

## **Convert It! Index**

The Index lists all Help topics available for Convert It!. Index items are arranged alphabetically within each category. Use the scroll bar to see entries not currently visible in the Help window.

To learn how to use Help, press F1 or choose Using Help from the Help menu.

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## **Convert It! Commands**

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## Conversion Menu Commands

The following are the commands available on the Conversion menu.



### **Temperature**

Opens a dialog box showing an input area for the initial temperature you want to convert. It has a set of option buttons to indicate what units the initial temperature is in. Once you have an initial temperature you can use the scroll bar to change the temperature displayed in the Equivalent Temperature box. The CANCEL button will exit the dialog.



### **Distance**

Opens a dialog box showing an input area for the initial length or distance you want to convert. It has a set of option buttons to indicate what units the initial length or distance is in. Once you have an initial length you can use the scroll bar to change the length displayed in the Equivalent Distance box. The CANCEL button will exit the dialog.



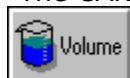
### **Mass**

Opens a dialog box showing an input area for the initial mass you want to convert. It has a set of option buttons to indicate what units the initial mass is in. Once you have an initial mass you can use the scroll bar to change the mass displayed in the Equivalent Mass box. The CANCEL button will exit the dialog.



### **Area**

Opens a dialog box showing an input area for the initial area you want to convert. It has a set of option buttons to indicate what units the initial area is in. Once you have an initial area you can use the scroll bar to change the area displayed in the Equivalent Area box. The CANCEL button will exit the dialog.



### **Volume**

Opens a dialog box showing an input area for the initial volume you want to convert. It has a set of option buttons to indicate what units the initial volume is in. Once you have an initial volume you can use the scroll bar to change the volume displayed in the Equivalent Volume box. The CANCEL button will exit the dialog.



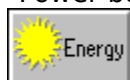
### **Angle**

Opens a dialog box showing an input area for the initial angle you want to convert. It has a set of option buttons to indicate what units the initial angle is in. Once you have an initial angle you can use the scroll bar to change the angle displayed in the Equivalent Angle box. The CANCEL button will exit the dialog.



### **Power**

Opens a dialog box showing an input area for the initial power you want to convert. It has a set of option buttons to indicate what units the initial power is in. Once you have an initial power you can use the scroll bar to change the power displayed in the Equivalent Power box. The CANCEL button will exit the dialog.



### **Energy**

Opens a dialog box showing an input area for the initial energy you want to convert. It has a set of option buttons to indicate what units the initial energy is in. Once you have an

initial energy you can use the scroll bar to change the energy displayed in the Equivalent Energy box. The CANCEL button will exit the dialog.

## Temperature Command



This dialog box has several areas.

### **Initial Temperature:**

This text box shows the current temperature that is converted in the Equivalent Temperature box. By entering a new value here you can convert any temperature to its equivalent in another scale.

### **Initial Temp. is in:**

This group of option buttons allows you to indicate what scale the value in the Initial Temperature text box is in. This allows the tool to properly convert to the other scales.

### **Equivalent Temps.:**

This box contains an entry for each temperature scale. The scale indicated by the Initial Temp is in: option button is the one that is controlled by the Initial Temperature text box and the scroll bar.

### **Temperature Scroll Bar:**

Using this scroll bar can change the temperature indicated by the Initial Temp. is in: option buttons. Pressing one of the scroll arrows will change the temperature by one degree. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the temperature by 10 degrees. Initially the scroll bar will top out at about 20000 degrees, however you can increase this limit by entering a new larger value in the Initial Temperature text box. The scroll range will be increased to two times the value entered.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Temperature](#)

## Distance Command



This dialog box has several areas.

### **Initial Distance:**

This text box shows the current distance that is converted in the Equivalent Distance box. By entering a new value here you can convert any distance to its equivalent in another scale.

### **Initial Dist. is in:**

This group of option buttons allows you to indicate what scale the value in the Initial Distance text box is in. This allows the tool to properly convert to the other scales.

### **Equivalent Distances:**

This box contains an entry for each distance scale. The scale indicated by the Initial Dist. is in: option button is the one that is controlled by the Initial Distance text box and the scroll bar.

### **Distance Scroll Bar:**

Using this scroll bar you can change the temperature indicated by the Initial Dist. is in: option buttons. Pressing one of the scroll arrows will change the distance by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the distance by 10 units. Initially the scroll bar will top out at about 20000 units, however you can increase this limit by entering a new larger value in the Initial Distance text box. The scroll range will be increased to two times the value entered.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Length and Distance](#)

## Mass Command



This dialog box has several areas.

### **Initial Mass:**

This text box shows the current mass that is converted in the Equivalent Mass box. By entering a new value here you can convert any mass to its equivalent in another scale.

### **Initial Mass is in:**

This group of option buttons allows you to indicate what scale the value in the Initial Mass text box is in. This allows the tool to properly convert to the other scales.

### **Equivalent Mass:**

This box contains an entry for each mass scale. The scale indicated by the Initial Mass is in: option button is the one that is controlled by the Initial Mass text box and the scroll bar.

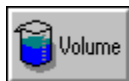
### **Mass Scroll Bar:**

Using this scroll bar can change the mass indicated by the Initial Mass is in: option buttons. Pressing one of the scroll arrows will change the mass by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the mass by 10 units. Initially the scroll bar will top out at about 20000 units, however you can increase this limit by entering a new larger value in the Initial Mass text box. The scroll range will be increased to two times the value entered.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Weight and Mass](#)

## Volume Command



This dialog box has several areas.

