

BookMaker Braille Express 100 & Braille Express 150

Braille Embosser User's Manual



RoHS Compliant ©

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All environmentally friendly, Enabling Technologies embossers bearing the proprietary RoHS Compliant © logo are certified to comply with all requirements of the Restriction of Hazardous Substances - EU Directive 2002/95/EC: restriction on the use of certain hazardous substances in electrical or electronic equipment sold or used in the European Union after July 1, 2006. These substances are lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, and polybrominated diphenyl ethers.

The Restriction of Hazardous Substances Directive (RoHS) became European Law in February 2003. Together with the Waste Electrical and Electronic Equipment Directive (WEEE), which is setting collection, recycling and recovery targets for all types of electrical goods, it is part of a legislative initiative to solve the problem of huge amounts of toxic e-waste.

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INTRODUCTION

Even if you're experienced with Braille and computers, our embossers have lots of handy features that take only a few minutes to learn but make your work much easier and faster. That's why we hope to persuade everyone to read the short section called "Setting Up Your Embosser."

If you're new to Braille desktop publishing, "Your First Braille Document" describes the basic process of creating Braille in less than two pages.

To help you get the most out of your embosser both now and in the future, we've enclosed a CD-ROM that includes:

- MANUAL.TXT A text file version of the BookMaker, Braille Express 100 and Braille Express 150 User's Manual suitable for use with most screen readers.
- MANUAL.PDF An accessible Adobe Acrobat version of the BookMaker, Braille Express 100 and Braille Express 150 User's Manual.
- USERMAN.BRF A formatted grade 2 Braille file of the BookMaker, Braille Express 100 and Braille Express 150 User's Manual 40 characters by 25 lines.

Installing the ET Emboss Driver in Windows XP.PDF

This Adobe Acrobat file contains the detailed instructions for installing the ET Emboss driver in Windows XP.

- \ETEmboss\ This subdirectory contains the drivers needed by the Microsoft Windows XP operating system to properly install your embosser.

And (sometimes)

- README.TXT Where we add things at the last minute that were too late for the manual!

Your First Braille Document

Many people think that a Braille embosser automatically prints "in Braille" from your computer files by substituting Braille letters for print ones. Although publishing in Braille gets easier all the time, it's not quite that simple yet.

The Braille alphabet evolved from a French military code designed for night reading and is based on a six-dot "cell." One "cell" stands for one letter, as you might expect, but not all the time.

More often, words have been shortened and punctuated according to rules unique to Braille. The rule systems are called "grades". Grade 1 Braille uses official Braille punctuation and capitalization but spells out every text letter of every word. Grade 2 Braille uses official Braille punctuation, capitalization, and nearly 200 contractions to save space.

Most documents for adult readers, as well as most signs in public buildings, are in grade 2 Braille. The grade 2 contractions are understood by Braille readers everywhere and are abbreviations of common words and letter combinations. For example, "you" in grade 2 is the letter "Y".

Unless you're a Braille reader or a certified Braille transcriber, there is no way you could possibly know these rules. That's why you need a software package called a "translator." Translation software reads your computer files and literally "translates" them into correctly contracted, punctuated, and formatted Braille pages, ready to "print" on your Braille embosser. Newer translators even contain their own word processors so you can create, edit, spell check, print, translate, and emboss your documents inside the translator, just as you would in Microsoft Word or WordPerfect. Others produce Braille by reading common types of word processing files, typically in ASCII text format, and creating new ready-to-emboss Braille files. Translators are very easy to use and typically create the finished Braille computer files (even long ones) in seconds.

Once you're ready to emboss the Braille you've created, you can roughly estimate the finished size of most Braille projects if you keep in mind that even with grade 2 contractions AND the larger dimensions of standard Braille paper, 1 print page usually equals 2 to 3 Braille pages.

Glossary

Buffer:	Memory reserved to store data entered into the embosser. One page uses about 1K or 1000 characters of the buffer.
Configuration:	A collection of settings for a computer connection.
Default:	What you get if you don't change anything.
Emboss Head:	Mechanical element that makes the Braille dots.
Interface:	Connection.
Interpoint:	Braille characters on both the front and back sides of a single sheet of paper.
Menu:	A stored collection of settings in the embosser's memory.
Multi-Copy:	Built-in function copies stored text up to 99 times.
NOV-RAM:	Nonvolatile memory. Stores menu settings while the power is off.
On-Line:	Ready to receive data from a computer USB, serial or parallel port.
Off-Line:	Ready to receive commands. Not ready to receive data from computer.
Parallel Port:	Connects the embosser to a computer with a Centronics type interface.
Parameters:	Settings.
ROM:	Read only memory. Contains the embosser "firmware" (permanent programming) of its features and functions.
Sequence:	A series of key strokes, usually followed by the Enter Key.
Serial Port:	Connects the embosser to a computer with a serial RS-232D Interface.
Top-of-Form Offset:	Top margin of Braille paper during embossing.
Tractor:	Moves the paper through the machine while printing.
Tractor Well:	Recess into which the tractors are installed.
USB Port:	Universal Serial Bus - Connects the embosser to a computer with this high speed connection.

SETTING UP YOUR EMBOSSER

Unpacking

First, check the embosser and accessories carefully for damage. If any damage is apparent, notify the shipper immediately. Also, check the contents against the packing list and if you find a discrepancy, let us know as soon as possible.

IMPORTANT! Remove the metal ship lock before turning on the embosser. The ship lock is a metal plate bolted into the embosser to keep it safe during shipping. The ship lock **MUST** be removed **BEFORE** turning on the embosser. Save the metal ship lock and allen wrench and store them, along with the carton and other packing material. You will need them should you ever have to return the embosser for service. Although the embosser is in a very sturdy, shock-resistant case, shipping any electronic equipment without proper packing is not a good idea!

To remove the metal ship lock, first remove the embosser's cover, then locate the paper tractors. To the immediate left of the right front paper tractor will be a small donut shaped tractor stop with a set screw inside. Using the small allen wrench taped to the inside of the embosser's cover, loosen the set screw so that the donut shaped tractor stop slides freely. Carefully slide the metal ship lock a few inches to the left and then pull it towards you to remove it.

