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# Using Charting Gallery



*This manual has been written for  
use with your HP Touchscreen  
Personal Computer.*

**Manual Part No.  
45513-90002**



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## Introduction

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### Overview

Charting Gallery is a graphics application that helps you create professional quality charts for reports and presentations. Charting Gallery takes advantage of HP Touch so that you can create charts and modify their appearance at a touch of your screen. If you prefer, Charting Gallery functions can be performed using your keyboard instead of using touch.

Charting Gallery can be used in conjunction with other Hewlett-Packard business applications which add drawing features to a chart, create memos, or process electronic mail. In addition, you can use Charting Gallery to make presentation quality graphics from Lotus™ 1-2-3™ and VisiCalc® spreadsheet data, or from the dBase II database program.

With Charting Gallery you can:

#### Create

- line charts
- scattergrams
- bar charts
  - stacked
  - clustered
- pie charts

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Lotus™ and 1-2-3™ are U.S. trademarks of Lotus Development Corp.*



### **Combine**

- chart data and chart descriptions from two different charts
- charts with other Hewlett-Packard office and business products

In addition you can:

- Annotate your charts
- Draw your charts on printers or plotters for use in reports and presentations

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## **System Requirements**

Charting Gallery runs on a minimally configured HP Touchscreen Personal Computer. A plotter or printer is required to produce a copy of a chart. Appendix A of this manual provides a complete list of the printers and plotters that can be used with Charting Gallery.

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## **Using This Manual**

*Using Charting Gallery* is a reference guide that provides complete information about making charts with Charting Gallery. Because the way you create any of the chart types is similar, the manual is organized by functions such as creating or drawing a chart, so that you can find information quickly and easily no matter what phase of chart making you are in. Any differences between chart types are mentioned where these differences occur.

### **Chapter 1 – Getting Ready to Use Charting Gallery**

In this chapter you will learn how to configure and install Charting Gallery, as well as some basics you need to know about using Charting Gallery and designing charts.

## **Chapter 2 – Creating a Chart**

In this chapter you will find out how to choose the type of chart you want to create, and how to enter the information to create your chart.

## **Chapter 3 – Editing a Chart**

In this chapter you will practice the various ways of changing chart appearance such as adding titles, annotating, scaling, and choosing textures.

## **Chapter 4 – Getting and Saving a Chart**

In this chapter you will learn the different ways of saving and getting charts.

## **Chapter 5 – Drawing a Chart**

In this chapter you will learn how to print and plot your chart.

## **Appendices**

**Appendix A** – Provides a list of printers and plotters that can be used with Charting Gallery.

**Appendix B** – Provides information on how to use Charting Gallery with files from other applications such as Drawing Gallery, Lotus 1-2-3™, and dBase II® .

**Appendix C** – Provides a list of error messages you might encounter, and what to do when they occur.

## **Setting You Free with Charting Gallery**

This booklet is a tutorial that is supplied in addition to the user's guide. Use these lessons to learn the basic steps for creating a chart. Once you are familiar with the procedure, you can refer to the user's guide for the specific information you want to create charts that fit your needs.





# 1

## Getting Ready to Use Charting Gallery

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Before you begin making charts with Charting Gallery, there are a few steps you need to perform, and some basic information about Charting Gallery that you need to know. This chapter, a checklist for new Charting Gallery users, includes:

- how to start and leave Charting Gallery
- information about Charting Gallery screens
- guidelines for making effective charts

Before you start Charting Gallery, your computer should be set up and configured. If it is not, refer to the manuals that come with your HP Personal Computer.

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### Charting Gallery Discs

Charting Gallery comes with four discs:

- Bar Charts master disc
- Pie Charts master disc
- Line Charts master disc
- Gallery Output Library Disc (GOLD) for printing and plotting

Each of the chart discs are for that chart type, and the GOLD disc is used for drawing your charts. These application discs are used with your Sys\_Master (operating system) disc to start Charting Gallery.

## **Installing and Starting Charting Gallery**

It is recommended that you make and use copies of the Charting Gallery master discs and work from those copies. Use the INSTALL program to install copies of your master chart discs on your computer. Use the COPY/BACKUP program to copy the GOLD disc. Both the INSTALL and COPY/BACKUP programs are explained in the manuals that come with your HP Personal Computer. Refer to those instructions when you follow the steps listed below for your particular disc drive.

If you have a flexible disc, you should install each Charting Gallery disc you receive onto a newly formatted disc. Use the master discs to install copies of the chart types and the GOLD disc so that, if anything happens to one of the copies, you still have the master discs. You can use the master discs to work from, but if anything happens to those discs, you will need to replace them. Replacements are available from Hewlett-Packard for a minimal charge.

### **If You Have a Fixed Disc**

To install Charting Gallery:

Charting Gallery must be installed on your fixed disc, and the GOLD disc must be copied to your fixed disc. See the manuals that come with your HP Personal Computer for instructions on installing and copying applications. Each application disc that contains the chart type you want to use must be installed (using INSTALL) on your fixed disc. For example, if you only want to use bar charts, install the Bar Chart application. Then, copy the GOLD disc (using COPY/BACKUP) into the same directory.

**If You Have a Double-Sided Flexible Disc Drive**

To start Charting Gallery:

When the P.A.M. screen is displayed with the choices for the chart applications you installed:

1. Select an application.
2. Select `Start Applic`.

Because you copied the GOLD disc to your system, you do not need to perform any special steps when you draw your charts.

To install and copy Charting Gallery:

1. Install each master chart type (bar, line, and pie) disc, using INSTALL, to a newly formatted disc with double-sided format.
2. Copy the GOLD disc (using COPY/BACKUP) to each of the application discs.

To start Charting Gallery:

When the P.A.M. screen is displayed:

1. Put the application disc for the chart type you want in the right-hand drive (Drive B).
2. Select `Reread Discs`.
3. Select an application.
4. Select `Start Applic`.

Because you copied the GOLD disc to each chart type data disc, you do not need to perform any special steps when you draw your chart.

## If You Have a Dual Single-Sided Flexible Disc Drive



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If you use single-sided flexible discs, you must have two disc drives to run Charting Gallery. Charting Gallery cannot be run from just a 9133XV floppy disc drive since it needs a drive for the application disc and a drive for the GOLD disc.

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To install and copy Charting Gallery:

1. Install each of the chart types to a newly formatted disc.
2. Copy the GOLD disc (using COPY/BACKUP) to a separate (fourth) disc.

