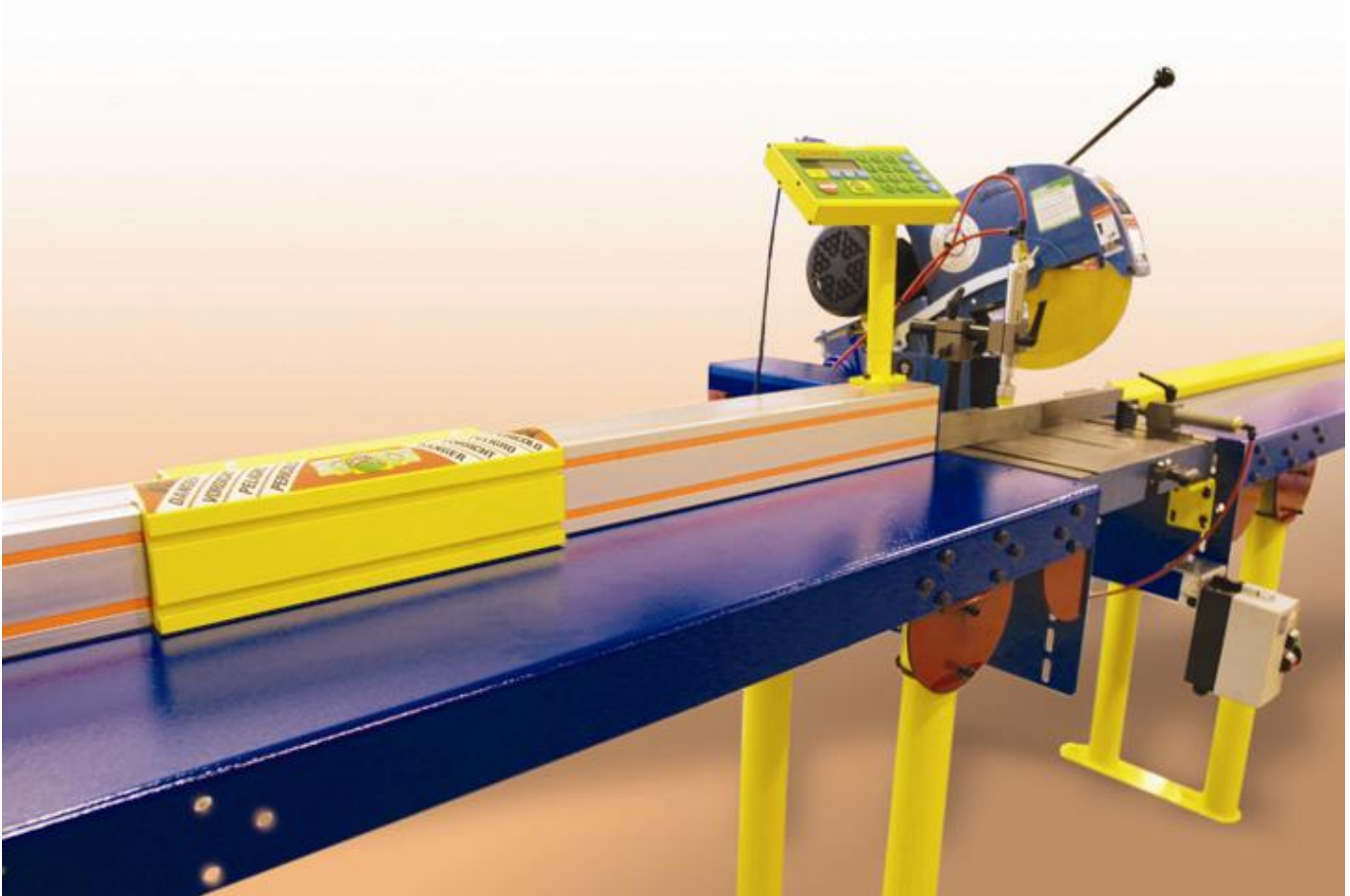


TigerStop[®] Manual

Setup

May 2006

*Home Routine
Accuracy & Operation
Scaling, Setting the Kerf, & Auto-Test*



IMPORTANT! TigerStop must be enabled with a code that must be obtained from TigerStop Customer Service. If you will be installing your unit on a weekend or after business hours, be sure to get your enable code before 4 p.m. PST!