### **Initial Volume:**

This text box shows the current volume that is converted in the Equivalent Volume box. By entering a new value here you can convert any volume to its equivalent in another scale.

### **Initial Volume is in:**

This group of option buttons allows you to indicate what scale the value in the Initial Volume text box is in. This allows the tool to properly convert to the other scales.

### **Equivalent Volume:**

This box contains an entry for each volume scale. The scale indicated by the Initial Volume is in: option button is the one that is controlled by the Initial Volume text box and the scroll bar.

### **Volume Scroll Bar:**

Using this scroll bar can change the volume indicated by the Initial Volume is in: option buttons. Pressing one of the scroll arrows will change the volume by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the volume by 10 units. Initially the scroll bar will top out at about 20000 units, however you can increase this limit by entering a new larger value in the Initial Volume text box. The scroll range will be increased to two times the value entered.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Volume and Capacity](#)



## Area Command



This dialog box has several areas.

### **Initial Area:**

This text box shows the current area that is converted in the Equivalent Area box. By entering a new value here you can convert any area to its equivalent in another scale.

### **Initial Area is in:**

This group of option buttons allows you to indicate what scale the value in the Initial Area text box is in. This allows the tool to properly convert to the other scales.

### **Equivalent Area:**

This box contains an entry for each area scale. The scale indicated by the Initial Area is in: option button is the one that is controlled by the Initial Area text box and the scroll bar.

### **Area Scroll Bar:**

Using this scroll bar can change the area indicated by the Initial Area is in: option buttons. Pressing one of the scroll arrows will change the area by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the area by 10 units. Initially the scroll bar will top out at about 20000 units, however you can increase this limit by entering a new larger value in the Initial Area text box. The scroll range will be increased to two times the value entered.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Surface or Area](#)

## Angle Command



This dialog box has several areas.

### **Initial Angle:**

This text box shows the current angle that is converted in the Equivalent Angle box. By entering a new value here you can convert any angle to its equivalent in another scale.

### **Initial Angle is in:**

This group of option buttons allows you to indicate what scale the value in the Initial Angle text box is in. This allows the tool to properly convert to the other scales.

### **Equivalent Angle:**

This box contains an entry for each angle scale. The scale indicated by the Initial Angle is in: option button is the one that is controlled by the Initial Angle text box and the scroll bar.

### **Angle Scroll Bar:**

Using this scroll bar can change the angle indicated by the Initial Angle is in: option buttons. Pressing one of the scroll arrows will change the angle by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the angle by 10 units. The scroll bar will top out at 360 degrees or 6400 mils depending on the scale in use.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Angular Measurements](#)

## Power Command



This dialog box has several areas.

### **Initial Power:**

This text box shows the current power that is converted in the Equivalent Power box. By entering a new value here you can convert any power to its equivalent in another unit.

### **Initial Power is in:**

This group of option buttons allows you to indicate what units the value in the Initial Power text box is in. This allows the tool to properly convert to the other units.

### **Equivalent Power:**

This box contains an entry for each power unit. The unit indicated by the Initial Power is in: option button is the one that is controlled by the Initial Power text box and the scroll bar.

### **Power Scroll Bar:**

Using this scroll bar can change the power indicated by the Initial Power is in: option buttons. Pressing one of the scroll arrows will change the power by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the power by 10 units.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Power Measurements](#)

## Energy Command



This dialog box has several areas.

### **Initial Energy:**

This text box shows the current energy that is converted in the Equivalent Energy box. By entering a new value here you can convert any energy to its equivalent in another unit.

### **Initial Energy is in:**

This group of option buttons allows you to indicate what unit the value in the Initial Energy text box is in. This allows the tool to properly convert to the other units.

### **Equivalent Energy:**

This box contains an entry for each energy unit. The scale indicated by the Initial Energy is in: option button is the one that is controlled by the Initial Energy text box and the scroll bar.

### **Energy Scroll Bar:**

Using this scroll bar can change the energy indicated by the Initial Energy is in: option buttons. Pressing one of the scroll arrows will change the energy by one unit. Clicking on the gray area to the right or left of the scroll box (or pressing page up or page down) will change the energy by 10 units.

When you have finished you can press the Cancel button to return to the main window. Pressing the Help button will get you this help topic.

For background information see [Energy Measurements](#)

## **File Menu Commands**

The following are the commands available on the File menu.

### **Exit**

This command will exit the Convert It! application. You may also press F3 to activate this command.

### **About**

This command will display a dialog box showing the name of the application, its icon, its author, and how to register the program.

## Cancel Command



If this button is clicked on the main Convert It! window, the Convert It! window will be closed and Convert It! will be removed from memory.

If this button is clicked on one of the Conversion Tools, the conversion tool dialog will be closed and you will return to the main Convert It! window.

## Help Command



If this button is clicked on the main Convert It! window, Convert It! will display a help topic about the available conversion tools.

If this button is clicked on one of the Conversion Tools, the conversion tool will display a help topic about the specific conversion tool.

