

Contents



For Best Results, Read Me First	2
Introducing Financial Calculator	2
Getting Started With Financial Calculator	3
Installing Financial Calculator	3
Starting It Up	7
Trying It Out	9
How Financial Calculator Differs From Its Calculator Twin, the HP12C	12
The Calculator on the HP 150 Display Screen	12
Bye, Bye Calculator "On" key	12
Touching to Perform Calculator Functions	13
Function Key Summary	13
Typing on the Keyboard to Perform Calculator Functions	14
Saving a Calculator	18
Typing Disc File Specifications	19
Loading a Calculator	20
Clearing the Calculator	20
Printing Numbers on the Calculator Display	21
Specifying the Printer You Want to Use	21
Sending Numbers to Other HP 150 Applications	22
DIF (Data Interchange Format) Files	22
Performing HP 150 Disc Operations Using File Manager	23
Getting Help	23
Ending a Financial Calculator Session	24
Beeping and New Error Conditions	25
Index	27

For Best Results, Read Me First

When you purchase Financial Calculator, you receive this handbook, the *HP-12C Owner's Handbook*, and the disc containing the Financial Calculator program. You may be confused about receiving two handbooks and about how you are going to use them.

This handbook, *Financial Calculating Using the HP 150*, is your primary guide to using Financial Calculator. You should study it first to acquaint yourself with Financial Calculator features.

From time to time in this handbook, you see references to the *HP-12C Owner's Handbook*. This happens when calculator operations are discussed, such as performing financial calculations and using calculator keys on the HP 150 display. You use the *HP-12C Owner's Handbook* because, even though it describes the operation of the HP-12C handheld calculator, the HP-12C calculator functions are identical to Financial Calculator. This means that when you need to know how to perform a specific computation, such as amortization, you should refer to the *HP-12C Owner's Handbook*.

For an additional charge, you can order the *HP-12C Solutions Handbook*. This is a supplement to the *HP-12C Owner's Handbook* and provides a variety of applications in the financial area.

Introducing Financial Calculator

Essentially, Financial Calculator is the HP-12C calculator simulated on the HP 150 Personal Computer. The simulation is so exact that calculations produce identical results. In addition, Financial Calculator lets you save calculator data on your discs, and transfer these figures to other HP 150 application programs, such as VisiCalc and Graphics.

One advantage to using Financial Calculator, is that you can begin using it immediately. You don't have to learn a new software product, all you need is a general familiarity with how calculators are used.

Another advantage to using Financial Calculator is that its financial calculator functions are both extensive and comprehensive. In fact, they are more comprehensive than those available with VisiCalc, for example. This means that you do not have to figure out the algorithms for these calculator functions and enter them into other programs, such as VisiCalc.

Getting Started With Financial Calculator

You can use Financial Calculator from the master disc that you receive. However, as with other HP 150 applications, we recommend that you install it onto a work disc and use Financial Calculator from that work disc.

Installing Financial Calculator

For your convenience, the following procedures summarize how you install Financial Calculator onto a work disc. More detailed installation procedures are outlined in the *HP 150 Personal Computer Owner's Manual*, and you should refer to this manual when you have difficulty following these procedures.

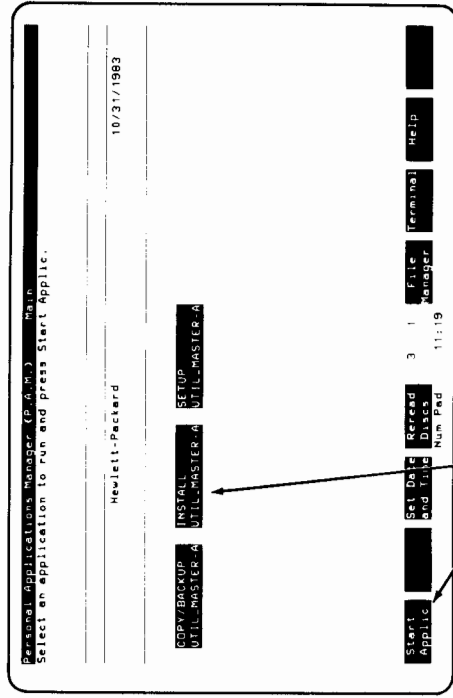
To simplify the installation procedures which follow, it is assumed that you're working with an HP 150 that has two disc drives. If you have more than two disc drives, you should still be able to follow the steps, even though the screens will vary from those shown here.

