

ProHance

PowerMouse™ and PowerTrack™

User's Guide



ProHance

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WELCOME

Congratulations on your purchase.

Your ProHance device is designed to let you navigate through your application programs with unprecedented speed, accuracy, and push-button simplicity. The extra buttons put a mobile toolbar of user-configurable commands at your fingertips. To perform an operation, simply press a button. Every command can be done with "drag-and-drop" simplicity.

- Saves time
- Saves hassle
- Eliminates keystrokes
- Eliminates wading through menus or toolbars
- Eliminates unnecessary cursor motion, saving miles of wasted travel
- Eliminates screen clutter
- Simplifies any command to its ultimate in ease and efficiency
- Frees you to create menus that work the way you think

Because of its unlimited versatility, your device is a thousand devices in one. You are limited only by your imagination. Because it is application independent, it:

- Provides a single, consistent toolbar tool across all your programs
- Adds a toolbar to programs that don't have one

Your device is more than a mouse, much more. Consider your computer, which is an integrated system of different components -- a hard disk is just one component. Your device is an integrated set of hardware and software components -- mouse functions are just one component. The software that comes with your device is an integrated toolkit of application programs, not just a "driver," and you will be able to add new features to your device as they become available simply by purchasing the new software releases.

Enjoy!

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CHAPTER I. ACQUAINT YOURSELF WITH THE BASICS

The buttons are programmable. You can configure them any way you want -- as mouse buttons, numeric keys, function keys, other keys on the keyboard, or as one-click macro sequences of the above, automating playback of frequently used commands, thereby simplifying and speeding up your work. These are called key definitions (or macros). A complete set of key definitions is called a Key Definition Table (or KDT).

You can have as many KDTs as you want, changing the configuration of your device as required. KDTs are stored as *.KD* files in your ProHance directory. The combination of user-definable buttons and templates allows your device to be used for an incredible diversity of applications. Here are some examples of how ProHance devices are being used:

- Word processing
- Spreadsheets
- CAD
- Desktop publishing
- Graphics
- Illustration
- Accounting
- Machine control
- Process control
- Robotics
- Game controllers
- Flight simulators
- Remote control
- Yacht navigation
- Medical equipment
- Handicapped users
- Keyboardless terminals
- Musical instruments
- Stock trading systems
- Construction takeoff
- ... and more

Your device comes with a library of pre-defined KDT's to choose from. These should get you started. The following section explains how to use them.

For proper operation, the active KDT must match the program in use. The menus for Lotus are different from WordPerfect, for example, so the macros are different.

CHAPTER II. USING THE SUPPLIED KDTs

USING THE REMAINING KDTs

If you followed the instructions in your Getting Started pamphlet, you already chose one KDT to use. Your AUTOEXEC.BAT file will load this KDT every time you boot up your computer. You can however, configure your AUTOEXEC.BAT file to load several KDTs at one time, ready for instant access. Here's a simple way to do that:

- RERUN INSTALL. Choose the KDTs you want, but limit yourself to no more than 3 or 4. Do not choose the general purpose KDTs - DEFAULT, FNKEY, or WINDOWS if a more specific KDT applies.
- IF you don't find a KDT for a given program, don't worry. When using that program, just use the LEFT MOUSE, RIGHT MOUSE, ENTER, ESC, numeric, and other non-macro buttons. Avoid using macro-programmed functions like COPY, MOVE, and ERASE. Later on, you can create a KDT for the program if you wish.
- PRINT reference sheets for each KDT. You can do this when prompted during INSTALL, or at any time by typing POWERPRN at the DOS prompt and ProHance directory and following the on-screen directions.
- START using your programs. Use the printouts and/or templates as guides.
- Use drags to highlight ranges, points to select destinations. Press the same button until the command is done.
 - The KDTs should automatically switch as you change programs. If not, press FN then LMOUSE. This invokes the [MENU] function (explained later in the manual) to manually select the active KDT. A unique tone will identify each KDT. If you have a PowerMouse/50, you can create an FN key or dedicated [MENU] button as explained later.

HOW TO USE THE PRE-PROGRAMMED CAPABILITIES

Each button on your device has a normal meaning and five additional meanings when preceded by one of five prefix buttons FN, USER, SHIFT, CTRL, and ALT. The FN and USER prefix buttons are on your device. SHIFT, CTRL, and ALT are keyboard shift keys (although you can define PowerMouse buttons to be SHIFT, CTRL, and ALT keys if you want). PowerMouse prefix buttons (including SHIFT, CTRL, and ALT) act differently than keyboard shift keys:

- PowerMouse prefix buttons are pressed and released before the second button is pressed.
- Keyboard shift keys must be pressed and held down as the second key is initially pressed (but can be released thereafter).

NOTE: Because the *PowerMouse/50* has fewer buttons, it does not come with predefined FN and USER buttons. However, you can certainly add them if you wish.

There are two types of keypress operations. If you've never used a mouse before, you need to know about "**dragging**" the mouse. This simply means that you move the mouse while pressing a button. For example, to copy a range of numbers you will "drag" the COPY button over the range to be copied, that is, hold the COPY button down while moving your device around. The command to include dragging within a key definition is [DRAG]. The other type of operation is "**pointing**", which means positioning the mouse cursor and then pressing a button. The command to include pointing within a key definition is [POINT].

Most of the key definitions in the supplied KDT's have been programmed with a [POINT] or [DRAG] command. This allows commands to complete in one fluid motion with the same button. The MOVE button works the following way. Go to the object to be moved, then hold down the MOVE button, drag your device over the object, point to the new destination, and press the MOVE button again.

CHAPTER III. CREATING YOUR OWN KDT

The remainder of this manual explains how to create key definitions -- adapting the supplied KDTs to meet your personal preferences or creating new ones. You will discover that the process is easy, fun, and rewarding. The small amount of time you spend learning to program the buttons will be paid back quickly as your productivity increases.

You can also contact ProHance. We provide a number of optional *PowerPaks*TM for AutoCAD, Generic CADD, Cadkey, CorelDraw, 1-2-3, Excel, Word, WordPerfect and certain other programs, which provide pre-programmed professional KDTs (with 50-100 commands each) and manuals specific to a program. These are available at a nominal cost.

RECORDING KEY DEFINITIONS

Perhaps the easiest way to create a key definition is to record it as you do it. This is a great way to create a session-specific command you may not use again, or to record a new key definition you want to use permanently. Click RECORD (FN RMOUSE on supplied KDTs) to begin recording, then the button to be recorded. A high pitched tone confirms recording has started. Perform the desired operation. Use keystrokes to make menu selections instead of mouse picks. When finished, click RECORD again to stop recording. A low pitched tone confirms the end of recording. The prior key definition, if any, gets overwritten, and the new key definition becomes active. If you want to make this change permanent, use the POWERED File Save or save As commands explained in the following section to save your changes to disk.

You may want to view, modify, or debug key definitions you've recorded. You can do so using POWERED -- the KDT macro program and editor.

Rows 1 through 40 display the key definitions associated with a button, each column representing a prefix-state of that button.

Rows **DF** and **GO** near the bottom of the table hold optional default and autoexecute macros. DF is typically used to specify device operating parameters and GO is typically used to launch the related application program.

Row **PR** contains an optional printer setup string.

Row **RE** at the bottom of the table displays a history of your past activities, which you can edit and move to a button to create a key definition from what you've just done. This is the AutoRecord feature.