To start Charting Gallery:

When the P.A.M. screen is displayed,

1. Remove the system disc from drive A:
2. Put the application disc for the chart type you want in the left-hand drive (drive A:).
3. Put a formatted data disc (one with your charts on it or on which you want to put your charts) in the right-hand drive (drive B:). This is recommended because there is very little room on your application disc for data files.
4. Select **Reread Discs**.
5. When the P.A.M screen appears again, select the chart application.
6. Select **Start Applic**.

When you are ready to draw a chart the GOLD disc must be in a disc drive:

1. Remove the data disc from drive B:
2. Place the copied GOLD disc in drive B:
3. Select a drawing function or select **Cancel** if you decide not to draw the chart.
4. After you return to the Edit and Draw screen, you can replace the GOLD disc with the data disc if you want to get or save information.

You can have Charting Gallery come up automatically without displaying the P.A.M. screen. See the instructions in the manuals that come with your HP Personal Computer on setting an application to start automatically (autostart).

### **Warnings about Taking Discs Out of the Disc Drives**

Follow these instructions carefully to prevent damage to your discs or loss of data:

- Do NOT take a Charting Gallery application disc out of the drive or turn off your computer while Charting Gallery is running.
- The only time you can safely remove the Charting Gallery application disc is when the P.A.M. screen is displayed.

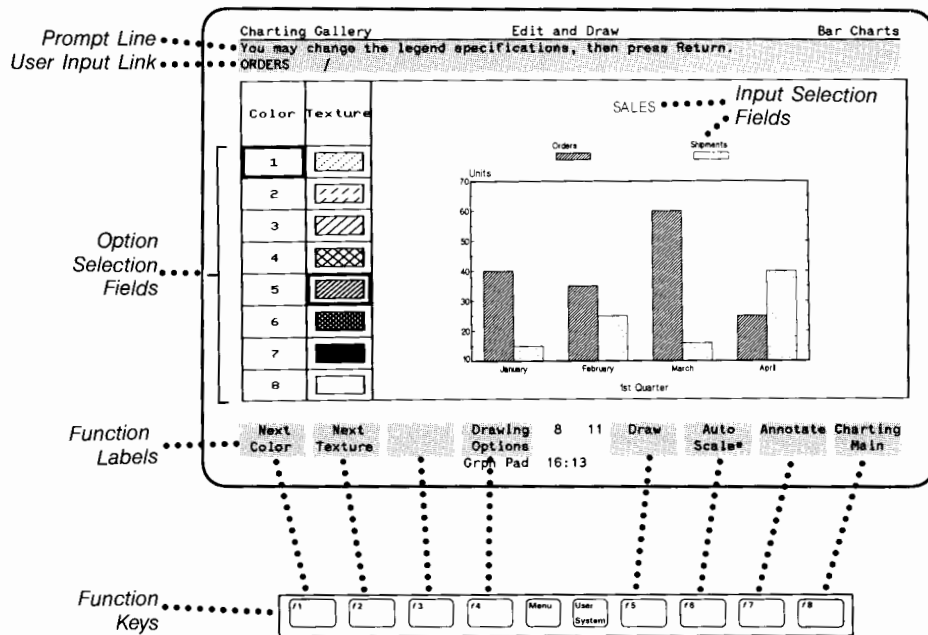
The GOLD disc can be removed from drive B: when your chart has been printed or plotted, and you have returned to the Edit and Draw screen.

Data discs can be removed at any time.



# Charting Gallery Screens

Charting Gallery screens have basic features that you should be familiar with before you create a chart. A typical screen is shown in Figure 1-1 below.



**Figure 1-1. Charting Gallery Screen.**

Prompt Line - Displays messages for you and tells you which operations you can currently perform.

User Input Line - Used to type or change any information that is requested on the prompt line.

Input Selection Field - Used to change information

Option Selection Field - Used to select from various options such as color or line style. The current or "active" option is highlighted with an indicator box.

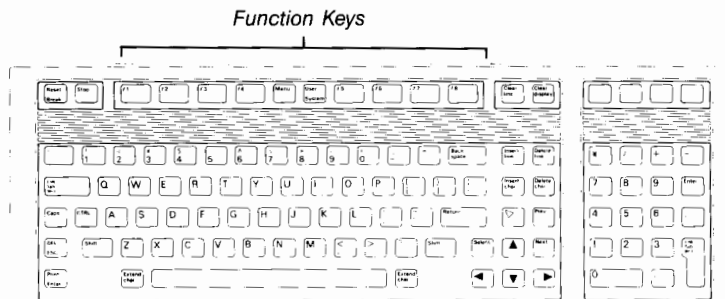
Function Labels – Match the keys f1 through f8 at the top of your keyboard. These labels represent various functions that you can perform. The functions available depend on your current activity.

### **Using Your Touchscreen with Charting Gallery**

Charting Gallery is designed to take advantage of the touch feature of your HP Touchscreen Personal Computer. Instead of typing commands or pressing keys to tell your computer what to do, you simply touch one of the function labels at the bottom of the screen, or select options from other areas of the screen. Each function label represents a Charting Gallery task. The tasks (and the words in the boxes) change from screen to screen. You can touch the screen to choose the kind of bar chart you want to create, the kind of texture you want to use, the color you want to draw it with, and many of the other options Charting Gallery makes available to you.

## Using the Keyboard with Charting Gallery

Anything you can do by touch, you can also do from the keyboard. The top row of keys on the keyboard, labeled f1 through f8, corresponds to the function labels (the boxes on the bottom of your touchscreen).



**Figure 1-2. Function keys.**

Pressing the function key on the keyboard performs the same task as touching the corresponding function label on the screen. For example, you can select Exit Charting by pressing the f8 function key, or by touching the Exit Charting label on your screen. While the tasks change from screen to screen, the correspondence between function labels and function keys is always the same: f1 corresponds to the first function label from the left; f2, the second, and so on.

This user guide tells you which function you should select to perform a particular operation. You can choose the easiest method of selection for you.

The touchscreen facility can be turned on or off by simultaneously pressing the **CTRL**, **Shift**, and **Menu** keys.

