next' field.

3. Press [Start] and TigerRack will move to the calculated position.

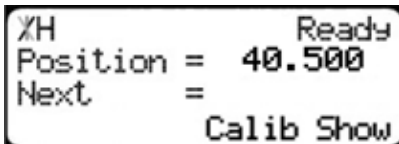
You can also do math functions on the current position.

Example: I want to subtract 1.5 inches from my current position of 42 inches.



%H Ready
Position = 42.000
42.000 - 1.5
Calib Show

1. Press [-] [1] [.] [5] [=].



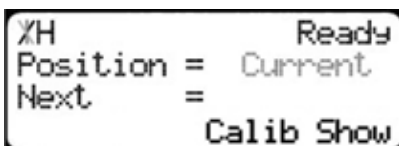
%H Ready
Position = 40.500
Next =
Calib Show

The answer will appear in the 'Next' field.

2. Press [Start] and TigerRack will move.



Jog

TigerRack can be manually jogged in or out. When activated, TigerRack will move until you let go of the jog button. It will then glide to a gentle stop.



%H Ready
Position = Current
Next =
Calib Show

1. Start at the Ready Screen.

2. At the top of the TigerRack controller, you have a  and a . To jog, press and hold one of these buttons.

Note: If the jog buttons move TigerRack in the wrong direction, you can use the 'Jog Reverse' setting in the 'Setup' menu to reverse the movement.

Increment

The increment function is a push feed mode used to step TigerRack through a series of movements. Increment...

- Can be a positive value that will move TigerRack towards the tool.
- Can be a negative value that will move TigerRack away from the tool.
- Will compensate for kerf automatically using the 'Kerf' setting in the 'Setup' menu.
- Can only store one increment value at a time.

```
%H          Ready
Position =   Current
Next      =
Calib Show
```

1. Start at the Ready Screen.

2. Press the [Show] soft key to display more options.

```
%H          Ready
Position =   Current
Next      =
Menu Incr PrSet List
```

3. A new set of options have appeared. Press the [Incr] soft key to access the Increment menu.

```
TH      Enter  Incr
Position =  42.000
Incr Size=
```

4. Enter the size you want to increment and press [=].
For this example, I am going to use an increment of 2 inches.

```
%H  Incr Move Incr
Position = 42.000in
Next     = 38.875in
Incr Size= 2.000in
```

5. The current position is 42. If that is where you want to start, press [Start] to begin incrementing. If you need to move TigerRack to load your stock, enter the position and press [Start]. TigerRack will move to position. Load your stock and press [Start] to begin incrementing.

```
%H          Ready
Position =   Current
Next      =
Menu Incr PrSet List
```

6. When you are finished, press [Stop] to return to the Ready Screen.

PreSet

The PreSet function is a set of 100 programmable hot keys used to quickly access common lengths. PreSets...

- Can be used in Set Point, Pusher or Increment mode.
- Can be programmed in PreSet slots number 1 - 100.

Note: PreSet functionality can be changed using the 'PreSet' setting in the Part List menu.

PreSet Programming

```
%H          Ready
Position =   Current
Next      =
Calib Show
```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```
%H          Ready
Position =   Current
Next      =
Menu Incr PrSet List
```

2. A new set of soft key options have appeared. Press the [PrSet] soft key to access the PreSet feature.

```

TH   Enter      PrSet
Pre-Set#
Press START to move.
View Edit Clear

```

3. Enter the number of the preset you want to program and press the [Edit] soft key.

4. For this example, I am going to program PreSet number 1.

```

TH   <Edit 1> PrSet
Pre-Set = Empty
New Value=15 15/16
View Clear

```

5. Enter the length you want the PreSet to move TigerRack to, and press [=].

For this example, I want to move to 15 15/16 inches.

```

%H   <Edit 1> PrSet
Pre-Set = 15.937in
New Value=
View Clear

```

6. The PreSet value is now set.

7. Press [Stop] to go back to the Ready Screen.

Using the PreSet

```

%H                                     Ready
Position = Current
Next      =
Menu Incr PrSet List

```

1. Start at the Ready Screen.

2. Press the [PrSet] soft key to access the PreSet menu

```

TH   Enter      PrSet
Pre-Set#
Press START to move.
View Edit Clear

```

3. Enter the PreSet number you wish to use and press [Start].

```

%H                                     Ready
Position = 15.937
Next      =
Menu Incr PrSet List

```

4. TigerRack will move to the PreSet position.

Deleting PreSets

```

%H                                     Ready
Position = Current
Next      =
Menu Incr PrSet List

```

1. Start at the Ready Screen.

2. Press the [PrSet] soft key to access the PreSet menu.