Summary of Menu Bar Commands

USE	TO
<u>E</u> dit	Change the key definition of the highlighted button
<u>H</u> elp	Show Help
<u>F1</u>	Display a summary of commands while in edit mode
<u>Q</u> uit	Exit. Choose Yes if you want to save changes to disk
<u>C</u> opy, <u>M</u> ove, <u>S</u> wap	Change the layout of commands on the buttons
<u>D</u> elete	Delete definitions, thereby undefining buttons
<u>F</u> ile <u>R</u> etrieve	Retrieve and activate a Key Definition Table
<u>F</u> <u>S</u> ave	Save definitions, overwriting the current KDT
<u>F</u> <u>s</u> ave <u>A</u> s	Save definitions as another file name
<u>F</u> <u>M</u> erge	Merge another KDT into undefined keys of the current KDT
<u>F</u> <u>F</u> etch	Overwrite a range of definitions from another KDT
<u>F</u> <u>C</u> ompare	Print the differences between two KDTs
<u>F</u> <u>N</u> ew	Start a new KDT with a basic set of key definitions
<u>F</u> <u>U</u> se	Define which program name this KDT is used with
<u>F</u> <u>T</u> oggle	Toggle the active KDT among the resident KDTs loaded
<u>P</u> rint <u>K</u> eypad	Print a summary reference sheet in keypad layout
<u>P</u> <u>L</u> isting	Print a complete listing of key definitions
<u>P</u> <u>T</u> able	Print a summary reference sheet in table layout
<u>P</u> <u>S</u> etup	Specify a printer setup string
<u>P</u> <u>D</u> estination	Direct printout to a DOS file or device
<u>O</u> ptions <u>T</u> ype	Set keypad view for different ProHance devices
<u>O</u> <u>M</u> ode	Set cursor mode (mouse or non-mouse)
<u>O</u> <u>M</u> <u>A</u> utomatic	Set [AUTOSW ON] to enable automatic switching
<u>O</u> <u>M</u> <u>F</u> orce	Set [AUTOSW OFF] to disable automatic switching
<u>O</u> <u>M</u> <u>2</u> -button	Set [2 BUTTON] mouse mode
<u>O</u> <u>M</u> <u>3</u> -button	Set [3 BUTTON] mouse mode
<u>O</u> <u>M</u> <u>N</u> on-mouse	Set [0 BUTTON] non-mouse (cursor key) mode
<u>O</u> <u>S</u> peed	Set cursor [SPEED], [XSENS], and [YSENS] settings
<u>O</u> <u>D</u> iverge	Set [DIVERG] angle from n = 0 to 45 degrees
<u>O</u> <u>P</u> layback	Set the playback delay in milliseconds
<u>O</u> <u>W</u> idth	Change the relative size of the keypad and table views
<u>O</u> <u>B</u> rief	Display commands in abbreviated form; used for more room

FILE COMMANDS

To begin editing a KDT, use the **File Toggle** or **File Retrieve** commands to select an existing KDT, or the **File New** command to start from scratch. Later on, use the **File Save** or **File saveAs** commands to save your changes. The remaining **File** commands perform other useful functions, such as importing key definitions from another KDT or printing a comparison of two KDTs. When creating a new KDT, make sure to use the **File Use** command to store the name of the program the KDT goes with. It is the **File Use** command that enables KDT autoswitching as you change programs.

Toggle Retrieve	File Toggle sequences through all the KDT's loaded into resident memory by POWER in the AUTOEXEC.BAT file. File Retrieve selects a KDT from disk, replacing all resident KDTs. Before a new KDT goes active, you will be asked if you want to save changes to the current KDT if you did not already do so. IMPORTANT: The KDT being edited when you exit the Editor will be the active KDT.
Save saveAs	File Save saves the active KDT to disk, overwriting the existing KDT of the same name. File saveAs saves to another file name.
Fetch Merge	File Fetch imports key definitions from another KDT (on disk), overwriting existing key definitions. File Merge imports into blank cells only. After selecting the command, use ←/→ to highlight a range, then press ENTER. Key definitions are imported from the same range in the source KDT.
Compare	File Compare prints out a report of the differences between the current KDT and a specified KDT on disk. It is great for tracking changes and revisions.
New	File New clears the current KDT to a default configuration. This saves time when creating new KDTs. If you don't like the default configuration, simply Delete the contents of all cells in the KDT and start from scratch.

Use	File Use stores the name of the program the KDT is designed for. It is this information that enables autoswitching. When prompted, enter the name of the .EXE or .COM file of the related application program, for example WINWORD for Word for Windows, WP for WordPerfect, or 123 for Lotus 1-2-3. The .EXE or .COM extension is not necessary.
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OPTIONS COMMANDS

Mode Speed Diverge Playback	Options Mode , Options Speed , Options Diverge , and Options Playback change device parameters stored in the DF macro. Select the desired command and enter a value when prompted. For a complete description of these parameters, refer to the section <i>Device Parameters</i> .
------------------------------------	--

HOW TO GET AROUND IN THE EDITOR POWERED

Start up POWERED from DOS or from a Windows icon. A keypad view and table view will appear on the screen. To assign a key definition to a button on your device, highlight a button and select a button prefix-state. Use your mouse or keyboard cursor keys to do this.

Press ↑/↓	to select a button from the keypad.
Press ←/→	to select 1 of 6 button prefix-states (NORMAL, FN, USER, SHIFT, CTRL, ALT).

EDITING COMMANDS

The Editor works like a spreadsheet. Simply move things around using the **Copy**, **Move**, **Swap**, and **Delete** commands.

Copy Move Swap Delete	To Copy , Move , or Swap a range of key definitions, select the command, highlight the range and press ENTER, then point to the destination and press ENTER. To delete a range of key definitions (i.e. erase them), select Delete , highlight the range, then press ENTER.
------------------------------	--

- Help** *For help*, select **H**elp from the command line.
- ESCAPE** *To cancel a command* before it is completed, press ESCAPE.
- Quit** *To exit the Editor*, select **Q**uit. Changes become active as you exit the Editor.

Editing a key definition is also straightforward.

- Edit** *To edit a key definition* simply highlight it, then select **E**dit or press F2. A cursor appears on the edit line. You can then begin editing. To move the cursor, use the LEFT and RIGHT cursor keys on your keyboard or move the ball. To delete characters, use DELETE or BACKSPACE. To complete an edit, press ENTER to accept the changes. Press ESC to cancel. Press F1, for help.

The Anatomy Of A Key Definition

A key definition consists of three parts: a title, a macro, and comments:

Title: macro[;comments]

1. **The title is optional** but highly recommended. It provides an easy way to refer and remember your key definitions. Titles show up as button labels on your keypad view printouts. The colon following the title separates the title from the macro. Key definitions must have a title (or at least a colon) before the macro, if the macro itself contains a colon; otherwise, everything to the left of the first colon gets treated as part of the title rather than as part of the macro. Other buttons in the same KDT can call key definitions with titles. **Example:** [title] calls another button by its title. *title* must be spelled exactly, including uppercase and lowercase letters.
2. **The macro is the active part of a key definition.** It can be as simple as a single keystroke, or as time-saving as the stored sequence of keystrokes, mouse clicks,

and commands required to automate a given task up to the maximum 255 characters allowed. Long macros are more complicated looking, but that's because they are doing more of the work for you. The longer your macros, the shorter your work. If you approach the maximum length of a macro, use **O**ptions **B**rief to display bracketed expressions in an abbreviated form, creating more room for longer key definitions.

3. **Comments are optional.** Enclose them within [brackets] starting with a semicolon (;). Use them for notes or for creating a short manual which explains how to use the buttons. **P**rint **M**anual prints a button-by-button description of your KDT using titles for button labels and comments for explanation. Because titles and comments are attached to key definitions, your documentation is automatically updated as you move things around or change your KDT.

Keystrokes

A macro may consist of keystrokes, mouse clicks, points and drags, and a number of very useful *SmartButton™* functions. To add *keystrokes* to a macro, simply press the keys on your keyboard. This will work with all but the keys used by the Editor such as ESC, ENTER, DELETE, BACKSPACE, LEFT, RIGHT, and F1. For these keys press CTRL+L first (for "literal"), then the key.

[Brackets] are used for keys that don't have single-letter equivalents to assure the characters are treated as keys instead of text. **Example:** in the macro "Please enter the room.[ENTER]", *enter* is treated as text and [ENTER] is treated as an ENTER key.