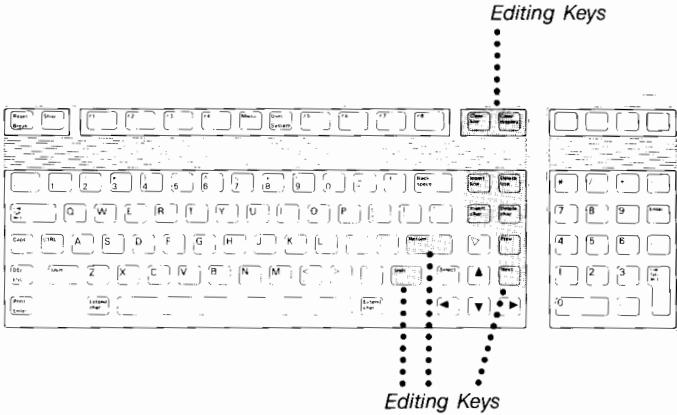
### **General Warning**

Some Charting Gallery functions are slower than others. If you select a function, pause to give it time to take effect before selecting the function again. Sometimes selecting a function twice causes Charting Gallery to save the function and execute it twice. When this happens, you may perform some unexpected function such as exiting the program or moving to another screen.

### **Editing Keys**

You can edit the data you enter on the Data screen and you can edit various options on the Edit and Draw screen, such as the Main Title. You edit data or select editing options by moving the cursor to the data you want to change (Data screen), or by moving the indicator box to the option you want to change (Edit and Draw screen). The cursor is the blinking underscore (   ) on your screen that tells the computer where you are entering or changing information. The indicator box is the box that highlights the current or

active option. You can use the following keys on your keyboard to edit and move the cursor or indicator box on your screen:



**Figure 1-3. Editing Keys.**

Some of these keys are context oriented so that on one screen they perform one function and on another screen a different function. If a key has more than one function, each function is indicated in the list below. Those keys that are specific to a particular Charting Gallery screen are briefly reviewed in that particular chapter of *Using Charting Gallery*.

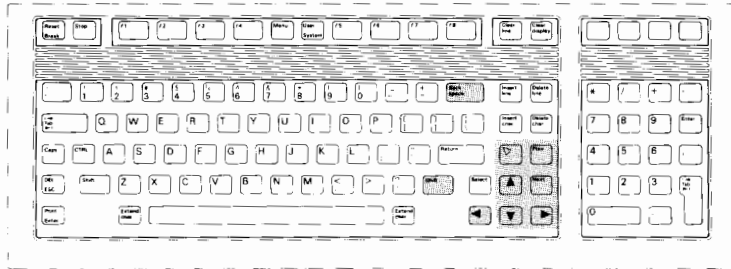
- Clear line** Erases the line the cursor is on from the cursor to the end of the line.

<b>Shift</b> <b>Clear line</b>	Erases the entire line the cursor is on no matter where the cursor is positioned on the line.
<b>Tab</b>	Moves the cursor to the next field on the screen, and the selector box to the next chart element on the Edit and Draw screen.
<b>Shift</b> <b>Tab</b>	Moves the cursor to the previous field or option, and moves the selector box to the previous chart element on the Edit and Draw screen.
<b>Return</b>	Moves the cursor down one line on a column of the Data screen, and redraws your chart on the Edit and Draw screen, except in the case of the axis value and interval prompts where it tells Charting Gallery to accept the values in the input line.
<b>Shift</b> <b>Return</b>	Moves the cursor up one line on a column of the Data screen, and redraws your chart on the Edit and Draw screen.
<b>Insert char</b>	When this key is enabled, new characters are inserted at the cursor position, and existing characters are pushed to the right.
<b>Delete char</b>	Removes the character the cursor is under and closes up the space by pulling the other characters on the line to the left.
<b>Insert line</b>	On the Data screen, creates a new line at the cursor position. This causes existing data to move down one line.
<b>Delete line</b>	On the Data screen, deletes the line the cursor is on and causes existing data to move up.
<b>Clear display</b>	On the Data screen, clears your screen from the point where the cursor is positioned.

- Caps** Displays all new letters you type in uppercase. Using **Shift** when Caps is on gives lowercase letters.
- Prev** Displays the previous 16 lines of data on the Data screen.
- Next** Displays the next 16 lines of data on the Data screen.

### Cursor Control Keys

Cursor control keys let you move the cursor around on the screen. The cursor is the blinking underscore (   ) on your screen that tells the computer where you are entering or changing information. The cursor control keys are the arrow keys located at the right of your keyboard.



**Figure 1-4. Cursor Control Keys.**

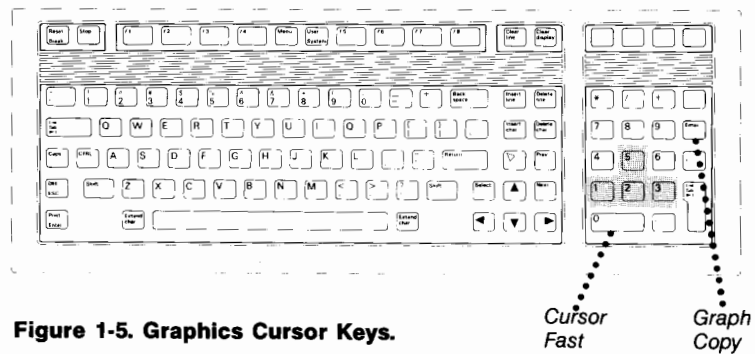
- ▲** Moves the cursor up one line each time you press it.
- ▼** Moves the cursor down one line each time you press it.

- ◀ Moves the cursor one column to the left each time you press it.
- ▶ Moves the cursor one column to the right each time you press it.
- ⏴ Moves the cursor to the top left of the screen.
- Shift ⏴ Moves the cursor to the bottom right of the screen.
- Backspace Moves the cursor back one space to the left.

## Graphics Cursor Keys

Use graphics cursor keys to move the graphics cursor when you draw lines and boxes on your chart on the Edit and Draw screen. The graphics cursor is the cross line indicator (+) that tells Charting Gallery where you want to draw or erase lines and boxes. It is only used when you use the annotate function on the Edit and Draw screen.





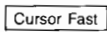
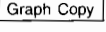
The graphics cursor keys correspond to the 1, 2, 3, and 5 keys on the numeric pad to the far right of your keyboard.



**Figure 1-5. Graphics Cursor Keys.**



You can place the graphics template that is supplied with your HP Personal Computer on the numeric key pad to use these keys more easily.

- 1  Moves the graphics cursor to the left.
- 2  Moves the graphics cursor down.
- 3  Moves the graphics cursor to the right.
- 5  Moves the graphics cursor up.
- 0  Speeds up the graphics cursor when pressed simultaneously with one of the arrow keys.
-  Lets you get a trial copy of your chart.

The remaining graphics keys are not used in Charting Gallery.

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## The Charting Main Functions

You enter and leave Charting Gallery from the Charting Main functions. You also select other Charting Gallery screens from Charting Main. When you first enter Charting Gallery, the Charting Main functions are listed on the screen, as well as in the function labels at the bottom of your screen. When you return to Charting Main from other screens, the function labels are displayed, but the current Charting Gallery screen remains displayed. The function label associated with the current screen is highlighted.