Contact information:

TigerStop LLC, Assembly Plant, 12909 NE 95th St., Vancouver, WA 98682

Tel: 360 254-0661 • Fax: 360 260-0755 • Website: www.tigerstop.com • Email: service@tigerstop.com

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Home Routine

Concept → Every TigerStop completes a **home routine** on start up. The home routine is a five stage process as described below.

- Prior to running the home routine, TigerStop automatically changes the values of several parameters and then changes them back.
- The **ramps**, **velocity**, **lash** and **min/max limits** are saved.
- Once saved, the acceleration parameters are set to 50 (normally set to 75)
- Velocity parameters are reset to 5 **ips**
- Maximum Limit is set to +1000
- Minimum Limit is set to -1000
- Lash parameter is set to 0.

Recap of the Home routine at Start Up


Turn TigerStop ON . The screen displays .


Press  for the home routine. The screen displays .


Make sure NOTHING is in the path of the stop!


Press  again.


The stop moves away from the blue motor box and begins to run through the 5 stages of the setup routine...

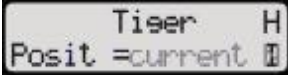
 1 The **stop** moves 1" (25mm) toward the **zero end** to ensure that the **carriage** is outside of the end sensor. This also confirms that there is enough room to move toward the **home end** of the fence in later stages.

 2 The stop reverses direction and moves toward the home end of the machine until it trips the end sensor. This confirms that the sensor is sending a signal to indicate that the carriage is blocked.

 3 The value of the velocity parameter is automatically reset to 1 ips, and the stop backs away 1" (25mm) to clear the far end sensor.

 4 The stop moves slowly and precisely back to the home end sensor again until it is tripped. The position displayed on screen is reset to the calibration parameter saved in the motion menu.

 5 The stop again moves back 1" (25mm) to clear the home end sensor. Velocity and acceleration parameters are restored to the values saved in the motion menu.

After stage 5, the display returns to the Ready screen .

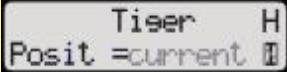
Performing Home Routines After Start Up

Concept → The home routine can usually be performed without **cycling power**. This is most often done if TigerStop X's out, either through a software error, or because the drive is disabled after the stop comes up against an immovable object.

How to Do It → To perform a home routine without cycling power...

- Press   → 
- Press  

This will initiate the home routine.







TigerStop will run through all 5 stages and return to the Ready screen  to indicate that the routine has been completed.

Home Routine Failure


Concept → If the home routine fails at power-on, the drive will be disabled and movement commands will not be processed.

Parameter Check & Adjustment

→ Make sure that the values of the motion menu parameters in your TigerStop match those listed below.

-  InVel = 5
-  InAccel = 50
-  InDecel = 50
-  OutVel = 5
-  OutAccel = 50
-  OutDecel = 50

What is TigerStop Telling Me?

Concept  The controller screen displays TigerStop's current status as a letter at the end of the top line. When TigerStop executes a movement or operation, it passes through several stages, indicated by the letter rapidly changing.

```
targetTiser H
Posit =current
```

H = Holding position: TigerStop is at rest.

```
targetTiser A
Posit =current
```

A = Accelerating: TigerStop is speeding up from 0 to its **target velocity**.

```
targetTiser C
Posit =current
```

C = Constant velocity: TigerStop is travelling at its target velocity.

```
targetTiser D
Posit =current
```

D = Decelerating: TigerStop is slowing down to 0 velocity.

```
targetTiser L
Posit =current
```

L = Lash compensation: TigerStop is making an adjustment move to account for **lash**.


```
targetTiser W
Posit =current
```

W = Wait: TigerStop is waiting to move, having disabled the interlock solenoid.

```
targetTiser X
Posit =current
```

X = Drive disabled: For some reason TigerStop's drive is disengaged.

TigerStop has cut out and needs to be reset.

