



# Biblical Hebrew (Tiro) keyboard manual

## Introduction

This manual and keyboard charts are designed to help you make use of Tiro Typework's Biblical Hebrew keyboard driver. This keyboard driver has been developed to facilitate typing of Biblical texts including *teamin* (accents/cantillation marks) and *nikud* (vowel points). The driver works with the Windows 2000 and Windows XP operating systems, and is being made available for download from the Society of Biblical Literature website ([www.sbl-site.org](http://www.sbl-site.org)) as a service to scholars using the new SBL Hebrew font. The keyboard layout was developed by John Hudson, the designer of the SBL Hebrew typeface.

## Installation

The keyboard driver can only be installed on Windows 2000 and Windows XP. Because the keyboard driver, like the SBL Hebrew font, relies on Unicode character encoding, it cannot be installed on older operating systems and will not work with non-Unicode applications that rely on 8-bit character sets.

The keyboard deliverable ships with an install file, `BHebTiro.msi`, and the driver itself, a dynamically linked library, `BHebTiro.dll`. These are delivered as a self-extracting zipped archive: `BHebTiro.exe`. Unzip the install file and driver by double-clicking on the self-extracting archive file. The files will be unzipped to a directory structure in the same location as the archive:

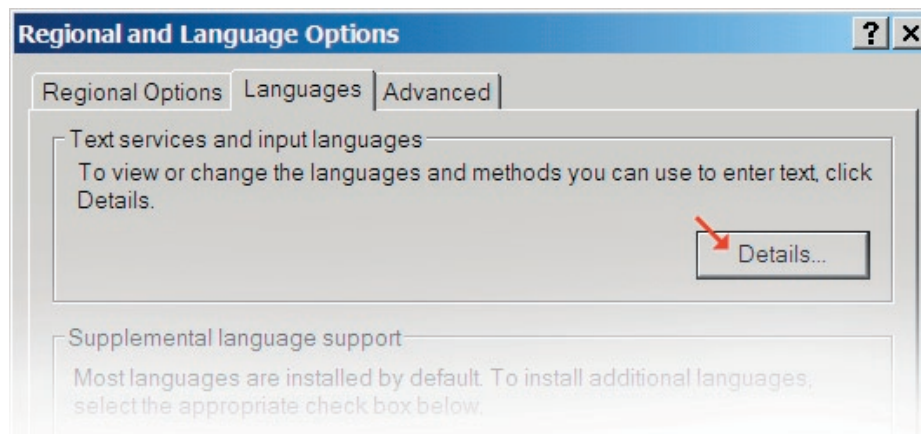
```
/BHebTiro.exe
/i386
    BHebTiro.dll
    BHebTiro.msi
```

