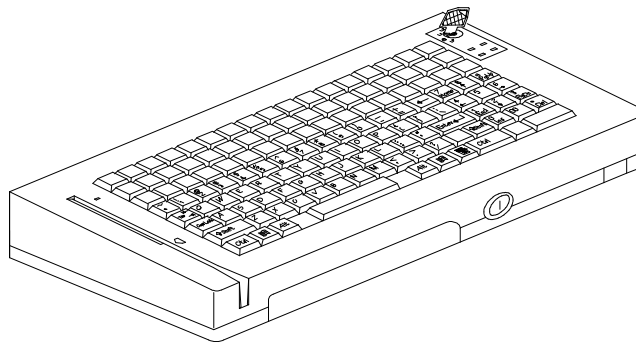


# **PST KB136 SERIES**

## **QWERTY KEYBOARD**



***POSIFLEX***<sup>™</sup>

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# OVERVIEW

## SCOPE

The KB136 unit is the optional programmable keyboard segment within the PST systems replacing the original KB112. This keyboard provides in the lower part a “QWERTY” keyboard that resembles the standard PC keyboard and at the top a matrix of 3 by 17 locations for freely programming purpose. Nevertheless, there are 2 more programmable keys within the “QWERTY” region. The “QWERTY” region is available for layout of various countries.

This printed material works as a supplement to the available documentation for the PST systems. In other words, the User’s Manual and Technical Manual of the relevant PST system should be referred to for proper comprehension of the KB136. Should there be any further question, please visit our web site (<http://www.posiflex.com.tw>) and look for the “KB136 Technical Guide”.

## FEATURES

- Base structure in 8 by 17 matrix
- Lower 5 rows of the matrix provide “QWERTY” keyboard, numerical keypad and 2 programmable keys for each country
- Upper 3 rows of the matrix provide powerful programmable ability (programming under Windows, multiple page, multiple level, whole range key content, time delay, position sense answer back code, etc.)
- A 6 position control key to provide security lock, multiple page controller and answer back code control
- Total memory for keys to be programmed: 8 KB
- Spill-proof construction
- Wear resistant Laser marked QWERTY and numeric keys
- Reliable and pleasant key click
- Extension keyboard connector
- Comfortable key size
- Alternative double key

## MODEL NUMBERS

MODEL NUMBER	COUNTRY / LANGUAGE
PSTKBQRTY-FR	French
PSTKBQRTY-GR	Germany
PSTKBQRTY-IT	Italy
PSTKBQRTY-NL	Netherlands
PSTKBQRTY-PO	Portugal
PSTKBQRTY-SP	Spain
PSTKBQRTY-SV	Sweden / Finland
PSTKBQRTY-UK	United Kingdom
PSTKBQRTY-US	United States

## ACCESSORIES

When the KB136 QWERTY keyboard is supplied with a PST system, the original 112 key programmable keyboard is replaced by the KB136 QWERTY keyboard. Meanwhile, all the keyboard relevant accessories of the original 112 key programmable keyboard are deleted from the PST accessories carton. These parts include: Legend sheet in 4 colors; Key clip (1 pc of QC-2000), Single key transparent key cap (92 pcs); Double key transparent key cap (2 pcs); Quad key transparent key cap (1 pc) and Blank key (2 or 4 pcs). The following accessories for the QWERTY keyboard are placed in the PST accessories carton instead: This manual (1 copy); Legend sheet for QWERTY keyboard in 4 colors (CLABKBPSTHKB112); Key clip (1 pc of QCH-2000), Single key transparent key cap (52 pcs) and Double key transparent key cap (1 pc).

## OPTIONS

- Single key
- Double key
- 2 tracks ISO MSR
- 3 tracks ISO MSR
- JIS I/II MSR

# STANDARD LAYOUTS



- FRANCE
- GERMANY
- ITALY
- NETHERLANDS
- PORTUGAL
- SPAIN
- SWEDEN/FINLAND
- UNITED KINGDOM
- UNITED STATES

# FRANCE

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Ctrl	⏏	Alt							Alt Gr	⏏	⏏	Ctrl				






# GERMANY

° ^	! 1	" 2 ²	§ 3 ³	\$ 4	% 5	& 6	/ 7 {	( 8 [	) 9 ]	= 0 }	? β \	` '	←	7 Pos1	8 ↑	9 Bild ↑	
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↓	A	S	D	F	G	H	J	K	L	Ö	Ä	' #	↵	1 Ende	2 ↓	3 Bild ↓	
↑	Y	X	C	V	B	N	M <i>m</i>	; ,	: .	- -	> <	! ;	↑	0 Einf	00	, Entf	
Strg		Alt							Alt Gr			Strg					




# ITALY

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←	Q	W	E	R	T	Y	U	I	O	P	é	*	Invio	4	5	6	
→											è	[ + ]		←		→	
☒	A	S	D	F	G	H	J	K	L	ç	°	§	↵	1	2	3	
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# NETHERLANDS

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Caps Lock	A	S ß	D	F	G	H	J	K	L	± +	` '	> <	↵	1 End	2 ↓	3 PgDn
↑	Z «	X »	C ¢	V	B	N	M m	;	:	=	[ ]	↑	0 Ins	00	,	Del
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# PORTUGAL

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← →	Q	W	E	R	T	Y	U	I	O	P	* +	` ..	↵	4 ←	5	6 →
Caps Lock	A	S	D	F	G	H	J	K	L	Ç	â ä	^ ~	↵	1 End	2 ↓	3 PgDn
↑	Z	X	C	V	B	N	M	;	:	- ,	> <	↑	0 Ins	00	.	Del
Ctrl		Alt							Alt Gr			Ctrl				

# SPAIN

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→											`	[ + ]				
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

## SWEDEN/FINLAND

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← →	Q	W	E	R	T	Y	U	I	O	P	Å ^ " ~	↵	4 ←	5	6 →		
Caps Lock	A	S	D	F	G	H	J	K	L	Ö Ä *	'	↵	1 End	2 ↓	3 PgDn		
↑	Z	X	C	V	B	N	M	; ,	: .	- _	> <	↵	0 Ins	00	, Del		
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# UNITED KINGDOM