## Leaving Charting Gallery

To leave Charting Gallery, select **Exit Charting** from Charting Main.

If Charting Main is not displayed:

1. Select the eighth (farthest right) function label on the screen. This will be **Charting Main**, **Done**, or **Cancel** depending on the charting operation you are performing. Select the eighth function label as many times as needed until Charting Main is displayed.
2. Select **Exit Charting**.

Your current chart is always saved in a work file each time you leave Charting Gallery. If you are working on more than one chart, and want to use the chart again, be sure to save each chart before starting a new one.

To save your chart before leaving:

1. Return to Charting Main by selecting the eighth function label as many times as necessary to display the Charting Main functions.
2. Select **Get and Save**.
3. Type a file name for the chart.
4. Select **Save Chart**.
5. Select **Charting Main**.
6. Select **Exit Charting**.

For complete information on saving charts, see Chapter 4, Getting and Saving Charts.

When you leave Charting Gallery, you return to the P.A.M. screen. When the P.A.M. screen is displayed, you can safely remove your application disc. Always take your flexible

discs out of the disc drive before you turn off the computer.

Now you can use a different application or turn off the computer if you are finished using it.

## Planning a Chart

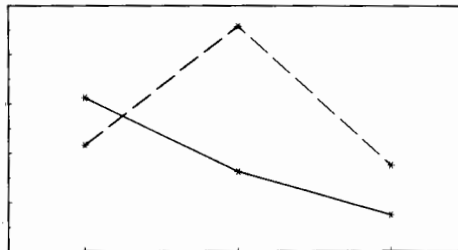
If you are new to the world of business graphics, or if you are faced with a lot of data that you are not sure how to represent graphically, the following provides some basic guidelines for chart making. Keep in mind that they are only general rules; in some cases, the best chart will be produced by trial and error, and always, your good judgement.

## Choosing a Chart Type

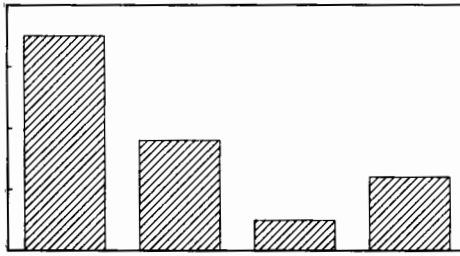
Because charts are visual representations of data, it is important that your audience be able to interpret the visual message that your chart represents. The best efforts and the most visually pleasing chart will not be effective if your data is not represented in an appropriate way. The kind of chart you will make depends on the message or objective you want to communicate. Use the following guidelines for choosing the kind of chart you need to make.

1. When comparing one item over time use line or vertical bar charts:

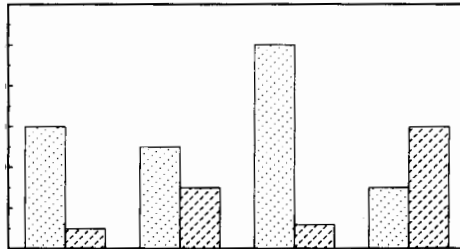
- Line Chart - emphasizes a trend or rate of change.



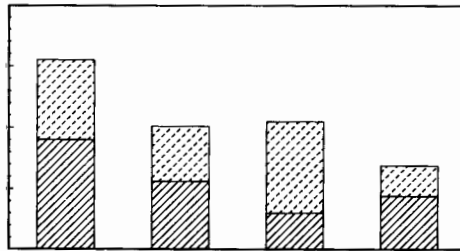
- Vertical Bar Chart – shows large changes from one period to the next.



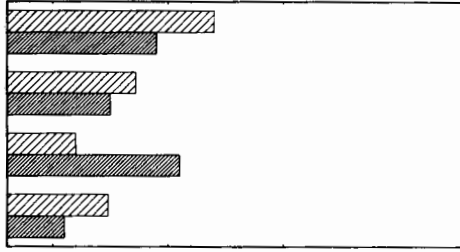
- Clustered Bar Chart – compares two or more independent series over a period of time.



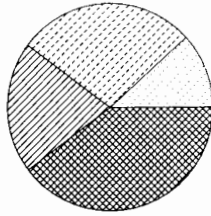
- Stacked Bar Chart – shows how components of a set of data change over time.



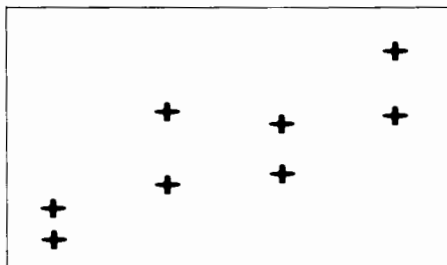
2. Use horizontal clustered bar charts when comparing elements during the same period of time.



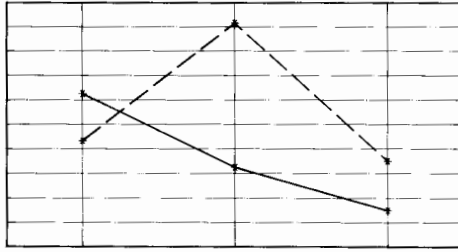
3. Use pie charts when comparing parts of a whole.



4. Use a scattergram when comparing how sets of data correlate.



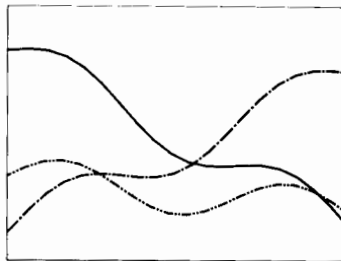
5. Add a grid to your line chart when comparing percentage of change.



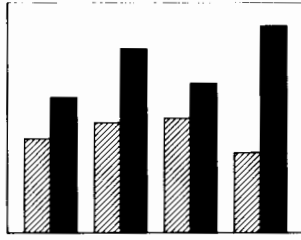
## Basic Design Principles

Visual clarity enhances the usefulness of a chart. Once you are familiar with the basics of making charts with Charting Gallery, you will want to enhance their visual effect by keeping in mind the following three design principles.

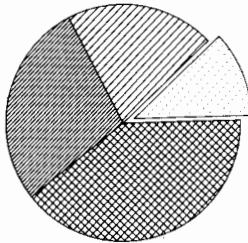
**Simplicity** - Use as few elements and as little information as possible when you make a chart.