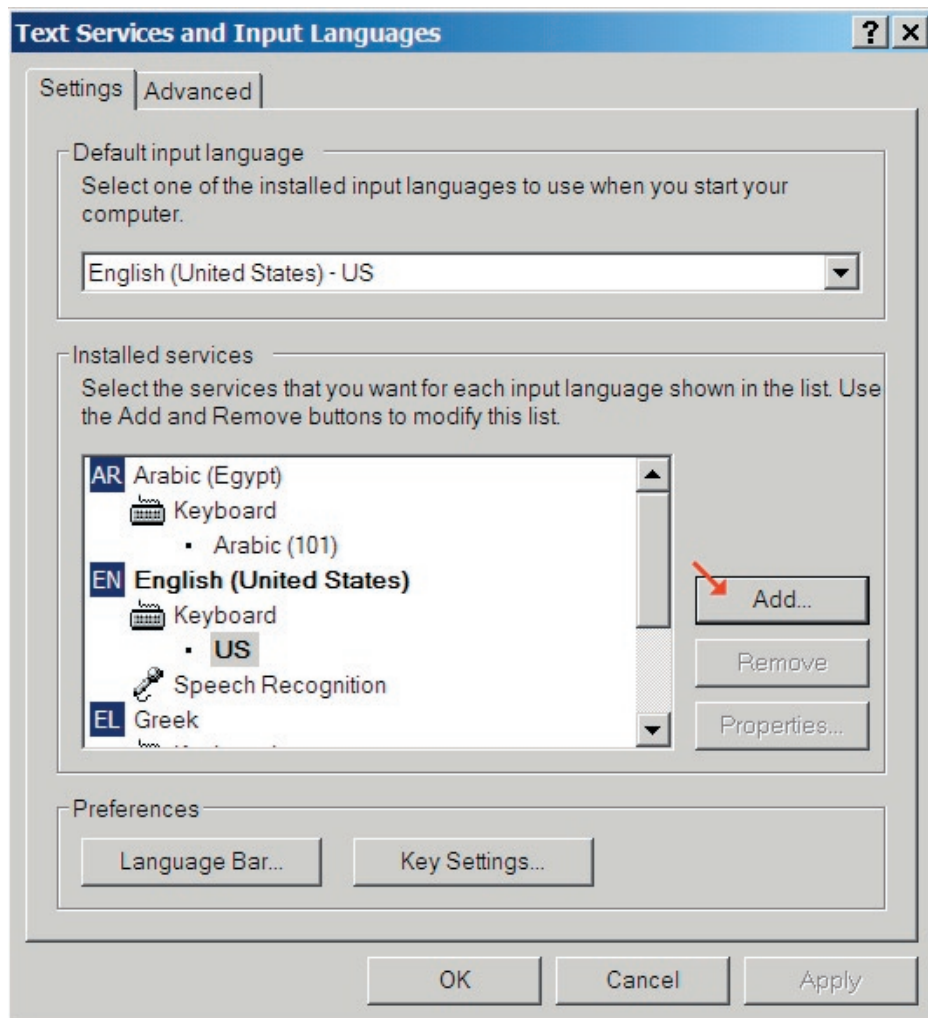
Installing the keyboard on your system is a two-stage process: first you need to register the driver on your system, and second you need to activate the keyboard in your text services settings.

Note that you do not need to do anything with the driver file itself. To register the driver on your system, double-click on the `BHebTiro.msi` install file. Windows will install the driver and register