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⬅ ➡	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	⬇	4 ⬅	5	6 ➡	
Caps Lock	A	S	D	F	G	H	J	K	L	: ;	@ '	~ #	⬅	1 End	2 ⬇	3 PgDn	
⬆	Z	X	C	V	B	N	M	< ,	> .	? /	 \	⬆	0 Ins	00	.	Del	
Ctrl	⌨	Alt								Alt Gr	⌨	⌨	Ctrl				

# UNITED STATES

~ `	! 1	@ 2	# 3	\$ 4	% 5	^ 6	& 7	* 8	( 9	) 0	- _	+ =	←	7 Home	8 ↑	9 PgUp	
Tab ↵	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	 \ 	4 ←	5	6 →	
Caps Lock	A	S	D	F	G	H	J	K	L	: ;	" '	Enter ↵	1 End	2 ↓	3 PgDn		
⇧ Shift	Z	X	C	V	B	N	M	< ,	> .	? /		⇧ Shift	0 Ins	00	.	Del	
Ctrl		Alt								Alt			Ctrl				

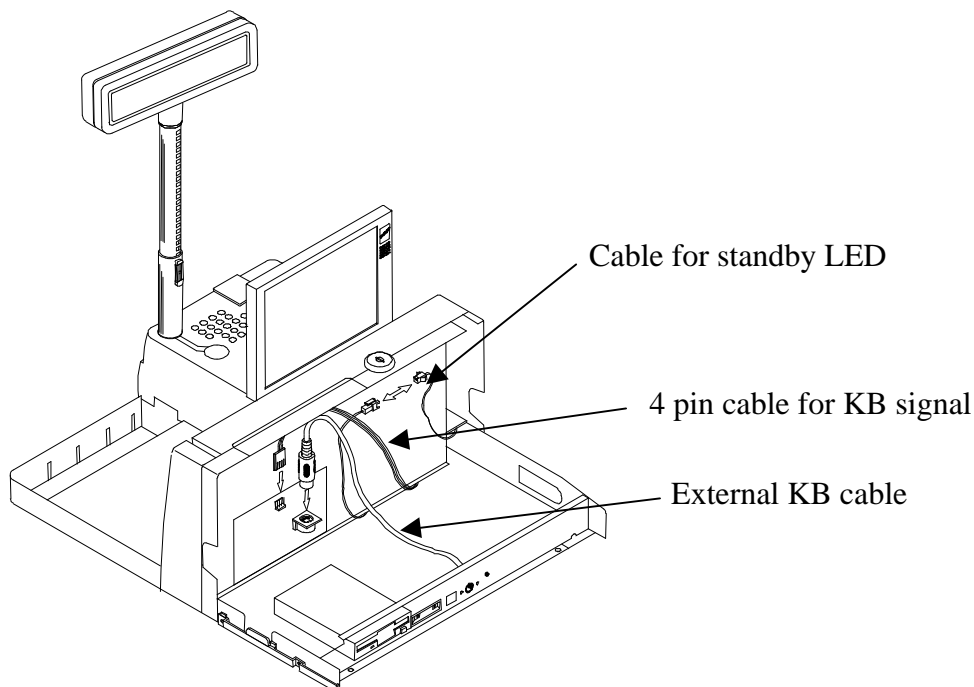


# INSTALLATION

## HARDWARE INSTALLATION

To install KB136 into a PST system originally equipped with KB112, the user should disassemble the KB112 from the PST system according to the instructions given in the Technical Manual of respective PST system. After this disassembly, there are three cables coming from the inside of the PST system, namely, a 2 pin cable for the standby LED, a 4 pin cable for KB signal and a DIN 5 pin cable for the external KB connector.

The user shall connect these three cables to the proper connectors in the KB136 assembly as shown in the example below. Unlock the mechanical lock, place the programmable keyboard down and back to the position, lock the mechanical lock and screw on the 2 bottom screws as in reverse order of the disassembly of the keyboard unit. The KB136 is then well installed.



**Fig. 3 – 1 Cable connection**



## UTILITY INSTALLATION

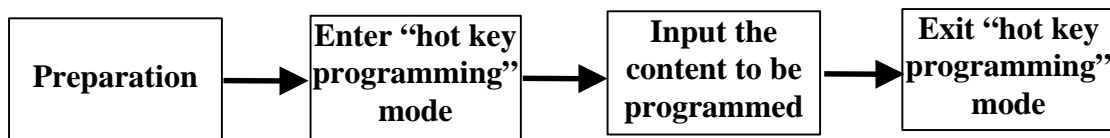
There are in total three methods to program the programmable keys in KB136 QWERTY keyboard: "RWM.EXE" the straightforward direct read/write programming utility; "KBM.EXE" the normal programming utility and the "Hot Key Programming" most suitable to modify the key contents of one or two keys. Installation procedures are required for utilities "KBM.EXE" and "RWM.EXE".

In the utility diskette, there is a file named "INSTALL.EXE" for installation of all the utilities into any operating system among Windows95 Windows 3.1 and DOS. The user may install the programming utility by following the step by step instructions from this executable program. The user may refer to the information on our web site for a preview of this program.

# PROGRAMMING

## HOT KEY PROGRAMMING

The KB136 programmable keyboard supports the “hot key programming” method which is most useful in instant modification of a few keys in a preprogrammed keyboard without entering the more sophisticated programming utility. Of course, the user may also use this feature to program through out all 51 keys (3 rows, 17 columns) by 5 pages (LP and L1 to L4) at will. The whole process of “hot key programming” contains 4 steps for each key to be programmed and is illustrated as following:



### PREPARATION

To enable “hot key programming” feature of the KB136 “QWERTY” keyboard, a standard **PC or PS-2 keyboard must be connected** to the external KB connector of KB136 before entering “hot key programming” mode. The user shall then decide which key of which page is to be programmed and turn the 6 position control key to the proper position before entering the “hot key programming” mode. Please note that the answer back codes of the position control key and the 2 programmable keys in the numerical keypad are not covered by the “hot key programming” feature.