After removing the metal ship lock, slide the donut shaped tractor stop so it is positioned in the center of the embosser, between the left and right tractors, and retighten it to prevent it from moving from side to side.

Place the embosser on a sturdy desk or table with the handle facing you. Plug the power cord first into the embosser's power interlock located on the rear of the embosser, and then into a grounded outlet. (The embosser's power requirements are listed under "Electrical" in the "Technical Specifications" section later in this manual.)

Installing Paper

Your embosser will produce good quality Braille on paper weights from standard 20-pound computer paper (suitable for rough drafts) to 100-pound traditional Braille paper (recommended for more permanent documents).

If necessary, the height of the Braille can be adjusted up or down for different weights of paper using the impact control knob above the keypad (turning the knob clockwise makes the height of the Braille higher). You will notice that there is a raised dot next to the impact control knob that is located approximately in the one o'clock position. This sets the embosser to produce optimal Braille height when using 100-pound traditional Braille paper. Please use this adjustment very cautiously, as running the embosser with the dots set too high can cause premature wear on critical parts. If you find that in order to produce good quality Braille you have to turn the knob clockwise (higher), then please call our Customer Support Department immediately at (800) 777 3687.

Remove the paper from the box by turning the box upside down and stack the paper neatly on the floor in front of the table.

Open all four of the embosser's paper tractors by lifting on the inside edge of each tractor door. They will stay open until closed by hand.

Insert the paper into the embosser so it extends through the embosser and out the back. Position the tractors so that the tractor pins line up with the holes on the edges of the paper (making sure the paper is straight).

To move the tractors from side to side, push the small release handles, located near the outside edge of each tractor, toward you. (They may be a little stiff at first.) Although all four tractors are able to move, generally it is the two right tractors that need to be moved more often because that is how you adjust for differences in paper width.

Close the tractors to grip the paper and tighten the release handles back down to lock the tractors themselves in position. Check to be sure there is enough room behind the embosser to collect the paper.

Turn the power switch on. The embosser will execute a self test and play a start-up tune. In addition, ET Speaks will come up talking automatically and tell you that the embosser is ready to run.

IMPORTANT! Please refer to the section in this manual titled "Setting Top-of-Form".

The Keypad

The keypad is a small 16-key keyboard in the right rear corner of the embosser surface. The keypad is how you tell the embosser what to do. The keys are spaced 4 columns down by 4 rows across. The top three rows are laid out in calculator format with 7, 8 and 9 running from left to right on the top row, 4, 5 and 6 just below them, and 1, 2 and 3 next to the bottom. The key at the left of the very bottom row is 0. To the right of zero is the decimal point, and to the right of that, a key labeled E. The keys in the far right column are, from top to bottom, the OL, LF, FF and V key.

OL (On-Line/Off-Line)

The embosser must be on-line to receive and print data from a computer, and it (usually) must be off-line to receive commands from you.

Press OL to take the embosser from on-line (ready to receive and print data) to off-line (ready to respond to your commands). Press it again to return on-line. Note the audible difference in the on-line and off-line tones.

If you press OL while embossing, the embosser will pause. Any data left in the buffer remains, and embossing will resume as soon as you press OL again.

LF (Line-Feed)

On-line, LF makes ET Speaks repeat its last phrase. Off-line, if you are using your embosser to produce single-sided Braille, LF will advance one line each time this key is pressed. For normal interpoint embossing, you won't need LF very often because interpoint embossers process entire pages, rather than individual lines.

FF (Form-Feed)

On-line, FF makes ET Speaks stop speaking in mid-phrase. Off-line, FF advances the page to the top of the next page and prints the last partial or odd-numbered page in the buffer, if necessary.

V (View)

Off-line, V works with ET Speaks to verify individual menu settings. Otherwise, pressing V advances the page several lines, allowing you to read the line just embossed. Pressing V once more returns the paper to its original position. This

feature is handy when you wish to verify the contents of a document that is currently being embossed.

E (Enter)

E is similar to the "enter" key on your computer keyboard and is used to finish and transmit commands.

Setting Top-of-Form

Top-of-form tells the embosser where the paper starts and where to begin the Braille. You need to tell the embosser to reset top-of-form whenever you change paper or adjust the top margin, which we call the top-of-form offset. The distance from the top edge of the paper to where the Braille begins is adjustable in 0.1 inch increments by using the top-of-form offset setting (Parameter 30.NNE) found in each of the machine's 16 menus. For 25 lines embossed on 11 inch paper we generally recommend a top-of-form offset of 3 or 0.3 inches. The default setting is 0. To change it to 3 enter the following:

- OL Takes the embosser off-line
- 0.1E Enter menu number 1. If you are using a different menu, substitute the alternate menu number for the 1 in the sequence
- 30.3E This will set a top-of-form offset value of 3 or 0.3 inches. This setting will remain until you change it, even after power is turned off
- 1.1E This will install the change and reset the embosser

If you have paper loaded in the embosser, check to be sure the tractors are securely holding the paper and that the paper can flow smoothly into the embosser with no obstructions. Turn on the embosser and listen for the start-up tune that signifies the embosser is ready to run.

To set top-of-form, enter 2E OR 3E as follows on the embosser's keypad:

- OL Takes the embosser off-line
- 2E Set top-of-form with an extra blank page at the beginning
- OR
- 3E Set top-of-form at the top of the very first page (refer to **IMPORTANT!** note below)

An automatic sensor inside the embosser seeks the top edge of the paper, so the paper should begin to move back and forth until the sensor fixes the location of

the paper's edge in the embosser's memory. After setting top-of-form, the embosser returns on-line automatically, signified by the two-note on-line tune.