You need:

1. A formatted disc (which may contain other programs)
2. The Financial Calculator Master Disc
3. The Disc Applications Disc (containing the INSTALL program).

Start up your HP 150 system as usual. When you see the P.A.M. display, insert the Disc Applications Disc into drive A, then touch **Reread Discs**. You should see "INSTALL" as one of the applications on the display.

Now, touch **INSTALL** on the display, and **Start Applic**:



Touch these areas

prompt line, 8

Save All Marked, 22, 23

Save Calculator, 11, 18, 23

Saving a calculator, 12, 18, 20

session, ending a calculator, 7, 24

touching the display, 13

Transfer Functions, 22

typing on the keyboard, 14

Unmark All, 22

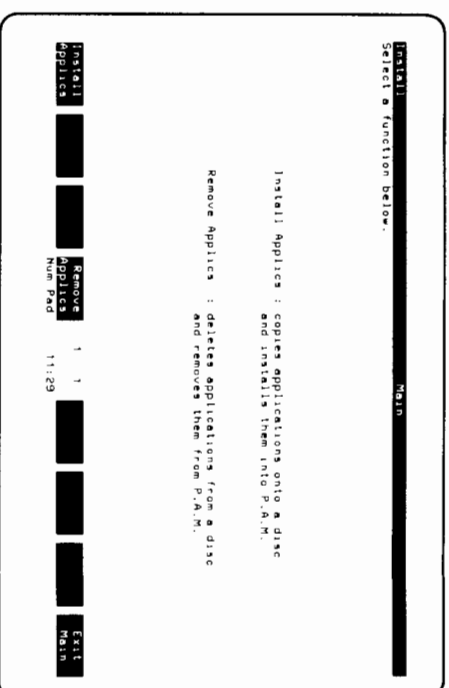
Unmark Previous, 22

VisiCalc, Series/100, 2, 3

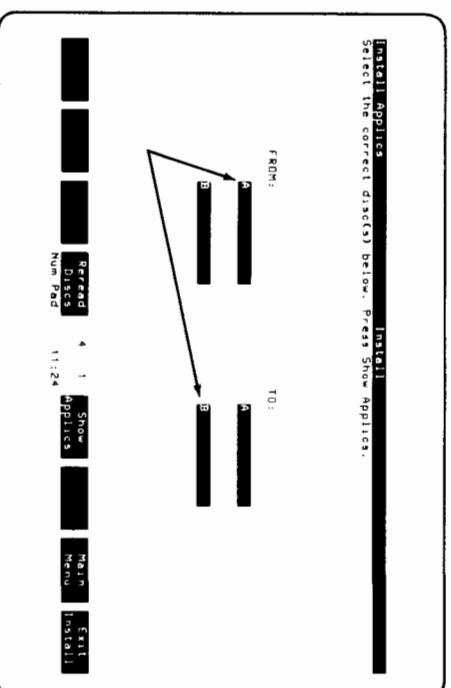
work disc, 3

- ending a calculator session, 12, 24
- error messages, 8, 25
- Exit Calculator**, 24
- File Manager**, 18, 20, 23
- files
 - Calculator (CALCTOR.GSV), 18, 20, 24
 - DIF (CALCTOR.DIF), 24
- Financial Calculator Master Disc, 3, 5, 7
- function keys, 8, 12, 13
- Financial Calculator, 13
 - Main, 13
 - HP12C, 13
- functions, calculator, 13
- Graphics, Series/100, 2
- Help**, 23
- Help, 23
- HP12C Calculator, 2, 8, 12
- HP12C Owner's Handbook, 2, 9, 10, 13, 25
- HP12C Solutions Handbook, 2
- input line, 8
- keyboard, 14
- typing on the, 14, 19
- Lead Calculator**, 20, 23,
 - loading a calculator, 20
- Mark Number**, 22
- Master Disc, Financial Calculator, 3
- messages, 25
- Numbers Marked, 22
- "On" key (HP12C calculator), 12
- P.A.M., 4, 7, 24
- Print**, 11, 21
- Printer: PRN**, 11, 21
- Printer: LST**, 11, 21
- Printer: AUX**, 11, 21
- Print Functions**, 11, 21
- printers, 21
- printing calculations, 21