## **Convert It! and Windows Keys**

Choose from the following list to get help with the keys used in Convert It! and Windows:

### **Convert It!**

[Convert It! Keys](#)

### **Windows**

[Dialog Box Keys](#)

[Editing Keys](#)

[Help Keys](#)

[Menu Keys](#)

[System Keys](#)

[Text Selection Keys](#)

[Window Keys](#)



## Convert It! Keys

<b>Key(s)</b>	<b>Function</b>
Tab	Moves from one control to the next
<u>direction keys</u>	Moves between options in a group box
Alt+F4	Exits the current window
Enter	Performs the action of the current control
Spacebar	Presses the current <u>command button</u>
Ctrl+T	Activates the Temperature Convert Tool
Ctrl+D	Activates the Distance Convert Tool
Ctrl+M	Activates the Mass Convert Tool
Ctrl+V	Activates the Volume Convert Tool
Ctrl+A	Activates the Area Convert Tool
Ctrl+N	Activates the Angle Convert Tool
F3	Exits Convert It! or the current tool
F1	Starts the Help System
Shift+F1	Activates Help Mode

## Dialog Box Keys

Use the following keys within dialog boxes.

<b>Key(s)</b>	<b>Function</b>
Tab	Moves from one control to the next
Shift+Tab	Moves from one control to the next in reverse order
Alt+letter	Moves to the option whose underlined letter matches the one you type
direction key	Moves the <u>selection cursor</u> from option to option in a group of options.Or moves the cursor left, right, up, or down within a list or text box.
Home	Moves to the first item or character in a list or text box
End	Moves the last item or character in a list or text box
PgUp or PgDn	Scrolls up or down in a list box, one window at a time
Alt+Down Arrow	Opens a drop-down list box
Alt+Up or Down Arrow	Selects an item in a drop-down list box
Spacebar	Selects or cancels a selection in a list box or selectsOr clears a check box
Ctrl+Slash(/)	Selects all the items in a list box
Ctrl+Backslash(\)	Cancels all selections except the current selection
Shift+direction key	Extends the selection in a text box
Shift+Home	Extends the selection to the first character in a text box
Shift+End	Extends the selection to last character in a text box
Enter	Executes a <u>command button</u> Or chooses the selected item in a listbox and executes the command
Esc or Alt+F4	Closes a dialog box without completing the command(same as the Cancel button)

## Editing Keys

Use the following keys to edit text.

<b>Key(s)</b>	<b>Function</b>
Backspace	Deletes the character to the left of the <u>insertion point</u> .Or deletes selected text.
Del	Deletes the character to the right of the insertion point.Or deletes selected text.
Shift+Del	Deletes the selected text and places it on Clipboard.
Shift+Ins	Inserts text from Clipboard to the active window.
Ctrl+Ins	Makes a copy of the selected text and places it on Clipboard.
Alt+Bksp	Undoes the previous editing operation.

## Help Keys

Use the following keys to get Help.

<b>Key(s)</b>	<b>Function</b>
F1	Gets Help and displays the Help Index for the application. If the Help window is already open, pressing F1 displays the index to Using Help. In some Windows applications, pressing F1 displays a Help topic on the selected command, dialog box option, or system message.
Shift+F1	Changes the pointer to a question mark with an arrow so you can get Help on a specific command, screen region, or key. You can then choose the command, click the screen region, or press the key or key combination you want to know more about. This feature is only available in some Windows applications.

## Menu Keys

Use the following keys to select menus and choose commands.

<b>Key(s)</b>	<b>Function</b>
Alt or F10	Selects the first menu on the menu bar
Letter key	Chooses the menu or menu item whose underlined letter matches the one you type.
Left or Right Arrow	Moves among menus.
Up or Down Arrow	Move among menu items.
Enter	Chooses the selected menu item.
Esc	Cancels the selected menu.

## System Keys

Use the following keys can be used from any window, regardless of the application you are using.

<b>Key(s)</b>	<b>Function</b>
Ctrl+Esc	Switches to <u>Task List</u>
Alt+Esc	Switches to the next application window or minimized <u>icon</u> , including full-screen programs.
Alt+Tab	Switches to the next application window, restoring applications that are running as icons.
PrtSc	Copies an image of the screen contents onto Clipboard
Alt+PrtSc	Copies an image of the active window onto Clipboard
Alt+F4	Closes the active application window.
Ctrl+F4	Closes the active document window.
F1	Gets Help and displays the Help Index for the application. (See <u>Help Keys.</u> )

## Text Selection Keys

The following keys can be used in most Windows applications. However, some of the keys listed here might not work in all places where you can select text or in all applications.

<b>Key(s)</b>	<b>Function</b>
Shift+Left or Right Arrow	Selects text one character at a time to the left or right.Or, if the character is already selected, cancels the selection.
Shift+Home	Selects text to the beginning of the line.
Shift+End	Selects text to the end of the line.

## Window Keys

<b>Key(s)</b>	<b>Function</b>
Alt+Spacebar	Opens the <u>C</u> ontrol <u>m</u> enu for an application.
Alt+Hyphen	Opens the Control menu for a document window.
Alt+F4	Closes a <u>w</u> indow.
Alt+Esc	Switches to the next application window or minimized icon, including full-screen programs.
Alt+Tab	Switches to the next application window, restoring applications that are running as icons.
Alt+Enter	Switches a non-Windows application between running in a window and running full screen.
direction key	Moves a window when you have chosen Move from the Control menu.Or, changes the size of a window when you have chosen Size from the Control menu.



## **Convert It! Procedures**

This index lists all Help topics available for Convert It! procedures. Index items are arranged alphabetically. Use the scroll bar to see entries not currently visible in the Help window.

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## Command Buttons

Command buttons initiate an immediate action. Like menu commands, command buttons use the following conventions.

### Convention    What it means

Dark border    The currently selected default button.  
Dimmed button The button is unavailable at this time.  
Ellipsis(...)    Opens another dialog box so you can provide more information.  
Chevron(>>)    Expands the current dialog box to show you additional options.

