TIGER OPTIMIZER™

Version 2.20-3

TigerStop™ 3: TigerOptimizer™ TigerLoader™

Includes:
  Optimized Controller
  TigerLoader software

TigerStop™ 1 and 2 users skip this section. Machine serial # and version are on the front cover.

Concept➲

***Tiger Optimizer™** is a powerful tool that increases not only your raw material yields but reduces your labor and cutting mistakes. You can load your cutlists at the Controller or download them from your PC with **Tiger Loader™**.*

***Tiger Stop™** then makes all the cutting decisions based upon the clear length you enter, giving you the right pieces in the right quantity with the least material used!*

SYSTEM REQUIREMENTS for TigerLoader™

Windows 3.1 or higher
(1) available COM port
Mouse *Optional but really handy*
3½" floppy drive
Short Haul Modem set
*If your TigerStop™ is more than 50 feet away from your computer, you'll need a **short haul modem set** which can convert RS232 (standard COM port) to RS485 and back to RS232. This item is available from Precision Automation, Inc.*

Installing TigerLoader™

To install TigerLoader™ software, insert the diskette in drive A (or drive B).

Windows 95

From Start Menu select RUN, *type* A: INSTALL A: (*or* B: INSTALL B:), *and hit* [ENTER].

TigerLoader™ will be in under C:\tiger\tloader.exe. *Click on this file and drag it to your screen to make a short cut.*

Windows 3.1 & 3.11

From the Program Manager, in the File Menu, select RUN *and type* A:INSTALL A: (*or* B: INSTALL B:), *and hit* [ENTER].

TigerLoader™ will be in under C:\tiger\tloader.exe.

Downloading a Cut List from your PC

Concept➲   ***TigerLoader™*** *can download data as long as the report generated has only one material type (all the same width, thickness, and material).*

*If you use a cutlist program that cannot generate a report with only one material type, you can output your standard report as an **ASCII comma-delineated file** and import it into an **EXCEL spreadsheet**, where it can be edited to fit TigerLoader's standard file format.*

Preparing Your Data for Downloading

What is the standard TigerLoader™ file format?

     There are five "fields" used in the TigerLoader™ standard file format:

Excel Format

	INDEX	LENGTH	COUNT	DESCRIP 1	DESCRIP 2
A					
B	1			up to 8 characters	up to 8 characters

Row "A" should appear in your EXCEL spreadsheet, even if it is blank, because when your cutlist is downloaded, it will begin with Row "B". Field 1 is used as an INDEX field to reference each line in the cutlist. Make sure to number your cutlist rows starting with 1 in row B under the INDEX Column. Fields 2 and 3 handle the LENGTH value and the COUNT or quantity. Fields 4 and 5 are user definable descriptor fields. These can be up to 8 characters in length. If you exceed the 8 characters allowed, your cutlist description fields will be truncated.

> Saving a Cutlist in EXCEL   *When you save your cutlist in EXCEL, save it as a **.CSV** file.*

Preparing Your Data for Downloading using TigerLink™

Concept➲   *If you are using commercial cutlisting software, your program may output cut list data in a format which TigerLoader™ cannot work with.*

Option 1 is to extract the data and reformat it in a spread sheet program such as described above.

*Option 2 is to use **TigerLink™** by Precision Automation, Inc., a universal interface and cutlist wizard for all cutlisting programs, enabling you to prepare your output for TigerLoader™.*

Using TigerLoader™

The Tiger Loader™ Screen:

Menu Bar ———

Screen ———

CLEAR   STOP   Be sure you are at the Ready Screen on the controller.

```
{Target}   PAI      H
Posit = {Current} I/N
```

❶ In Microsoft Windows, select the TigerLoader™ icon to open the program.

The TigerLoader™ screen pops up. The **Cut List** *window displays* **0**. *The* **Name** *window should display* **GO SET**. *If the* **Name** *window is blank, it means your PC is not communicating with TigerStop™.*

Solution*: The default port setting is* **Comm 1**.*On the TigerLoader™ menu bar, select* **Comm** *to access the drop-down menu, and select the Comm port you're using to connect your PC to TigerStop™.*

After you change to the correct port,"refresh" the TigerLoader™ screen by advancing **Cut List** *number* **0** *to* **1** *and back to* **0**. *When you do this, you'll see* **GO SETS** *appear in* **Name**. *Now you're connected!*

Now you need to set these TigerLoader™ variables:

❷ **Cut List** Before you open your cut list file, you must assign it the number that you'll access it by at the controller using a number between 2 and 99. Use the up and down arrows at Cut List window to select the number.
Do not select **0** *or* **1**, *as these cutlist numbers are reserved for* **GoSet** *and* **Increment**.