### ENTER “HOT KEY PROGRAMMING” MODE

To enter the “hot key programming” mode, the user must input the “**hot key**” and identify the key on the programmable keyboard to be programmed. The so-called “hot key” is a special combination of keys pressed on the standard PC or PS-2 keyboard. In KB136, the “hot key” is defined as pressing and holding the **left “Alt”**



key while pressing the **“PRT SC”** (“Print Screen”) key on the PC or PS-2 keyboard. And by doing so, the KB136 will give 2 beeps to notify that it is ready to receive the identification of which key to be programmed. Right after the “hot key” is released, the user shall press the key to be programmed on the programmable keyboard once to identify which key to be programmed. If the “hot key” is pressed for the second time or the “esc” key is pressed prior to the press of the key on the programmable keyboard, this mode will be aborted immediately. The user should not enter the “hot key programming” mode when the programmable keyboard is already fully loaded (no more free memory for further programming) by the key contents previously programmed.

## **INPUT THE CONTENT TO BE PROGRAMMED**

Once the programmable keyboard enters the “hot key programming” mode with the key to be programmed identified, what the user types on the standard PC or PS-2 keyboard will be taken for the content to be programmed into that key of the programmable keyboard till the user exits the “hot key programming” mode.

The legal input in this mode includes all **alphabetical letters** (including both upper and lower cases), **numerical digits** (applicable only for keys at the area above the alphabetical keys and excluding those on the numerical keypad), **symbols** (such as `!”,#\$ and excluding those arithmetic signs in the numerical keypad) and the **“enter”** key. The **“shift”** key, the **“caps lock”** key and the **“back space”** key are also accepted in this mode to serve an editing purpose (for example, pressing “back space” will erase the last character of the input instead of being treated as a character for input). Pressing the “esc” key in this mode will abort the “hot key programming” mode immediately. All the rest keys (such as the “Ctrl”, “Alt”, “Home”, any function key or arrow key or any key in the numerical keypad) on the standard PC or PS-2 keyboard are illegal inputs in this mode. The maximum number of key presses acceptable to any key by “hot key programming” is 32.

All the input from the standard PC or PS-2 keyboard in this mode will also be sent to the host computer. Any key press from the predefined or programmed KB136 for data input in “hot key programming” is prohibited.

## **EXIT “HOT KEY PROGRAMMING” MODE**

After the intended content of the key is completely entered, the user shall press the “hot key” again to notify the end of “hot key programming”. The programmable keyboard will give one beep to signify the normal exit of the “hot key programming” mode. Should there be any illegal entry in the content of the key or any other improper operation during the programming, the programmable keyboard will give three beeps to signify the failure of “hot key programming” and the key content is not changed. If the user pressed the “esc” key to abort “hot key programming”, the programmable keyboard will also give three beeps immediately as a response to signify the abort.

# PROGRAMMING UTILITY (KBM.EXE)

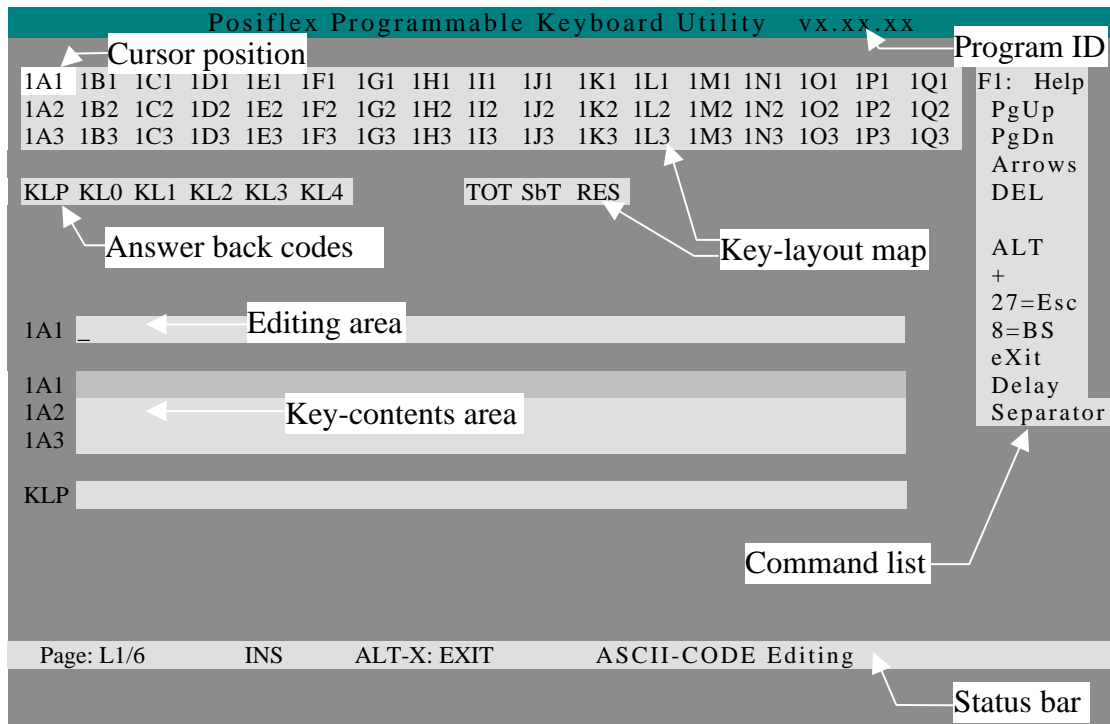
## GENERAL

Using the “KBM” utility for KB136 is quite similar to the way to use the “KBM” utility for KB112 though they may be of different versions and should be used distinctively. However, the screen display for KB136 is different from that for KB112 as the physical layout is different. Therefore, the screen display is explained as the following, whilst the user may refer to the relevant Technical Manual of PST systems or the web site for the rest.

An illustration of each part of the screen display for programming this keyboard is in Fig. 4-1, each area of the screen is labeled with its function. The user may start programming right away with the arrow keys to move around in the key layout map to select the key or the position control key to edit the content. The user may also use the “PgUp” / “PgDn” key to select for different page (total 5 pages).