```

TH   Enter      PrSet
Pre-Set#
Press START to move.
View Edit Clear

```

3. Enter the PreSet number you wish to delete and press the [Clear] soft key.

```

%H   <Clear 1> PrSet
Pre-Set = 15.937in
Press OK to clear.
View Edit

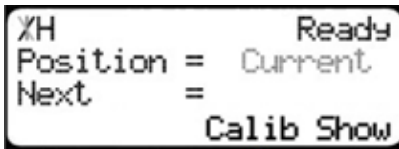
```

4. Press [OK] to clear.

5. TigerRack has now deleted the PreSet.

Quick Calibration

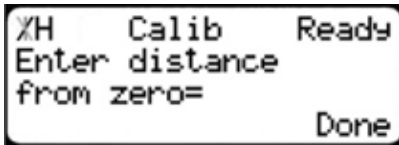
Quick calibration is a shortcut to the calibration setting. This allows more advanced TigerRack users to quickly calibrate.



XH Ready
Position = Current
Next =
Calib Show

1. Start at the Ready Screen.

Note: if you viewing the expanded options, press [Cancel].



XH Calib Ready
Enter distance
from zero=
Done

2. Measure how far the TigerRack is from your tool's zero point. Enter this measurement and press the [Done] soft key.

3. TigerRack is now calibrated.

Working with Part Lists

TigerRack has a versatile part list feature that allows users to enter large lists of parts for use with the TigerStop Dynamic Optimization upgrade. This lets the user run, view, edit, clear and optimize lists of parts, then processes the parts quickly and accurately.

There are 4 types of lists that you can enter;

Pusher

A pusher list will tell TigerRack to push the stock material into the tool. You can enter as many parts as you like into a pusher list and TigerRack will tell you when it needs another piece of stock. Pusher lists can be optimized if you have the TigerStop Dynamic Optimizing upgrade.

Set Point

A set point list will tell TigerRack to act as a stop. It will treat each length you enter as an absolute value from your zero point. Set point lists can be optimized if you have the TigerStop Dynamic Optimizing upgrade.

Pattern

A pattern list will tell TigerRack to process one stock lengths worth of parts in a push feed fashion. It will run the same pattern of parts over and over until its told to stop. Pattern lists cannot be optimized.

Pull

A pull list works just like a pattern except it pulls away from the zero point instead of pushing towards it. Pull lists cannot be optimized.

Programming a List

```
%H Ready
Position = Current
Next =
Calib Show
```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```
%H Ready
Position = Current
Next =
Menu Incr PrSet List
```

2. A new set of soft key options have appeared. Press the [List] soft key to access the List interface.

```
TH Enter List
Partlist#=
Press START to run
View Edit Clear DnLd
```

3. At the List interface, enter the list number you wish to program and press the [Edit] soft key.

Note: the list number is a memory slot that houses the list. You can choose numbers 1 - 100.

```
%H SelectType #1
A-Pusher C-Pattern
B-Setpoint D-Pull
A B C D
```

4. Select the type of list you would like to program.

```

XH  Select Opt  #1
Optimize Part List?
A-Yes    C-No
A        C

```

5. TigerRack will ask you if you want to optimize the list for material yield. If you choose no, TigerRack will process the list exactly as entered and will NOT optimize for material yield.

```

XH  Change H&T  #1
H&T Cuts = Global
A-Cont.   C-Change
A         C

```

6. Select if you want to use a global or a local head and tail cut.
Note: Head and tail cuts are trim cuts at the ends of your material.


Global - Uses the head and tail cut setting from the Part List menu

Local - Allows you to set a head and tail cut that is used for this list only.

```

XH  Line 1>    #1
Length = 0.000in
Quantity= 0
Done


```

7. You will now be taken to the programming screen for line 1. Enter the length of the part you wish to process and press .
In this example, I will tell TigerRack I want to cut a 24 inch part.

```

XH  Line 1>    #1
Length = 24.000in
Quantity=5
Done

```

8. The cursor will now drop to the quantity. Enter how many parts you want, followed by .
In this example, I will tell TigerRack that I want 5 parts.

```

XH  <Line 2>   #1
Length = 0.000in
Quantity= 0
Done

```

9. You will now be taken to line 2. Repeat steps 7 and 8 until you have entered all the parts you want to process.

Note: You can also download all the parts straight from your design file. Downloading is a faster way of importing parts for use with TigerStop's Dynamic Optimization.

```

XH  Complete   #1
Part List saved!
Press START to run
Press CANCEL to exit

```

10. Press the [Done] soft key when all parts are entered.
11. The list has now been saved.
12. Press [Start] to run the list.