You can close a dialog box without completing any commands by choosing Cancel (or Esc).

### To choose a command button:



\* Click the command button.



1. Press Tab to select the command button you want. A selection cursor around the button text marks the selected button.
2. Press Spacebar (or Enter) to choose the button. Or hold down Alt and type the underlined letter in the button name (if the button has an underlined letter) to choose the button in one step.

## Control Menu Commands

The following table defines the Control menu commands. Not all applications use every Control menu command listed here.

<b>Command</b>	<b>Action</b>
Restore	Restores the <u>window</u> to its former size after it has been enlarged or shrunk to an <u>icon</u> .
Move	Lets you use the keyboard to move the window to another position on the desktop.
Size	Lets you use the keyboard to change the size of the window.
Minimize	Shrinks the window to an icon.
Maximize	Enlarges the window to its maximum size.
Close	Closes the window.
Switch To	Starts <u>Task List</u> , which lets you switch among running applications and rearrange their windows and icons on your desktop.
Edit	Displays a cascading menu with five additional commands. This menu is available only for <u>non-Windows</u> applications running 386 enhanced mode. To open the cascading menu, click Edit. Or press the Right Arrow or Enter with the keyboard.

### **Command Action**

Mark	Lets you use the keyboard to select text to move onto Clipboard.
Copy	Copies the selected text onto Clipboard.
Paste	Copies text from Clipboard to the active window, inserting it at the <u>insertion point</u> .
Scroll	Lets you view information not currently visible in the window.
Settings	Displays a dialog box that requests information about multitasking options (such as foreground or background operation) or about allocation of system resources when running the application.

## Entering an Initial Value

The Initial Value field in each Conversion Tool is a text box. A text box is a rectangle into which you type information.

When you move to an empty text box, an insertion point appears at the left side of the box. The text you type starts at the insertion point.

If the box already contains text when you move to it, all the text in the box is automatically selected and any text you type replaces it. Or you can erase the existing text by pressing Del or Backspace.

### To select text in a text box:



\* Drag the pointer across the text you want to select. Or double-click to select one word at a time.



1. Use the direction keys to move to the first character you want to select.
2. Hold down Shift and press a direction key to extend the selection. Press Shift+Home to extend the selection to the first character in the box. Press Shift+End to extend the selection to the last character in the box.

## **Exiting Convert It!**

**You may exit Convert It! in one of five ways:**

1. Choose Close from the Control menu.
2. Press the Alt+F4 key combination.
3. Double click on the Control-menu box.
4. Choose Exit from the File Menu.
5. Press F3.

## Moving Within a Conversion Tool

Often you need to move around within a Conversion Tool to make several selections. Since a Conversion Tool is a dialog box, the methods are the same. The current option is marked by a selection cursor around the name of the option.

### To move within a Conversion Tool (dialog box):



\* Click the option or group you want to move to.



1. Press Tab to move forward (left to right and top to bottom) or Shift+Tab to move in the opposite direction. Or hold down Alt and type the underlined letter in the option or group name.
2. Within a group of options, use the direction keys to move from one option to another.

## Opening the Control Menu

Application windows, document windows, application icons, group icons, and some dialog boxes have Control menus (also called System menus).

The procedure you use to open the Control menu varies slightly depending on what you are working in.

### To open the Control menu for an application window or application icon:



\* Click the Control-menu box in the upper left corner of the window. Or click the icon. Be careful not to double-click, or you will close the window or open the icon. Use the save procedure to open the Control menu of a non-Windows application that is running in 386 enhanced mode.



1. Press Alt+Esc until the application window or icon is selected.
2. Press Alt then the Spacebar. Press Alt to close the menu without choosing a menu item.

### To open the Control menu for a document window or document icon:



\* Click the Control-menu box in the document window. Or click the document icon



1. Press Ctrl+F6 or (Ctrl+Tab) until the document window or icon is selected.
2. Press Alt then the Hyphen. Press Alt to close the menu without choosing a menu item.

### To open the Control menu for a dialog box:



\* Click the Control-menu box in the dialog box.



Press Alt and then Spacebar. Press Alt to close the menu without choosing a menu item.

## Option Buttons

Option buttons, also called radio buttons, provide lists of mutually exclusive items. You can select only one option from the list at a time. The selected option button contains a black dot. Unavailable options are dimmed.

### To select an option button:



\* Click the option button.



1. Press Tab to move into the option group.
2. Use the direction keys to select the option button. Or hold down Alt and press the underlined letter if the option name contains an underlined letter.



## Quitting a Conversion Tool

**You may exit a Conversion Tool in one of five ways:**

1. Choose Close from the Control menu.
2. Press the Alt+F4 key combination.
3. Double click on the Control-menu box.
4. Press Esc.
5. Press the Cancel button.

## Starting a Conversion Tool

You may start a Conversion Tool in one of five ways:



\* Click the proper tool button. Or use the menu to choose the Conversion menu and select a tool.



Press Tab to move to the tool button. Then press Spacebar. Or press Alt and use the direction keys to select the Conversion menu then select the tool. Or use one of the keys listed in Convert It! Keys

## Using Scroll Bars

The Conversion Tools have scroll bar you can use to change the value to be converted.



Mouse techniques:

### To scroll

### Do this

Up or down 1 unit

Click one of the scroll arrows.

Up or down 10 units

Click the scroll bar to the left or right of the scroll box.

Continuously

Point to one of the scroll arrows and hold down the mouse button until the value you want is displayed.

To any position

Drag the scroll box left or right on the scroll bar to a place you choose.