Here's a listing of keys that appear within brackets:

```
[ESCAPE], [ENTER], [LINEFEED], [SHIFT], [CTRL], [ALT], [LSHIFT], [RSHIFT]
[F1] through [F12], [INS], [DEL], [BACKSP], [TAB], [SHIFT-TAB]
[UP], [DOWN], [LEFT], [RIGHT], [PGUP], [PGDN], [HOME], [END]
[NUM LOCK], [CAPS LOCK], [SCROLL LOCK]
```

Any character in the IBM character set, or any key-down or key-up keystroke can also be included in a macro as follows. Refer to *Appendix D* and to the README.TXT file on your program diskette for a partial listing of commonly used special characters.

```
[n] sends character n (decimal)
[#n] sends keyboard scan code n (decimal)
[$n] sends keyboard scan code n (hex)
[$sscc] sends scan code ss (hex) with character code cc (hex)
```

NOTE: The Editor converts [\$hex codes] to [#decimal codes] when you press ENTER.

Drags and Points

Pauses For Cursor Motion:

[DRAG]	Suspends macro playback until the button is released
[POINT]	Suspends macro playback until the button is pressed, ignoring a key release
[NODRAG]	Globally treats all [DRAG]s in the KDT as [POINT]s

Drags and points can be included in key definitions to create pauses for mouse motion, thereby allowing several discrete operations to be combined into a single fluid motion. For example, Cut and Paste operations can be combined into a single drag-and-drop Move command executed with a single button. To add [DRAG]s or [POINT]s to your macros, use the shorthand notations [D] and [P] or type them in enclosed in [brackets].

[POINT] [POINT] suspends macro playback until the button is pressed again; the button release is ignored. [DRAG], on the other hand, resumes playback as soon as the button is released. A typical key definition would use a combination of [DRAG]s to highlight ranges and [POINT]s to select new screen locations or menus to click on. People who do not like having to hold buttons down while moving the cursor can use [POINT]s exclusively, changing [DRAG]s to [POINT]s simply by editing the key definitions or by including the global [NODRAG] command in the DF macro to treat all [DRAG]s as [POINT]s without having to edit each and every key definition.

Examples: Use [DRAG]'s and [POINT]'s to create a copy button for programs that do not support a mouse. Here [DRAG]'s are used to highlight the block of text to be moved. [POINT]s are used to delay execution of the paste function until the cursor has been moved to the destination point.

```
123          /c[DRAG][ENTER][POINT].[DRAG][ENTER]    2 button presses
WordPerfect [ALT-F4][DRAG][CTRL-F4]12[POINT]          2 button presses
[ENTER]
```

Mouse Clicks

Mouse Buttons:		
[LMOUSE]	Standard left mouse button	= [LDOWN][DRAG][LUP]
[LCLICK]	Left mouse button click	= [LDOWN][LUP]
[LPOINT]	Left mouse button point	= [LDOWN][POINT][LUP]
[RMOUSE]	Standard right mouse button	= [RDOWN][DRAG][RUP]
[RCLICK]	Right mouse button click	= [RDOWN][RUP]
[RPOINT]	Right mouse button point	= [RDOWN][POINT][RUP]
[MMOUSE]	Standard middle mouse button	= [MDOWN][DRAG][MUP]
[MCLICK]	Middle mouse button click	= [MDOWN][MUP]
[MPOINT]	Middle mouse button point	= [MDOWN][POINT][MUP]

Key definitions can contain mouse clicks. This allows commands to be completed with a single button press without going back and forth to the mouse buttons. To add mouse buttons to your macros, simply type them in enclosed in [brackets].

Here are three ways mouse buttons can be included in your macros:

```

Drag      [LMOUSE] = [LDOWN][DRAG][LUP]
Point     [LPOINT] = [LDOWN][POINT][LUP]
Click     [LCLICK] = [LDOWN][LUP]
  
```

[LMOUSE] are equivalent to conventional left, right, and middle mouse buttons. They implicitly include [DRAG]s, i.e. when pressed it sends a [DOWN] signal and when released it sends an [UP] signal.

[LPOINT] provide keylock capability. The first button press sends a [DOWN] signal. The [RPOINT] second button press sends an [UP] signal.
[MPOINT]

[LCLICK] simulate a click. The [DOWN] and [UP] signals are sent as soon as the button is pressed and the macro continues playback without waiting for a button release.
[RCLICK]
[MCLICK] **Example:** [LCLICK][LCLICK] simulates a double mouse click.

Examples: Create drag-and-drop macros by adding mouse clicks to your commands. Below shows how mouse clicks can be added to the COPY command of a mouse supported program.

```

123#      [LCLICK]c[LMOUSE][LCLICK][POINT][LMOUSE][ENTER]
EXCEL     [LMOUSE][ALT-E]c[POINT][LMOUSE][ENTER]
WP#       [LMOUSE][CTRL-F4]12[POINT][LCLICK][ENTER]
WINWORD   [LMOUSE][ALT-E]c[POINT][LCLICK][ALT-E]p
  
```



IMPORTANT: Be sure to define two buttons as [LMOUSE] and [RMOUSE] buttons or you won't have any mouse buttons. In older non-mouse programs, they will function as [ENTER] and [ESC] keys, respectively.

PRINT COMMANDS

Once you have completed your changes, use the **Print** commands to print out updated template labels and reference sheets for your modified KDT.

Keypad Table Listing **Print Keypad** prints out a 1-page button reference chart for the current KDT in keypad view. **Print Table** does the same but in table view. **Print Listing** prints out a 3-4 page long detailed listing of key numbers, titles, and the complete key definitions for reviewing and debugging purposes. **Print temPlate** prints out button labels, to size and to scale if you have a HP LaserJet or HPCL compatible printer, for transfer to a blank template. **Print Manual** prints out a reference manual, using your titles as the button labels and your embedded comments as the descriptions.

Setup Use **Print Setup** if you want to send a printer setup string as defined by your printer's reference manual. Enter print setup strings using the same conventions as for key definitions. **Example:** To print eight lines per inch in condensed type, use:

- LaserJet or compatible: [ESC][ESC](s16.66H[ESC]&I8D
- IBM, Epson, or compatible dot-matrix printer: [\015][\027][\048]

Destination **Print Destination** allows you to direct printouts to a file or any other valid DOS device. **Example:** Define the print destination as a *filename.ext*. This produces a pure ASCII text file that can then be imported into your graphics, CAD, or desktop publishing program for enhancement.



After a few days, once your KDT stabilizes, you can create a professional looking template from the blank template provided. Use your desktop publishing CAD, or similar program to create the labels using any combination of text, graphics, icons, or symbols. Then print them onto *StickyBak* (or similar graphic transfer film) for transfer to the blank template. Labels designed to scale can be transferred one row (5 buttons) at a time. Contact ProHance if you need more blank templates. They are available at a nominal cost.

SMARTBUTTON™ FUNCTIONS

There are a number of useful functions that you can add to a key definition for additional control and features. Enter these functions by typing the function name enclosed within [brackets]. Only the first unique letters boldfaced in the tables need be typed, e.g. [**P**] is recognized as [POINT] and [**PL**] is recognized as [PLAYBACK]. Use either upper or lowercase letters. They will be converted into uppercase letters when you press ENTER.

Device Parameters

Device Parameters:	
[<i>n</i> BUTTON]	Sets <i>n</i> = 2 or 3 button mode, or <i>n</i> = 0 non-mouse mode
[0 BUTTON]	Sets non-mouse mode
[AUTOSW ON]	Enables autoswitching between non-mouse and mouse modes
[AUTOSW OFF]	Disables autoswitching; default=ON
[SPEED <i>n</i>]	Sets basic and accelerated cursor speed. <i>n</i> =1-100; default=25
[XSENS <i>n</i>]	Sets character cursor X Sensitivity <i>n</i> =1-200; default=25
[YSENS <i>n</i>]	Sets character cursor Y Sensitivity <i>n</i> =1-200; default=12
[DIVERG <i>n</i>]	Adjusts motion of <i>n</i> =0-45 degrees to orthogonal; default=22
[PLAYBA <i>n</i>]	Plays keys back at <i>n</i> millisecond intervals
[WAIT <i>n</i>]	Pauses for <i>n</i> = 55 to 14,000 milliseconds, in 55ms increments; default=55

Device parameters allow you to define operational characteristics of the device such as cursor speed and mode of operation. These parameters can be optimized for each application and automatically changed by storing them in the DF macro of each KDT, included within key definitions for on-the-fly changes, or set with command line options. For convenience, set the DF macro using the **Options** commands. When no values are set in DF, the defaults are used.