You see this screen:

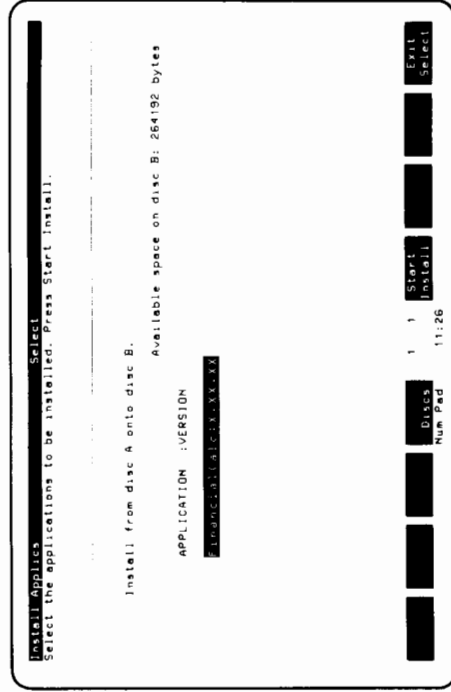


Now replace the Disc Applications Disc (drive A) with the Financial Calculator Master Disc, and insert the formatted disc into drive B. Press **Install Applications**. The following screen shows that disc drives A (FROM:) and B (TO:) are selected (highlighted).



Touch **Show Applies** to choose the applications you want to install.

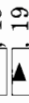
You see this:



Touch "FinancialCalc:" on the display (until it is highlighted), then touch **Start Install**. When Financial Calculator is installed properly, touch **Exit Install** to return to P.A.M.

Index

arrow keys, 19



Back space, 19

Clear line, 19

Delete char., 19

Insert char., 19

Printer Enter, 22

Shift, 14, 22, 24

Stop, 24

banner line, 8, 20

beeping, 25

CALCTOR.DIF files, 18, 20

CALCTOR.CSV files, 18, 20

calculations, 2

printing, 21

calculator, 7, 8

starting, 7

clearing a, 7, 20

loading a, 13, 20

saving a, 13, 18

calculator display, 8, 12

calculator files, 18, 20, 22

calculator keys, 8, 9, 10

Clear Calc., 12, 20

clearing the calculator, 12

Continuous Memory, 12, 20

DIF files, 22

disc

loading calculators from, 13, 20

saving calculators on, 13, 18

typing file specifications, 19

Message: Cannot save calculator. Type [Shift] [Stop] to exit without saving.

Cause: The disc is not in the designated drive.

Remedy: Insert the disc into the correct drive, and retry or type **[Shift] [Stop]** to end without saving the current calculator and marked numbers.

Message: Cannot find file xxxxxxxx.

Cause: The file you want to load is not on the designated disc or drive, or the disk is not inserted properly.

Remedy: Insert the correct disc into the indicated drive and retry.

Message: No more room for marked values; use "Save All Marked."

Cause: You marked more than 100 numbers.

Remedy: Either save the DIF file now, and save the additional numbers in another file; or unmark some of your numbers using **[Unmark Previous]**.

Message: Printer is not available; use "Printer Functions" to choose another.

Cause: The printer you selected (or the default printer) is not connected properly, is inoperative or is not selected properly.

Remedy: Make sure that the printer cable is connected properly and that the printer is turned on. Also check that you have selected the appropriate printer with the **[Printer:xxx]** function keys and that the printer is configured for your computer.

Message: Write error on file xxxxxxxx.

Cause: The disc was removed during a save operation, or a portion of your disc may be worn or unusable.

Remedy: Insert the disc properly and repeat the procedure you were performing. If the error persists insert another formatted disc and try again.