IMPORTANT! If you set the top-of-form with the OL, 3E command it is important to remember that embossing begins on the very first sheet of paper. This means that the paper is NOT engaged in the rear set of tractors. As the paper begins advancing during embossing, the top of the page should engage with the rear set of tractors. It is important to monitor the paper movement to make sure the paper engages in the rear set of tractors. If you find that the paper fails to engage in the rear set of tractors, you can begin the process by setting top-of-form and then open the rear tractor doors. Begin embossing and as the paper passes over the rear set of tractors, carefully close the tractor doors making sure that the tractor holes in the paper engage with the tractor pins on the tractor belts.

IMPORTANT! The embosser's sensor *must* find the paper's edge to set top-of-form, which makes pages break in the right places. When you reset top-of-form in the middle of a printing session, remove any finished pages before issuing the 2E or 3E command. Every time you install a new batch of paper or clear a paper jam, remember to reset top-of-form with the OL, 2E or 3E sequence.

The embosser will remember the top-of-form setting when you move the paper with LF, FF or V.

Changing (and Restoring) Menu Settings

Because Braille embossers need to work with many different kinds of software and computer operating systems, the embosser has a built-in feature that remembers sixteen different groups of settings, exactly as if you were going to use sixteen different computers with one embosser.

Each group of settings is called a "menu." All the menus stay set and ready to use even when the power is off. Eight of the menus are preset at the factory with settings many of our customers have requested. The other eight are yours to create as you need them. You can change, create and save settings in all the menus, even the ones preset at the factory.

When you turn on your embosser for the first time, Menu 1 is the default (which means it has control until you change it). Menu 1 is for a parallel connection to an IBM-compatible computer.

Use your new embosser to print out a Braille graphic of the keypad and a Braille list of all sixteen menus and their settings, which are stored permanently in the Service Menu.

To print out the list (assuming you have put paper in the embosser, turned on the power, and set top-of-form), enter the following on the embosser's keypad:

- OL Takes the embosser off-line
- 0.0E Enter the Service Menu (Menu Zero)
- 10E Emboss a graphic representation of the keypad and all 16 user menu default settings stored permanently in the embosser's memory

You can stop the list during printing with the E key.

Each of the sixteen menus has the same features, many of which will be familiar to most computer users (like right and left margins, word wrap, and page length), while others are unique to Braille environments.

When the embosser is OFF-LINE and in one of the menus, you can make ET Speaks tell you what the menu parameter is without changing anything.

- V.NE Reads menu parameters while in a menu

For example: Should you change the right margin? You think you set it for 40 characters wide yesterday but you're not sure. Enter on the embosser's keypad:

- OL Takes the embosser off-line
- 0.1E Enter Menu 1
- V.14E ET Speaks will read the current right margin setting, because 14 is the parameter assigned to the right margin

Now you know if you have to change the margin setting--or not.

- 1.1E Exit the menu

How to Change Menu Settings

Because each menu contains over thirty different settings, sooner or later you'll want to make some changes when you need to use different paper, Braille formats or port connections.

For example, let's say you're using Menu 1 because you have an IBM PC-compatible. You want to adjust the right margin for narrower Braille paper. Enter the following on the embosser's keypad:

- OL Takes the embosser off-line
- 0.1E Enter Menu 1
- 14.32E Set the right margin at 32 Braille characters
- 1.1E Return on-line and use this menu as the current configuration

A complete list of the thirty-plus individual menu items is also in the Quick Reference Guide in the back of this manual.

Restoring Factory Settings

If you change too many menu parameters to keep track of, or if you're not the only person to use the embosser, you might want to reset the embosser back to the original factory settings. Although you will lose all changes you've made to the menus, you'll also be starting fresh.

- OL Takes the embosser off-line
- 0.0E Enter the Service Menu
- 95E Restore the factory default settings
- 1E Reset the embosser

Connecting To Your Computer

Through the USB Port

We have supplied a USB-Parallel converter cable with your embosser. This cable will allow you to connect the embosser to one of your computer's USB ports.

Before you begin, select the USB port on your PC that you want to use for the connection. It does not matter which USB port you choose, so long as you make a note of which port you selected. Should you ever need to disconnect the converter, you must reconnect it to this same USB port.

Connect the USB-Parallel converter cable to the chosen USB port and to the embosser's parallel port. This is a plug and play device, and Windows will install the drivers for the converter automatically.

Next, install the ET Emboss printer driver according to the instructions in "Installing the ET Emboss Driver in Windows XP.PDF". Even if you are not

running Windows XP, you will be able to apply these instructions to your version of Windows.

When you are prompted to select a port for the printer, choose one of the USB virtual printer ports at the bottom of the list. If you have a print printer installed, it may already be installed on the first USB virtual printer port, so select the second virtual printer port.

Once the ET Emboss printer driver has been installed, go to your Braille translator's Embosser Setup and select the Windows Device, Send to Printer, or similar option that will allow you to select from a list of installed printer drivers. Select the ET Emboss printer driver from the dropdown list that appears, and click OK to close the Embosser Setup.

You are now ready to emboss your document. If embossing does not occur, make sure your embosser and the ET Emboss printer driver are both on-line. If these check out, right-click on the ET Emboss driver and select Properties. Click on the Ports tab and select a different USB virtual printer port. Click Apply, then OK, and try embossing the file again. Repeat these steps until your embosser embosses the file.

Through the Parallel Port

Connect a parallel cable from one of the parallel ports on your computer to the parallel port on your embosser. If you have been using a print printer, it is likely to be already connected to your computer's first parallel port, so look for the second parallel port to connect to the embosser. It doesn't matter which parallel port you use, so long as you remember which one it is. Turn on the computer and the embosser.

Many Windows applications require that a printer driver be installed. Select START, CONTROL PANEL, PRINTERS AND FAXES from the Windows desktop. Select Add Printer from the open window. Click the radio button labeled Have Disk. Insert the CD provided by Enabling Technologies that contains the ET Emboss printer driver. Follow the prompts displayed for your specific version of Windows. For more detailed instructions for installing the ET Emboss driver please refer to the "Installing the ET Emboss Driver" instruction file contained on the distribution disc that came with your embosser.