❸ **Name**   After you assign a number to your cut list, type in a name up to 8 characters long in the Name window.

This can be letters and/or numbers. This name is not *one of the five fields in the cut list data. It identifies the cut list to TigerLoader™ and can also be printed on labels when you have a* **TigerStop™ Level 4**.

Using TigerLoader™ *(Continued)*

❹   `Optimize`   If you want to optimize your cutlist at the controller, either for *value weighted* or *longest lengths* optimization, select <u>Yes</u>. If you want to download a cut list or cut patterns for *best fit* optimization, select <u>No</u>.

Best fit *optimization generates cut patterns which can be downloaded by Tiger Loader™. Your cut list or cut planner software vendor can provide you with this type of optimization.*

         `Length`   Not currently used.

❺   `Kerf`   When working in Push Feed, select <u>Yes</u>.
                           When working in Set Point, select <u>No</u>.

<table>
<tr><td>✋ The Importance of

Setting Your Kerf Variable</td><td>*Clicking here does not **set** your kerf variable. It only tells TigerStop™ to use that variable when making calculations for length. To set your Kerf variable see* **AppendixB.**

Important, *whenever you are pushfeeding you must set your Kerf Variable or you will **not** get accurate pieces.*</td></tr>
</table>

❻   `Mode`   When using TigerStop™ as a pusher, select <u>Push Feed</u>.

                           When using it as a stop system, select <u>Set Point</u>.
                           The selection <u>Other</u> is not currently used.

*Next, before downloading your cut list, on the **menu bar,** you need to set these variables:*

☝   <u>C</u>`omm`   You've already set this when you first opened TigerLoader™.

<table>
<tr><td>⊙</td><td>*When you download your cut list the dot next to the Com label on screen blinks to let you know that TigerLoader™ is communicating with TigerStop™. When it stops blinking, the cut list is loaded.*</td></tr>
</table>

❼   <u>U</u>`nits`   Select the drop-down menu at <u>Units</u> and choose inches or metric.
                           *TigerLoader™ accepts cut lists in inch or metric dimensions. **It's defaulted to inches, so you can skip this if you always work in inches.***

Opening & Downloading a Cut List

❽   <u>F</u>`ile`   Select <u>F</u>ile and <u>O</u>pen to open the cut list file you want to use.
                           TigerLoader™ defaults to its home directory every time you use Open.
                           Find your cut list file **(name.csv)** *in the appropriate directory. When you select and open it, the file name appears in the status line at the top of the TigerLoader™ screen. (This name is not the same as the name that you have given your cut list at step* **❸**). *It's now open and ready to download.*

Using TigerLoader™ *(Continued)*

❾   D̲n̲l̲o̲a̲d̲   Now, click on D̲nload on the menu bar.

TigerLoader™ sends the cut list to TigerStop™. While transmitting, the dot next to the Com label blinks. When the file is downloaded, the file name disappears from the status line.

Your cut list is at the TigerStop™ controller!

Accessing the Cut List at the Controller

You access your downloaded cut list at the TigerStop™ controller in the same way as when you program it by hand. See *Using* Push Feed 4.3 at page 17, and *Using* Cut List 5.3 at page 22.

When your cut list is downloaded from a PC you have the additional descriptor fields available which will appear as the top line in the controller window. This is not available when you enter a cut list by hand.

Descriptor Fields

Won't Display!

*If you're downloading to the TigerStop™ controller, but your two descriptor fields don't show up on the screen, you haven't set the display option in the Factory Settings. See **AppendixJ** for instructions on how to do this.*

How to Connect

TigerStop™ to Your PC

If your TigerStop™ is fifty feet or less from your PC then a standard 9 pin serial cable can be used, connected between the comm port at the back of your PC and the 9 pin serial port at the top of the TigerStop™ controller.

If your TigerStop™ is farther than fifty feet from your PC, you will need to purchase a short hall modem set. This is available through Precision Automation, Inc.