Creating a Backboard Defecting & Optimizing List

Backboard Defecting & Optimizing is a process that allows you to quickly and easily cut around material defects while optimizing the clear stock for better material yield. It is accomplished using a standard Set Point list, TigerStop's Dynamic Optimization upgrade and a back fence ruler.

Program a Set Point List

```

XH                      Ready
Position = Current
Next     =
Calib Show

```

1. From the Ready Screen, press the [Show] soft key to show the menu options.

```

XH                      Ready
Position = Current
Next     =
Menu Incr PrSet List

```

2. A new set of soft key options have appeared. Press the [List] soft key to access the List interface.

```

TH  Enter      List
Partlist#=
Press START to run
View Edit Clear DnLd

```

- At the list interface, enter the list number you wish to program and press the [Edit] soft key.

Note: The list number is a memory slot that houses the list. You can choose numbers 1 - 100.

```

XH  SelectType  #1
A-Pusher      C-Pattern
B-Setpoint    D-Pull
  A      B      C      D

```

- Choose Set Point list.

```

XH  Select Opt  #1
Optimize Part List?
A-Yes      C-No
  A      C

```


- TigerRack will ask if you want to optimize. Choose Yes.

Note: If you do not see this option, contact TigerStop Customer Service.

```

XH  Line 1>      #1
Length = 0.000in
Quantity= 0
                        Done


```

- You will now be taken to the programming screen for line 1. Enter the length of the part you wish to process and press . In this example, I will tell TigerRack I want to cut a 24 inch part.

```

XH  Line 1>      #1
Length = 24.000in
Quantity=5
                        Done

```

- The cursor will now drop to the quantity. Enter how many parts you want, followed by .

In this example, I will tell TigerRack that I want 5 parts.

```

XH  <Line 2>      #1
Length = 0.000in
Quantity= 0
                        Done

```

- You will now be taken to line 2. Repeat steps 6 and 7 until you have entered all the parts you want to process.

Note: You can also download all the parts straight from a design file. Downloading is a faster way of importing parts for use with TigerStop Dynamic Optimization.

```

XH  Complete      #1
Part List saved!
Press START to run
Press CANCEL to exit

```

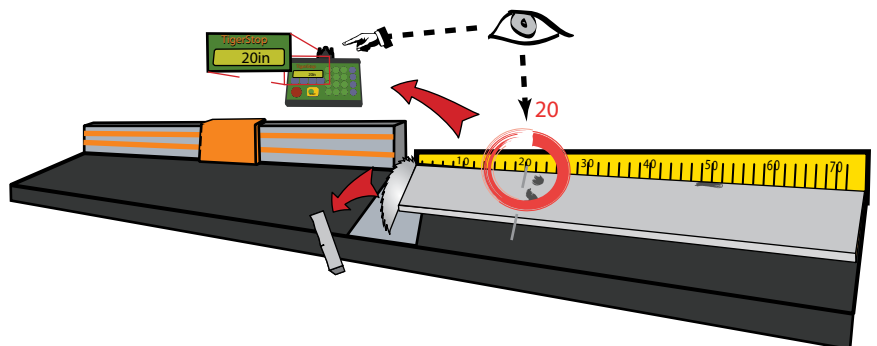
- Press the [Done] soft key once you have entered all parts.

- The list has now been saved. Press [Start] to run the list.

Running the list

- First, make your trim cut. After the trim cut, measure up to your first defect.

Note: If no defect is present, measure up to the end of the material.



TH Enter #1
Enter Stock
Length = 0.000in

2. TigerRack will ask you to enter the stock length. Enter what you measured and press [Start].

3. TigerRack will optimize the material up to the defect and will use as much of the material as mathematically possible.

Note: If you are using the Standard Interconnect Kit, TigerRack will move to the next part length when tool cycle is complete.