Keyboard techniques:

### To scroll

### Do this

Up or down 1 unit

Press the direction key that points in the direction you want to scroll.

Up or down 10 units

Press Ctrl+PgUp or Ctrl+PgDn.

To the bottom of the scale

End

To the top of the scale

Home

## **Weights and Measures**

Weights and Measures are the standards used to find the size of things. People in the United States and a few other countries use standards that belong to the customary, or English, system of measurement. This system was developed in England from older measurements standards, beginning about the 1200's. People in nearly all other countries -- including England --, and all scientists, now use a system of measurement called the metric system. The metric system was created in France in the 1790's. Its official name is *Système Internationale d'Unités* (International System of Units).

Weights and measures form one of the most important parts of our life today. Many weights and measures have had a fascinating history.

### **Related Topics**

[Length and Distance](#)

[Surface or Area](#)

[Volume and Capacity](#)

[Weight and Mass](#)

[Temperature](#)

[Angular Measurements](#)

[Power Measurements](#)

[Energy Measurements](#)

[Other Measures](#)

[Tables](#)

## Length and Distance

Lengths and distances are measured from one point to another, usually along a straight line. Length usually refers to the measurement of an object. Distance usually refers to the measurement of the space between two places. Below is a table showing the customary and metric units for length and distance.

Customary	Metric	Metric	Customary
1 inch	2.54 cm	1 nanometer	0.00000003937 in.
1 foot	30.48 cm	1 micron	0.00003937 in.
1 yard	0.9144 m	1 millimeter	0.03937 in.
1 rod	5.0292 m	1 centimeter	0.3937 in.
1 furlong	201.168 m	1 decimeter	3.937 in.
1 mile	1.6093 km	1 meter	39.37 in.
		1 dekameter	393.7 in.
		1 hectometer	328.0833 ft.
		1 kilometer	0.62137 mi.

Ancient peoples measured length by comparing the length of one thing with the length of the thing they wanted to measure, such as comparing a stick with an animal. Ancient people also based measurements on parts of the body. The Romans use the *uncia* for the width of a thumb. The English word inch comes from that word. Twelve uncia equaled a foot, which was roughly the length of a person's foot. Three feet equaled a yard, which was about the distance from a person's nose to the tip of the middle finger of an outstretched arm.

Measuring units based on body parts failed because not all people were the same size. Modern systems of measurement are based on units called measurement standards that are of a size agreed upon by the users of the system. Both the customary and the metric system use the same standard for length -- the meter. Scientists have defined the length of a meter as 1,650,763.73 wave lengths of light emitted from energized atoms of krypton-86. It is about 39 1/3 inches.

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## Surface or Area

An area of land or the surface of an object is measured in square units. These units result from multiplying the length of the area or object by its width. The square units of both the customary and metric systems are based on units of length and distance. Many times a small 2, placed the right and above the abbreviation of a metric unit (a superscript), indicates a square unit.

<b>Customary</b>	<b>Metric</b>	<b>Metric</b>	<b>Customary</b>
1 sq. inch	6.4516 cm <sup>2</sup>	1 sq. millimeter	0.00155 sq. in.
1 sq. foot	0.0929 m <sup>2</sup>	1 sq. centimeter	0.155 sq. in.
1 sq. yard	0.8361 m <sup>2</sup>	1 sq. decimeter	15.5 sq. in.
1 sq. rod	25.293 m <sup>2</sup>	1 sq. meter	1550 sq. in.
1 acre	0.4047 ha	1 sq. dekameter	119.6 sq. yd.
1 sq. mile	2.590 km <sup>2</sup>	1 sq. hectometer	2.4711 acres
		1 sq. kilometer	0.3861 sq. mi.

### Related Topics

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## Volume and Capacity

Volume refers to the amount of space occupied by an object. Capacity is the amount of a substance that a container can hold. Volume and capacity are both measured in cubic units. Cubic units combine length, width, and depth. But the names of many common cubic units, such as liter and quart, do not include the word cubic. A small 3, placed to the right and above the abbreviation of a metric unit (a superscript), indicates a cubed unit.

Customary	Metric	Metric	Customary
1 cubic inch	16.387 cm <sup>3</sup>	1 milliliter	0.0610 cu. in.
1 cubic foot	0.0283 m <sup>3</sup>	1 centiliter	0.6103 cu. in.
1 cubic yard	0.7646 m <sup>3</sup>	1 liter	61.025 cu. in.
1 pint	473.2 ml	1 kiloliter	264.179 gal.

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## Weight and Mass

The customary system measures the weight of various materials. The metric system measures mass (amount of material something contains). An object's mass does not change, but its weight decreases with altitude. These two measurement units are equal at sea level on the earth, and the comparisons in this table are based on that location.

<b>Customary</b>	<b>Metric</b>	<b>Metric</b>	<b>Customary</b>
1 grain	0.0648 g	1 milligram	0.0154 gr.
1 ounce	28.3495 g	1 centigram	0.1543 gr.
1 pound	0.45359 kg	1 gram	15.4324 gr.
1 ton	0.9072 t	1 kilogram	2.2046 lb.
		1 metric ton	2,204.62 lb.

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## Temperature

The customary system measures temperature in Fahrenheit degrees. The metric system measures temperatures in Celsius degrees. The Kelvin scale is based on absolute zero being 0 degrees Kelvin. In theory nothing can get colder than absolute zero.