Entering your Cutlist
at the TigerStop™ Controller

You can enter your cutlist at the TigerStop™ Controller and still use Tiger Optimizer™, following the steps listed in 5.1 *Programming* CUT LIST. At Step ❷ where you select a Group# and hit [GO], after you select a Group#, the screen displays:

Hit [1] to select optimize, and then continue with the remaining steps. (If you have TigerStop™ Levels 1 or 2,

> **Optimize Cutlist**
> **1–Yes   3–No**

the optimize screen still displays, but it does not operate, even if you select [1]—Yes.)

An important difference when using the Controller to enter your Cut List is that you *can't* enter description fields, only the lengths and quantities. And of course, there's no downloading involved because the cutlist is *already at the Controller.*

Setting Variables for the Optimization Mode

Tiger Optimizer™ lets you optimize by longest lengths or by value of pieces (that is, by which pieces you value highest).

Value Optimization

This is controlled by assigning a Sort Order. Sort order values range from 0 to 99.

A part valued 99 has highest priority (value).

A part valued 0 has lowest priority.

In a standard cutlist, if no value is assigned by the user, its value defaults to 0. Parts with Sort Order values of 0 are always sorted *longest to shortest*.

> Highest Priority   99
>
> ⬆
>
> ⬇
>
> (Default) Lowest Priority   0

Groups of parts can have the *same* Sort Order value.

> Prioritize Longest Lengths   0
>
> ⬆
>
> (Default)   ⬇
>
> Prioritize Shortest Lengths   1

Within a given *group* of parts, priority from longest to shortest or shortest to longest can be controlled by setting Sub-Order Direction in the Optimization Menu to 0 or 1. The default setting is 1.

Editing Sort Order at the Controller

Concept ➲   *Your cutlist can be sorted at the Controller to prioritize lengths of higher value.*

➲   [CLEAR] [STOP]   *Be sure you're in the Ready Screen. To return to the Ready Screen, hit [CLEAR] or [STOP] or both until you're there.*

```
{Target}    PAI    H
Posit = {Current} I/N
```

❶   [PRGRM] [SPACE/CALIBR] [–]   Hit the sequence [PRGRM] [SPACE/CALIBR] [–] to access the Sort Order setting screen.

```
Enter Cut List #
▊
```

❷   [?/–] [?/–] [GO]   Enter the Cut List #, hit [GO].

The screen displays the first line item in the Cut List: the two description fields, the index number, length, and SO…0.

```
{descrip} {descrip}
0 {value}      SO▊0
```

"SO" designates Sort Order. The blinking cursor is posed after SO and followed by zero.

❸   [9] [9]   Enter a number between 0 and 99 to prioritize the first line item in your Cut List. For example, enter "99".

```
{descrip} {descrip}
0 {value}      SO99
```

You'll see the number you enter appear after the SO.

[GO]   When you hit [GO], the screen advances to the next item in the Cut List.

```
{descrip} {descrip}
1 {value}      SO▊0
```

A part numbered 99 has highest priority.
A part numbered 0 has lowest priority.

✋ How to Scroll through a List   *When setting SORT ORDER, you can scroll (move) forward or backward through the list by using the [+] and [–] keys. The [=] key is used to view the entry you just made. After using [=], you can move forward or backward using [+] or [–].*

[+] [-] [=]

---

❹   [PRGRM]   To save your Sort Order and return to the Ready Screen, hit [PRGRM].

Setting Sub-Order Direction at the Controller

Concept➲ *Parts with the same Sort Order number can be further prioritized by setting the Sub-Order Direction.*

➲ **CLEAR** **STOP**

Be sure you're in the Ready Screen. To return to the Ready Screen, hit [CLEAR] *or* [STOP] *or both until you're there.*

{Target}   PAI   H
Posit = {Current} I/N

❶ **PRGRM** **SPACE CALIBR** **/**

Hit the sequence [PRGRM] [SPACE/CALIBR] [/] for the Sub-Order Direction screen.

Enter Password
■

TigerStop™ asks for your password.

❷ **?** **...** **GO**

Enter your password, and hit [GO] to access the Calibration / Menu.

Calibr/   ■
Head Cut   0.000

❸ **+** **...4x**➲

Cycle forward through the menu using [+] until you arrive at the Sub-Order Direction screen.

Calibr/   ■
SO Dir   1

*You'll find that the **Default Setting is [1].***
Hitting [0] *sets up a direction of **longest to shortest.***
Hitting [1] *sets up a direction of **shortest to longest**.*

❹ **?** **PRGRM**

Hit [0] or [1] and hit [PRGRM].