If you are using newer translation or transcription software such as DBT from Duxbury Systems to emboss your work, install the translation software package on your computer. Then open the program and select Global, Embosser Setup and select your embosser. Then select the port your embosser is connected to on your computer. For parallel connections this is

usually lpt1. DBT will automatically send your finished Braille work directly to the embosser. If you are using any other port with Duxbury DBT, select Windows Device from the menu and using the scroll down bar select the ET Emboss printer driver.

If you have older transcription or translation software that creates files without sending them to the embosser, you have to copy the final, formatted Braille files to the embosser yourself. Before you can do this in the Windows operating system, you must first install the ET Emboss printer driver in the Printers folder of Windows. Simply select the Add Printer icon found in the Printers folder, select Have Disk and follow the default prompts to install the driver for the parallel port that has the embosser attached. Right click or select the properties for the ET Emboss printer driver and set it as the Default Printer.

Menu 1 is already set to work with the embosser's parallel port and IBM PC-compatible computers. Assuming you have connected the computer and the embosser as described above, and fully installed your translation software, you can expect to get Braille out immediately.

If not, check to make sure the cables are tightly attached, the software is transmitting to the correct port, and the embosser is on-line.

Through the Serial Port

If you need to set up a serial connection, first connect a serial cable to the embosser's serial port and to one of the serial ports on your computer. Since computers usually have more than one serial port, make a note of which one the embosser is using. You'll need this information to set up your translation software and adjust your computer's settings, if necessary.

If you are connecting via a serial port to your computer, use Menu 2:

- OL Takes the embosser off-line
- 0.2E Enter Menu 2
- 8.1E Set the embosser to hardware handshaking
- 1.0E Make this the power-on default
- 1.1E Exit menu and reset embosser

Set your computer for: 9600 baud, no parity, eight data bits, one stop bit and hardware handshaking.

If you are connecting via the serial port to a Notetaker, first set your Notetaker for: 9600 baud, no parity, eight data bits, one stop bit and software handshaking. Then change the embosser settings to match:

- OL Takes the embosser off-line
- 0.2E Enter Menu 2
- 8.0E Set the embosser to software handshaking
- 1.1E Exit Menu 2 and reset embosser

If you already have a clear idea that something else should be changed in the embosser's serial port settings (baud rate, handshaking, etc.), the Quick Reference Guide in the back of this manual has a list of the menu items you can adjust for the serial port.

Assuming you have connected the computer and the embosser as described above, and fully installed your translation software, you can expect to get Braille out immediately. Please proceed to the section titled **Installing Drivers in Microsoft Windows**.

Installing Drivers in Microsoft Windows

Your CD-ROM contains the ET Emboss printer driver that is compatible with all versions of Microsoft Windows. For installing drivers in Microsoft Windows please see the document titled "Installing the ET Emboss Driver in Windows XP.PDF" contained on this CD-ROM.

Advancing Paper

If the test of your USB, parallel or serial port above was successful, you now have some Brailled pages to remove from the embosser.

Enter the following commands on the embosser's keypad to remove the finished document and prepare for the next:

- OL Takes the embosser off-line
- FF Advance a full page. The embosser may finish the last fraction of a page. Tear off the finished pages. Then:
- 2E OR 3E Reset top-of-form and send the embosser back on-line, ready for the next job

If embossing did not start as you expected, first rule out the obvious: Is everything plugged in, turned on, and directed to the port connected to the embosser? Is the embosser on-line? If these all check out, refer to the F.A.Q.

section later in the manual. We've included solutions to the most frequent complications our customers encounter.

GRAPHICS

Braille graphics are made using special software packages. For more information on producing tactile graphics using your embosser, contact your Enabling Technologies representative.

MULTI-COPY

Multi-Copy allows you to download up to 500,000 characters of text (about 500 Braille pages) from your computer into a reserved portion of memory, the Multi-Copy buffer. The embosser will copy whatever is in the Multi-Copy buffer from 1 to 99 times without reloading the text from the computer.

IMPORTANT! Stay ON-LINE while using Multi-Copy.

Run a single test copy of your file first, to be sure margins, paper size, page breaks, etc., are correct. Whatever menu is active when you start Multi-Copy is the one that continues to control the embosser once you start making multiple copies, so make any necessary adjustments to the menu before starting Multi-Copy.

When your file is ready for multiple copies, remain on-line, and enter the following on the embosser's keypad:

3.0E Turn on Multi-Copy

Go back to your computer and send or copy your file to the embosser. After the file is copied into the embosser's memory, go back to the embosser's keypad and, staying on-line, enter the following:

3.1E Tell the embosser that the file is completely copied

If no data was received from the computer, an error tone will sound, warning you that the buffer is still empty. If the file is too large (over 500 pages) for the embosser, the "Buffer Full" tone will sound and the embosser will also begin printing the text that has exceeded the buffer. This allows you to see where in your file the overflow occurred so you will know where to split your document. Tell the embosser how many copies to make. Enter the following on the embosser's keypad:

4.NNE "NN" stands for "any number up through 99"

For example, if you want 10 copies, you'd enter 4.10E. If you want 99 copies, you'd enter 4.99E. Also, ET Speaks, will count off copies as they emboss so you can monitor how the job is progressing.

Other Controls in Multi-Copy

- 3.2E Stops printing at the end of the current copy
- 3.3E Cancels Multi-Copy and clears the buffer
- 3.4E Suspends Multi-Copy at the top of the next sheet of paper

If you don't turn off the power or reset the machine, you can send another short document and resume printing where you left off.

- 3.5E Resumes Multi-Copy after the 3.4E sequence. Check that the paper is at top-of-form prior to entering this command

OL stops printing temporarily in Multi-Copy. Printing continues when OL is pressed again.

V stops printing and moves the paper out from under the platen, so the Braille which was just printed can be read. Press V again to move the paper back and resume printing.

OL, then LF, FF or 0.0E to enter the Service Menu while off-line exits Multi-Copy. The current copy will not be completed but the buffer remains unchanged. You can continue Multi-Copy by going back on-line and entering the 4.NNE sequence.