As demonstrated in example Fig. 4-2, the actual key layout of KB136 is composed of 3 rows by 17 columns matrix of programmable keys (white area) at the top and a “qwerty” portion plus numerical keypad (shaded area) with two programmable keys at the bottom. The programming utility can in principle define the white area indicated in Fig. 4-2 and the answer back codes of the 6 position control key. The key definitions for the 3 by 17 matrix part can be altered according to the Therefore, position of the 6 position key while the lower part (including the two programmable keys and a reserved key) keeps unique definition for each key.

Please note in Fig. 4-2 that all programmable keys are put in parentheses even the reserved possibility “RES”, which is in the shaded area indicating that this key is in general non-accessible for normal use. Please also note that the keys 1A1 ~ 1Q3 shall be defined as 2A1 ~ 2Q3 or 3A1 ~ 3Q3 etc. if the 6 position key is turned to position L2, L3 etc.. The font color of any programmed key in the key-layout map will be changed into light blue on the screen for identification (though not distinguishable on this manual as it is printed in black and white).



**Fig. 4-1**

(1A1)	(1B1)	(1C1)	(1D1)	(1E1)	(1F1)	(1G1)	(1H1)	(1I1)	(1J1)	(1K1)	(1L1)	(1M1)	(1N1)	(1O1)	(1P1)	(1Q1)
(1A2)	(1B2)	(1C2)	(1D2)	(1E2)	(1F2)	(1G2)	(1H2)	(1I2)	(1J2)	(1K2)	(1L2)	(1M2)	(1N2)	(1O2)	(1P2)	(1Q2)
(1A3)	(1B3)	(1C3)	(1D3)	(1E3)	(1F3)	(1G3)	(1H3)	(1I3)	(1J3)	(1K3)	(1L3)	(1M3)	(1N3)	(1O3)	(1P3)	(1Q3)
~	!	@	#	\$	%	^	&	*	(	)	-	+	←	7	8	9
`	1	2	3	4	5	6	7	8	9	0	-	=	←	Home	↑	PgUp
Tab	Q	W	E	R	T	Y	U	I	O	P	{	}	;	4	5	6
→	→										[	]	↵	←	→	
Caps Lock	A	S	D	F	G	H	J	K	L	:	"		Enter	1	2	3
										;	"		↵	End	↓	PgDn
↑ Shift	Z	X	C	V	B	N	M	<	>	?	/		↑ Shift	0	00	.
								,	.	/				Ins		Del
Ctrl	Alt							(RES)	Alt				Ctrl	(SbT)	(TOT)	

**Fig. 4-2**

Every time the programmed data is written to KB136, the content of QWERTY portion is refreshed according to the language environment applied.



## COMMAND LISTING IN VIEW MODE

- ESC** – quit the keyboard programming program
- F1** – get help on command list
- F3** – enter the configuration screen
- F5** – enter ASCII-code editing mode
- F8** – enter scan-code editing mode
- F10** – quit the keyboard programming program
- Ins** – toggle insert/overwrite status for editing (default = insert)
- Del** – delete the content of the key where cursor stays
- Home** – go to column A of same page same row
- End** – go to column I of same page same row
- PgUp** – go to one page less in cyclic manner
- PgDn** – go to one page next in cyclic manner
- Up arrow** – move cursor to one row up in cyclic manner
- Down arrow** – move cursor to one row down in cyclic manner
- Left arrow** – move cursor to one column left in cyclic manner
- Right arrow** – move cursor to one column right in cyclic manner
- ENTER** – enter ASCII-code editing mode, but if the last edit of the key was in scan-code mode then this means enter scan-code editing mode.
- Alt-A** – enter ASCII-code editing mode
- Alt-C** – copy the key content of a key or contents of the keys in a page to buffer
- Alt-E** – erase the current page or all pages
- Alt-G** – enter the configuration page
- Alt-L** – load key definitions from a disk file
- Alt-M** – enter multi-level shift marker
- Alt-N** – enter scan-code editing mode
- Alt-O** – load key definitions from a disk file
- Alt-P** – paste the buffer content to key definition
- Alt-R** – read key definitions from the programmable keyboard
- Alt-S** – save key definitions to a disk file
- Alt-T** – toggle key-content format between page-wise and column-wise
- Alt-U** – recover key definition before last change



**Alt-W** – write key definitions to the programmable keyboard

**Alt-X** – quit the keyboard programming program

**any other key stroke** – will be taken as an input in ASCII-code editing mode, and will give no influence if the current key was last edited in scan-code editing mode

## COMMAND LISTING IN ASCII-CODE EDITING MODE

**ESC** – enter view mode

**F1** – get help on command list of ASCII- code editing mode

**F5** – enter view mode

**F8** – enter view mode

**F10** – enter view mode

**BkSp** – delete the character to the left of cursor

**Ins** – toggle insert/overwrite status for editing (default = insert)

**Del** – delete the character where cursor stays or the last character

**Home** – go to first position within the key definition

**End** – go to last position within the key definition

**PgUp** – go to one page less in cyclic manner

**PgDn** – go to one page next in cyclic manner

**Up arrow** – move cursor to one row up in cyclic manner and enter view mode

**Down arrow** – move cursor to one row down in cyclic manner and enter view mode

**Left arrow** – move cursor to one character left within the key definition

**Right arrow** – move cursor to one character right within the key definition

**Alt-A** – enter view mode

**Alt-D** – enter time delay mark into the key-content

**Alt-N** – enter view mode

**Alt-S** – enter a multi-level separator between definitions of different levels.

**Alt-X** – enter view mode

**Alt-27** – enter an “ESC” into the key-content

**Alt-8** – enter a “BkSp” into the key-content

**Ctl-C** – immediately terminates the programming utility.



**any other key stroke** – will be taken as an input in ASCII-code editing mode.

## COMMAND LISTING IN SCAN CODE EDITING MODE

**ESC** – leading code to enter scan code of any key after it into key-content, except “ESC” + “F” for utility version since 2.15.xx

**ESC-F** – leading code of arbitrary release code for utility version since 2.15.xx. usually used to release “CTL”, “ALT” or “SHF”.