[n BUTTON] determines whether the device operates in [0 BUTTON] non-mouse mode or conventional [2 BUTTON] or [3 BUTTON] mouse modes. The default is 2-button mode. Non-mouse mode converts ball motion into cursor keystrokes (Left, Right, Up, Down), and treats the [LMOUSE] and [RMOUSE] buttons as ENTER and ESC, respectively. Mouse mode converts ball motion into conventional INT33 MOUSE.COM commands and enables the [LMOUSE] and other mouse button functions. [3 BUTTON] mode enables 3-button mouse operation for programs which support a 3-button mouse; use [MMOUSE] to define the third mouse button. This parameter can be stored in the KDT by editing the DF macro directly, or by using the Options Mode command to do it for you. This parameter can also be set by including the /FORCE*n* command line option when loading the ProHance software, where *n* = 0, 2 or 3.

[AUTOSW] determines whether the device is allowed [AUTOSW ON] or not allowed [AUTOSW OFF] to automatically switch modes (see explanation on [n Button] mode) as you change programs. This parameter can be stored in the KDT by editing the DF macro directly, or by using the Options Mode Automatic (auto on) or Force (auto off) commands to do it for you. The default is autoswitch on.

IMPORTANT: We recommend you use the defaults [2 BUTTON][AUTOSW ON] in all your KDTs. This assures you won't inadvertently get stuck in non-mouse when you switch between programs, as you might do in Windows. If you like to experiment, there are times when it can be advantageous to move the character cursor instead of the mouse pointer in mouse programs by forcing non-mouse mode [0 BUTTON][AUTOSW OFF]. But use this approach with caution: (1) key definitions are constructed differently for mouse and non-mouse mode; (2) you can get "stuck" in non-mouse mode when you're not expecting it; and (3) some features of your program may not be accessible in non-mouse mode because the mouse pointer is required.

[SPEED n] determines how far the cursor moves for a given amount of mouse movement. The bigger the number, the faster the cursor goes. For values of *n* greater than 10, dynamic gain is enabled which lets you get across the screen quickly, then slow down for pixel-by-pixel control. The speed at which dynamic gain kicks in can be changed with the double speed threshold command line option /DOUBLE *n*. The smaller the value of *n*, the sooner ballistic gain kicks in. To turn ballistic gain off completely, set *n* to its highest value with the command POWER /D999. Store this parameter in the KDT by editing the DF macro directly or use the Options Speed *n* command. From DOS, use /SPEED*n* and/or /DOUBLE*n* command line options where *n* = 1 to 999. *n* = 25 is the default value.
Example: POWER /S35 /D99.

[XSENS n]
[YSENS n] determine cursor speed for non-mouse programs. Store these parameters in the KDT by editing the DF macro directly or use the Options Speed *n* command to do it for you. From DOS, use the /HORIZ*n* and /VERT*n* command line options where *n* = 1 to 100. The default values [XSENS 25][YSENS 12] are good for word processing programs (25 characters for each inch of device motion in the horizontal (or X) direction, and 12 lines per inch in the vertical (or Y) direction). [XSENS 8][YSENS 12] are good values for spreadsheet programs (8 columns and 12 rows per inch moved).

[DIVERGE n] is for non-mouse mode. It reports only horizontal or vertical mouse motion to your application program when moving within an angle of *n* degrees, typically 22 or 45 degrees. When moving down a column of numbers in a spreadsheet program, for example, this prevents the cursor from jumping back and forth between columns even though the mouse is not moved in a purely vertical path. Store this parameter in the KDT by editing the DF macro directly or use the Options Diverge command. The default value is 22.

[PLAYBACK n] delay is used to slow down the speed at which macros are played back to the application program. This may be necessary with slower computers or older programs. Store this parameter in the KDT by editing the DF macro directly or use the Options Playback command. The default value is 0.

[WAIT *n*] inserts a time delay at a specific point in a macro, without slowing down playback elsewhere. It is used to suspend playback when the macro has launched a command that keeps your program busy for a period of time and would otherwise lose the information being sent to it - disk accesses, screen updates, PageDown, and similar operations. [WAIT]s are also very useful for debugging macros by allowing you to observe the macros as they play back; use [WAIT 1000] for a one second delay or shorter or longer values as you choose. To add this parameter to a key definition, type it in within brackets at the point where you want the delay added. The default is *n* = 55.

Special ProHance Buttons

Special ProHance Buttons:

[FN]	Makes an FN prefix key
[USER]	Makes a USER prefix key
[MENU]	Activates various features of the ProHance programs
[RECORD]	Records a key definition for the next button pressed
[RESET]	Cancels any key definitions in progress

- [FN] define the FN and USER prefix buttons. If **go** buttons are so designated, the FN and USER key-combinations are not accessible.
- [USER]
- [MENU] defines the MENU button. It is used for switching between KDT's or pops up POWERPLS. Each press of the MENU button activates the next KDT loaded by POWER in the AUTOEXEC.BAT file. We have located this command on FN LMOUSE in the supplied KDTs; however, you don't need to follow this convention. Put MENU anywhere you like -- on an unshifted button if you use it frequently.
- [RECORD] (typically FN RMOUSE) creates a button which starts and stops the recording of macros without having to pop up the Editor. The most important advantages of this command are that it (1) allows key definitions to be recorded with the POWER program (which takes up the least amount of RAM), and (2) works regardless of the screen type, even when POWERPLS doesn't work. For details on operation, refer to the section *Recording Key Definitions*.
- [RESET] resets all macros to their starting point. This is a good command to have around when you get lost somewhere in the middle of a macro, and want to restart. You can make a separate RESET button, or simply include [RESET] as part of the key definition, which resets your application program. *Examples:* [ESCAPE][RESET] for most programs; [CTRL-C][CTRL-C][RESET] for AutoCAD.

Data Entry Commands

Data Entry:

[FFIELD <i>n</i>]	Pauses for a fixed field entry of up to <i>n</i> =255 characters
[VFIELD]	Pauses for a variable field entry; terminated by ENTER
[VFIELD <i>char</i>]	Pauses for a variable field entry; terminated by the <i>character</i> specified
[DATE]	Types today's date in the form: 1 JAN 92

[VFIELD] create a pause during macro playback until the terminating key (ENTER or *char*) is pressed. Any number of keys can be typed during these pause. This allows text or numbers to be entered, choices to be made altering the outcome of the command, and so on. A powerful use of this function is to automate the creation and filling in of memos, letters, faxes, database records, month end reports, and similar procedures.

Example: The following macro *Memo* types the framework of a memo for you, pausing only when information is to be typed in. Simply press the button, then type *Name* ↵ *Subject* ↵ and you're done. The rest has been typed for you.

```
Memo: MEMORANDUM[ENTER][60]=[ENTER]TO: [VFIELD]
FROM:your name[ENTER]Subject: [VFIELD]Date: [DATE]
[10][ENTER]Sincerely,[5][ENTER][25]_[ENTER]
```

[FFIELD *n*] works like [VFIELD] except macro playback pauses for exactly *n* keystrokes, then resumes automatically -- without a terminating key press. Use a fixed field when the number of keystrokes is always the same -- five digits for a zip code, 10 numbers for a phone number, two characters for the abbreviation of a state's name, and so on. The advantage is that it's faster.

