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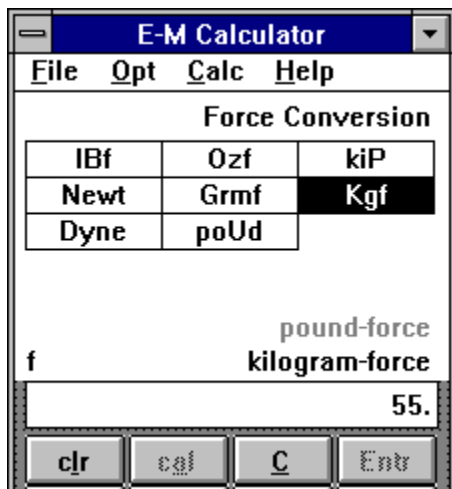
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## Formula-Units Interface

If a particular formula requires an input expressed in unavailable units, the calculator can be switched between Formula Solver and Units Conversion modes.

To see this, place a formula into the Formula mode window, and then ( without returning to Calculator mode ), replace it with a Conversion mode window. The conversion window will cover the formula window but will not close it.

The underlying formula window is identified by a small character 'f' appearing in the lower left hand corner of the Units Converter window...



Double clicking the mouse or pressing the Esc key will restore the underlying formula window.

## **Using E-M Calculator with Clipboard**

Calculator formula results can be copied to Windows Clipboard by selecting the File-Copy menu pick.

Clipboard support is only active under Formula Solver mode.

## **Using E-M Calculator with a Printer**

Calculator formula results can be sent directly to Windows Print Manager by selecting the File-Print menu pick. This option requires the file `commdlg.dll` to be present in the `Windows\System` directory.

Printer support is only active under Formula Solver mode.

## SI Multiplier Conversion

The SI Multiplier Conversion is a powers of 10 converter provided for use with SI conversions.

This converter is selected through the Calc-Convert-SI Prefix menu pick, and functions the same as the Units Conversion mode window.

## Units Conversion

The E-M Calculator is set to Units Conversion mode by completing the Calc-Convert-Units menu selection. To return to Calculator mode at any time, press the calculator clr button.

As an example of units conversion, convert a pressure of 1200 Pascals to pounds per square inch...

To do this, set the calculator to Units Conversion mode for Press/Stress conversion. This is done by selecting the Units-Press/Stress menu pick.

> Enter a value of 1200 into the display.

> Initialize the conversion by clicking on the Pascal field.

> Perform the conversion by clicking on the pounds per square inch field.

The Display will now express 1200 Pascals as 0.1740453 poundf per square inches.

Unit conversion fields can be accessed through the keyboard by Ctrl-char keystrokes where char is the capitalized character of each field string. In the above example, Ctrl-P would initialize the Pascal assignment, and Ctrl-I would perform the conversion to pounds per square inch.

## Formula Solver

The E-M Calculator is set to Formula Solver mode by completing the Calc-Formula menu selection. To return to Calculator mode at any time, press the calculator clr button.

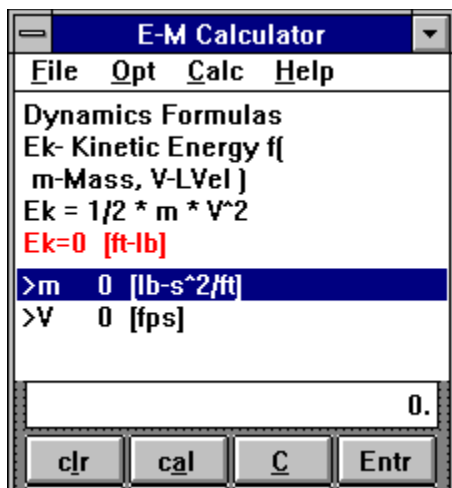
Formulas are grouped under the general headings of:

- > Displacement-Velocity-Acceleration
- > Dynamics
- > Uniformly Accelerated Motion
- > Work and Power
- > Torque & Horsepower
- > Strength of Materials

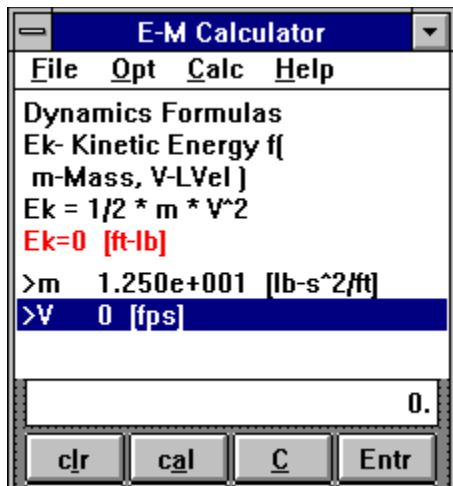
As an example of using the formula solver, set the calculator to Formula Solver mode for Kinetic Energy as a function of mass and velocity...