🖐 Sub-Order is
G L O B A L

Setting Sub-Order Direction *establishes a **global** sub-order direction for ALL Sort Orders, EXCEPT ...*

Sort Orders with a value of 0, which have an unchangeable default direction of longest to shortest.

Sort Orders valued 1 through 99 are affected by the Sub-Order Direction you set here.

Using Tiger Optimizer™

Concept➲   *TigerOptimizer™ allows you to progress through your cut list or push feed group, cutting the most valued parts first, instead of line by line as entered.*

It's helpful to integrate your stop to your saw using an **Interlock Kit.** *See* **AppendixH** *for setting the appropriate modes if you are using the Interlock Kit.*

➲ [CLEAR] (STOP)   *Be sure you're in the Ready Screen. To return to the Ready Screen, hit* [CLEAR] *or* [STOP] *or both until you're there.*

```
{Target}   PAI    H
Posit = {Current} I/N
```

❶ [PRGRM] [?] (GO)   Hit [PRGRM], your Cut List number, and [GO] to select the cutlist you want to use.

(GO)   If this is the correct Cutlist Enter [GO]

```
Enter CLEAR Leng
▪
```

At this point, depending on which feed method you choose…Optimized Pushfeed…Optimized Cutlist (Set point) …your stop will respond according to the settings you made in **AppendixH.**
Make sure that the right modes are selected for the type of feed you are using.

Optimized *Cut List*

TigerStop™ "asks" for clear length. First, trim the lead edge of the board, then look down your infeed rule (set up on the infeed table fence) and note the clear length to the first defect in the board. (If you're cutting clear stock, enter the length of your piece.)

Enter the clear length at the controller and hit [GO]. The controller will select from your cutlist the best pieces it can take out of the clear length and move to the closest position.

Move your board up to the stop and make your first cut. (If you do not have the TigerStop™ Interlock Kit installed, you'll have to push the [GO] button after each cut to let TigerStop™ know you've cut a piece.)

(If you do have the Interlock Kit installed and the modes set correctly, then TigerStop™ will "know" that you have cut a piece.) As soon as you have cut enough pieces of that size, TigerStop™ will move away from the saw for the next size, until the clear length is used up.

Now, you have reached the defect. At this point, TigerStop™ "asks" for the next clear length. Before you enter this, trim the defect out of the board and measure your clear length. Enter the clear length and repeat the above process until the controller screen displays "Cutlist Empty".

Optimized *Push Feed*

Optimized Push Feed operates the same as Optimized Cut List with the exception that after you enter your clear length TigerStop™ **retracts** by the total clear length and **push feeds** the stock after each cut, if DM is wired, or after each [GO] is pushed. Make sure that your set up includes Kerf for this type of cutlist.

New Display for Operating Mode

Beginning with TigerStop™ version 2.11, you can know *exactly* what your machine is doing. The display has indicators which tell you where the stop's at in its movements. These indicators are letters that appear in the upper right hand corner of the display.

H   Halt   *The system is stopped but will still actively hold position. This is the normal state of TigerStop™ when it's on but not moving.*
For example, after the stop has found its position, an impact forces it off. It will bounce back in a matter of a couple of seconds.

A   Accelerating   *The system is accelerating towards its constant velocity setting.*

C   Constant Velocity

D   Decelerating   *The system is decelerating from its constant velocity to its setpoint.*

L   Locking   *The system is locking on its position.*

X   Drive Disable   *After its setpoint is reached and after the rip mode time out, the system will no longer actively hold position. When the rip mode variable is set to 0, the Drive Disable does not operate and X never appears in the display. Drive Disable is used almost exclusively with TigerStop™ when it is used as a rip fence positioning device (TigerRip Fence). After the stop has found its position, if an impact forces it off, it does not bounce back.*

> If Drive Disable is *not* activated on a TigerRip Fence, the usual impacts a rip fence receives can result in electrical failure.

W   Wait   *Waiting period after a new position is entered before the system starts to move, controlled by the SC delay.*

How does this indicator series look when you run TigerStop™?

When TigerStop™ is in Ready mode, the letter **H** appears on the display. After you enter a length and press go, you will see in rapid succession the letters **W, A, C, D, L,** and **H** appear, as the stop waits momentarily, accelerates, moves at its constant velocity, decelerates, locks on its position, and then halts all movement (except its ability to actively hold its position).

If you are using TigerRip Fence, the last letter to appear will be **X,** to let you know that the drive is disengaged to protect the electronics from burnout in case of accidental impact.