**Unity** - The elements contained in your chart should function as a whole instead of as separate parts.



**Emphasis** - Emphasize important information so that it becomes the center of attention without destroying the unity of the chart.



## Scaling and Axis Guidelines

How you set up the scale (proportions) for the X- and Y-axes affects both the visual aspects of the chart and the accuracy of the data you are representing. Charting Gallery makes this aspect of chart making easy because it automatically scales your chart using the following guidelines.

1. Charting Gallery places independent variables on the horizontal axis, and places dependent variables on the vertical axis, except for horizontal bar charts. In the case of horizontal bar charts, the variables are reversed, that is, the independent variable is placed on the vertical axis, and the dependent variable is placed on the horizontal axis.

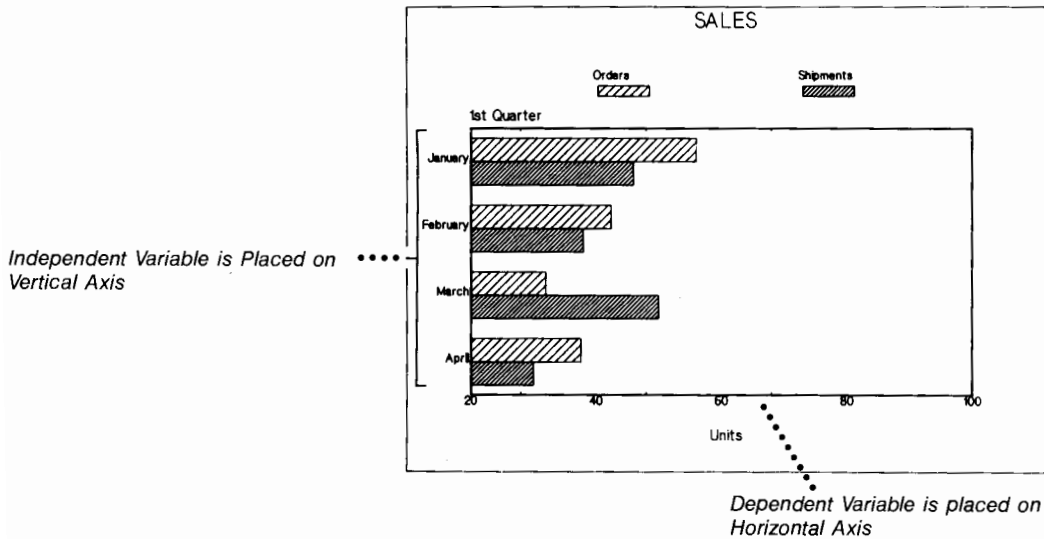
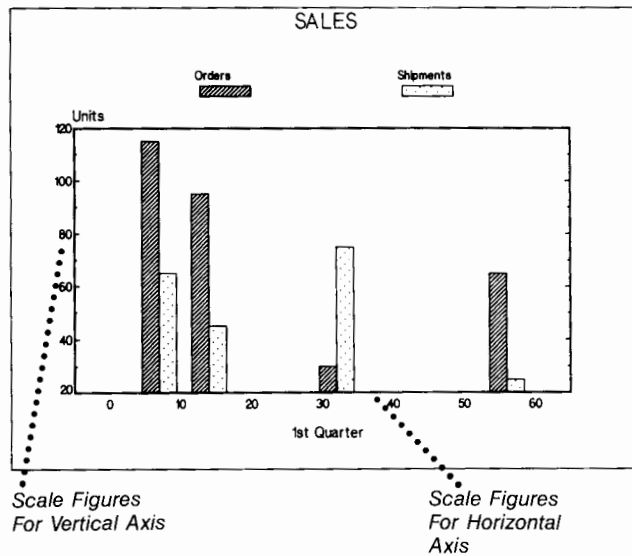


Figure 1-6. Scaling and Axis Guidelines



Independent variables are those that influence dependent variables. For example, if you want to see the amount of sales for a period of months, time (months) is the independent variable that affects sales (\$ amount).

2. When using multiple charts to compare trends, use the same scale so that the comparisons are valid. Charting Gallery chooses a scale for each chart you make. To make several charts match, you need to set the scale to match the chart with the largest data range, that is, the chart with the greatest range between minimum and maximum axis values.
3. Charting Gallery automatically adjusts scale units so that they are equally spaced. For example, if you entered 3, 9, and 12, as values of data points, Charting Gallery adjusts the scale units to read 5, 10, and 15.
4. Charting Gallery puts scale figures for the horizontal axis on major tick marks, and puts scale figures for the vertical axis on the left side of the grid.



**Figure 1-7. Scale Figures**

5. Charting Gallery always makes the axes heavier than the grid lines.
6. Grid lines are not allowed to pass through bars, columns, or lines that represent data.

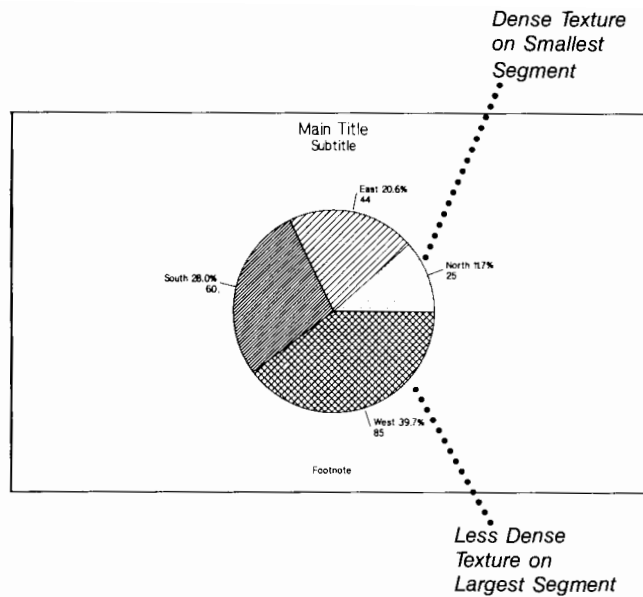
---

## Texture

Texture that is used for pie and bar charts is an effective means of differentiating between data and for providing emphasis, especially when color is not available. Charting Gallery automatically uses the following guidelines when your chart is drawn. They are important to remember when you change the texture for any of your charts.

1. Arrange textures from dense to less dense.

On a pie chart, put the texture that is most dense on the smallest segment, and the least dense texture on the largest segment. When you have an emphasized (exploded) segment, use the texture that is most dense for that segment. On other charts, put the texture that is most dense next to the axis, and less dense textures away from the axis.