**F1** – get help on command list of ASCII- code editing mode

**F5** – enter view mode

**F8** – enter view mode

**F10** – enter view mode

**BkSp** – delete the character to the left of cursor

**Ins** – toggle insert/overwrite status for editing (default = insert)

**Del** – delete the character where cursor stays or the last character

**Home** – go to first position within the key definition

**End** – go to last position within the key definition

**PgUp** – go to one page less in cyclic manner

**PgDn** – go to one page next in cyclic manner

**Up arrow** – move cursor to one row up in cyclic manner and enter view mode

**Down arrow** – move cursor to one row down in cyclic manner and enter view mode

**Left arrow** – move cursor to one character left within the key definition

**Right arrow** – move cursor to one character right within the key definition

**Alt-A** – enter view mode

**Alt-D** – enter time delay mark into the key-content

**Alt-M** – enter a multi-level shift marker into the key-content

**Alt-N** – enter view mode

**Alt-S** – enter a multi-level separator between definitions of different levels.

**Alt-X** – enter view mode

**Alt-27** – work like “ESC” as the leading code for scan codes.

**Alt-8** – enter a “BkSp” into the key-content

**Ctl-C** – immediately terminates the programming utility.

**any other displayable key stroke** – will be taken as an input in scan-code format.

**any other non-displayable key stroke** – will have no influence

## ANSWER BACK CODE

Programming the answer back codes of the 6 position electronic key-lock is also very easy as they are included in the keyboard programming with the locations coded as “KLP”, “KL0”, “KL1”, “KL2”, “KL3” and “KL4” in the key-layout map of page L1. The programmable keyboard will issue an answer back code to PC whenever the 6 position electronic key is switched to a new position or when the keyboard receives an “enquiry” code (E7h) from the PC or the PST system. A time delay as determined in the configuration of the keyboard programming utility is adjustable by “r” and “t” key presses, this time delay is useful to give only the answer back code of the last position of control key when it is turned across several positions. Here are some examples of sending this “enquiry” code in different languages:

Language	Syntax
C	outp (0x60, 0xE7)
BASIC	out &H60, &H0E7
DEBUG	o 60 E7

## HARDWARE LIMITATION

In case of “multiple combination key” application which means pressing three or more keys at the same time to obtain certain data output from the keyboard, there could be some limitations inherent from the nature of keyboard structure. The CPU of keyboard detects the contact between the “horizontal” and “vertical” lines for each key press, recognizes which key is pressed and sends correspondent data to the host computer. When there are many keys pressed at the same time, and the pattern of the contacts coincides with some special relationship, there are chances that the CPU of keyboard be confused about exactly which keys are pressed. The user may change the locations of the key-definition to prevent this once such confusion happens.



## SHORTCUT UTILITY (RWM.EXE)

The feature of this RWM.EXE is designed mainly for the off-line programming purpose and is very useful in quick reproduction of the preprogrammed contents of the programmable keyboard. In such application, the user should have either the preprogrammed keyboard or the preprogrammed file with “.tpl” extension name which is the result of the keyboard programming. The user may use RWM.EXE to directly transfer the programmed result of the programmable keyboard to a “.tpl” file or directly transfer a prestored “.tpl” file to a programmable keyboard without entering the utility “KBM.EXE” which may take more keystrokes. For instance, the user wants to transfer a file “XXX.tpl”, which was saved before, to the programmable keyboard, he/she should type in following command in subdirectory “POSIFLEX.D”:

```
RWM XXX.tpl          (enter)
```

This operation is quite recommended to be performed on a daily basis to ensure the system stability.

On the other hand, when the user wants to save the contents of a programmed keyboard, e.g. when he/she newly receives a programmable keyboard, to a file named “YYY.tpl”, he/she should type in following command in subdirectory “POSIFLEX.D”:

```
RWM -r YYY.tpl       (enter)
```

In this application, the user must be careful on the housekeeping of these template files and **never mix** such files with those originated from other programmable keyboard. In other words, transferring a file generated from other programmable keyboard to KB136 could mess up the data format inside KB136, and vice versa.

# DETAILS IN PROGRAMMING

Please refer to our web site for every detail in programming this KB136. The following simplified guide serves as a concise tool for instant application.