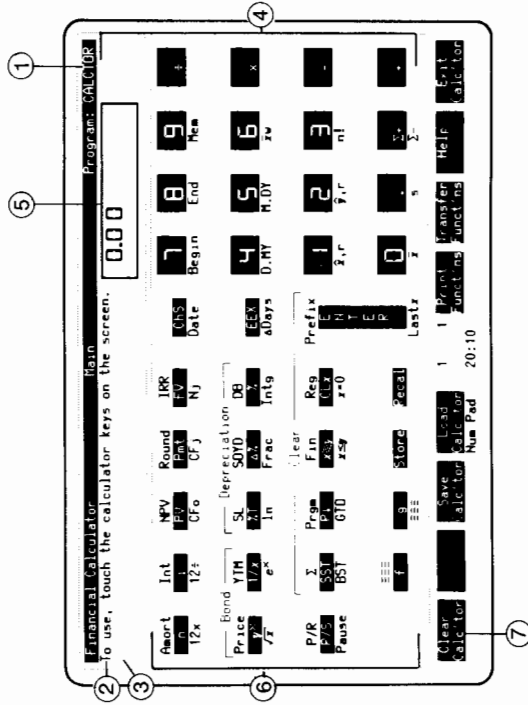
Starting It Up

You start using Financial Calculator the same way you start other applications. You touch its name ("FinancialCalc") on the P.A.M. display, then touch **[Search App List]**. If you do not see FinancialCalc on the display, make sure that the Financial Calculator Work Disc is in one of your drives, then touch **[Read Discs]**. If you still do not see it, refer to the *HP 150 Personal Computer Owner's Manual* for further help.

When you start Financial Calculator, it starts with the calculator (consisting of program lines, register values and display settings) you were using when you ended the last Financial Calculator session. This lets you start up as if you never ended the last session. Since this is the first time you've used Financial Calculator, this beginning calculator has the effect of clearing the calculator (see "Clearing the Calculator").



When you start up Financial Calculator, you see a display which looks like the following figure. The parts of the display and their functions follow.



1. *banner line*—

This inverse-video line identifies Financial Calculator and the name of the last calculator file loaded from disc. Error messages which occur during calculator save, load and print operations are also listed here.

2. *prompt line*—

This line tells you what information you need to type during save and load operations.

Beeping and New Error Conditions

Financial Calculator beeps when many error conditions occur. This can happen when you touch an illegal sequence of calculator keys or when you type unusable keys on the keyboard. See the section "Typing on the Keyboard to Perform Calculator Functions" for more information on the use of the keyboard.

New error conditions (those not listed in the *HP-12C Handbook*) can occur due to the disc capabilities added with Financial Calculator. The messages which follow list those error conditions and give corrective actions, where appropriate. Remember that when you see ERROR on the calculator display, you should refer to "Appendix C: Error Conditions" in the *HP-12C Handbook* for an explanation.

When error conditions occur, you can take the corrective action indicated and retry the operation you were performing, or you can continue with other calculator operations.

Message:

Cannot create file xxxxxxxx

Cause: There is no room on your disc to save a file, or a disc is not inserted properly in the disc drive.

Remedy:

Insert a usable disc properly and retry.

Message:

Cannot find the program disc. Put it back into the original drive and hit "Return."

Cause: The disc containing Financial Calculator is not in its original drive.

Remedy:

Insert the disc into the appropriate drive and retry.

Message:

Cannot load xxxxxxxx; clearing calculator instead.

Cause: The disc was removed during loading, or the file is not a calculator file.

Remedy:

The calculator is cleared. If you want to retry the load, insert the correct disc and repeat the load procedure.



Ending a Financial Calculator Session

When you want to end Financial Calculator, you can touch **Exit Calculator** or type **[Shift] [Stop]** on the keyboard.

Exit Calculator saves the current calculator and marked values onto disc automatically before returning you to P.A.M. It saves the calculator into file CALCTOR.CSV, and marked numbers into CALCTOR.DIF.

If you want to return to P.A.M. without saving the current calculator and marked numbers, type **[Shift] [Stop]**.

3. *input line*—

You type disc file information on this line when you save and load calculator files. At other times, this line is part of the calculator (see below).

4. *the calculator*—

This area is a replica of the HP-12C Calculator.

5. *calculator display*—

This area shows calculated results. This is the same as the HP12C display.

6. *calculator keys*—

This area simulates the HP12C keyboard. Keys are shown in this handbook in regular key notation even though you touch the HP 150 display instead of typing the keys on the keyboard. If you want to use the keyboard, refer to the section, "Typing on the Keyboard to Perform Calculator Functions".

7. *the function keys*—

These are the highlighted blocks at the bottom of the display that let you save, load and print calculator data.