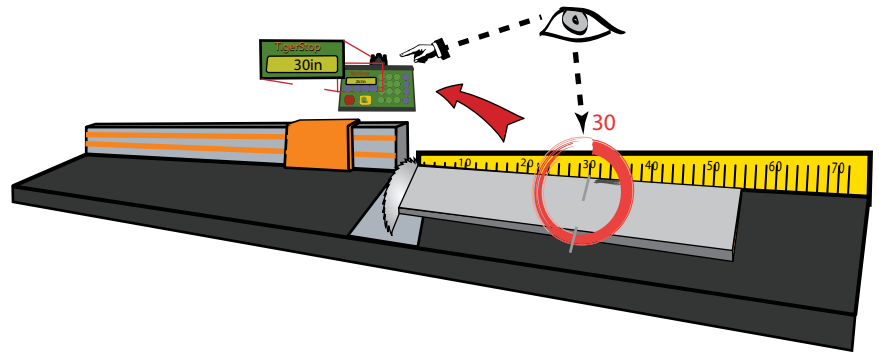
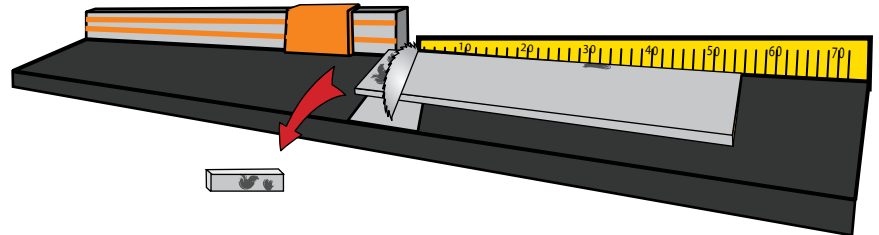
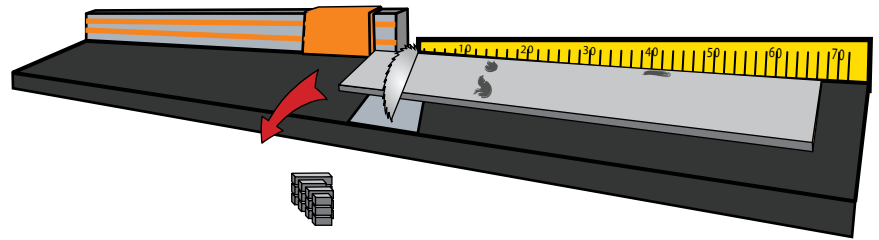
4. Cut out your defect.

5. TigerRack will once again ask you to enter the stock length. Measure up to the next defect, enter this measure and press [Start].

Note: If no defect is present, measure up to the end of the material.

6. TigerRack will optimize the material up to the defect and will use as much of the material as possible.

7. Continue in this fashion until the entire stock is used. If you have more parts to cut, start at step 1 with a new piece of material.



Why Use BackBoard Defecting & Optimizing?

- Dynamic Optimization™ determines the best use of material, so the operator (unskilled worker or pro fabricator) only has to focus on feeding parts and cutting.
- TigerRack moves to the correct position up to .008" so the operator never has to use a tape measure or set a manual stop ever again.
- TigerRack reduces station setup time between different cut lengths and allows the operator to optimize for defects like forklift stabs, shipping damage, dents, or aesthetic blemishes, while getting optimal yield.
- TigerRack increases accuracy. The operator doesn't have to worry about cutting errors or the associated costs of rework. Quality control concerns are no longer a bottleneck.
- Dynamic Optimization™ reduces scrap waste and shelving costs. Purchase less raw footage while

sending fewer pounds back to the recycler.

- A TigerStop® Dynamic Optimizing™ station can even be used by an unskilled worker. Top paid Fabricators and skilled workers can better use their time managing the shop or doing work requiring greater expertise.

Contact TigerStop Customer Service to Enable Your Optimizing Upgrade!
(360) 254-0661
service@tigerstop.com

Maintenance Schedule

Record the following settings for future reference.

Serial Number:	Drive Test Results
Min Limit:	MxP =
Max Limit:	MxN =
Scale:	P+ =
Kerf:	P- =
Lash:	

Daily

1. Clean all dirt and debris from drive areas:
 - Cable Track
 - Pinion Gear
 - Rack
2. Check all cables for damage.
3. Check calibration, if necessary.

Weekly

1. Visually inspect the rack and pinion for lubrication. Only use molybdenum disulfide lubricants.
2. Visually inspect the cable track for objects that may have fallen into or on the track.

Quarterly (Every 3 Months)

1. Check rack to ensure that the sections are tight and aligned properly (see page 9).
2. Check the pinion gear to ensure that it is properly tensioned (see page 10).
3. Run a motor drive test and record the data in the maintenance log. If drive numbers are above 12000 (check), contact TigerStop Customer Service.