## QUICK KEYBOARD PROGRAMMING REFERENCE GUIDE

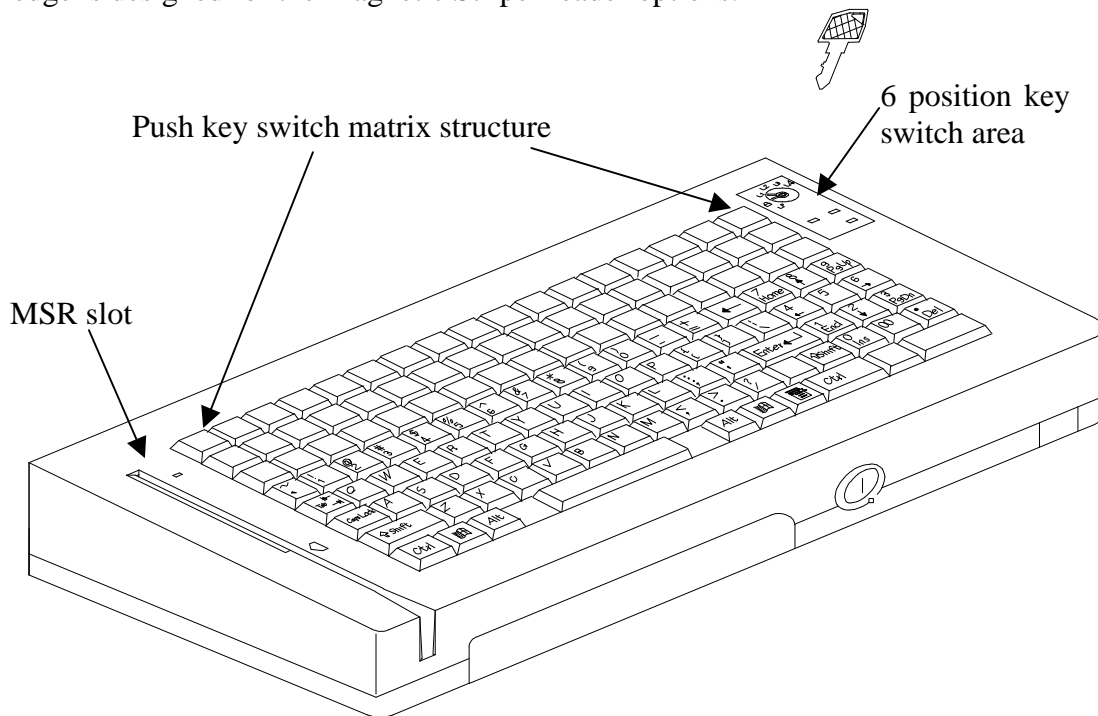
Keys To Program	How to Program Them
Esc, F1 - F12, Back Space, Shift, Ctrl, Alt, Insert, Delete, End, Page Up, Page Down, Print Scrn, Scroll Lock, Break, and all Arrow Functions	<b>Press:</b> (Alt-N), Esc, "Desired Key", Down Arrow
A - Z, 0 - 9, ~ ` ! @ # \$ % ^ & * ( ) - _ = + } { [ ]   \ ' ; " : / . , < > ?	<b>Press:</b> Enter, "Desired Key or Keys", Down Arrow
Tab, Enter	<b>Press:</b> (Alt-N), "Desired Key", Down Arrow
Caps Lock	<b>Press:</b> Enter, (Alt-C), Down Arrow
Multishift	<b>Press:</b> (Alt-N), (Alt-M), Down Arrow - - - - Press (Alt-M) as many times as needed.
Seperator	<b>In Between Any Text, Press</b> (Alt-S)
Different Levels	<b>Press:</b> Page Up or Page Down - - - - You'll see an indicator on the bottom left, corresponding to what level you are on.



# APPLICATION

## KEYBOARD CONSTRUCTION

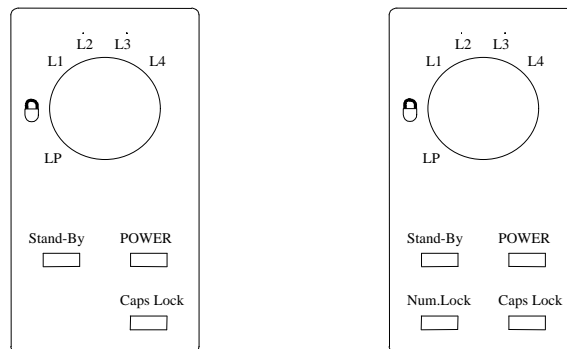
This keyboard is constructed of three parts on the top surface (ref. Fig. 6-1). A 6 position turning key switch area is at the upper right corner, a 17 x 8 matrix push key switch structure occupies most of the top surface and a up-down slot near the left edge is designed for the Magnetic Stripe Reader options.



**Fig. 6 – 1 Structure of KB136**

## LED's

In the rectangular area at upper right corner there are one 6 position electronic key switch and three LED's. They are arranged as indicated in the left of Fig. 6-2.



**Fig. 6 – 2 Layout in 6 position key switch area**

The top left LED is for stand-by indication, the top right LED is the power-on indicator and the bottom right LED is the Cap-Lock indicator for the “QWERTY” keyboard. For the KB136 manufactured after year 1999, another LED at the bottom left is added to indicate Num-Lock status of the numerical keypad as shown in the right in Fig. 6-2.

The two top LED’s work exactly in the way the host system (e.g. PST1000 or PST6000 series) defines. In other words, the description in the user’s manual of the system applies for these two LED’s.

For the “Caps Lock” or “Num Lock” LED at the bottom, the function as of a normal standard PC or PS/2 keyboard applies if the KB136 is operating alone without an external PC or PS/2 keyboard connected. When an external PC or PS/2 keyboard is connected, pressing the “Caps Lock” key or the “Num Lock” key on the PC or PS/2 keyboard will have both the correspondent LED on KB136 and PC or PS/2 keyboard change status accordingly. Yet, if it is the “Caps Lock” key or the “Num Lock” key on KB136 pressed, only the correspondent LED on KB136 will change while the LED on PC or PS/2 keyboard remain unchanged.

## 6 POSITION KEY-LOCK

The 6 position electronic key-lock in KB136 is identical to the one in KB112. Please refer to the PST system manuals.



## **PUSH KEY SWITCH MATRIX**

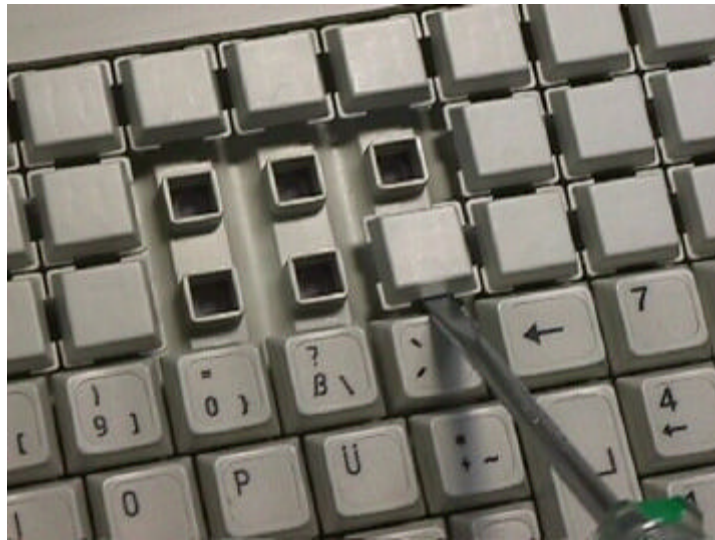
The major part on the keyboard surface is constructed in a 17 x 8 matrix providing a possibility of maximum 136 key positions available. This is why this keyboard is named as KB136. However, as indicated before, while the upper 17 x 3 matrix remains in matrix and page dependent, the lower part is organized in “QWERTY” format. This “QWERTY” format portion, occupying an area of 5 whole rows and containing two programmable keys, is country dependent and page independent and never possesses as many as 85 keys for any country as the layout dictates. So there will never be a total number of actually 136 keys for any country throughout the KB136 series.