Trying It Out

To feel comfortable about how Financial Calculator works, try doing Example 2 on page 11 of the *HP12C Owner's Handbook*. Familiarize yourself with the example and solution steps as outlined in the *HP12C Owner's Handbook*. Now review "The Calculator on the HP 150 Display Screen" in this handbook.

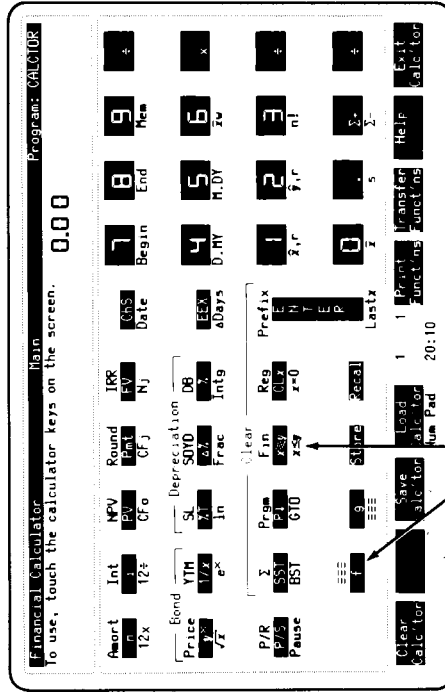
Try doing Example 2 using the solution steps outlined below. They are the same steps you saw in the *HP12C Owner's Handbook* but they are presented in a way that helps to clarify how you do them on the HP 150. Additional steps are added at the end to show you how to print and save numbers.

If you make a mistake and need to clear a number you enter, touch **[CLX]**.

Touch these keys **The calculator display shows:** **Description:**

[F1] [F1M] (in the CLEAR area)	0.00 (or number you keyed previously)	Current Financial data is cleared.
--	---------------------------------------	------------------------------------

This figure shows where you touch these calculator keys on the display:



Touch these keys

Performing HP 150 Disc Operations Using File Manager

When you touch **Save Calculator**, **Load Calculator**, or **Save All Marked** you see the **File Manager** function key appear. It lets you leave Financial Calculator temporarily and begin File Manager. When you're finished with File Manager, you continue with Financial Calculator by touching **Back to Calculator**.

Three things you might use File Manager to do are:

- To look at your disc directories
- To permanently change the disc device: \ dir path that Financial Calculator uses
- To look up a file on disc, then pass its name to Financial Calculator

Refer to the *HP 150 Personal Computer Owner's Manual* for details on how to use File Manager.

Getting Help

The **Help** function key appears continuously when you are using Financial Calculator. It gives reference information about this product in the context in which it is requested.

When Help information requires more than one page of display, you touch **Next** and **Prev** to turn the display pages.

When you're finished with Help, touch **Done** to continue with calculator operations.

Sending Numbers to Other HP 150 Applications

You can select one or more numbers from the calculator display to be saved on disc in a format that can be used by other HP 150 applications. This format is called DIF format (see the next section). To save numbers on a DIF file, you start by touching **Transfer Functions** on the main level of function keys. When you do this, you see another level of function keys which let you select (mark) numbers, then save them.

You mark numbers you want to save by touching **Mark Number** when the figures appear during calculations. As you do this, you see the “Numbers Marked” counter on the banner line increase by 1. When you’ve marked all of the figures you want to save, touch **Save All Marked**. You then type the file name you want to use for the DIF file. See the section, “Typing Disc File Specifications”, for details on typing procedures.

If you mark values you don’t want to save, you can “unmark” those figures by touching either **Unmark All** or **Unmark Previous**. **Unmark All** lets you unmark all of the numbers that you marked. **Unmark Previous** unmarks the last (or previous) figure you marked and displays it for you on the input line. In both cases, the Numbers Marked counter changes to reflect the current number of figures that you have marked.

When you need to print a number on the display at the same time you’re marking it, type **Shift** **Print Enter** on the keyboard.

DIF (Data Interchange Format) Files

Financial Calculator lets you store up to 100 numbers in a single DIF file. Numbers that are saved contain the same precision (number of decimal places) as the calculator uses for internal calculations. These numbers vary from the numbers that you see on the calculator display when they contain more decimal positions than can be shown.