ET SPEAKS

ET Speaks and Your Embosser

As you've noticed, your embosser automatically voices all the keypad entries you make and all its own status messages with no intervention necessary from you. However, while using ET Speaks as the voice of your embosser, two keys can help you control the speech when the embosser is ON-LINE.

The LF key makes ET Speaks repeat its last phrase
The FF key makes ET Speaks "shut up" in mid-phrase

Turn Speech Off and Change Voices In The Embosser Menus

For embossers equipped with ET Speaks, all sixteen menus have the following additional settings to modify the speech:

- 25.0E Turns the speech OFF
- 25.1E Turns the speech ON (the default)
- 36.NE Chooses a different voice by substituting a number from 0 to 5 for the "N". 0 is the default (i.e., 36.0E)

Example: You use an IBM-compatible computer and have your embosser connected to one of the computer's parallel ports. You want to turn the speech off. To do this, turn on the embosser. Then, on the embosser's keypad, enter:

- OL Takes the embosser off-line
- 0.1E Enter Menu 1. (Menu 1 is the factory menu preset for the IBM PC connected to the parallel port. This is probably the menu you have been using)
- 25.0E Turn speech off
- 1.1E Save these menu changes and exit to go on-line

The embosser will now work with "speech off" in Menu 1, unless (or until) you change it.

To turn the speech back on, do all the steps above, except instead of 25.0E (which turned the speech off) enter 25.1E to turn speech on.

Check parameters without changing them by entering V.NE to have ET Speaks tell you the current setting. In the above example, suppose you want to check to make sure the speech is really on before resetting the embosser. While anywhere in Menu 1, enter V.25E on the keypad to hear the current speech setting.

Change Speech Characteristics In The Service Menu

All our embossers come with a special Service Menu that contains various testing and maintenance functions, like restoring factory defaults, running dot test patterns, and so forth. Embossers equipped with ET Speaks have additional functions in the Service Menu to enable you to change some of the speech features of the voice now active. The Service Menu's keypad code is OL then 0.0E.

- 20E ET Speaks reads all sixteen menus (stop with the E key)
- 50E Set ET Speaks' volume (0E lowest to 9E highest)
- 51E Set ET Speaks' speed (0E slowest to 9E fastest)
- 52E Set ET Speaks' tone (0E bass, 1E mid-range, 2E treble)
- 53E Set ET Speaks' frequency (0E lowest to 9E highest)
- 54E Set ET Speaks' pitch (0E lowest to 9E highest)
- 55E Set ET Speaks' intonation, which is how much expression should be implied by punctuation (0E least to 9E most)
- 56E Set ET Speaks' articulation, which is the amount of distinctive separation between words (0E least to 9E most)
- 57E Set ET Speaks' reverb (0E none to 9E most)
- 58E Set ET Speaks' pause between words (0E shortest to 9E longest)
- 59E ET Speaks reads the settings above (stop with the E key)
- 63E (BookMaker and Braille Express 150 only) Disable speech board (1E enables the speech board, E disables the speech board)
- 1E Exits the Service Menu

Example: You want to maximize the "reverb" to see what it sounds like. Enter these commands on the embosser's keypad:

- OL Takes the embosser off-line
- 0.0E Enter the Service Menu
- 57E Select Reverb as the setting to change
- 9E Set Reverb to the maximum
- 1E Exit the Service Menu

Back to normal? Repeat all commands above EXCEPT replace 9E with 0E.

TECHNICAL SPECIFICATIONS

Printing

Printing method: Impact. Paper feed: Sprocket. Character matrix: 6 dot or 8 dot. Character set: USA default (8 total). Printing direction: Bidirectional. Paper width: Adjustable (1.5 to 13.25 inches). Page length: Selectable (3.0 to 14 inches). Paper weight: 20 lb. to 100 lb. Text buffer: 500,000 characters.

Default spacing (Library of Congress): Dot spacing: Alpha 0.090 inch, Graphics 0.080 inch standard, 0.060 inch high. Dot Height: 0.020 inch. Character spacing: 0.240 inch. Line spacing: 6 dot 0.400 inch, 8 dot 0.490 inch. Other spacing formats selectable: Regular (Library of Congress), Regular with relaxed line spacing. Optional (BookMaker and Braille Express 150): Petite (Japanese), Petite with relaxed line spacing for interline printing, and Moon.

BookMaker: Printing speed: Interpoint 80 characters per second. Single-sided 50 characters per second. Line width in Library of Congress spacing: Alpha 44 characters (maximum). Graphic 66 characters (132 dots maximum)

Braille Express 100: Printing speed: Interpoint 100 characters per second. Single-sided 60 characters per second. Line width in Library of Congress spacing: Alpha 44 characters (maximum). Graphic 66 characters (132 dots maximum).

Braille Express 150: Printing speed: Interpoint 150 characters per second. Single-sided 90 characters per second. Line width in Library of Congress spacing: Alpha 44 characters (maximum). Graphic 66 characters (132 dots maximum).

Actual printing speeds may vary based on paper grade setting, page layout and data format.

Physical Description

Width: 21.25 inches (53.9 cm). Depth: 18.00 inches (45.7 cm). Height: 8.75 inches (22.2 cm). Weight: 50 pounds (22.7 kg). Case Style: Aluminum carrying case, with handle. Sound Level: 80 dba average. Sound level may vary with ambient conditions.

Environmental

Temperature: Operating or Storage 35 F to 100 F (2 C to 37.8 C). Humidity: Operating or Storage 10% to 95% (noncondensing).

Electrical

Line voltage: USA 105 to 130 VAC. EURO 210 to 260 VAC.

Braille Express 100: Fuse size (maximum): 105 to 130 VAC: 250V, 3.0A (slow-blow); 220 to 240 VAC: 250V, 1.8A (slow-blow).

BookMaker and Braille Express 150: Fuse size (maximum): 105 to 130 VAC: 250V, 3.5A (slow-blow); 220 to 240 VAC: 250V, 1.8A (slow-blow).

Interface

Port 1: Centronics compatible parallel. Port 2: Serial EIA-232D (DTE). Port 3: Serial, ET Speaks.