 TigerRip Fence specific: X = TigerStop is at rest. Drive must be disabled because rip fence handle is in lock down position, and the drive cannot be allowed free movement once it comes to rest.

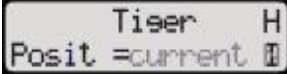
```
targetTiser DM H
Posit =current
```

DM = Dead Man Open: TigerStop "thinks" the interlock limit switch is OPEN and the saw or other tool engaged. The stop can NOT move with this status.

Running Min-Max

Concept → The Min-Max routine defines TigerStop's **operating range** by detecting the position of the end sensors at both extremities of the aluminum fence extrusion.

Min-Max is an auto-setup mode and should be run ONLY after the stop has run through the home routine. Min-Max should be the ONLY method used to change minimum or maximum parameters. See also, When to Run Min-Max.

1. At the Ready screen  press and HOLD  and  at the same time, then quickly release.

2. The screen displays .

Make sure NOTHING is in the path of the stop!

3. Press  again.

*The stop will move to both ends of the fence extrusion, first to the **far end**, then to the **motor end**. The minimum and maximum parameter values are now changed and saved.*

When to Run Min-Max

Concept → The Min-Max routine should be run...

- When a belt is changed or re-tensioned.
- When TigerStop has a problem that affects the minimum and maximum parameters.
- When parameters have been reset.
- When a controller has been replaced.

See also...

Set Up Auto-Test

Now Run Auto-Test

Making TigerStop Accurate

Concept → Calibrate TigerStop to set its distance from zero. Calibrate whenever the saw blade is changed, or when you add or remove a stop attachment, such as a gangstop or pusher foot.

How to Do It → From a position at least 12" out, enter a length of 10".

1. Press   .

The stop moves inbound to a position 10" from the saw blade.

2. Cut a piece of stock at this length and carefully measure it.



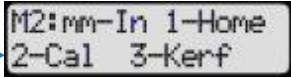
It should be right on 10". If it is accurate, no need to calibrate.

Be sure to use an accurate measuring tool. TigerStop can be only as accurate as you make it!

→ If the sample cut measured 10¼" instead of 10"...

It's time to calibrate!

Continuing →

3. Press   → . The M2 menu displays.

4. Press  → . The M4 menu displays.

You enter the actual measured length of your sample piece at this screen.

5. Press       .

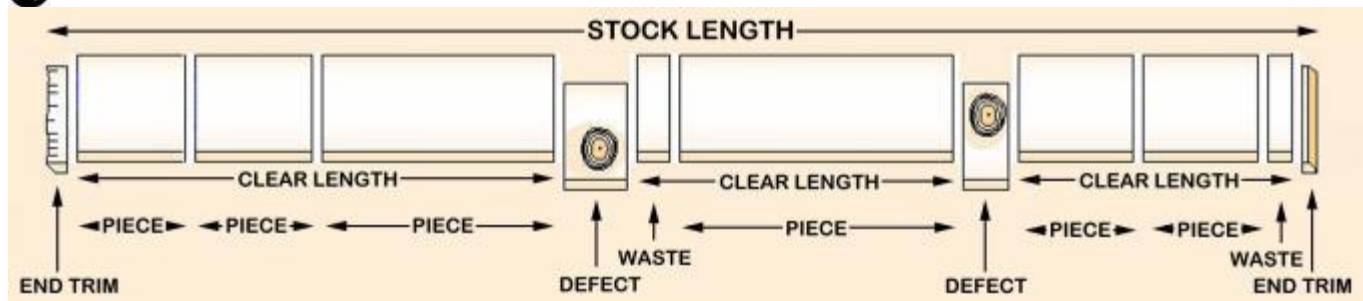
This will save the original position of 10" as 10.25", correcting the inaccuracy.

6. Cut another sample piece using the same procedure, starting at step 1 above.

If the sample piece measures the same as the position shown on screen, TigerStop is calibrated. If it is still off, repeat the process.

Head and Tail Cuts

Concept → Head and tail cuts are **global parameters**, affecting **push feed** and **pattern cut lists** only. **Head cut** and **tail cut** lengths are removed from any possible **Clear Length**.



How to Do It → To program your head and tail cuts...