it on your system (this may take up to a minute depending on the speed of your computer). Once the driver is installed and registered Windows will report that the keyboard has been successfully installed.

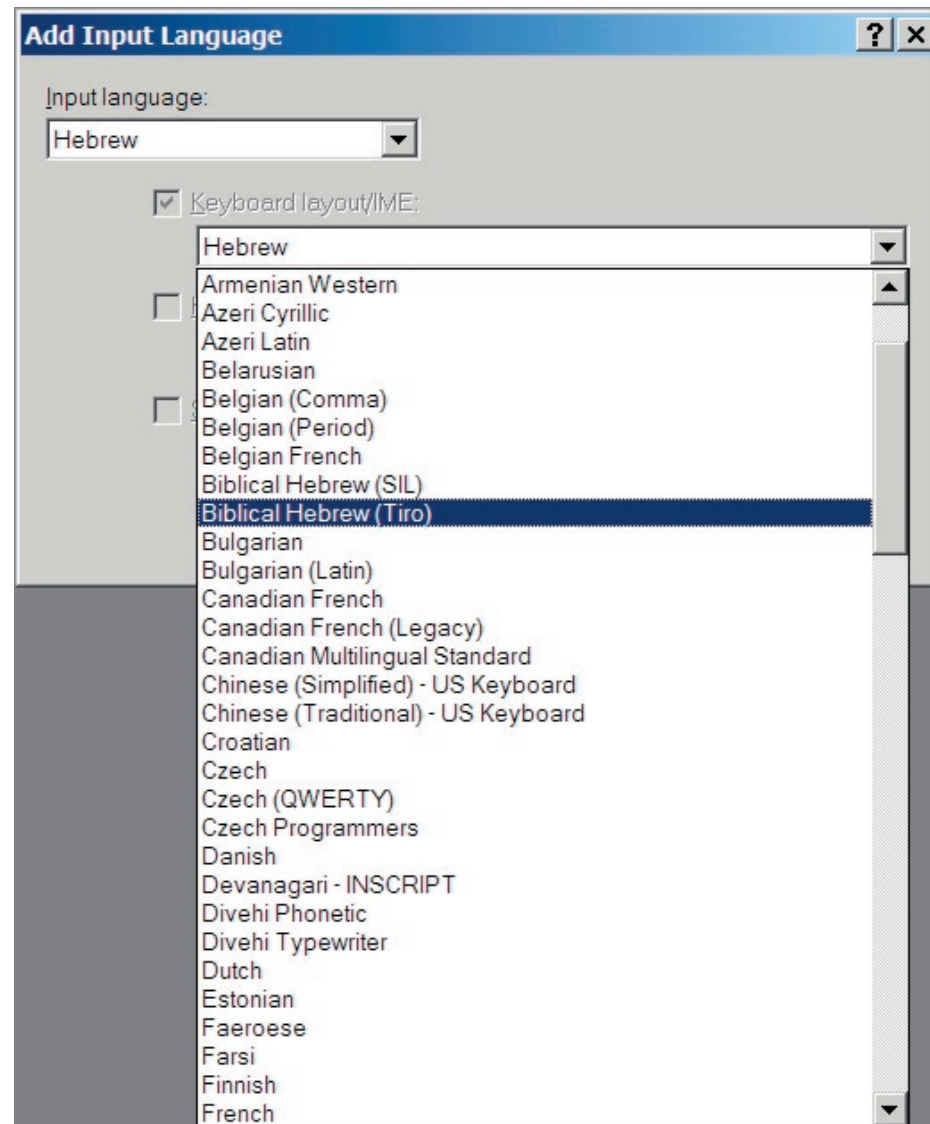
**Do not delete the .msi install file.** If you ever need to remove the keyboard from your system you will need this file. For complete uninstallation instructions, see page 11 of this manual.