Lock Functions

Lock Functions:

[x LOCK]	Toggles <i>x</i> = FN, USER, SHIFT, CTRL, ALT, CAPS, NUM or SCROLL locks
[x OFF]	Resets a lock
[LOCK OFF]	Resets all locks

[x LOCK] works like the NUMLOCK key on your keyboard, swapping the prefix-state of the keypad so that the macros associated with the *x* = FN, USER, SHIFT, CTRL, or ALT shift-layers can be accessed without pressing a prefix key. Whereas [x LOCK] toggles the shift-state, [x OFF] and [LOCK OFF] set the shift-state to normal. Locks are extremely useful:

Example: Put a numeric keypad on the unshifted layer and function keys on the FN layer, then define a button to toggle between numeric keys and function keys. The toggle button would have [FN LOCK] on its unshifted key-state and [FN LOCK], [FN OFF], or [LOCK OFF] on its FN key-state.

Example: Include lock functions within a macro. For example, put a numeric keypad on the USER layer and "pop" it up in the middle of a command for data entry, then "push" it back after the number has been entered. AutoCAD

Example: CIRCLE[ENTER][LCLICK]R[ENTER][USER LOCK]V[LOCK OFF]



Example: Group related tasks on the same layer, then change layers as work progresses. The CAD user might switch between drawing commands, editing commands, and dimension commands. A Microsoft Works user might switch between word processing tasks, spreadsheet tasks, and so forth. If you need more commands than one KDT can hold, then use the [KDT] command to toggle among multiple KDTs. A single lock button, as shown here, can be used to change which layer of commands is "on top" by pressing it in conjunction with the desired prefix key. Or you might prefer using several lock buttons, labeling each one accordingly - DRAW, EDIT, DIM, for example, or WP, SS, OTHER, etc.



- Only one shift-state can be locked at a time. If a second lock function occurs while another is active, the second lock takes over.
- Recommendation: Include [ESC], [ENTER], [FN], [USER], and other important functions on all shift-states.
- Recommendation: Include [BEEP]s with each lock command to provide an audio cue as to what is going on -- one beep for lock, two for unlock, etc.

Emulating Mouse Motion

Emulating Mouse Motion:

[PUSHXY]	Stores the current cursor location
[GOTO x y]	Jumps to the cursor location $x*(XCAL/100)$, $y*(YCAL/100)$
[POPXY]	Returns to the location stored by PUSHXY
[XCAL n], [YCAL n]	Calibrates GOTO x y values for different monitors; default $n=100$

Some programs have commands that are accessible only through an icon or by clicking on a menu item. Even these can be automated. For positioning the mouse cursor onto a particular screen location, use the following mouse functions.

[PUSHXY]	saves the starting mouse pointer screen location.
[GOTO x y]	moves the mouse pointer to another screen location.
[POPXY]	returns the mouse pointer to the starting cursor location.

A typical macro might look something like this:

```
[PUSHXY][GOTO 20 0][LCLICK][GOTO +0 +10][LCLICK][POPXY]
```

"x" and "y" values are expressed as percentages of the screen width and height, respectively, with 0 0 located at the top left corner of the screen and 100 100 located at the bottom right corner, and can be expressed in absolute (x y) or relative (+x -y) terms. **Example:** The above macro stores the current location of the mouse pointer then clicks on a menu item located 20% across and 0% down the screen, clicks on a submenu item 10% down from the main menu, and returns the mouse pointer to its starting location. Result: the command is executed without moving the mouse.

Use the program, SHOWXY.EXE to display the current "x" and "y" values in the upper right corner of the screen (for many, but not all programs or video cards). Run POWER from C:\PROHANCE, then SHOWXY, and start your application program. Record the values for the cursor locations you want, then create your key definitions using these values.

If SHOWXY does not work, create a KDT with various GOTO values on different buttons, for example, [GOTO 10 0], [GOTO 20 0], [GOTO 30 0], [GOTO +0 +10], [GOTO +0 +20], [GOTO +1 +0], [GOTO +0 +1], and so forth. Then use these buttons to quickly establish the basic x and y locations for the menu and sub-menu locations.

Some programs, such as AutoCAD, use their own internal screen coordinate system that is different from the mouse coordinate system, and the GOTO functions may produce inconsistent results. In these cases, try [GOTO -50 -50][GOTO -50 -50] instead of [GOTO 0 0] which, may establish a good 0 0 reference point.

Example: [GOTO -50 -50][GOTO -50 -50][GOTO +10 +10][LCLICK]

[XCAL n]
[YCAL n]

scale the "x" and "y" values for different displays and video cards. Because the "x" and "y" values are video specific, macros which work on one system may not work on another system. For this reason, [GOTO x y] functions are scaled by [XCAL] and [YCAL] factors and actually go to locations $x * [XCAL n] / 100$ and $y * [YCAL n] / 100$. Thus, a KDT built on one computer can be adapted for another computer - without editing every macro - simply by setting the horizontal [XCAL] and vertical [YCAL] scaling factors in the *DF macro*, or by using the *XCAL* and *YCAL command line options*. "n" is expressed as a percentage, i.e. use [XCAL 100] or [YCAL 100] for a scaling factor of 1. The values for "n" are typically less than 100 when going from a lower to a higher resolution screen since the menus are typically squeezed into a smaller portion of the screen, and greater than 100 when going from a higher to a lower resolution screen.

Takeoff Functions

Takeoff Functions:

[XDIST]	Types horizontal inches moved (or * XCAL/100 for other units)
[YDIST]	Types vertical inches moved (or * YCAL/100 for other units)

[XDIST]
[YDIST]

are specialized functions used to measure distances on blueprints or other drawings and type these dimensions into the current application program. For this purpose, attach a crosshair (available for a nominal cost) to your mouse using Velcro, a screw, or some other means of attachment.

Example: The following *Measure* macro measures the lengths of straight lines (pipes, wiring, walls, etc.) on a blueprint, then types these dimensions into a Lotus 1-2-3 spreadsheet from which materials lists and cost estimates can be calculated. Operation is very simple. Click the MEASURE button to identify the 1-2-3 cell where you want the result. Then trace the line on your blueprint, clicking the button at each junction on the line. Click the STOP button when you're finished. That's it. The running sum is in the 1-2-3 spreadsheet.

NOTE: The Measure macro is shown in segments for clarity; it appears as a contiguous text string in the Editor.

Measure:	The title of the macro.
[LCLICK][XOFF][YOFF]	Picks the cell where you want the result, and freeze the cursor from moving around the spreadsheet.
[POINT]	Points to the start of the line to be measured.
[REPEAT]	Repeats the following sequence until another button is pressed.
[POINT]	Points to an intersect point.
[F2] + @sqrt(((XDIST) ^ 2 + (YDIST) ^ 2)[ENTER]	Calculates the length of the current line segment and adds it to the total.
/rv[ENTER][ENTER]	Replaces the formula with the value. This keeps the formula from growing longer with each measurement.

Stop: [ENTER][XON][YON] Enters the result and turns cursor motion back on.

NOTE: If your measurements are consistently off by a certain amount, use [XCAL] and [YCAL] to calibrate your unit.

Other Functions

Other Functions:

[BEEP]	Makes a beeping sound
[CURSOR]	Temporarily displays a mouse pointer in non-mouse programs
[KDT name]	Changes to another resident KDT
[KEYINT n]	Sends keys at INT 9 (scan code) or INT 16 (character) level; default $n=16$
[n]	Repeats the following command n times
[PUCK n]	Invokes the corresponding AutoCAD ***BUTTONS n command
[REPEAT]	Repeats rest of macro until another button is pressed
[title]	Executes the key definition with this <i>title</i> , then continue
[XOFF], [XON]	Turns horizontal cursor motion off or on
[YOFF], [YON]	Turns vertical cursor motion off or on
[XYCMD]rldu	Sends ball motion as keys other than cursor keys

[PUCK n] is a special function for the AutoCAD user which executes the n th line in the ***BUTTONS n section of ACAD.MNU. This means [PUCK n] buttons can be programmed with ADI menus, script, or LISP routines the same as a digitizer cursor! If you use these commands, the /ADI command line option must be used and AutoCAD's digitizer interface configured as ADI for version 10, *AutoDesk Device Interface* for version 11, or ADI (*real mode*) for version 12. (See *AutoCad PowerPak™* manual for more details).