- To access the Operation Menu, press .
- At enter your and press .
- The first parameter is head cut . Enter your head cut and press to view it.
- Then, press to advance to the next parameter, tail cut . Enter your tail cut and press to view it, or to save both head and tail cut values you just entered.

When you program a value into the head cut and tail cut parameters, this will cause TigerStop to automatically push your material into position for you to make a head cut, and it will also prevent you from cutting a finished part out of the tail cut "zone."

Head and tail cuts can also be entered for a specific cut list. This is called a "local" head and tail cut, as opposed to "global" as described above. For instructions on setting "local" head and tail cuts, see Local Head and Tail Cuts.

Scaling

Concept Most TigerStops require a scaling adjustment **biannually**. This operation may also be performed on new machines received from the factory, because the environment in your facility can be dramatically different than that in our assembly shop.

There are two methods that can be used to **scale a TigerStop**. The first method makes use of a spreadsheet and is much quicker. The second method makes use of a "trial and error" method of gradual changes to the scale value combined with making sample cuts until the sample length is accurate. Refer to Manual Scaling for this method.

Spreadsheet Method

To scale your TigerStop a short and a long measurement are needed to work from.

The short measure must be 12" or less, and the long measure about 10" less than the **working length** of the TigerStop. In the case of Tiger16 or longer, you must use a long measurement of at least 70"

Metric The short measure must be 300mm or less, and the long measure about 200mm less than the working length of the TigerStop. In the case of Tiger16 or longer, you must use a long measurement of at least 1780mm.




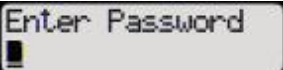




ALWAYS use the same measuring tool for all measurements!

➔ Copy the scaling spreadsheet from the TigerStop Manual CD, or create one inserting the formulas shown in the example below.

INCH MEASUREMENT SYSTEM						
Initial Scale	Short Position	Long Position	Long Measure	Position Error	New Scale	
				=SUM(D3-C3)	=(A3)*(((C3)-(D3))/(C3-B3)+1)	
Enter positions and measurements as whole inches, decimal inches, or inches and fractions. Any decimal or						
METRIC (MILLIMETER) MEASUREMENT SYSTEM						
Initial Scale	Short Position	Long Position	Long Measure	Position Error	New Scale	
				=SUM(D8-C8)	=(A8)*(((C8)-(D8))/(C8-B8)+1)	
Enter positions and measurements in MILLIMETERS.						

TigerStop Setup

Find the current scale factor the machine is using in the Calib* Motion menu.

- Press   . At  enter your  and press . Scroll to the scale parameter by pressing  to go forward, or  to go backward.

- When you get to Scale , enter the value you find there into spreadsheet cell

	A
1	
2	Initial Scale
3	

A, Initial Scale

- Calibrate TigerStop at the Short Position, a point close to the application. Move the stop to this position by an inbound movement, for example by moving from 10" to 8". Enter this position into

B
INC
Short Position

spreadsheet cell B, Short Position

- Next, move the stop to a point 2" (50mm) past the Long Position, and then bring it back to the Long Position, again by an inbound movement. Enter this position into spreadsheet cell C, Long

C
LONG MEASURE
Long Position

Position

- Cut a sample piece with the stop at the Long Position. Carefully measure the sample piece and

D
MEASUREMENT SYST
Long Measure


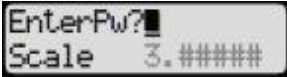



enter the measured length of this sample into spreadsheet cell D, Long Measure

- The spreadsheet instantly calculates the Position Error  and the New Scale value

F
New Scale
#DIV/0!

appears in spreadsheet cell F, New Scale

The New Scale value should be reasonably close to the old value. If it is SIGNIFICANTLY different, check your work for errors. If everything appears correct, enter the new value into the Scale parameter.

 The Scale parameter  is DOUBLE password protected. To change the value, you must re-enter your  and press , and then enter the new value for scale from spreadsheet cell F, and press  to save it.

Change the Scale Parameter



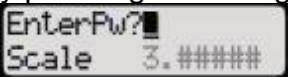
This instruction simply tells you how to access the Calib* Motion menu to change the Scale parameter. Refer to the Scaling or Manual Scaling topics for complete instructions on when and why to change this parameter.