Now you need to set up your text services to use the keyboard. Go to the Control Panel via Settings in your Start Menu and select 'Regional and Language Options'. [Note that these instructions record the install process for Windows XP; the names of some settings windows may vary slightly in Windows 2000, but the process is the same.] This will open a new window with three tabbed panels. Select the 'Languages' tab, and then click the 'Details...' button. This will open the 'Text Services and Input Languages' window.



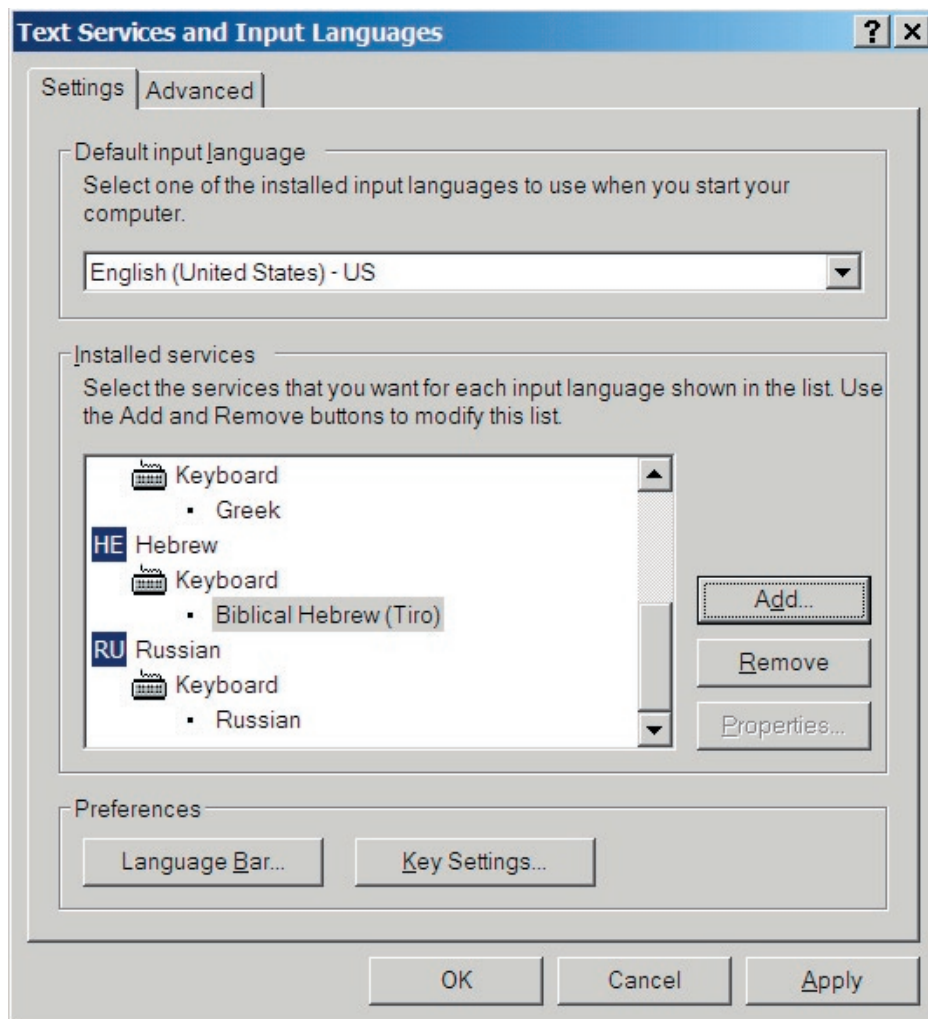


This window displays the languages and keyboards that are installed on your system. The window contents will depend on which languages and keyboards you currently have installed, and may not look exactly like the illustration above. To add a new keyboard, click the 'Add...' button to open the 'Add Input Language' window shown opposite. Select 'Hebrew' in the 'Input Language' field, and then select the Biblical Hebrew (Tiro) keyboard from the dropdown list of 'Keyboard layout/IME' options.



Note that when you first open the dropdown list the 'Hebrew' keyboard will automatically be selected. This is the modern Israeli keyboard, *not* the Biblical Hebrew keyboard. You will need to scroll up to find the correct keyboard as shown above. Once you have selected the correct

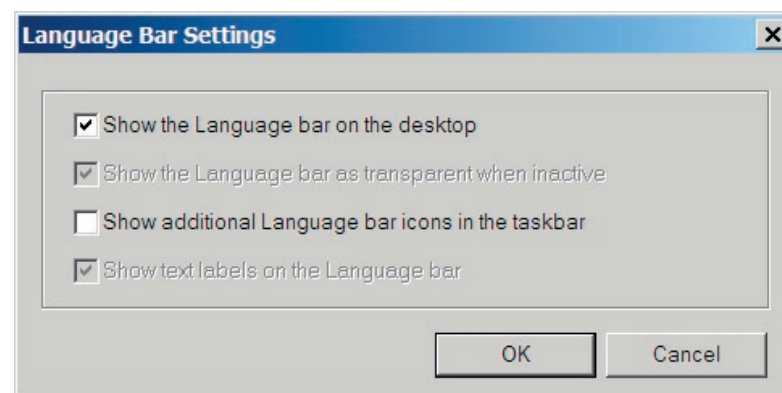
keyboard from the list you can close the 'Add Input Language' window. If you have successfully installed the keyboard in your text services, the 'Text Services and Input Languages' window will now look like this:



Note that it is possible to have more than one keyboard installed for a single language. For instance, you might have both the Biblical Hebrew and modern Israeli keyboard installed for Hebrew. In this case the 'Text

Services and Input Languages' window will list all keyboards associated with the Hebrew language.

It is strongly recommended that you set preferences to display the language bar on your desktop. This will place a small language/keyboard icon in the taskbar, which you can use to quickly and easily switch between different keyboard drivers. To set this preference, click the 'Language Bar...' button in the 'Text Services and Input Languages' window to open the preferences dialogue, which should be set to look like this:




You can now close both the 'Language Bar Settings' dialogue and the 'Text Services and Input Languages' window. Your Biblical Hebrew keyboard is installed and ready to use.

### Using the language bar

The language bar displays, in minimised mode, as a two-letter language icon in your taskbar. If your default input language is English, you will see a small blue square with the letters EN: **EN**. If you left-click once on this icon a list of all text services supported languages will pop up. To use your Biblical Hebrew keyboard, select the Hebrew language (HE) from the pop-up list. [Note that this keyboard selection will only apply to the application you are using when you switch to the Hebrew keyboard; other applications will continue to use your default keyboard or whichever one you have been using in them. If you want to use the He-

brew keyboard in more than one application, you will need to activate it for each application.] If the Tiro Biblical Hebrew keyboard is the only keyboard you have associated with the Hebrew language, you are now ready to start typing Biblical Hebrew.