Service

User maintenance: None required. MTBF (excluding print head): 50,000,000 characters. Print head life: 100,000,000 characters.

Accessories

Standard: Line cord, 3 wire (USA). USB-Parallel cable.
Optional: Special interface cables. Special line cords.

Special Features

1. Fully configurable print format
2. Fully configurable communications
3. Sixteen independently selectable configuration menus plus a special service menu
4. Configuration stored in nonvolatile RAM
5. Graphics capability
6. Computer Braille or grade 1 translation built in
7. Six or eight dot Braille codes
8. Eight Braille character sets
9. User definable Braille codes
10. 500,000 character text buffer (about 500 pages)
11. Multi-Copy makes up to 99 copies in a single command sequence
12. Paper-out detector
13. Special view feature allows reading the current line
14. Word wrap and hot zone formatting
15. Two screen dump modes
16. No user maintenance required
17. All modular construction
18. Dynamic Braille Scaling allows size adjustment in Braille cell size and spacing from Regular Library of Congress (default) to Regular with Relaxed Line Spacing.
Optional (BookMaker and Braille Express 150): Petite (Japanese), Petite with relaxed line spacing for interline printing, and Moon

FCC Compliance

WARNING: Changes or modifications to this unit not expressly approved by Enabling Technologies Company could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

QUICK REFERENCE GUIDE

Keys

OL	On-Line/Off-Line (toggle)
LF	Line-Feed
FF	Form-Feed
V	View (toggle)
0-9	Numeric entry
Decimal	Numeric entry
E	Enter

Tones

Various sounds indicate the status of the embosser. Try out the tones (it won't hurt anything) by typing the sequences below on the embosser's keypad while off-line.

1.0E	Power on self test OK
1.1E	Chopin Funeral Dirge--Power on self test failed
1.2E	2 short beeps--OK
1.3E	Buzz--Invalid sequence
1.4E	4 long beeps--Overrun error (serial data)
1.5E	Low to high--On-line
1.6E	High to low--Off-line
1.7E	1 short beep--Console bell
1.8E	Series of low to high--Paper out
1.9E	Series of low beeps--Exit tone
1.10E	Series of low/high--Low voltage/High temperature
1.11E	Beethoven's 5th--Multi-Copy buffer full

Top-of-Form Reset

Do this after you change menu settings or add paper.

OL	Takes the embosser off-line
2E	Set top-of-form at the top of the second blank sheet (recommended)
OR 3E	Set top-of-form at the top of the first blank sheet

Menus

Enter a Menu

- OL Takes the embosser off-line
- 0.NE Go to menu N (1 through 16)

Menu Settings & What They Do

- 1.0E Make this menu the power-on default
- 1.1E Exit and make this menu current
- 2.0E Selects serial port
- 2.1E Selects parallel port
- 3.NE Sets baud rate to N. Available baud rates from 45.5 to 38,400. Example: Change to 9600 by keying 3.9600E
- 4.NE Sets the number of data bits to N. Available data bits: 5, 6, 7 and 8
- 5.NE Sets the number of stop bits to N. Available stop bits: 1, 1.5 and 2
- 6.NE Selects parity (0 = none, 1 = odd, 2 = even)
- 7.NE Sets communication code (0 = ASCII, 1 = Baudot)
- 8.NE Sets handshaking (0=Xon/Xoff, 1=DTR & CTS, 2=DTR & DSR, 3=RTS & CTS, 4=RTS & DSR)
- 9.NE Braille mode (0 = 6 dot, 1 = 8 dot)
- 10.NE Word wrap (0 = off, 1 = on)
- 11.NE Perf skip (0 = off, 1 = on)
- 12.NE Paper-out detector (0 = off, 1 = on)
- 13.NE Auto LF mode (0=none, 1=xmit, 2=rcv, 3=xmit & rcv)
- 14.NNE Set right margin to N
- 15.NNE Set left margin to N
- 16.NE Emboss control characters (0 = off, 1 = on)
- 17.NNE Set lines per page to N
- 18.NNE Set page length to N (1.0 inch increments)
- 19.NE Internal Sensors (0 = off, 1 = on)
- 20.NE Enter character N into control character table
- 21.NE Remove character N from control character table
- 22.NE Hot zone (0 = off, 1 = on)
- 23.NE Recognize escape sequences (0 = off, 1 = on) 23.1 required for graphics
- 24.NE Set bell position to N
- 25.NE ET Speaks (0 = off, 1 = on). Default is ON
- 26.NE Local echo (0 = off, 1 = on)
- 27.NE Braille format (0 = computer, 1 = grade 1)

- 28.NE Eighty column mode (0=off, 1=80 column, 2=160 column)
- 29.NNE Alpha character set (0=none, 1=IBM 437, 2=IBM 850, 3=Spain, 4=France, 5=Italy). (0=USA, 1=Spain, 2=Germany, 3=Swiss, 4=Denmark, 5=Austria, 6=France, 7=Italy)
- 30.NNE Top-of-form offset to NN (1/10 inch increments)
- 31.NE Eight bit character handling (0=print 8 bit chrs, 1=ignore eighth bit, 2=print space, 3=discard)
- 32.NNE Autoprint constant (1 second increments)
- 33.NE Interpoint on and off (0 = interpoint on, 1 = single-sided {bank 1 only}, 2 = single-sided {bank 2 only})
- 34.NNE Paper grade setting (0=fastest, 12=slowest)
- 35.NE Dynamic Braille Scaling: 0=Regular (Library of Congress), 3=Regular size, relaxed line spacing, 4=Petite (Japanese) (BookMaker and Braille Express 150 only), 5=Petite with relaxed line spacing for interline printing (BookMaker and Braille Express 150 only), 6=Moon (optional)
- 36.NE ET Speaks' voices (0=default, or 1, 2, 3, 4, or 5)

Other Menu Functions

- V.NE Reads, with ET Speaks, parameter N in this menu
- V.E View function while in menu
- N.VE Prints all parameters in menu N
- 0.VE Prints all parameters in current configuration

Exit a Menu

- E Exits but remains off-line
- 1.1E Exits and makes this menu current

Restore Menus to Factory Defaults

- OL Takes the embosser off-line
- 0.0E Go to the Service Menu
- 95E Restore the factory default settings
- 1E Reset the embosser

Multi-Copy

Reminder: Stay on-line while using Multi-Copy.