To tamper with the Scale parameter without reasonable cause will make your TigerStop measure inaccurately.

How to Do It  To access the Motion Menu...

1. Press   .

2. At  enter your  and press .

3. Scroll through the parameters by pressing  to go forward, or  to go backward until you get to the Scale parameter .

Scale is double password protected.  indicates this.

4. Enter the password again and press . This lets you change the value of the Scale parameter.

5. After you change the parameter value, press  to save the change.

Manual Scaling

Concept Most TigerStops require a scaling adjustment **biannually**. This operation may also be performed on new machines received from the factory, because the environment in your facility can be dramatically different than that in our assembly shop.

There are two methods that can be used to **scale a TigerStop**. The first method makes use of a spreadsheet and is much quicker. Refer to Scaling for this method. The second method makes use of a "trial and error" method of gradual changes to the scale value combined with making sample cuttings, until the sample length is accurate.

How to Do It Manual Method

To scale your TigerStop a short and a long measurement are needed to work from.


*The short measure must be 12" or less, and the long measure about 10" less than the **working length** of the TigerStop. In the case of Tiger16 or longer, you must use a long measurement of at least 70"*

Metric *The short measure must be 300mm or less, and the long measure about 200mm less than the working length of the TigerStop. In the case of Tiger16 or longer, you must use a long measurement of at least 1780mm.*

ALWAYS use the same measuring tool for all measurements!









1. Calibrate TigerStop at a point close to the **application**. Move the stop to this position by an **inbound movement**, for example by moving from 12" to 10". For easy instructions on calibrating your TigerStop at 10", see Making TigerStop Accurate. You can then return to this topic and continue at step 2.
2. Next, move the stop out to 72" (1828mm), and then bring it back to 70" (1778mm), again by an inbound movement.
3. Cut a sample piece with the stop at this length. Carefully measure the sample piece.

DECREASE Scale  *If the piece measures **LONGER** than 70", you will **DECREASE** the scale factor at Step 5.*

INCREASE Scale  *If the piece measures **SHORTER** than 70", you will **INCREASE** the scale factor at Step 5.*

NEVER decrease or increase the Scale factor by more than 0.005 each time!

4. Move the stop back in to 10" (254mm).
5. Change the scale factor by an increment no more than 0.005. Click here for instructions on changing the scale factor.
6. After you have changed the scale factor, the stop's position as shown in the controller display will change.

7. Press     . Enter 10" by pressing    to restore the correct position.

8. Repeat steps above until TigerStop's short and long positions are accurate.

Saw Kerf

Concept Saw kerf is the width of the cut made by your saw blade. Any time you change the saw blade, you must check the kerf to make sure it matches the TigerStop kerf parameter. If it is larger or smaller, you must adjust the kerf. This is done at the controller.

How to Do It How to set saw kerf

1 Make a sample cut to check the actual kerf.


1. Cut a sample board, for example, at 24". Make sure it is very accurate!
2. Cut the sample board into two pieces.
3. Carefully measure each of the cut pieces.
4. Add the lengths of the pieces together.

The kerf will be the difference in length between the original uncut board and the combined length of the two cut pieces.

2 Look at the current kerf value.

5. Press    

6. Press     and look at the current kerf value.

*If the current kerf value is correct, press  to leave it alone and exit the M5 menu.
If the kerf displayed is incorrect, change it to match your sample...*

3 Update the kerf value.

7. Enter the correct kerf value and press  to save it and exit the M5 menu.

Kerf Range

- Normal kerf ranges between 1/8" and 7/32".
- TigerStop displays this in decimal inches as between 0.125" and 0.225".

The normal range of kerfs is between 3.2mm and 5.7mm.

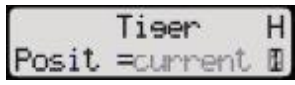



Set Up Auto-Test

Concept Auto-Test should be run any time a new drive belt is installed on a TigerStop.

Running auto-test requires that you choose two positions, one near the motor and the other near the far end, and program these two positions alternately into the **first 10 hot keys**. When auto-test is run, the stop will travel between these two positions until you press the STOP button.