If you have more than one keyboard associated with the Hebrew language, the language bar should display a small keyboard icon next to the HE language icon when Hebrew is selected: . If you hover your mouse pointer over the keyboard icon, it will display the name of the keyboard currently selected. If it is not the keyboard you want, click on the keyboard icon and select the preferred keyboard from the pop-up list. [Note that due to a display problem the keyboard icon might not appear immediately when you select the Hebrew language icon. To correct this, right-click on the Hebrew language icon and select 'Restore the Language Bar' from the pop-up menu. This will display the full language bar on your desktop. Click the small minimise button in the top right of the language bar to return it to the taskbar: the keyboard icon should now be displayed next to the Hebrew language icon.]

### Known input issues

The Tiro Biblical Hebrew keyboard has been tested with a variety of applications on Windows XP. The keyboard functions correctly in all test situations, inputting Unicode character values as specified in the charts on the following pages. However, a number of bugs have been identified in test applications. Most seriously, some shift-state keys on the Tiro Biblical Hebrew keyboard trigger an unwanted font change that breaks correct text rendering in Microsoft Office Xp—including Word 2002—and the current version Microsoft Wordpad. This is due to a bug in these applications, and reveals itself either by displaying empty boxes or by misplacing combining marks after consonants. The problem appears only affects input in applications that use RichEdit formatted text. Plain text applications such as Notepad and other text editors do not have this problem, so it is possible to work around the bug by typing text in a plain text editor and then pasting it into Word 2002, Wordpad

or another application. Note that this bug has been fixed in Word 2003.

### Using the keyboard

- **Normal state.** The Tiro Biblical Hebrew keyboard matches the positioning of consonants in the modern Israeli standard keyboard. Unlike some Hebrew keyboard, this standard does not phonetically relate Hebrew letters to English equivalents (e.g. ק=Q, י=Y), but instead maps Hebrew letters in a manner most convenient for efficient touch-typing. This means that it may take some time and practice to familiarise yourself with the layout, but in the longer term you should be able to achieve decent typing speeds. Only the consonants and European numbers strictly follow the layout of the Israeli standard keyboard: many modern punctuation characters that are not found in Biblical texts have been relocated from the normal and Shift states to the less commonly accessed Shift+AltGr state.
- **Shift state.** This state is of the Tiro keyboard is completely given over to combining marks. These are arranged by type and by their default position relative to a consonant. For example, cantillation marks such as *telisha gedola* that are positioned above and at the right of a consonant are grouped in the top right corner of the keyboard. Similarly, all cantillation marks that are positioned below a consonant are grouped in the bottom row of the keyboard. The vowel points—with the exception of *holum*, which is grouped with the above marks in the top row—are all arranged for most convenient access on the 'home' row of keys where the fingers rest.
- **AltGr state.** Some keyboard hardware makes a distinction between the left and right Alt keys, identifying the latter as AltGr. Even if your keyboard does not have the right Alt key labelled as AltGr, some applications will treat it as distinct. This means that, alone and in combination with the Shift key, two additional states can be utilised for text input. *If you find that holding down the right Alt key does not provide access to this state, you can press a combination of Ctrl+Alt instead.* The most important keys in the AltGr state of the Tiro Biblical Hebrew keyboard are the con-



trol characters in the number row at the top of the keyboard. The use of these characters to affect rendering is detailed in the SBL Hebrew font manual. Note that this state contains three double-consonant characters that are included in the Microsoft standard Hebrew keyboard; these are Yiddish digraphs and should not be used in encoding Hebrew text.

- **Shift+AltGr state.** This state contains modern punctuation characters not found in Biblical texts, remapped from their positions in the Shift state of the Microsoft standard Hebrew keyboard.

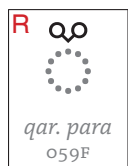
## The keyboard charts

The charts on the following four pages show the layout of the different states of the Tiro Biblical Hebrew keyboard. Each key is represented by a diagram containing an image of the character, a key identifier, a mnemonic name and the character's Unicode value. There are three types of keys:



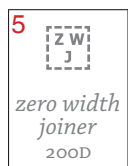
### *Base character key*

The large black glyph shows the character. The red letter or other character in the top left corner indicates the English keyboard identifier (e.g. the *alef* is located on the T key). The grey text below the glyph names the character and gives its Unicode value.