[BEEP] makes a beeping sound, then resumes macro playback. You can use [BEEP]s to let you know (1) when KDTs change - one [BEEP] for the first, two for the second, or (2) when locks are set - one when the lock is set, two when it is reset.

[CURSOR] puts a mouse pointer on the screen. This adds a pointer to non-mouse programs for presentation and training purposes.

[KDT name] changes the active KDT to *name*, provided *name* is resident. If you use Windows or some other task switching program, you can change both the active program and the active KDT by including the program's hot key as part of the key definition. You can also use the [KDT] function to chain KDTs together, creating a virtual KDT of unlimited size. Spell *name* exactly; otherwise, the KDT with the closest matching name will be chosen.

[KEYINT n] defines how keystrokes are sent to your application program. The typical commands are [KEYINT 18] to send keystrokes through the DOS keyboard buffer, or [KEYINT 9] for low-level scan codes. Other [KEYINT] options are described in *Appendix B*. Use this command only if you have problems.

[n] repeats the next keystroke, [function], or nested macro [title] n times, then proceeds with the rest of the key definition. If you want the entire balance of the key definition to be repeated, use the [REPEAT] command instead.

Example: [50]_ [ENTER] draws 50 underlines, then returns to the next line.

Example: [10][BEEP] will make a sound ten beeps long.

Example: [5][title] will repeat the macro [title] 5 times.

[REPEAT] repeats the remainder of the macro indefinitely -- until another button is pressed. Unlike the [n] command, it (1) repeats the entire remainder of the key definition, not just the next item, and (2) continues indefinitely, not just " n " times.

[title] calls another macro by its title. *title* must be spelled exactly, including uppercase and lowercase letters.

Examples: *Close* calls *Underline* to draw a signature line at the end of a letter. *Repeat* types the sentence "My name is John Doe" 50 times.

Underline: [50]_

Close: Sincerely yours,[ENTER][ENTER][Underline]

MyName: My name is John Doe[ENTER]

Repeat: [50][MyName]

[XOFF] [XOFF] temporarily stops reporting cursor motion to your application program in the X (horizontal) direction, [YOFF] in the Y (vertical) direction. [XON] and [YON] turn cursor motion back on. **Example:** Include [XOFF][YOFF] on your numeric keys to suspend cursor motion as soon as a number is pressed, then include [XON][YON] on the ENTER button to turn cursor motion back on when the number is entered.

[XYCMDS]rldu changes how mouse motion is sent to non-mouse programs from the cursor keystrokes normally sent (RIGHT, LEFT, DOWN, UP) to the keystrokes specified. To return to normal operation, use the [XYCMDS] function by itself with nothing following it in the key definition.

GoFast: [XYCMDS][8][RIGHT][8][LEFT][8][DOWN][8][UP][DRAG][XYCMDS]

Example2: [XYCMDS][F3][F4][F5][F6]

Reset: [XYCMDS]

USING PREFIX KEYS

If you have more commands than you have buttons, this is no problem. You can get up to five additional commands per button by defining the prefix-states of these buttons. Later, these commands can be played back by using prefix keys, as explained in *Chapter II*. How can you keep track of so many commands? There are at least two ways we recommend to logically organize your commands so they are easy to remember.

Option 1: Put Related Commands On The Same Button

Put related commands on the same button, for example, all File commands on one button, all Edit commands on another, all View commands on a third. The advantage is that a single button label, FILE for example, makes it easy to locate the commands.

FILE new File open File close File save	EDIT undo Cut Copy Paste	VIEW normal View outline View layout View zoom	INSERT page Insert footnote Insert bkmrk Insert frame	FORMAT char Format pgraph Format column Format style
TOOLS spell Grammar Thesaurus Hyphenation	TABLE insert Delete cols Delete rows Convert text	WINDOW new Window 1 Window 2 Window 3	HELP index	TEXT underline Bold Italicize

Option 2: Put Related Commands On The Same Layer

Put related commands on the same shift-state (or "layer"). Our hypothetical AutoCAD example on the next page puts Drawing commands on one layer, Editing commands on another, Viewing commands on a third, and a numeric keypad on the fourth. The advantage of this approach is that you can use *Lock Functions* to "pop-up" related commands for one-click access as the nature of your work progresses, then "push" them back when finished. This can be done with a single LOCK button as the example shows - the prefix-state of the button when pressed determines which layer pops up.

Draw line Copy Zoom window 1	Draw polyline Move Zoom dynamic 2	Draw circle Erase Zoom scale 3	Draw circle 2pt Offset Zoom previous 4	Draw circle 3pt Rotate Zoom extent 5
Draw arc Stretch Birdseye 6	Draw ellipse Trim Pan 7	Draw polyline Fillet Redraw 8	Draw text Chamfer Regen 9	[FN LOCK] [USER LOCK] [SHIFT LOCK]

Shift, Ctrl and Alt Prefix Keys

You are not restricted in what you put on different prefix-states of a button. For a button to work like a keyboard key, however, you must define the prefix-states accordingly. **Example:** Although BUTTON1 is Escape, CTRL+BUTTON1 is F10, not Ctrl+Escape as you might expect. BUTTON2 through BUTTON4 show how to define buttons that work like keyboard keys.

LEGEND	BUTTON1	BUTTON2	BUTTON3	BUTTON4
Normal Shift Ctrl Alt	[ESCAPE] [F10]	[ESCAPE] [SHIFT-ESC] [CTRL-ESC] [ALT-ESC]	a A [CTRL-A] [ALT-A]	[F1] [SHIFT-F1] [CTRL-F1] [ALT-F1]



NOTE: If you press SHIFT+BUTTON, CTRL+BUTTON, or ALT+BUTTON and there is no corresponding key definition, then the key definition for FN button will be played back.



NOTE: You can add SHIFT, CTRL, and ALT prefix buttons to your device simply by defining them as [SHIFT], [CTRL], and [ALT]. But note that they don't work like keys on your keyboard. They (1) work in one-finger mode (like the FN and USER buttons) so you don't have to hold two buttons down at the same time, and (2) they only "shift" other device *buttons*, not keys on the keyboard.

TIPS

- Create a couple of reassignable buttons, R1 and R2. These are buttons with titles but no macros. Record their macros on-the-fly for session-specific tasks. Note that these newly created macros can be called by other macros, using their pre-assigned titles. **Example:** Pre-assign R1 the title "R1". Record R1 during your session. Then record R2 as [10][R1]. When you press R1, you get the function once. When you press R2, you get the function 10 times.
- Put the most frequently used commands on unshifted prefix-states, and on the buttons that are the easiest to reach.
- Put commands that are used together on adjacent buttons, for example, CUT and PASTE.
- If you use lock functions, include important functions such as Esc, Enter, LMouse, RMouse, FN, and USER on all 6 prefix-states.
- On the PowerTrack, place [DRAG] commands on the top 10 round buttons which are easiest to hold down as you move the ball. Or use [POINT]s instead of [DRAG]s.
- To troubleshoot a macro which doesn't work properly, insert [WAIT]s at various points in the macro to slow it down so you can observe what is happening as it plays back. [WAIT 990] is a good choice. When the key definition is debugged, delete the [WAIT]s.
- Tap into the capabilities of your application program's macro facilities. Example: Define a [CTRL-P] button, then create a Ctrl+P macro with your application program. When the button is pressed, your program will pick up the Ctrl+P played back by the device, then play back the macro you created. By defining 1 or 2 buttons in advance, you can create session-specific macros with your application program.

IV. CHANGING THE ACTIVE KDT

The supplied KDTs are designed to automatically change as you change programs. However, if automatic switching does not appear to be working, read on.

Automatic switching:

For automatic switching to work, the KDT must already be (1) resident (loaded in RAM) and (2) linked to the program it goes with.



To change the boot-up list of resident KDTs, rerun INSTALL and make your new selections, or edit AUTOEXEC.BAT directly. To change the resident list of KDTs during a session, from the DOS prompt or from Windows' Program Manager **F**ile **R**un, type POWER followed by the names of the desired KDTs (separated by spaces), then ↵.

Example: POWER 123 WP# ACAD ↵.