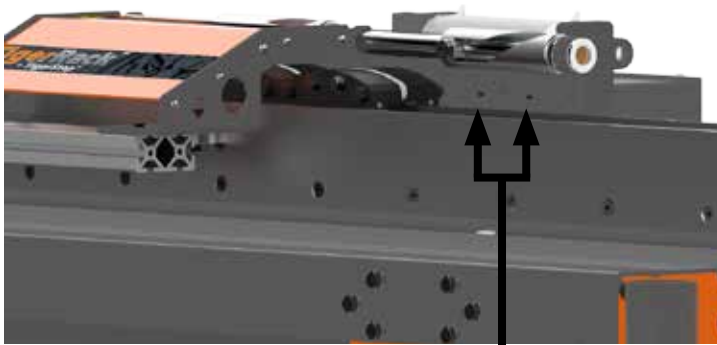
Yearly

1. Thoroughly inspect all cables and air lines running through the cable tray.
2. Perform a data log to ensure system accuracy. A downloadable copy can be found at www.tigerstop.com/support.

Installing TigerRack Brakes

TigerRack can be purchased with 1, 2 or 3 brakes. If you purchased 1 or 2 brakes, you can add more brakes to TigerRack in the field.

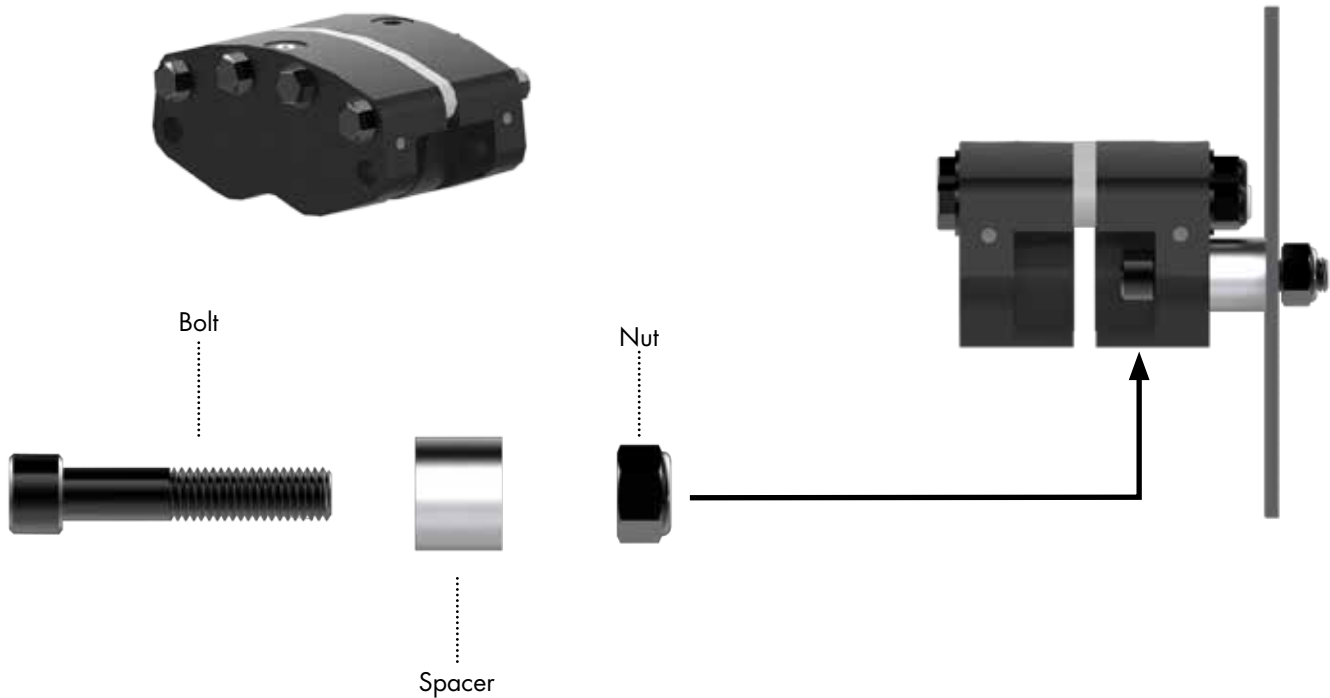
1. Power down TigerRack.
2. Open the TigerRack motor box.



Mounting
Holes

Note: TigerRack brakes attach to the motor box, under the flip away stop.

3. Identify the brake mounting holes on the motor box.
4. Attach the brake to the motor box using the supplied hardware, as shown.



Maintenance Log

[illegible]

FIND US ONLINE AT
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fast and accurate...every time

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