### *Combining character key*

The black glyph shows the default positioning of the mark on a consonant, represented by a grey dotted circle. The other information is the same as on the base character key.



### *Control character key*

Control characters are not normally displayed in text, and have no advance width, so they are represented in the key charts by a grey identifier in a dotted square. The other information is the same as on the base character key.

Note that the names on the key diagrams are meant only as an aid to identification. In some cases they have been abbreviated to fit on the key diagram, and not all names correspond directly to Unicode Standard character names or any other nomenclature. The Hebrew cantillation marks have different names in different traditions (the Sephardic and Ashkenazic traditions even use the same names for different marks) so users should be guided by the appearance of the glyph and the Unicode value rather than the name.

# Biblical Hebrew (Tiro) – US Standard layout

State: Normal

␣ sof pasuq 05C3	1 1 one 0031	2 2 two 0032	3 3 three 0033	4 4 four 0034	5 5 five 0035	6 6 six 0036	7 7 seven 0037	8 8 eight 0038	9 9 nine 0039	0 0 zero 0030	- maqaf 05BE	= equal 003D	Backspace	
Tab	Q ⠂ thousands 0308	W ' geresh p. 05F3	E ק qof 05E7	R ר resh 05E8	T א alef 05D0	Y ט tet 05D8	U ו vav 05D5	I ן final nun 05DF	O ם final mem 05DD	P פ pe 05E4	[ [ bracket*† 005D	] ] bracket*† 005B	\   paseq 05C0	
Caps Lock	A ש shin 05E9	S ד dalet 05D3	D ג gimel 05D2	F כ kaf 05DB	G ע ayin 05E2	H י yod 05D9	J ח het 05D7	K ל lamed 05DC	L ך final kaf 05DA	; ף final pe 05E3	' ׃ yetiv 059A	Enter		
Shift	Z ז zayin 05D6	X ס samekh 05E1	C ב bet 05D1	V ה he 05D4	B נ nun 05E0	N מ mem 05DE	M צ tsadi 05E6	, ת tav 05EA	. ץ final tsadi 05E5	/ ׁ dehi 05AD	Shift			
Ctrl		Alt	Space word space 0020							Alt (AltGr)		Ctrl		

Consonant positions are based on Israeli standard keyboard.

Most of the modern punctuation, not used in Bible texts, has been relocated to the AltGr+Shift state.













































Note presence of combining marks *yetiv* and *dehi* and the double number dot for thousands in this state; these would not fit on the shift state with the other combining marks.

\* Character not included in first release of SBL Hebrew font.

† Mirrored character: some applications may reverse display, e.g. )→(

# Biblical Hebrew (Tiro) – US Standard layout

State: SHIFT

 zinor 05AE	1  tel. qetana 05A9	2  pashta 0599	3  segolta 0592	4  masora c. 05AF	5  masora dot 0307	6  holam 05B9	7  rafe 05BF	8  sin dot 05C2	9  shin dot 05C1	0  g. muqdam 059D	-  tel. gedola 05A0	=  dagesh 05BC	Backspace	
Tab	Q  punctum 05C4	W  iluy 05AC	E  ole 05AB	R  qar. para 059F	T  shalshelet 0593	Y  gershayim 059E	U  geresh 059C	I  pazer 05A1	O  zaq. gadol 0595	P  zaq. qatan 0594	[  revia 0597	]	 zarqa 0598	 qadma 05A8
Caps Lock	A  meteg 05BD	S  sheva 05B0	D  qubuts 05BB	F  hiriq 05B4	G  hat. segol 05B1	H  segol 05B6	J  tsere 05B5	K  hat. qamats 05B3	L  qamats 05B8	;	'  hat. patah 05B2	 patah 05B7	Enter	
Shift	Z  punctum 0323	X  mahapakh 05A4	C  yer. ben yomo 05AA	V  mer. kefula 05A6	B  merkha 05A5	N  darga 05A7	M  tevir 059B	,	.	/	Shift			
Ctrl		Alt	Space word space 0020								Alt (AltGr)		Ctrl	

Combining marks are arranged by type and by normal position relative to a consonant.

Number row: above marks, incl. prepositional *teamin*, consonant modifiers, *holam*, textual marks, postpositional *teamin*.

Top row: *dagesh*, above centre *teamin*, upper punctum.