To link a KDT to a program, store the name of the program within the KDT using the **F**ile **U**se command, as explained in *Chapter III*.

Automatic switching may cause problems if you start a program without a corresponding resident KDT, as the resident KDT with the nearest matching **F**ile **U**se information will be used. For this reason, we suggest you (1) stick to the LEFT MOUSE, RIGHT MOUSE, ENTER, ESC, and other neutral buttons when using a program without a matching KDT, or (2) create a KDT for each program you use, even if it's just a copy of the DEFAULT KDT with the name of the corresponding program added to it.

Manual switching:

Automatic switching may not always work, e.g. when switching between Windows tasks. In this case, you have two options:

1. Use just one KDT and stick with it. For example, the DEFAULT and FNKEY are general-purpose KDTs which can be used with just about any program, and the

WINWORD and EXCEL KDTs use Common User Architecture key definitions shared with many Windows programs.

2. Manually change KDTs using one of the following approaches:

Use **POWERSEL**:

Type **POWERSEL** at the DOS prompt or click on a **POWERSEL** icon you've created in Windows, and select from the list which pops up.

Press a **button**:

Press **MENU** (FN LMOUSE). If you are using **POWER**, this activates the next resident KDT, in the sequence the KDTs were loaded. A distinct tone identifies each KDT. Or program a button with the [KDT name] function, and press it to activate a specific KDT (see *Chapter III SmartButton™ Functions* for more details).

Make the change from the DOS prompt or Windows Program Manager **F**ile **R**un:

Type **POWER kdt1 kdt2 kdt3**. This command makes these the resident KDTs, replacing any previously loaded KDTs, with **kdt1** initially the active KDT. If you need more KDT memory, use the /M command line option explained in *Appendix B*.

Use **batch files**:

Create batch files for your programs. Here's an example GOWORD.BAT batch file you might run from the DOS prompt or Windows Program Manager:

```
C : \PROHANCE\POWER WP
CD \WORDPERF
WP
```

Use **POWERED** or **POWERPLS**:

Use **File Toggle** to select another resident KDT (if more than one is resident), or use **File Retrieve** to select a KDT from disk (this, however, removes all other KDTs from memory). See *Chapter III* and *Appendix B* for more details.

FILES ON THE PROGRAM DISKETTE

The ProHance program diskette contains the following files, although the list may change with time. To save disk space, only POWER.COM and the KDTs you use are required, typically less than 25K bytes of disk space.

INSTALL.EXE	The installation program. It can be re-run anytime to change your Windows or AUTOEXEC.BAT setup.
POWER.COM	The basic driver. Uses the least amount of RAM. Pressing MENU sequentially activates the next KDT among resident KDTs.
POWERSEL.EXE	An enhanced version of POWER. Pressing MENU pops up a list of KDTs to select from.
POWERPLS.EXE	An enhanced version of POWER. Pressing MENU pops up the Editor for viewing, editing, and recording of KDTs (refer to the section <i>Recording Key Definitions</i>).
POWERED.EXE	The non-resident version of the Editor.
PROHANCE.DRV	The ProHance Windows driver.
README.EXE	An editor for displaying and editing README.TXT (or other files).
README.TXT	A text file containing updates since the manual.
SHOWXY.EXE	Program to display the X and Y values for the [GOTO] command.
TEST.EXE	A test program for isolating problems.
.KDT or .KD*	The Key Definition Tables.

INSTALL activates POWER.COM. To change drivers, it is necessary to first remove the active driver. Type POWER OFF at the DOS prompt. If a "removed" message appears, activate the new program by typing its name optionally followed by one or more KDT names and command line options. If a "deactivated" message appears,

other memory-resident programs were loaded after the ProHance program and you must make the change in AUTOEXEC.BAT.

COMMAND LINE OPTIONS

Device operation can be altered from the command line by including one or more of the following options with spaces in between. Only the slash (/) and the first letter need be typed. **Example:** POWERPLS kdt1 kdt2 kdt3 /P3F8 /I4 /S20 /N

USE	TO
/?	Display a summary of command line options
/50	Use POWERED with a 50-line display on VGA monitors
OFF	Remove a driver from memory (if no other TSR loaded after it)
/ADIn	Enable AutoCAD Device Interface support; default n =interrupt 79
/BAUDn	Set the baud rate: 1200 to 4800 baud; default n =4800
/COMn	Use communications port n =1 to 4
/DOUBLEn	Set threshold for ballistic gain n =1-999 mickeys per second; default n =36
/FORCEn	Force n button mode (0 = cursor key mode); same as [n BUTTON]
/HORIZn	Set horizontal sensitivity n =1-255 characters per inch; default n =25; [XSENS n]
/INTn	Set the COM port interrupt level. Example: /I4.
/JAMn	Set the number of keys to type ahead of the application n =1-15; default n =1
/KEYINTn	Set keystroke playback interrupt level n =1, 9, 14-18; default n =17; [KEYINT n]
/LOCK	Toggle function lock; same as [FN LOCK]
/MEMn	Include in AUTOEXEC.BAT to reserve more RAM for KDTs n =1-50 Kbytes.
/NET	Use on some networked computers
/PORTn	Set the COM port address n in hexadecimal. Example: /P3F8.
/REPORTS n	Set the report rate n =1-255 screen updates per second; default n =72
/SPEEDn	Set the ballistic cursor speed from 1 to 100; default n =25; same as [SPEED n]
/TINY	Minimize the resident size of POWER. Works with many programs, but not all.
/VERTn	Set vertical sensitivity n =1-255 characters per inch; default n =12; [YSENS n]
/XCALn	Set horizontal calibration for [GOTO x]; default n =100(%); same as [XCAL n]
/YCALn	Set vertical calibration for [GOTO y]; default n =100(%); same as [YCAL n]

Summary of SmartButton™ Commands

USE	TO
[AUTOSW ON]	Sets n = 2 or 3 button mode or n = 0 non-mouse mode
[AUTOSW OFF]	Sets non-mouse mode
[BEEP]	Makes a beeping sound
[n BUTTON]	Sets n = 2 or 3 button mode or n = 0 non-mouse mode
[CURSOR]	Temporarily displays a mouse pointer in non-mouse programs
[DATE]	Types today's date in the form: 1 JAN 94
[DIVERG n]	Adjusts motion of n = 0-45 degrees to orthogonal; default=22
[FFIELD n]	Pauses for a fixed field entry of up to n=255 characters
[FN]	Makes an FN prefix key
[GOTO x y]	Jumps to the cursor location x*(XCAL/100), y*(YCAL/100)
[KDT name]	Changes to another resident KDT
[KEYINT n]	Sends keys at INT 9 (scan code) or INT 16 (character) level; default n=17
[LOCK OFF]	Resets all locks
[x LOCK]	Toggles x = FN, USER, SHIFT, CTRL, ALT, CAPS, NUM or SCROLL locks
[x OFF]	Resets a lock
[MENU]	Pops up POWERPLS or performs KDT switching
[PLAYBA n]	Plays keys back at n millisecond intervals
[POPXY]	Returns to the location stored by PUSHXY
[PUSHXY]	Stores the current cursor location
[PUCK n]	Invokes the nth line in the ***BUTTON section of the ACAD.MNU file
[RECORD]	Records a key definition for the next button pressed
[REPEAT]	Repeats rest of macro until another button is pressed
[RESET]	Cancels any key definitions in progress
[SPEED n]	Sets basic and accelerated cursor speed n=1-100; default=25
[VFIELD]	Pauses for a variable field entry terminated by ENTER
[VFIELD char]	Pauses for a variable field entry terminated by the character specified
[WAIT n]	Pauses for n = 55 to 14,000 milliseconds in 55ms increments; default=55
[XCAL n], [YCAL n]	Calibrates GOTO xy values for different monitors; default=100
[XDIST]	Types horizontal inches move (or *XCAL/100 for other units)
[XOFF], [XON]	Turns horizontal cursor motion off or on
[XSENS n], [YSENS n]	Sets character cursor X and Y sensitivity n=1-200; XSENS default=25, YS default = 12
[XYCMDS]rldu	Sends ball motion as keys other than cursor keys
[YDIST]	Types vertical inches moved (or *YCAL/100 for other units)
[YOFF], [YON]	Turns vertical cursor motion off or on
[n]	Repeats the following command n times
[title]	Executes the key definition with this title, then continue

SPECIAL KEY CODES

Some programs differentiate between the left and right SHIFT keys on the main keyboard, the ENTER key on the numeric keypad and the main ENTER key, and so on. In these cases, you can specify a specific key by using the corresponding scan codes, many of which are shown here for U.S. keyboards. For more information, refer to the IBM PC Technical Reference Manual and other reference books.