**Figure 1-8.**

2. Avoid leaving a segment or bar blank. A blank area seems less important than an area that has a texture. Charting Gallery does not choose a solid or blank texture when drawing your chart unless you request them.
3. Avoid using only one solid texture because it has the effect of over emphasizing an area.
4. Use a solid fill texture of varying colors for segments or bars when your plotted chart will be in color and does not have to be photocopied. While solid fill takes longer to plot, it is much more attractive.
5. Do not mix textures and colors.

For more complete information on designing and creating charts, use the response card included in your Charting Gallery package to order *Steps to Effective Business Graphics*.



# 2

## Creating a Chart

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When you create a chart you organize information into a picture that shows trends, patterns and interrelationships. For example, you can use a chart to show changes over time, percentages, or the relation of a part to a whole. Charting Gallery makes creating charts easy and quick.

There are two major steps in creating a chart. First you choose the kind of chart that best represents what you are trying to say, then you enter the information you want to represent on the chart.

This chapter tells you how to:

- Choose a chart type (bar, line, or pie).
- Choose a specific type of bar or line chart.
- Enter information on a chart.
- Start a new chart.

---

### Choosing a Chart Type

The first step in creating a chart is to choose the type of chart you want to make. There are four types of charts you can create, and they are accessible from three separate discs:

- bar
- line or scattergram
- pie

The type of chart you choose depends on the information you are trying to present and what your audience needs to know. Guidelines for planning charts are discussed in Chapter 1, Getting Ready to Use Charting Gallery. The general rule of thumb is:

- Use line and bar charts to show changes over time. Line charts portray continuous changes or trends, while bar charts compare groups at specific points in time.
- Use pie charts to show the relationship of a part to a whole
- Use scattergrams to correlate information.

Once you have decided on the type of chart that best fits your needs, you are ready to begin.

### **Starting the Chart**

Each type of chart is on a separate disc. If you have a fixed disc drive, you load all the chart types you want to use on the disc. If you have a flexible disc drive, you load the disc for the chart type you want to use when you are ready to begin creating it. See Chapter 1, Getting Ready to Use Charting Gallery, if you need information on these procedures.

The P.A.M. screen with the chart applications you want to use should be displayed on your screen. If the P.A.M. screen is not displayed, refer to the manuals that come with your HP Personal Computer for this procedure.

To start a chart from the P.A.M. screen:

If you have a fixed disc drive:

1. Select the Bar, Line or Pie chart application.
2. Select `Start Applic`.

This procedure displays the Charting Main functions.

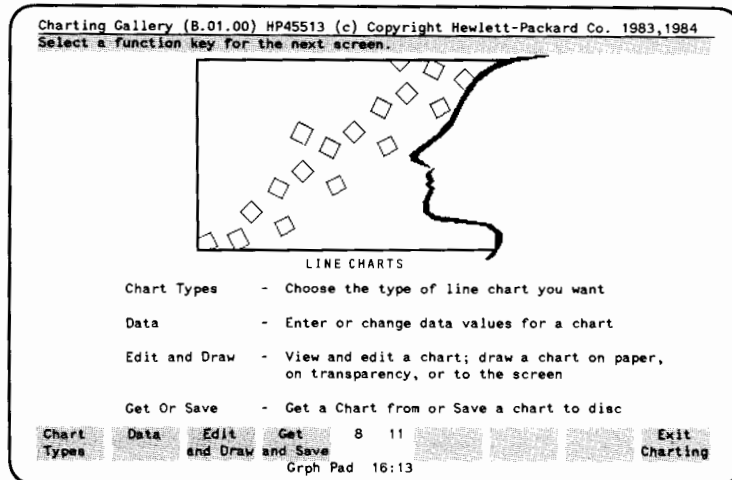
If you have a double-sided flexible disc drive:

1. Put the application disc for the chart type you want in the left-hand disc drive (drive A:).
2. Select **Reread Discs**.
3. Select the application.
4. Select **Start Applic**.

If you have a single-sided flexible disc drive:

1. Remove the system disc from drive A:
2. Put the application disc for the chart type you want in the left-hand disc drive (drive A:).
3. Put a formatted data disc (one with your charts on it or one on which you want to put your charts) in the right-hand disc drive (drive B:). This is recommended because there is very little room on your application disc for data files.
4. Select **Reread Discs**.
5. Select the application.

6. Select **Start Applic**.



**Figure 2-1. Charting Main Functions.**

If you chose a bar or line chart in the procedure above, you now decide which type of bar or line chart you want to draw. Refer to the information that follows to choose a bar type or line type for your chart.

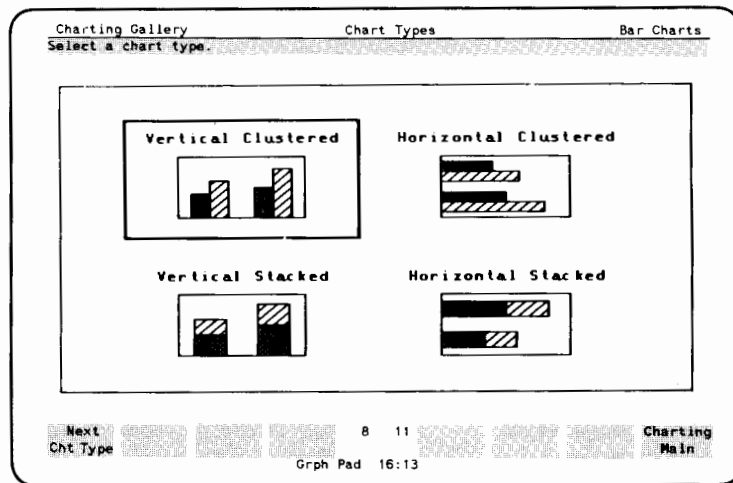
If you chose a pie chart, you are ready to begin entering information for your chart.

You can also begin a new chart using the New Chart function that is displayed on the Data screen. This function clears all information that is on the Data screen so that you can start over and enter new information. This function is discussed in the Starting a New Chart section at the end of this chapter.

## Choosing the Type of Bar Chart

If you chose to create a bar chart, you can choose from four types of bar charts:

- Vertical Stacked
- Vertical Clustered
- Horizontal Stacked
- Horizontal Clustered



**Figure 2-2. Types of Bar Charts.**

The kind of bar chart you choose depends on what you want to show with your chart. Horizontal bar charts are generally preferred over vertical bar charts when comparing size or emphasizing the differences between one thing and another. This is because there is more space for item labels on horizontal bar charts, and because people tend to read time comparison into a column chart whether or not time is being measured.