- 3.0E Start Multi-Copy
- 3.1E Document is fully copied and ready to print
- 4.NNE Print "NN" (2 to 99) copies of the document
- 3.2E Stop printing at end of current copy
- 3.3E Cancel Multi-Copy
- 3.4E Suspend Multi-Copy at top of next sheet
- 3.5E Resume Multi-Copy following 3.4E

ET Speaks

Two keys control ET Speaks when the embosser is ON-LINE.

The LF key makes ET Speaks repeat its last phrase
The FF key makes ET Speaks "shut up" in mid-phrase

ET Speaks tells you the current setting of menu parameters if you enter V.NE while in the menu.

Service Menu

This menu contains special functions often used in the testing, aligning, and troubleshooting of the embosser by service personnel, but some are also useful in daily operation.

You enter the service menu by going off-line with the OL key, then typing 0.0E. Some of the functions exit automatically when they are completed, and these are labeled "Auto" in the right most column. The others will remain active until you press any key to stop them. Leave the Service Menu by pressing the E key until you hear a series of beeps, which brings you back to the off-line level.

SEQUENCE	FUNCTION	EXIT
1E	System reset	AUTO
2E	Print test pattern (E 5 pattern)	ANY KEY
3E	Print 6 dot pattern (equal signs)	ANY KEY
4E	High temperature sensor test	ANY KEY
5E	Line-feed motor on high power	ANY KEY
6E	Top-of-form sensor test (tone)	ANY KEY

- 7E Paper-out sensor test (tone) ANY KEY
- 8E Low line voltage sensor test ANY KEY
- 9E Print test documentation ANY KEY
- 10E Print keypad and all settings ANY KEY
- 11E Carriage motor on high power ANY KEY
- 12E Home sensor alignment test (0=1 step left, .=1 step right) ANY OTHER KEY
- 15E (BookMaker and Braille Express 150 only) Speak (with ET Speaks) firmware version or press 1 to print out firmware revision number in grade 2 AUTO
- 20E ET Speaks reads all sixteen menus
- 63E (BookMaker and Braille Express 150 only) Disable speech board (1E enables the speech board, E disables the speech board)
- 90E Activate delay before emboss routine for LOC and ELS modes only (0E-12E) AUTO
- 93E (BookMaker and Braille Express 150 only) Active delay before emboss routine for Petite Interline mode only (0E-12E) AUTO
- 94E Memory test AUTO
- 95E Load defaults into NOV-RAM AUTO
- 96E Zero the NOV-RAM checksum AUTO
- 98E Calculate new checksum AUTO
- 99E Verify the NOV-RAM checksum (Dirge if fail) AUTO

Parameters 50 through 59 refer to the ET Speaks option:

- 50E Set ET Speaks' volume (0E lowest to 9E highest)
- 51E Set ET Speaks' speed (0E slowest to 9E fastest)
- 52E Set ET Speaks' tone (0E bass, 1E mid-range, 2E treble)
- 53E Set ET Speaks' frequency (0E lowest to 9E highest)
- 54E Set ET Speaks' pitch (0E lowest to 9E highest)
- 55E Set ET Speaks' intonation, which is how much expression should be implied by punctuation (0E least to 9E most)
- 56E Set ET Speaks' articulation, which is the amount of distinctive separation between words (0E least to 9E most)
- 57E Set ET Speaks' reverb (0E none to 9E most)
- 58E Set ET Speaks' pause between words (0E shortest to 9E longest)
- 59E ET Speaks reads the settings above (stop with the E key)

WARRANTY, SUPPORT & SERVICE

Enabling Technologies Company warrants all parts and workmanship of the embosser to be free of defects for a period of one year (365 days) from date of delivery. This warranty is extended only to the original purchaser who must return such defective part(s) to Enabling Technologies Company immediately upon customer's discovery of the defect in question. Return shipment of such defective part(s) must be pre-paid by customer.

This warranty does not extend to defects resulting from improper use or unauthorized service by purchaser. Also, the warranty is invalid if any of the instructions accompanying the product are not carefully followed.

This limited warranty is made in lieu of all other warranties, expressed or implied, and is limited to the repair or replacement of the product. No warranty, expressed or implied, is extended concerning the completeness, correctness, or suitability of the Enabling Technologies Company equipment for any particular application. There are no warranties which extend beyond those expressly stated herein.

Enabling Technologies Company offers an Extended Warranty Program. For further details, contact:

Enabling Technologies Company
Service Contract Administrator
1601 Northeast Braille Place
Jensen Beach, Florida 34957

For support and service within the United States, contact our Customer Support Group toll free at (800) 777 3687 or (772) 225 3687. For customers outside the United States contact your local Enabling Technologies distributor. They may be able to resolve your problem quickly on the phone. You may also contact us via email at: support@brailleur.com.

If your problem cannot be resolved on the phone, request a Return Authorization (RA) number from the Customer Support Group. You **MUST** have an RA number before you can return your embosser to us for service. This number is necessary for us to schedule service time for your embosser.

After you obtain a Return Authorization number from Customer Support, pack your embosser in the original carton and packing material. If the original carton was discarded, use a container that provides at least three

inches of packing material around all sides of the embosser or call us to purchase new packing materials.

Include a letter inside the package containing the following information:

1. Your name.
2. Your company name (if applicable).
3. Your shipping address and zip code.
4. Your mail drop code (if applicable).
5. Your RA number.
6. A description of the trouble you are experiencing. Please include as much information as possible about the problem and the conditions under which it occurs.