TO EMULATE	USE SCAN/CHAR CODE (for U.S.)
Keys on the numeric keypad:	
+	[\$4E2B]
-	[\$4A2D]
*	[\$372A]
\	[\$E02F]
ENTER	[\$E00D]
Shift keys:	
Left SHIFT key	[\$2A]
Right SHIFT key	[\$36]
Left CTRL key	[\$1D]
Right CTRL key	[\$E0][\$1D]
Left ALT key	[\$38]
Right ALT key	[\$E0][\$38]
Special system keys:	
PRINT SCREEN	[\$E0][\$2A][\$E0][\$37]
CTRL+PRINT SCREEN	[\$E0][\$37]
SYSREQ	[\$54]
SCROLL LOCK	[\$46]
PAUSE	[\$E1][\$1D][\$45]
CTRL+BREAK	[\$E0][\$46]

IN CASE OF DIFFICULTY

This Appendix contains solutions to common problems. For even more ideas, type \PROHANCE\README at the DOS prompt to read README.TXT. Also use TEST.EXE.

Device not found on any port:

- Try another COM port.
- Check for loose connectors, bent or broken pins.
- Check your COM port assignments for interrupt conflicts.
- Run TEST.EXE with its /M option by typing \PROHANCE\TEST /M.

The cursor doesn't move:

- Make sure the ball is inserted.
- Run \PROHANCE\POWER before your application.

The cursor moves too fast or too slow:

- Use POWER /SPEEDn to set the speed. For example, POWER /S35.

The cursor "sticks":

- Remove the ball and clean it by blowing on it or wiping it with a soft cloth. Clean the rollers using a toothpick or other soft object. Then reinsert the ball and replace the retainer ring.

The cursor jumps around the screen:

- Change your application program's mouse setup to "Microsoft Bus Mouse" or "MOUSE.COM"

Alpha "∞" characters appear when the mouse is moved:

- Re-run INSTALL using the command INSTALL /X.

I can't get into Windows:

- Rerun INSTALL including the Windows pathname, e.g. INSTALL C:\PATH\WINDOWS, to let INSTALL do your Windows configuration. Or do the configuration yourself. From the DOS prompt in your Windows directory, type SETUP. Highlight the current mouse option and press ENTER. A list of options appears. Choose the ProHance option. If it does not appear, choose Other, and enter C:\PROHANCE (or the directory you specified) as the location, then choose the ProHance option that appears. Save changes, and exit SETUP.

The computer clicks like a Geiger counter:

- o If this occurs in Windows, use POWER /B to lower the mouse baud rate (see Appendix B).
- o Some computers generate clicks when you type; turn this option off. On the Compaq DeskPro, do this by pressing CTRL+ALT+MINUS.

The wrong characters appear when keys are pressed:

- o Make sure you have the correct Key Definition Table activated
- o Try POWER /K9 - If this doesn't work, try:
 - POWER /K18 - Fastest, compatible with most programs
 - POWER /K16 - Allows more special key combinations to work
 - POWER /K1 - For some resident macro programs *
 - POWER /K15 - For Advanced BIOS machines only
 - POWER /K14 - Generates keyboard hardware interrupts

Keys work but the cursor doesn't move:

- o Check to see that the ball is in the unit.
- o If you are using a portable whose COM port does not meet RS232 standards, there may not be enough voltage for proper device function.

The mouse cursor doesn't appear:

- o Only mouse-aware programs have a mouse cursor.
- o Choose the KDT with a "#" for mouse-mode, or try MOUSE.KDT.

Mouse cursor appears but mouse clicks don't work:

- o Check that the KDT matches the application. (Try MOUSE.KDT if the problem persists.)
- o Check that LEFT MOUSE [LMOUSE] and RIGHT MOUSE [RMOUSE] buttons have been defined in the KDT.

PCTOOLS - use [INT 1][CTRL][ESCAPE] to pop up PC Tools

SIDEKICK - use [CTRL][ALT][DRAG][S9D][B8] to pop up SideKick

SYMPHONY - use COM2 or disable Symphony's communications manager

PROHANCE DEVICES

CONVENTIONAL SERIES



PROHANCE SERIAL MOUSE

The ProHance serial mouse is a conventional mouse. It is a solidly-built, quality device that looks sharp and feels great. 50-800 DPI, dynamic control, 100% Microsoft compatible.



PROHANCE SERIAL TRACKBALL

The ProHance serial trackball is a conventional trackball. It is solidly-built, and features a large ball for a quality feel and control. It also has a retainer ring for easy removal and cleaning of the ball. 50-800 DPI, dynamic control, 100% Microsoft compatible. A 2-button PS/2 bus version is also available.

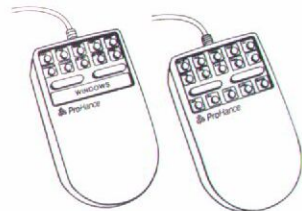
PRO SERIES



PROMOUSE

ProMouse is the first step up from a conventional mouse. 10 extra buttons put constantly used keys at your fingertips: Esc, Enter, PgUp, PgDn, Home, End, Ins, Del, backspace, and F1-F10. 20-5000 DPI, dynamic control, 400 reports/second. Adds mouse support to non-mouse programs automatically; no other drivers required.

POWER SERIES



POWERMUSE/50 and POWERMUSE/70

PowerMouse/50 is the next step up from a ProMouse. Same features plus programmable buttons for one-click commands, drop-in templates, a powerful macro program, and a library of ready-to-go KDTs. PowerMouse/70 is a 17-button version of PowerMouse/50; the five extra buttons include two shift keys FN and USER that double or triple the available functions.



POWERMUSE/100

PowerMouse/100 is our top of the line, 40-button model. It has all the capabilities of a PowerMouse/70 plus a numeric keypad (or more commands). It is the preferred model for spreadsheet users, and others who benefit from a numeric or function key keypad. 20-5000 DPI, dynamic control, 400 reports/second. Adds mouse support to non-mouse programs automatically; no other drivers required.



POWERTRACK/100

PowerTrack/100 is the trackball version of PowerMouse/100. It is ideal for portable computer users, and those who don't have desk space for a mouse. It is also ideal for remote control applications, since it can control a computer from a distance. For example, many users use it with a 100' RS232 extension cable to run computer-generated presentations from the podium, or even from within the audience. [CURSOR] provides a pointer.

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This device generates and uses radio frequency (RF) energy. If it is not installed and used in strict accordance with the instructions provided in this manual, the device may cause interference to radio and television reception.

This device has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that RF interference will not occur in a particular installation.

If you have interference, disconnect your device from your computer. If the interference stops, it was probably caused by the device. Otherwise, something else may be causing the problem. With your device disconnected, turn your computer off. If the interference stops, check your add-in I/O boards, disconnecting one at a time, turning your computer on and off, to see if one of the boards is causing the interference.

To reduce or eliminate any interference, try the following:

- o Reorient your radio or TV antenna.
- o Move your computer further away or to one side of your radio or TV.
- o Plug your computer into a different power outlet from your radio or TV so they are on different circuits and circuit breakers from your radio or TV.
- o If necessary, consult with your computer dealer or an experienced radio-TV technician for more suggestions.
- o You may also find the booklet "How to identify and Resolve Radio-TV Interference Problems", published by the FCC, to be helpful. This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. The stock number is 004-000-00345-4.

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