Middle row: below *nikud*.

Bottom row: below *teamin*, lower punctum.



# Biblical Hebrew (Tiro) – US Standard layout

State: ALTGR (ALT+CTRL)

ˆ ; semicolon 003B	1	2	3	4 ש sheqel 20AA	5 ZW J zero width joiner 200D	6 ZW NJ zero width non joiner 200C	7 CGJ c. graph- eme joiner 034F	8 LRM left-to-right mark 2000E	9 RLM right-to-left mark 2000E	0 ⋯ mark base 25CC	- - hyphen 002D	=	Backspace
Tab	Q	W ” gersahyim p. 05F4	E € euro* 20AC	R	T	Y	U װ dbl. vav 05F0	I	O	P	[	]	\ \ backslash* 005C
Caps Lock	A	S	D	F	G	H ײ dbl. yod 05F2	J װ yod-vav 05F1	K	L	;	' , comma 002C	Enter	
Shift	Z	X	C	V	B	N	M	,	.	/	⋅ period 002E	Shift	
Ctrl		Alt	Space  thin space 2009						Alt (AltGr)		Ctrl		

Note control characters in number row; these will not display and have no advance width, but can be used to affect rendering of specific character combinations. See SBL Hebrew font manual for more information.

The double consonant characters are Yiddish digraphs and should not be used for Hebrew text.

\* Character not included in first release of SBL Hebrew font.

# Biblical Hebrew (Tiro) – US Standard layout

State: ALTGR+SHIFT (ALT+CTRL+SHIFT)

~ <i>asciitilde*</i> 007E	1 ! <i>exclamation</i> 0021	2 @ <i>at sign*</i> 0040	3 # <i>numbersign</i> 0023	4 \$ <i>dollar</i> 0024	5 % <i>percent</i> 0025	6 ^ <i>asciicircum</i> 005E	7 & <i>ampersand*</i> 0026	8 * <i>asterisk</i> 002A	9 ( <i>paren.†</i> 0029	0 ) <i>paren.†</i> 0028	- _ <i>underscore</i> 005F	= + <i>plus</i> 002B	Backspace
Tab	Q / <i>slash</i> 002F	W ' <i>quote</i> 0027	E	R	T	Y	U	I	O	P	[ { <i>brace*†</i> 007D	] } <i>brace*†</i> 007B	\   <i>bar*</i> 003B
Caps Lock	A	S	D	F	G	H	J	K	L	; : <i>colon</i> 003A	' " <i>dbl. quote</i> 003B	Enter	
Shift	Z	X	C	V	B	N	M	, < <i>less</i> 003E	. > <i>greater</i> 003C	/ ? <i>question</i> 003F	Shift		
Ctrl		Alt	Space  <i>no-break space</i> 00A0						Alt (AltGr)		Ctrl		

This state is populated solely by punctuation characters that may be encountered in modern Hebrew text, and which are mapped in the shift state of the Microsoft standard Hebrew keyboard.

\* Character not included in first release of SBL Hebrew font.

† Mirrored character: some applications may reverse display, e.g. )→(

## Uninstalling the keyboard

If you want to completely remove the Tiro Biblical Hebrew keyboard from your system, you must reverse the two stages of the installation process. Begin by opening the 'Text Services and Input Languages' window as explained on pages 2–3. Select the 'Biblical Hebrew (Tiro)' keyboard from the list of installed services, and then click the 'Remove' button. Close the 'Text Services and Input Languages' window. Now locate the same `BHebTiro.msi` file that you used to install the keyboard driver on your system. *As noted on page 2, it is important that you not delete this file after installation.* Double-click on the `BHebTiro.msi` file; you will be offered the option to remove or repair the keyboard. Ensure that the remove option is checked, and click okay. Windows will notify you when the keyboard has been successfully removed. Note that you *must* remove the keyboard from installed services before attempting to uninstall the driver using the `.msi` file. If you have not done this first step, the second will fail and the keyboard will not be removed.

If you are updating the keyboard with a newer version, you must completely remove the old driver from your system, using its own `.msi` install file, before attempting to install the new keyboard.

If you have accidentally deleted the `.msi` install file, and need to remove the keyboard from your system, contact the distributor of the keyboard or revisit the download site and obtain a copy of the install file.