The numerical keypad portion will function as arrow keys and “Home”, “End”, “Ins” etc. like the numerical keypad on a standard PC or PS/2 keyboard does if the “Num Lock” status is OFF.

The marking on the “QWERTY” keys and the numerical keys is non-erasable. To mark the programmed keys, please refer to the method explained for KB112.

## **KEY TOP REPLACEMENT**

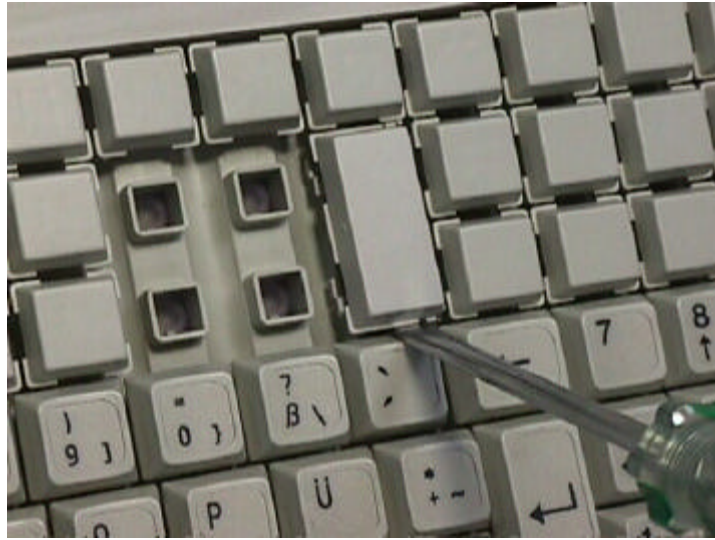
In the push key switch matrix area, there are 17 by 3 programmable keys. Yet, there are chances that the user may want to compromise some number of programmable keys for a larger key for ease of operation. In such occasions, the user may purchase the double key option, remove the single keys and insert the double key and sometimes remove the double key for other arrangement. The user may use a flat bladed screwdriver to remove the key tops (ref. Fig. 6-3a, b & c). Please note that there are two possible directions for a double key.



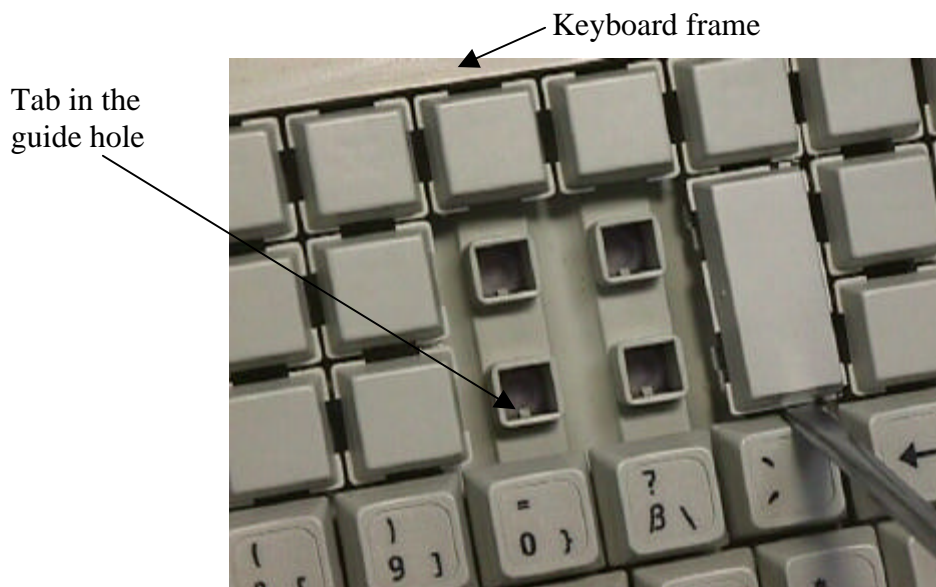
**Fig. 6 – 3a**

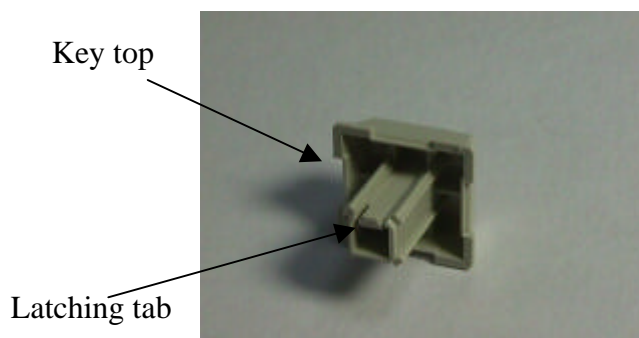


**Fig. 6 – 3b**

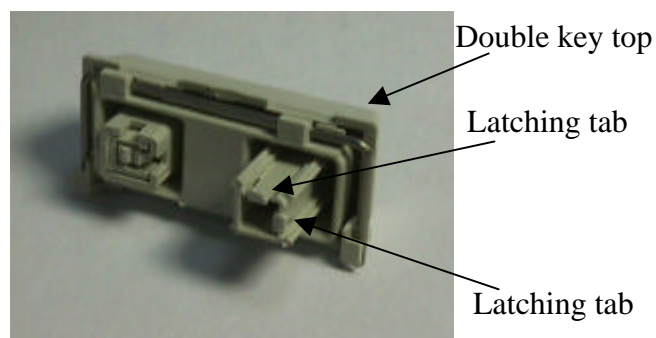
**Fig. 6 – 3c**

It is very important to correctly orientate the key tops before they are inserted into the keyboard frame. **Failure to do this could result in permanent damage.** Looking into the guide hole on the keyboard frame, there is a tab inside the bottom side wall (ref. Fig. 6-4). Examining the bottom square stem of a single key top, there is a springy latching tab on one side (ref. Fig. 6-5a). Checking the bottom of a double key top, there are two sides of the matching stem (besides the patented balancing mechanism) constructed with the springy latching tab (ref. Fig. 6-5b).