The arrangement of bar charts (that is, stacked or clustered) also depends on what you want to show with your chart. A clustered bar chart is used to compare the relationships within an item. A stacked bar chart is used to compare parts to the total item.

If you do not indicate which bar type you want, Charting Gallery automatically chooses the Vertical Clustered bar type for you the first time, and after that uses the last type of bar chart you chose.

To choose the type of bar chart you want to use:

1. Select **Chart Type** from Charting Main.
2. Select one of the four bar types by touching the type on the screen or by selecting **Next Cht Type**. The bar type you select is highlighted with a box around it.
3. Select **Charting Main** to return to the Charting Main functions.

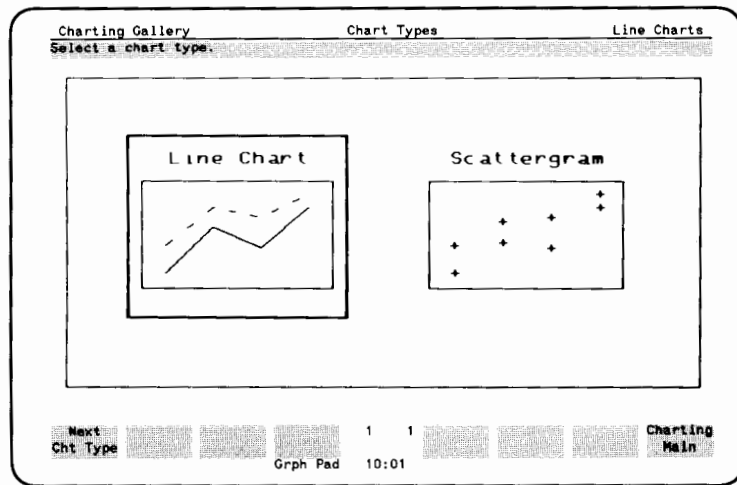
---

## Choosing the Type of Line Chart

If you chose to create a line chart, you can tell Charting Gallery whether you want to make a Line chart or a Scattergram. If you do not indicate whether you want a line chart or scattergram, Charting Gallery automatically chooses the Line chart for you the first time, and chooses the last type used, Line or Scattergram, thereafter.

Generally speaking, a Line chart is best when you are plotting a long series of data or several series of data when many points must be plotted. Use a scattergram when you want to show how two sets of data correlate.

For example, you may want to see how forecasted sales correlate to actual sales for a given time period.



**Figure 2-3. Line Chart and Scattergram.**

To choose the type of Line chart you want to make:

1. Select **Chart Type** from Charting Main to display the Chart Types screen.
2. Select Line or Scattergram by touching the type you want on the screen, or by selecting **Next Cht Type**. The type you choose is highlighted with a box around it.
3. Select **Charting Main** to return to the Charting Main functions.

## Entering Information

You enter the following information for your chart on the Data screen:

- columns of data for your chart
- x-axis labels for pie, bar, line and scattergrams
- legends for bar and line charts
- segment labels for pie charts

Charting Gallery then takes this data and draws the type of chart you selected.

Figure 2-4 shows a data screen for bar charts.

Charting Gallery Data Bar Charts  
Choose a label type and fill in your data.

	Textual X-Axis Labels	Legend 1	Legend 2	Legend 3	Legend 4	Legend 5
1		Bar	Bar	Bar	Bar	Bar
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Use Next or Prev on keyboard to see more data

Numeric Labels Period Labels Mark Begin Mark End Num Pad 5 26 New Chart Clear Column Clear Field Clear Charting Main

10:55 CAPS

Figure 2-4. Data Screen.

You enter information on the Data screen by moving the cursor (|) to a column and typing the label, legend, or data for your chart.

To display the Data screen:

1. Select **Data** from Charting Main.

### **Moving the Cursor (|) on the Data Screen**

There are several ways to move the cursor on the Data screen. The quickest and easiest way is to touch the screen where you want the cursor placed. You can also use various keys on your keyboard to move the cursor.

- Use the **Return** key to move the cursor down a column.
- Use the **Tab** key to move the cursor across a row to the right.
- Use **Shift** with another key to reverse the function. For example, press the **Return** and **Shift** keys together to move the cursor up a column.

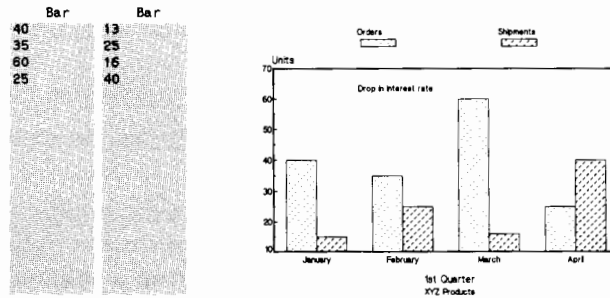
The cursor control (arrow) keys, and **Insert line** and **Delete line** keys can also be used. See Chapter 1, *Getting Ready to Use Charting Gallery*, for complete information on Editing Keys.

### **Entering Data**

You enter the numerical data that you want to organize into a chart on the Data screen in the columns labeled Bar, Line or Pie. Data columns are labeled "Bar" when you choose bar charts, "Line" when you choose line charts, and "Pie" when you choose Pie charts. These columns of data then become the bars and lines on bar and line charts, and any one column becomes a pie chart when you are creating pie charts. The information you enter is referred to as data values, and each line on the column is referred to as a field.

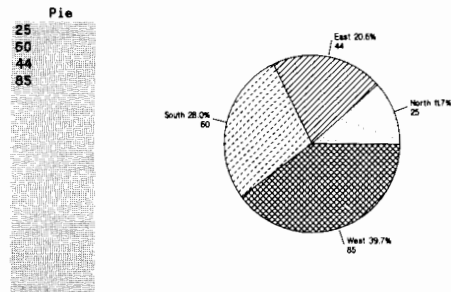
There are five columns for entering data values, and each column has 16 spaces where data values can be entered. Each screen of five columns and 16 spaces per column is a data page. You can have up to four data pages, or 64 data values. The **Next** and **Prev** keys are used to view data pages.

Each column of data values you enter corresponds to a line on a line chart, a series of bars on a bar chart, or a pie chart. You can enter data anywhere in a field. Charting Gallery right justifies the values when you display the Data screen again.



**Figure 2-5. Data to Bar Chart.**

Pie charts only use one column of data values because they show the relationship of parts to a whole. Each data value you enter corresponds to a segment of a pie chart, and each column of data corresponds to a pie chart. You can have up to 16 segments in one pie chart. Choose the column of data you want to use by selecting **Next Column** until the column you want is highlighted.