RIP FENCE Specific: When running auto-test on a TigerRip Fence, the compressed air supply must be connected to the machine!




How to Do It How to set up Auto-Test


At the Ready screen  press    to start entering the "hot keys."




Example Use 8" and 50" as the near and far positions.

To run auto-test for your machine, choose as the far position a length at the far end of your TigerStop instead of 50" as in this example.

To run auto-test on a metric TigerStop, you can use 200mm and 1270mm, approximate metric equivalents of the positions used in this example.


Press  to enter the first (near) length and then  to view it 

Press  to advance to the next hot key.

Press   to enter the next (far) length and then  to view it



You can automatically advance to the next hot key by pressing  after each entry.







Now, program hot keys 3 to 10 alternately with 8" and 50" (see list below), and then press  to save them and exit the "hot keys" program.





Auto-test will NOT run correctly unless ALL 10 hot keys are programmed!

Hot Keys #3 to #10



- GoSet#38" • GoSet#78"
- GoSet#450" • GoSet#850"
- GoSet#58" • GoSet#98"
- GoSet#650" • GoSet#10 ... 50"

Now Run Auto-Test

5 Press    to access the Calib* Motion menu , and then enter your  and press .

6 Press  repeatedly until you see , enter your  again, and then .

Make sure NOTHING is in the path of the stop!

7 Press   to change the parameter value from 0 (inactive) to 1 (active).

TigerStop immediately starts running the auto-test, coursing back and forth between the close and far positions you programmed in hot keys 1 to 10.

8 Press  to stop running auto-test.

TigerStop LLC

Warranty Certificate

TigerStop System Products, TigerStop, TigerFence, TigerCross Cut, TigerRip Fence, Heavy Duty (HD2), Accessory Products and Spare Parts

LIMITED WARRANTY COVERAGE

All new TigerStop LLC machines warranted exclusively by the TigerStop LLC ("Manufacturer") limited warranty as follows: Each TigerStop LLC machine ("Machine") and its components ("Components"), except those listed below under limits and exclusions, is warranted against defects in material and workmanship for a period of twelve (12) months from the date that a machine is enabled by the purchaser or the end user. In the event that a machine is not put into use, enabled within thirty six (36) months from shipment date the warranty shall lapse. If the machine is enabled before thirty six months (36) and after thirty (30) months, the warranty shall be in effect until thirty six (36) months from shipment date. Electronic components and Belts are warranted for a period of six (6) months, with the exception of System Products which carry a twelve (12) month warranty on electronics. Motors carry a warranty of twelve (12) months. Consumables such as wear on painted surfaces, are not covered. The foregoing is a limited warranty and it is the only warranty by manufacturer. Manufacturer disclaims all other warranties, express or implied, including but not limited to all warranties of merchantability and fitness for a particular purpose.

REPAIR OR REPLACEMENT ONLY: MANUFACTURER'S LIABILITY UNDER THIS AGREEMENT SHALL BE LIMITED TO REPAIRING OR REPLACING, AT THE DISCRETION OF MANUFACTURER, PARTS, OR COMPONENTS.

An additional one-year warranty extension may be purchased from your authorized TigerStop LLC distributor.

LIMITS and EXCLUSIONS of WARRANTY

Except as provided above, buyer agrees that all warranties express or implied, as to any matter whatsoever, including but not limited to warranties of merchantability and fitness for a particular purpose are excluded. Components subject to wear during normal use and over time such as paint, window finish and condition, light bulbs, seals, chip removal system etc., are excluded from this warranty. Factory-specified maintenance procedures must be adhered to and recorded in order to maintain this warranty. This warranty is void if the machine is subjected to mishandling, misuse, neglect, accident, improper installation, poor or improper power conditions, improper maintenance, or improper operation or application, or if the machine was improperly repaired or serviced by the customer or by an unauthorized service technician.