After selecting Dynamics formulas from the Calc-Formula menu bar, select Kinetic Energy and  $E_k f(m, V)$  from the Dynamics Formulas Dialog Box list boxes and close the box by picking the OK button.

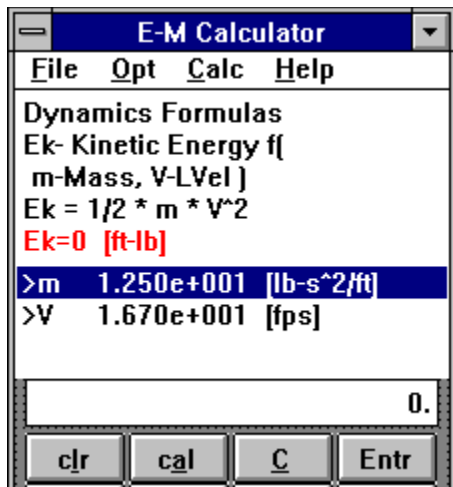
The calculator should appear as...



Place a value of 12.5 [lb-s^2/ft] in the calculator display and Enter ( using the Entr button ) the value into the formula solver variable field for mass. The calculator should appear as...

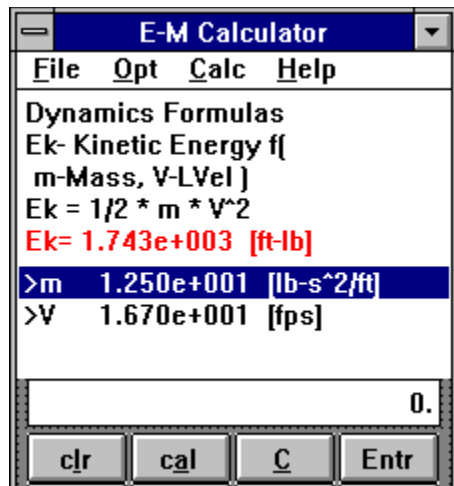


Place a value of 16.7 [fps] in the calculator display and Entr the value into the formula solver variable field for velocity. The calculator should appear as...



Solve the formula by pressing the calculate ( cal ) button...





Most formulas can be worked in both English and SI units.

## Calculator Options

### > Angular Units Settings

This is a menu selection to set trigonometric input for degrees or radians.

### > Precision Settings

Invokes a Precision Settings Dialog Box containing drop-down list boxes for setting the number of decimal places to display in calculator results.

List boxes are available for calculator and formula results and can be independently set.

### > Calculator On-Top Option

This is a menu selection to set the E-M Calculator as a topmost window. This option can be toggled on or off.

## Calculator Functions

Button	Key	Function
0 . 1-9	0 . 1-9	Enter Digits 0 thru 9 and Decimal Point.
+ - * / =	+ - * / =	Add, Subtract, Multiply, Divide, and Equal-Equal repeats previous operation.
C	c	Clears Display and any Pending Operations.
clr	l	Cancels Calculator Formula or Units Window.
cal	a	Solves Calculator Current Formula.
Entr	Enter	Moves Display Value to Formula Solver Current Variable Field.
Ms	CTRL-S	Store Current Display to Memory.
Mr	CTRL-R	Move Stored Memory to Display.
Mc	CTRL-L	Clears Stored Memory.
2nd	F8	Toggles Between First and Inverse Functions for Specified Buttons.
Pi	p	Sets Display to Value of Pi.
Sin	s	Calculates Sin or Arc Sin of Display.
Cos	o	Calculates Cos or Arc Cos of Display.
Tan	t	Calculates Tan or Arc Tan of Display.
x^2 (sqrt)	x (q)	Calculates Square or Square Root of Display.
y^x (xrt)	y	Calculates y to x Power or xth Root of y.
ln (e^x)	n	Calculates Natural (Base e) Log of Display or e Raised to the x Power.
log (10^x)	g	Calculates Common (Base 10) Log of Display or 10 Raised to the x Power.
1/x	r	Calculates Reciprocal of Display.
Exp	e	Enters Exponential (e notation) in Display.
+/-	F5	Toggles Plus or Minus Sign (or Exp sign) of Display.
bck	b	Deletes Rightmost Digit of Display.