**Fig. 6 – 4**



**Fig. 6 - 5a**



**Fig. 6 - 5b**

When any key top is to be inserted onto the keyboard frame, the tab on the inside wall of the key top guide hole **must** mate a corresponding springy latching tab as illustrated above. In this way, the matching stem of a double key must be either at the bottom when the double key is “vertically” aligned or at the right of the key coverage area when the double key is “horizontally” aligned. The location for the key-definition to be programmed for the double key shall then be the bottom or the right position accordingly.

## **MAGNETIC STRIPE READER SLOT**

The MSR slot for KB136 is identical to that for KB112. Please refer to the PST system manuals.

## PRELOADED PATTERN

This keyboard is preloaded with some data in the “LP” page of the programmable area as indicated below to help the user’s application at the moment he/she receives this programmable keyboard.

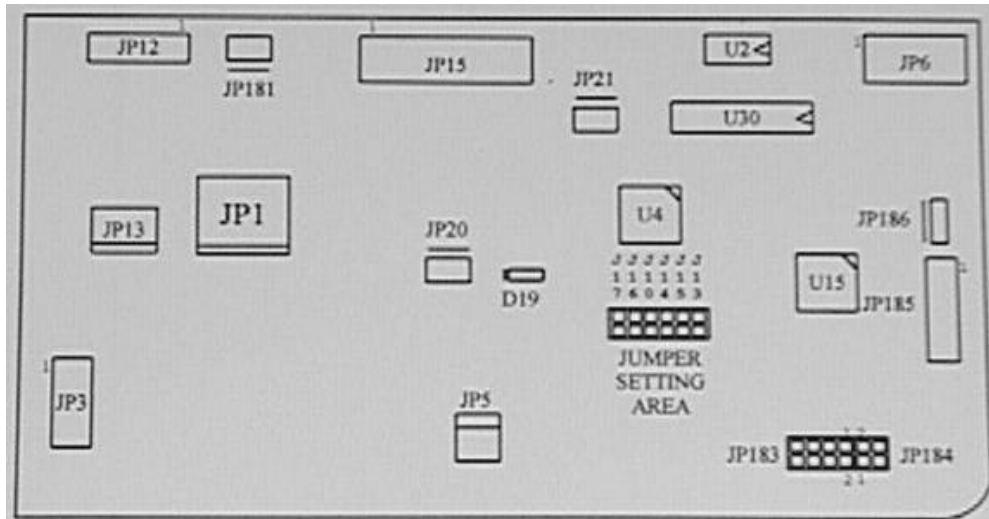
									Insert	Home	PgUp			↑		
									Delete	End	PgDn		←	↓	→	
Esc	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	Print Screen	Scroll Lock	Pause	Num Lock
~ `	! 1	@ 2	# 3	\$ 4	% 5	^ 6	& 7	* 8	( 9	) 0	- _	+ =	←	7 Home	8 ↑	9 PgUp
Tab ⇧⇨	Q	W	E	R	T	Y	U	I	O	P	{ [	} ]	; \	4 ←	5	6 →
Caps Lock	A	S	D	F	G	H	J	K	L	:	" '		Enter ↵	1 End	2 ↓	3 PgDn
⇧ Shift	Z	X	C	V	B	N	M	< ,	> .	? /			⇧ Shift	0 Ins	00	· Del
Ctrl	⌘	Alt							Alt	⌘	⌘	Ctrl				

**Fig. 6 – 6**



# HARDWARE DETAILS

## PCB LAYOUT



## CONNECTORS

Position	Connector Type	Function
JP1	DIP 5 pin jack	External KB connector
JP3	8 x 1 header	6 position key lock
JP5	4 pin header 90°	Internal KB
JP6	11 pin lock connector	Narrow tongue of membrane
JP12	(7 x 1 header)	Reserved alternative external KB connector
JP13	(Mini DIN 6 pin jack)	Reserved alternative external KB connector
JP15	16 pin lock connector	Wide tongue of membrane
JP20	2 pin header	Cap Lock LED
JP21	2 pin header	(Num Lock LED)
JP181	2 pin header	Power On LED
JP185	8 x 1 header	MSR connector
JP186	3 x 1 header	MSR LED

## JUMPER SETTING

POSITION	FUNCTION	JUMPER SHORT	JUMPER OPEN
J10	JIS II/ISO	JIS II MSR	ISO MSR
J13	ALT + NUM	OFF	ON
J14	TRACK 1	ON	OFF
J15	TRACK 3	ON	OFF
J16	TRACK 2	ON	OFF
J17	Leading & ending sentinel	OFF	ON

JP183 STATUS	JP184 STATUS	FUNCTION
1-2, 3-4, 5-6, 7-8 short	All open	MSR enabled
All open	1-2, 3-4 short	MSR disabled



## PART NUMBERS

Part Number	Description
PSTKB136	Stroke type keyboard w/o MSR
PSTKB136MR2	Stroke type keyboard with 2 track MSR
PSTKB136MR3	Stroke type keyboard with 3 track MSR
PSTKB136MRJS2	Stroke type keyboard with JIS II MSR
PSTKB136CPUMR	Keyboard controller
CMSRCATRIGE-2	MSR module 2 tracks
CMSRCATRIGE-3	MSR module 3 tracks
CMSRCATRIGE-4A	MSR module JIS II
PSTKBELCK6PASY	6 position key lock with wafer assembly
PSTKB112EKEY	4 key set for 6 position key lock
PSTKBMECHKEY	Keyboard front door key
PSTKBDR-1	Keyboard front door
CCBLA-151	Power / Caps Lock LED, (green) with cable
CCBLA-152	MSR LED, (dual color) with cable
CCBLA-167-2	Stand by LED, (yellow) with cable
QCH-2000	Key clip
CLABKBPSTHKB112	Legend sheet for qwerty keyboard in 4 colors
PSTHKEYPAIR	1 x 1 single key top & key cap pair
PSTHDBKEYPAIR	1 x 2 double key top & key cap pair