On the Fahrenheit scale water freezes at 32° and boils at 212° under normal atmospheric pressure. On the Celsius scale, water freezes at 0° and boils at 100°. Because there are 100° between freezing and boiling on the Celsius scale it is sometimes called the centigrade scale. Absolute zero, 0° Kelvin, is -273.15° Celsius, otherwise the two scales are graduated the same. In other words 1° Kelvin measures the same temperature difference as 1° Celsius. Only their respective 0 points are different.

There is no single measurement standard for temperature. Various temperatures are used to standardize thermometers. One of these is 0.01° C, which is the triple point of water (the temperature at which water can exist as a liquid, a gas, and a solid at the same time).

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## Angular Measurements

There are four main units used to measure angles.

The degree is  $1/360$  of the way around a circle. Degrees are sometimes further divided into minutes and seconds. Usually called minutes of arc, a minute is  $1/60$  of a degree. Similarly a second of arc is  $1/60$  of a minute of arc.

Radians are also used to measure angles of arc. A complete circle contains  $2\pi$  radians. One radian is the angle at the center of a circle that cuts off an arc on the circumference equal in length to the radius.

Mils are also sometimes used to measure angles. A mil is  $1/6400$  of a circle. Mils are mainly used in aiming artillery.

A grade, or gon, is one-hundredth of a right angle. A circle contains 400 grades. The grade was developed in 1792. It is a metric measurement of angle.

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## Power Measurements

Power is a measure of the amount of energy spent over certain period of time. The units used in this program are the Watt, kilowatt, and the metric horsepower for the metric system. The customary power unit used is the horsepower.

The watt is the power provided when one joule is used for one second.

The British horsepower is the power needed to raise 550 pounds one foot in one second.

The metric horsepower is the power needed to raise 75 kilograms one meter in one second.

1 horsepower	= 745.7W
1 hp (metric)	= 735.3W
1 Watt	= 0.001341hp
1 kilowatt	= 1000 W

### Related Topics

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## Energy Measurements

Energy is defined as the equivalent of or the capacity to do work. The units used in this program are the joule, erg, calorie, and the Calorie for the metric system. The customary energy unit used is the Btu.

The joule (J) is the amount of energy needed to move a mass of one kilogram through one meter with an acceleration of one meter per second per second.

The erg is the amount of energy needed to move one gram through one centimeter with an acceleration of one centimeter per second per second.

The calorie (cal) is the amount of energy needed to raise the temperature of one gram of water by one degree Celsius from 14.5° Celsius to 15.5° Celsius. A Calorie is equal to 1000 cal.

The British thermal unit (Btu) is the energy needed to raise the temperature of one pound of water from 60° Fahrenheit to 61° Fahrenheit.

1 joule	=	$1 \times 10^7$ erg
1 erg	=	$1 \times 10^{-7}$ erg
1 cal	=	4.1855 J
1 Cal	=	1000 cal
1 Btu	=	1054.8 J

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## **Other Measurements**

Measurement units for length, temperature, time, and mass are called basic measurements. These units can be combined into other measurements called derived measurements. For example, area is one length times another to form square units.

Some measurements combine different units. The measurement of speed is derived by dividing distance traveled by time to travel. It tells the distance traveled in a certain time. For example, miles per hour or meters per second. Another derived measurement is pressure, which is the force acting on a unit of area. Pressure units include pounds per square inch and dynes per square centimeter.

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## **Convert It! Tables**

This index lists all Help topics available for Convert It! tables. Index items are arranged alphabetically. Use the scroll bar to see entries not currently visible in the Help window.

[Metric System](#)

[Temperature Conversions](#)

[Metric to Customary Conversion Factors](#)

[Customary to Metric Conversion Factors](#)

[General Conversion Factors](#)

## Metric System Unit Tables

### Metric System Base Units

Quantity measured	Unit	Abbreviation
Length	meter	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Temperature	degree Kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

### Metric Decimal Multiples and Submultiples

Multiples and submultiples	Prefixes	Symbols
$10^{18}$	exa	E
$10^{15}$	pecta	P
$10^{12}$	tera	T
$10^9$	giga	G
$10^6$	mega	M
$10^3$	kilo	k
$10^2$	hecto	h
10	deca	da
$10^{-1}$	deci	d
$10^{-2}$	centi	c
$10^{-3}$	milli	m
$10^{-6}$	micro	$\mu$
$10^{-9}$	nano	n
$10^{-12}$	pico	p
$10^{-15}$	femto	f
$10^{-18}$	atto	a

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## Temperature Conversions

### Temperature Factors

$$^{\circ}\text{F} = 9/5 (^{\circ}\text{C}) + 32$$

$$\text{Fahrenheit temperature} = 1.8 (\text{temperature in Kelvins}) - 459.67$$

$$^{\circ}\text{C} = 5/9 [ (^{\circ}\text{F}) - 32 ]$$

$$\text{Celsius temperature} = \text{temperature in Kelvins} - 273.15$$

$$\text{Fahrenheit temperature} = 1.8 (\text{Celsius temperature}) + 32$$

### Related Topics

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## Metric to Customary Conversions Factors

To obtain	Multiply	by
Inches	Centimeters	0.3937007874
Feet	Meters	3.280839895
Yards	Meters	1.093613298
Miles	Kilometers	0.6213711922
Ounces	Grams	$3.527396195 \times 10^{-2}$
Pounds	Kilograms	2.204622622
Gallons	Liters	0.2641720524
Fluid ounces	Milliliters (cc)	$3.381402270 \times 10^{-2}$
Square inches	Sq. Centimeters	0.1550003100
Square feet	Square meters	10.76391042
Square yards	Square meters	1.195990046
Cubic inches	Milliliters (cc)	$6.102374409 \times 10^{-2}$
Cubic feet	Cubic meters	35.31466672
Cubic yards	Cubic meters	1.307950619