Without limiting the generality of any of the exclusions or limitations described in other paragraphs, manufacturer's warranty does not include any warranty that the machine or components will meet buyer's production specifications or other requirements, or that operation of the machine and components will be uninterrupted or error-free. Manufacturer assumes no responsibility with respect to the use of the Machine and Components by Buyer, and manufacturer shall not incur any liability or Seller to Buyer for any failure in design, production, operation, performance or otherwise of the Machine or Components other than repair or replacement of same as set forth in the Limited Warranty above. Manufacturer is not responsible for any damage to parts, machines, business premises or other property of Buyer, or for any other incidental or consequential damages that may be caused by a malfunction of the Machine or Components.

ADDITIONAL WARRANTY (SYSTEM PRODUCTS EXCLUSIVELY)

System Products carry a twelve (12) months labor and parts warranty, FOB Vancouver, WA. In the event that a service technician is required to make repairs at customer's place of business, then buyer agrees to prepay all travel costs and to provide prepaid ticket and rental car for a TigerStop LLC technician along with all other expenses incurred by technician. All other terms apply of the warranty certificate. Purchaser agrees that any other technical service provided by a third party is not covered under this warranty.

SPARE PARTS WARRANTY EXCLUSION

Spare parts are warranted for a period of thirty (30) days from shipment date. All other terms of this warranty apply.

LIMITATION OF LIABILITY AND DAMAGES: MANUFACTURER IS NOT LIABLE TO BUYER, SELLER OR ANY CUSTOMER OF BUYER FOR LOSS OF PROFITS, LOST DATA, LOST PRODUCTS, LOSS OF REVENUE, LOSS OF USE, COST OF DOWNTIME, BUSINESS GOOD WILL, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE, WHETHER IN AN ACTION IN CONTRACT OR TORT, ARISING OUT OF OR RELATED TO THE MACHINE OR COMPONENTS, OTHER PRODUCTS OR SERVICES PROVIDED BY MANUFACTURER OR SELLER, OR THE FAILURE OF PARTS OR PRODUCTS MADE BY USING THE MACHINE OR COMPONENTS, EVEN IF MANUFACTURER OR SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. MANUFACTURER'S LIABILITY FOR DAMAGES FOR ANY CAUSE WHATSOEVER SHALL BE LIMITED TO REPAIR OR REPLACEMENT, AT THE DISCRETION OF MANUFACTURER, OF THE DEFECTIVE PARTS, COMPONENTS OR MACHINE.

Buyer has accepted this restriction on its right to recover incidental or consequential damages as part of its bargain with Seller. Buyer realizes and acknowledges that the price of the equipment would be higher if Seller or Manufacturer were required to be responsible for incidental or consequential damages, or punitive damages.

This Warranty Certificate supersedes any and all other agreements, either oral or in this writing, between the parties hereto with respect to the warranties, limitations of liability and/or damages regarding the Machine or Components, and contains all of the covenants and agreements between the parties with respect to such warranties, liability limitations and/or damages. Each party to this Warranty Certificate acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein regarding such warranties, liability limitations and/or damages, and that no other agreement, statement, or promise not contained in this Warranty Certificate shall be valid or binding regarding such warranties, liability limitations and damages.

WARNING: TigerStop, TigerFence, TigerCross Cut, TigerRip Fence and TigerStop Heavy Duty 2 (HD2) are machine components intended for use in conjunction with other potentially dangerous machinery. The use of these components does not make that machinery safe. TigerStop LLC's products are not intended to substitute, in any manner, for safety requirements in general, or in conjunction with other machinery. These components must be incorporated into machinery by persons qualified to design safety features to make the machine as safe as possible and to ensure that it meets federal, state and local law with respect to safety and all other regulatory requirements. In addition, TigerStop and TigerStop Heavy Duty 2 (HD2) are machine components that should only be operated by qualified persons trained in safe operating procedures. Illustrations of TigerStop and TigerStop Heavy Duty 2 components in use do not show, and are not intended to show, safety features necessary to make the machinery safe to operate.

TRANSFERABILITY

This warranty is not transferable from the original end user to another party.

Revision 1: 12/12/06

Important Notices

Limit of Liability

All rights reserved. The information contained in the TigerStop Manual has been validated and reviewed for accuracy. No patent liability is assumed with respect to the use of the information contained herein. While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions.

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