Please have your RA number printed clearly on the outside of the carton so we can begin work on your embosser as quickly as possible. Address the box containing your embosser to the location below for quickest service:

Enabling Technologies Company
Customer Support
1601 Northeast Braille Place
Jensen Beach, Florida 34957 USA

Finally, before you ship your embosser, insure the package. We are not responsible for shipping damage, and the carrier is not responsible if the package is not properly packaged and insured. You could be charged for shipping damage if the embosser was not properly packed.

FREQUENTLY ASKED QUESTIONS

We get some of the same questions repeatedly, so we've included them below. If you have a problem not covered here, call our toll free Customer Support phone number at 1 (800) 777 3687 or 1 (772) 225 3687 for international customers. We will be equally pleased to help you OR to learn from your experience.

Q. I'm having trouble entering menu commands. You refer to the letter "N" when you talk about some of the key sequences, but there is no N key on my keypad.

A. "N" is a general term that represents a user-supplied number in a key sequence. Whenever you see N listed as part of a key sequence--for example, 14.NNE--replace the N(s) with actual numbers (e.g., 14.32E).

For a complete list of menu parameters and their available options, please see the Quick Reference Guide in this manual.

Q. Where's my last page? It's missing!

A. This problem occurs with interpoint embossers because interpoint embossers process two pages at once. Your last page is probably an odd-numbered page, and it could still be in the buffer of the embosser. Free your last page by pressing the OL key followed by the FF key.

Q. I have an interpoint embosser. How do I switch it to single-sided mode?

A. Some Braille translators allow you to control whether your embosser embosses on one or both sides of the page. Therefore, you should consult your translator's documentation for instructions on how to disable interpoint embossing.

If you have disabled interpoint embossing in your translator, and your embosser is still embossing on both sides of the page, you'll need to manually select single-sided mode on the embosser. To do this, assuming Menu 3 has control of the embosser, enter the following on the embosser's keypad:

OL--Takes the embosser off-line
0.3E--Enter Menu 3
33.1E--Select single-sided mode
1.1E--Save changes, exit, and return on-line

Q. I have an interpoint embosser. I switched to single-sided mode, but now I want to go back to embossing in interpoint Braille. How do I do that?

A. First, check to make sure that your Braille translator is set up to format documents in interpoint Braille. Specific instructions on how to do this can be found in your translator's documentation.

If adjusting your translator's settings does not automatically re-enable interpoint on the embosser, you must re-enable it manually. To do this, assuming Menu 3 has control of the embosser, enter the following on the embosser's keypad:

OL--Takes the embosser off-line
0.3E--Enter menu 3
33.0E--Enable interpoint mode
1.1E--Save settings, exit, and return on-line

Q. How to I switch from wide to narrow paper, and vice versa?

A. Leave the left tractor in its current position and move the right tractor to fit the width of your paper. Set the desired line length in your Braille translator. If your braille translator does not control your embosser's margins, you will need to set your right margin to the appropriate line length. For more information, consult your Braille translator's documentation and see "Changing (and Restoring) Menu Settings" earlier in this manual.

Q. Could I have a bad USB cable? The embosser makes the right tones, the computer sends data--but nothing happens!

A. USB cables don't fail often. If nothing happens when you try to emboss, make sure your translator is set to send your translated documents through the ET Emboss printer driver. Also, make sure that both your embosser and the ET Emboss driver are online.

Q. Could it be that this Braille embosser doesn't understand grade 2 Braille? The words have no contractions, and the punctuation doesn't look right.

A. The embosser prints exactly what the computer sends. Most Braille translators have both a Print and an Emboss command. Be sure that your file is translated into Braille, and that you are using the translator's Emboss command.

Q. How do I cancel an emboss job?

A. You can abort the print job by taking the embosser off-line. When embossing stops, simply turn off the embosser. Then, check any Windows printer drivers, including ET Emboss, that are mapped to the port to which your embosser is connected. If any jobs are in the print queue, clear these before turning your embosser back on.

Q. What causes the embosser to skip a blank page after each full page?

A. In some Braille translators, when you select single-sided mode for your interpoint embosser, the translator will add an extra formfeed after each page of text to keep the text on one side of the page. If your embosser is also set to single-sided mode, this results in a blank page between each page of text. To resolve this issue, leave your translator in single-sided mode, but set your embosser back to interpoint mode.

Q. The Braille starts too high on the page. How can I move it down?

A. For instructions on adjusting the top margin, which we call the top-of-form offset, please see the section titled "Setting Top-of-form" earlier in this manual.

Q. My embosser won't find top-of-form. What could be the problem?

A. In order for your embosser to find top-of-form, the top-of-form sensor must detect the paper. Make sure that your embosser's left tractor is all the way to the left, and the right tractor is properly adjusted for your paper size. (The paper should lie flat--with no bowing--between the two tractors.) Also, before issuing the top-of-form command, make sure that no more than a page is sticking out the back of the embosser.

If all these check out and you are still having problems, your top-of-form sensor may not be properly detecting the paper because it may be dirty from accumulated paper dust. If you suspect that your top-of-form sensor is dirty, DO NOT attempt to clean it yourself. Contact our Customer Support Group for instructions on proper cleaning of the top-of-form sensor.

Q. My embosser stops embossing after half a page and makes a high/low beeping sound. What's happening, and how can I get it to stop?

A. Your embosser has stopped embossing because it is having trouble detecting your paper. If the embosser were to continue to emboss without paper installed, damage to the embosser could occur. If the embosser is having trouble detecting the paper, there may be some reason why the paper

sensor is being uncovered during embossing. Check your paper path. The stack of paper should be taken out of the box and stacked on the floor below the embosser. Your embosser's left tractor should be all the way to the left, and the right tractor should be adjusted for the proper paper width, so that the paper lies flat between the two tractors. If your embosser is equipped with a paper holder, make sure the paper is underneath this metal bracket, which is located on the left side of the embosser. Finally, the paper should flow smoothly into and out of the embosser; it should not bunch up.

If all these check out and you are still having problems, your paper sensor may not be properly detecting the paper because it may be dirty from accumulated paper dust. If you suspect that your paper sensor is dirty, DO NOT attempt to clean it yourself. Contact our Customer Support Group for instructions on proper cleaning of the paper-out sensor.