Numbers are stored in DIF files in column order. This means that if you send the figures to Series 100 VisiCalc, for example, you usually see them appear in the column containing the cursor.

14 **ENTER** 2 **x** **n** 28.00

Calculates and stores the number of accounting periods.

Notice that when you perform calculator operations, you enter the number first, then the operation. This may be different from the way you’re used to working with calculators.

5.35 **ENTER** 2 **+** **i** 2.68

Calculates and stores the periodic interest rate.

5000 **CHS** **PV** -5,000.00

Stores the present value of the policy.

FV 10,470.85

The value of the policy in 14 years.

The computations are complete. Now, you’re going to print the number, 10,470.85. Touch **Print Functions**, then **Print**. The printer, “PRN”, is used automatically. If this is not the printer you want to use, touch the appropriate **Printer: xxx** function key before you touch **Print**.

To save all of the numbers and calculator functions you have entered, touch **Calculator Menu** then touch **Save Calculator**. You see “B: \” on the input line. Now type a file name, such as “POLICY”, then **Return**. If you have difficulty with these procedures, see “Saving a Calculator.”



How Financial Calculator Differs From Its Calculator Twin, the HP-12C

As mentioned previously, the calculator operations of the HP-12C and Financial Calculator are identical. The differences in the product have to do with the expanded capabilities of the HP 150. The topics which follow summarize these expanded capabilities.

The Calculator on the HP 150 Display Screen

The physical arrangement of the HP-12C keyboard and display has been exactly duplicated on the HP 150 display (except for the "On" key which is no longer needed). Key labels are identical except in cases where longer labels are more descriptive and are easier to understand. Function keys at the bottom of the HP 150 display let you perform operations not available on the HP-12C. The specific uses of these function keys are described in the following sections.

Bye, Bye Calculator "On" key

Since the On key of the HP-12C is not needed on the HP 150, this key is removed from the display. Consequently, discussions about powering on and off, low power indication, and batteries in the *HP-12C Owner's Handbook* can be ignored.

The "Continuous Memory" feature of the HP-12C lets it retain the current calculator program and/or data when the calculator is turned off. Financial Calculator lets you save calculators (consisting of program lines, register values and display formats) by recording them onto your discs (see "Saving a Calculator"). It also saves them onto disc automatically when you end a Financial Calculator session (see "Ending a Financial Calculator Session").

Financial Calculator provides a function key **Clear Calculator** that clears the current program lines, registers and display formats. Using this function key is equivalent to clearing Continuous Memory on the HP-12C. Refer to the section, "Clearing the Calculator", for more details.

Printing Numbers on the Calculator Display

Print Functions lets you perform all of the printing operations of Financial Calculator. When you touch this function key, you see a subordinate level of function keys that actually do the printing and let you specify the printer you want to use.

When you touch **Print Functions** the first thing you do is to ensure that the printer that is selected is the one that you want to use. Refer to the next section for details on how to select a printer.

After selecting a printer, you're ready to print numbers from the calculator display. You begin/continue using the calculator, and when a number appears on the calculator display that you want to print, you touch **Print**. You continue using the calculator, and printing when necessary (you touch **Print** for each result you want to print). Alternatively, you can type **Shift Print Enter** on the keyboard instead of touching **Print**.

When you're finished printing, touch **Calculator Main** to return to the main level of function keys.

Specifying the Printer You Want to Use

Before printing numbers on the display, you can select the printer you want to use. The printer, "PRN," is used if you don't select one. If PRN is not assigned to the printer you want to use, then you can select another assigned printer. Be sure that the printer you select is one of the printers you used when you configured MS-DOS (see the *HP 150 Personal Computer Owner's Manual*).

You select a printer by touching **Print Functions** then one of the **Printer: xxx** function keys. The choices for printers are PRN, LST and AUX. When you select a printer, you see an asterisk appear in the function key label. To choose another printer, just touch that function key choice (touching your choice selects it, and unselects the previous choice).

Loading a Calculator

Load Calculator loads a calculator from disc that you previously saved using **Save Calculator**. When you touch **Load Calculator** you are prompted to type the name of the calculator you want to load. Refer to the section, “Typing Disc File Specifications” for details on how to type this file information.