### Related Topics

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## Customary to Metric Conversions Factors

To obtain	Multiply	by*
Microns	Mils	<b>25.4</b>
Centimeters	Inches	<b>2.54</b>
Meters	Feet	<b>0.3048</b>
Meters	Yards	<b>0.9144</b>
Kilometers	Miles	<b>1.609344</b>
Grams	Ounces	28.34952313
Kilograms	Pounds	<b>0.45359237</b>
Liters	Gallons	<b>3.785411784</b>
Milliliters (cc)	Fluid ounces	29.57352956
Sq. Centimeters	Square inches	<b>6.4516</b>
Square meters	Square feet	<b>0.09290304</b>
Square meters	Square yards	<b>0.83612736</b>
Milliliters (cc)	Cubic inches	<b>16.387064</b>
Cubic meters	Cubic feet	$2.831684659 \times 10^{-2}$
Cubic meters	Cubic yards	0.764554858

\* Boldface numbers are exact; others are given to 10 significant digits.

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## General Conversions Factors

To obtain	Multiply	by*
Atmospheres	Ft. of water @4°C	$2.950 \times 10^{-2}$
Atmospheres	In. of mercury @ 0°C	$3.342 \times 10^{-2}$
Atmospheres	Pounds per sq. inch	$6.804 \times 10^{-2}$
Ft. of water @4°C	Atmospheres	33.90
In. of mercury @0°C	Pounds per sq. inch	2.036
BTU	Foot-pounds	$1.285 \times 10^{-3}$
BTU	Joules	$9.480 \times 10^{-4}$
Joules	BTU	1054.8
Joules	Foot-pounds	1.35582
Ergs	Foot-pounds	$1.356 \times 10^7$
Foot-pounds	Horsepower-hours	$1.98 \times 10^6$
Foot-pounds	Kilowatt-hours	$2.655 \times 10^6$
Foot-pounds per min	Horsepower	$3.3 \times 10^4$
Horsepower	Foot-pounds per sec	$1.818 \times 10^{-3}$
Watts	BTU per min	17.5796
Kilowatts	BTU per min	$1.758 \times 10^{-2}$
Kilowatts	Foot-pounds per min	$2.26 \times 10^{-5}$
Kilowatts	Horsepower	0.745712
Feet	Miles	<b>5280</b>
Miles	Feet	$1.894 \times 10^{-4}$
Nautical miles	Miles	0.86897624
Knots	Miles per hour	0.86897624
Degree (angle)	Radians	57.2958
Radians	Degrees (angle)	$1.745 \times 10^{-2}$
Cubic Feet	Cords	<b>128</b>
Square feet	Acres	<b>43560</b>

\* Boldface numbers are exact.

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## **Control Minimize**

Reduces the Convert It! window to a small icon at the bottom on the screen.

For mouse users, clicking the Minimize icon is the same as choosing Control Minimize.

- » Minimizing is useful when you are running another application at the same time as Convert It!.
- » Appears only on the Control menu for the application.
- » You can restore a minimized window to its former size by using the Control Restore command.

## Minimize Icon



Mouse users can click the Minimize icon to shrink the Convert It! window to a small icon.

- » As a icon, the application remains in memory but does not take up room on your desktop.
- » Clicking the Minimize icon has the same effect as choosing the Control Minimize command.
- » To restore the Convert It! window choose Control Restore.With the mouse, double-click the Convert It! icon.

## **Control Restore**


Restores the Convert It! window to the size and location it had before you chose the Control Minimize command.


With the mouse, double-click the Convert It! icon.

## Title Bar **Convert It!**

The bar across the top of the window displays the application name. You can move a window by clicking on the title bar and dragging the window to a new location while holding the left mouse button down. When you release the button the window will be redrawn in the new location.

## Control Move

Displays a four-headed arrow  that you can use with the direction keys to reposition a window. This command is unavailable if the window is enlarged to maximum size. Select the Control Move command to begin moving a window by:

Clicking the Control-menu box, , then click Move.  
- or -  
Press Alt, Spacebar, M.



## Moving a Window or Dialog Box



Mouse techniques:

Drag the window or dialog box title bar.

Note: Not all dialog boxes have title bars.




Keyboard techniques:

1. If the borders aren't visible, restore the window to display them.
2. Press Alt, Spacebar, M.
3. Press the direction keys to position the outline of the window.
4. Press Enter to move the window.

## Control Close

Closes the active window. If a dialog box is open and has a Control menu, choosing this command closes the dialog box.

For mouse users, double-clicking the Control-menu box, , is the same as choosing Control Close. Choosing Control Close is the same as choosing File Exit. You can also close the window by pressing Alt+F4.

## **Control Switch To**

Lists all the open applications.

## **Switch To**

Activates the selected application.

## **End Task**

Closes the selected application

## **Cancel**

Closes the Task List window.

## **Tile**

Maximizes all open applications and sizes them so that the upper-left portion of each window is visible.

## **Arrange Icons**

Arranges the icons of all minimized applications across the bottom of the screen.

## How to Register Convert It!

**Convert It! 1.00 Registration Form/Invoice.** Please send to:  
SMI Corp., P.O. Box 582221, Tulsa, OK 74158

**Ordering by check:** You can order by sending a check and this order form to the address above. To print this order form, click on Print Topic in the File pull-down menu. Alternately, you can print the ASCII text file ORDER.DOC (distributed with Convert It!).