Since most calculator files are saved using the default file extension, “.CSV”, you do not need to type this extension when you type the file name. If you typed a different file extension when you saved the calculator, then you must type the full file name including the extension that you used. When the calculator is loaded, the file name is displayed on the banner line (the file extension is shown when it is not “.CSV”).

The **File Manager** function key becomes available for you to use when you load a calculator file. This function key lets you perform HP 150 disc operations such as listing directories. Refer to the section, “Performing HP 150 Disc Operations Using File Manager”, for more information.

Clearing the Calculator

Clear Calculator clears all program lines and calculator registers. It also resets calculator settings to their original values. This function key is equivalent to clearing Continuous Memory on the HP12C. When you need to clear individual registers, follow the procedures in the *HP12C Owner's Handbook*, page 19. Specifically, **Clear Calculator** does the following:

- Clears all registers
- Resets program memory to eight program lines, each containing the instruction `g|gno|00`
- Resets the display format to the standard (two decimal places)
- Resets date format to month-day-year
- Sets Payment mode to End

Touching to Perform Calculator Functions

Instead of typing keys on the calculator keyboard, you touch the simulated keyboard on the HP 150 display to perform calculator operations. In addition, function keys are available. They let you perform non-calculator operations like saving and loading calculator values.

The use of touch means that words like *pressing* and *keystrokes* used in the *HP12C Owner's Handbook* now translate to touching the equivalent areas on the HP 150 display. Also, *function keys* in the *HP12C Owner's Handbook* mean the specific set of calculator keys which perform a particular computation, such as AMORR, PMT, etc. Function keys, used here in this manual, mean the row of highlighted blocks at the bottom of the HP 150 display. Refer to the next section for an overview of the function keys.

Function Key Summary

The section lists the main groups of function keys which are used by Financial Calculator. Not listed here is the **File Manager** function key. It appears when you save and load calculator files. The *Main Function Keys* are the set of function keys you see when you start up Financial Calculator. Remember that you can type f1-f8 on the keyboard instead of touching the function keys on the display.

Main function keys:

Clear Calculator **Load Calculator** **Save Calculator** **Perform Functions** **Transfer Functions** **Help** **Exit Calculator**

Options of **Perform Functions**:

Program List **Program Aux** **Print** **Help** **Calculator**

Options of **Transfer Functions**:

Transfer All **Transfer Previous** **Math Number** **Print** **Help** **Calculator**

Typing on the Keyboard to Perform Calculator Functions

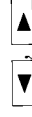
Financial Calculator gives you the flexibility of touching the calculator keys on the HP 150 display to perform computations, or typing the equivalent keys on the keyboard. You may prefer to use the keyboard when you're used to typing to perform calculator operations, or when you feel more comfortable typing, in general, rather than touching the display.

The rightmost keys on the keyboard are used for all of the calculator keys. These keyboard keys double-up in their use. That is, when you type them with the **[SHIFT]** key, you are specifying one set of calculator keys. When you type them without typing the **[SHIFT]** key, you specify another set of calculator keys.

You type the left section of calculator keys, consisting of the primary and alternate functions, by holding down **[SHIFT]**, then typing the keyboard equivalent of the calculator key. The left section of calculator keys have a one-to-one physical correspondence to the keyboard keys. This figure shows the keyboard keys with the key labels changed to show you their calculator key equivalents.

Typing Disc File Specifications

Most of the time, when you save or load files, you simply type the name of the file, then **[RETURN]**. To change the disc drive: \ dir path which Financial Calculator displays, type **[BACK SPACE]** to erase the characters you want to change, then type the characters you want to use. You can use the following keys on the keyboard to locate characters on the input line that you want to change, and to correct typing errors:



Moves the cursor to the left or right. Hold down for repeat movement.



Deletes the character at the cursor by shifting the remaining characters to the left.



Set insert mode. Characters that you type are added at the current cursor position. Type this key again to turn off insert mode.



Erases the character to the left of the cursor.



Erases all characters from the cursor to the end of the input line.