**Credit card ordering:** You can order with MasterCard or Visa from SMI Corp. by calling (918) 560-9536 from 8:00 am to 5:00 pm central time Monday through Friday. You can also mail credit card orders by filling out this order form and mailing it to the above address.

**Site licenses:** Site licenses are available for Convert It!. Call (918) 560-9536 to find out about the details.

Convert It! 1.00 quantity \_\_\_\_\_ @ \$10.00 ea. = \_\_\_\_\_  
Oklahoma residents add 7.25% sales tax + \_\_\_\_\_  
Total payment \_\_\_\_\_

Payments must be in US dollars drawn on a US bank. Prices are subject to change without notice.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_ Country: \_\_\_\_\_

Day Phone: \_\_\_\_\_ Evening Phone: \_\_\_\_\_

Electronic mail address: \_\_\_\_\_

Comments:

## **Convert It! Glossary**

absolute zero

application

command button

control menu

control-menu box

default button

dialog box

direction keys

drag

icon

insertion point

mass

menu

non-Windows application

option buttons

scroll arrow

scroll bar

scroll box

selection cursor

shrink

task list

text box

title bar

weight

window

**absolute zero**

a temperature characterized by a complete absence of heat. No molecular motion. -  
273.15°C or -459.67°F

**application**

a computer program used for a particular kind of work, such as word processing. This term is often used interchangeably with "program".

**command button**

a large button in a window or dialog box that carries out or cancels the selected action. Two common command buttons are OK and Cancel. The button that carries out the action will often have a label that describes the action (for example, open, create, install). Choosing a command button sometimes causes another dialog box to appear.



## **control menu**

The menu farthest to the left in the title bar, indicated by a Spacebar icon. The Control menu appears on every application that runs in a window and on some non-Windows applications. Document windows, icons, and some dialog boxes also have Control menus.

For application windows, document windows, icons, and dialog boxes, Control menu commands move, size, and close windows. You can also switch to Task List by using the Control menu. For non-Windows applications, the Control menu commands transfer information and perform other functions, depending on the application.

**control-menu box** 

The icon (symbolized Spacebar) that appears farthest to the left in the title bar and that opens the Control menu for the window.

**default button**

The command button in some dialog boxes that is automatically selected or chosen by Windows as the most logical or safest choice. The default button has a bold border, indicating that it will be chosen if you press enter. You can override a default button by choosing Cancel or another command button.

**dialog box**

A rectangular box that either requests or provides information. Many dialog boxes present options for you to choose among before Windows or the application can carry out the command. Some dialog boxes present warnings or explain why a command can't be completed.

## **direction keys** ↑ ↓ ← →

The four arrow keys on your computer keyboard. These keys move the cursor or pointer to locations you choose on screen. Each direction key has an arrow on it to show which direction the cursor or pointer will move. Each arrow key is named for the direction the key points: the Up Arrow key, the Down Arrow key, the Left Arrow key, and the Right Arrow key.

**drag**

Hold down the mouse button and move the mouse.

**icon**

A graphical representation of a disk drive, a directory, a group, an application, a document, and so on. You can enlarge an application icon to a window when you want to use the application.

**insertion point |**

The place where text will be inserted when you type. The insertion point usually appears as a flashing vertical bar in an application's window or dialog box. The text you type appears to the left of the insertion point which is pushed to the right as you type.



**mass**

The property of a body that is a measure of its inertia, that is commonly taken as a measure of the amount of material it contains and causes it to have weight in a gravitational field.

**menu**

A list of available commands in a application window. Menu names appear in the menu bar near the top of the window. You may use a command on a menu by selecting the menu name, then choosing the command you want.

**non-Windows application**

Applications that were not designed to run in Windows. Non-Windows applications do not necessarily conform to Windows user interface standards.

## **option buttons**

A small round or diamond shaped button. That appears in a dialog box and is used to select an option within a group of related options. You can select only one option.

**scroll arrow**

An arrow on either end of a scroll bar, that is used to change the contents of a window or list box or change a value. Clicking the arrow moves the contents one line or one unit. Pressing a scroll arrow scrolls the contents continuously.

**scroll bar**

A bar that may appear in a dialog box that will allow a value to be changed within a certain range. Or may also appear to allow you to scroll through a window that has more lines than can be shown in the window.

**scroll box**

A small box in a scroll bar that shows the position of what is currently in the window or list box or value.

**selection cursor**



The marking device that shows where you are in a window menu or dialog box and what you have selected. The selection cursor can appear as a highlight or as a dotted rectangle around the text in a dialog box option.



**shrink**

To reduce a window to an icon at the bottom of the desktop using the Minimize button or the Minimize command. The document or application remains open (or running), and can be the active application or document.

**task list**

A window that shows all the applications you have running and lets you switch among them. You can open the Task List window by choosing Switch To from the Control menu or by pressing Ctrl+Esc.

**text box**

A type of box within a dialog box where you type information needed to carry out a command. When the dialog box appears, the text may be blank or it may contain text.

**title bar**

The horizontal bar at the top of the window that contains the title of the window or dialog box. On many windows, the title bar also contains a Control-menu box and Maximize and Minimize buttons.

**weight**

The force with which a body is attracted in a gravitational field which is equal to the product of the mass by the local gravitational acceleration.

**window**

A rectangular area on your screen in which you view an application or document. You can open, close, and move windows, and change the size of most windows. You can open several windows on the desktop at the same time and you can shrink windows to icons or enlarge them to fill the entire desktop.