Saving a Calculator

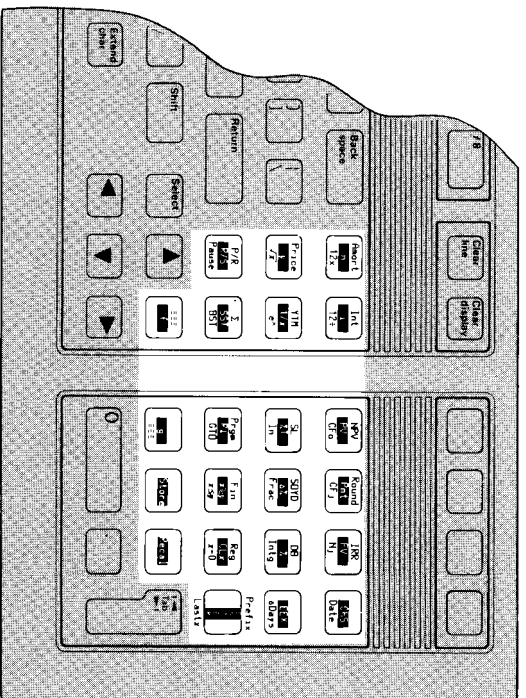
Save Calculator saves the current calculator information on disc. This includes all program lines, registers and calculator settings.

When you touch this function key, you see a prompt which asks you to type the file name you want to assign to the calculator when it is saved on disc. See the next section, “Typing Disc File Specifications,” for details on how to type this information.

When Financial Calculator saves a calculator, it automatically appends, “.CSV” to the end of your file name. This helps you to distinguish calculator files from others on your discs. If you need to use a different file extension, simply type the full file name including the extension you want to use.

The **File Manager** function key appears when you touch

Save Calculator. This function key lets you perform HP 150 disc operations, such as listing directories. Refer to the section, “Performing HP 150 Disc Operations Using File Manager” for more information on the use of this function key.

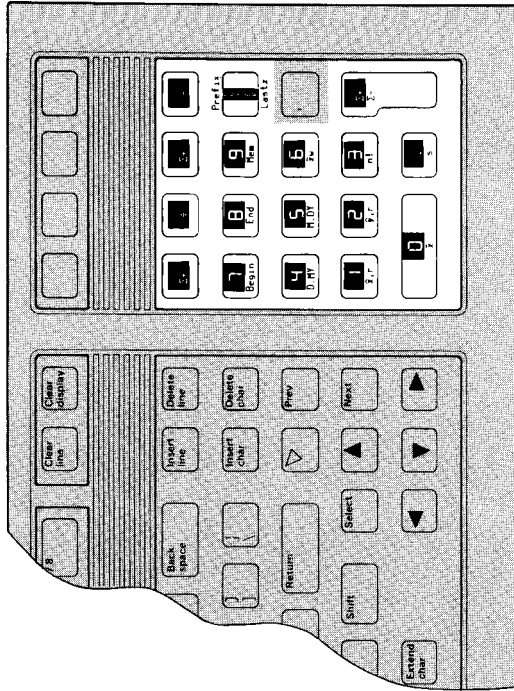


Typing the Left Section of calculator keys on the HP 150 keyboard.

You type the right section of calculator keys (consisting of arithmetic symbols, numbers, the decimal point, and the sum function) by typing the keys on the keyboard with the same key label meaning.

The right section of calculator keys do not always have a one-to-one physical correspondence to the keyboard keys. You use the calculator meaning to correspond them (i.e., a "7" on the calculator is a "7" on the keyboard, regardless of the physical location of the key on the keyboard).

This figure shows the keyboard keys with the key labels changed to show you their calculator key equivalents.



Typing the right section of calculator keys on the HP 150 keyboard.

When you need to type the \square alternate functions on the numeric keys, you have to type \square first, then the appropriate numeric key.

Example 2 (on page 11 of the HP12C handbook) is repeated here to illustrate how you type calculator data using the keyboard. The HP 150 keyboard key labels are substituted for the "Keystrokes" that you normally use for touching the display.

Type these keys on the keyboard:	The Calculator Display shows:	Description
\square (hold down) \square 5	0.00 (or number you keyed previously) 28.00	Current Financial data is cleared. Calculates and stores the number of accounting periods.
14 \square Enter \square 2 \square . \square Shift \square Insert line	2.68	Calculates and stores the periodic interest rate.
5000 \square Enter \square 2 \square / \square Shift \square Delete line	-5,000.00	Stores the present value of the policy.
5000 \square Shift (hold down) \square . \square + \square Shift \square +	10,470.85	The value of the policy in 14 years.