**Figure 2-6. Data to Pie Chart.**

The amount of information you enter depends on the type of chart you are creating and what you want your chart to show. For example, if you are comparing two or more items on a bar chart, each item compared has a corresponding column of data values. The number of values per column (data points) you enter is dependent upon the length of time (or other independent variable on the X-Axis) you are comparing the items for.

For example, if you are comparing orders to shipments for a period of four months using a bar chart, you would enter four data values for orders in column 1 and four data values for shipments in column 2.

You can choose what portions of data you want to include on your chart by marking that data using the **Mark Begin** and **Mark End** functions. Charting Gallery automatically marks extra data for those chart types such as pie that cannot use all 64 rows of data. These marking functions are discussed in the Making a Partial Chart section of this chapter.

### **Data Values**

Data values can be positive or negative numbers greater than or equal to  $10^{30}$ . These numbers can also have a fractional part expressed as a decimal. Some examples of numbers that can be entered as data values are:

3421.03

3

-3

-3.42103

When a data value is greater than 999,999, you can use the scientific notation  $+1E+30$  or  $-1E+30$ . The notation  $+1E+30$  means you can have a positive number with up to 30 zeros behind it. The notation  $-1E+30$  means you can have a negative number with up to 30 zeros behind it. For example, the number .00342 written with a notation is  $3.42E-3$ . Charting Gallery keeps up to six digits of precision.

Each chart type has limitations on how much data you can enter. These are listed at right.

### **Pie**

- Maximum number of pie segments = 16
- Maximum number of data values per pie segment = 1

It is recommended that your pie chart have 6 or fewer segments so that your audience can more clearly understand your chart.

You can choose which column of data you want to use for your pie chart if more than one column on your Data screen contains data. For example, you may bring in a page of data from a spreadsheet application to make several pie charts. You must create a pie chart from one column of data at a time; you cannot use some values from one column and some values from a second column. The column you choose is highlighted in inverse video, while the other columns are not highlighted.

### **Clustered Bar**

- Maximum Number of data rows is relative to the number of data columns:

<b>Number of Columns</b>	<b>Maximum Number of Rows</b>	<b>Maximum Number of Data Pages</b>
1	64	4
2	40	2+
3	26	1+
4	20	1+
5	16	1

### **Stacked Bar**

- Maximum number of bars = 5
- Maximum number of data values per bar = 64
- Number of data pages = 4



## Line Charts

- Maximum number of lines = 5
- Maximum number of data values per line = 64
- Number of data pages = 4

### To enter data:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Move the cursor (—) to the column portion of the screen. The columns are labeled Bar, Line, or Pie, depending on the chart type you are creating.
3. Type the data, pressing **Return** to move down the column or **Tab** to move across the row.

### To clear a column of data:

1. Move the cursor to the top of the column.
2. Select **Clear Column**.

### To clear a data value:

1. Move the cursor to the data value.
2. Select **Clear Field**.

### To clear all the data:

1. Move the cursor to the top left of the chart using the cursor control key.
2. Select **Clear Display**.

All the data for the chart is cleared, but the titles and annotations remain.

### **To clear the Data screen:**

1. Select **New Chart**.

Charting Gallery asks you to confirm.

2. Select **Yes, Continue** to confirm. Select **No, Cancel** to cancel.

When you confirm with **Yes, Continue** the current chart is not saved, and all the data is erased as well as the titles and any annotations you might have.

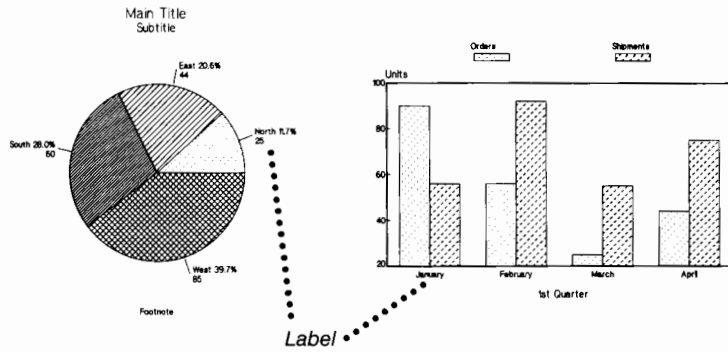
The New Chart function is discussed at the end of this chapter.

### **To display previous and next data pages:**

Use the Prev and Next keys

## X-Axis and Segment Labels

X-axis labels identify the independent variables on bar, line and scattergram charts, and segment labels identify the segments on pie charts.



**Figure 2-7. X-Axis Labels.**

## Pie Segment Labels

You can enter as many labels as you have pie segments, up to 16, and each label can be up to 20 characters long. You enter segment labels for pie charts in the column labeled Segment Labels on the Data screen.

To enter a segment label:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Move the cursor to the Segment Labels column.
3. Type the labels, pressing **Return** after each one.

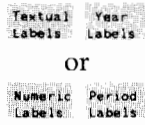
## X-Axis Labels for Bar and Line Charts

You can label the X-axis in two ways:

- Textual
- Numeric

In addition, each of the types has a shortcut when you want to use time period units (Period Labels) or years (Year Labels) as your labels. Period labels are available when you select Textual Labels, and Year labels are available when you select Numeric Labels.

You select the type of X-axis you want from the Data screen. You can have as many labels for the X-axis as there are bar groups or line points on your chart. Each label can be up to 20 characters long. If you do not enter information in the X-axis column on the Data screen, no X-axis labels appear on your chart.



**Figure 2-8. X-Axis Types.**

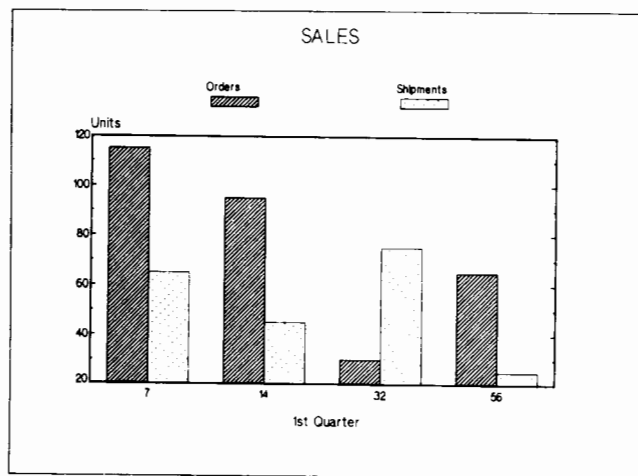
## Textual Labels

When you select Textual Labels, you tell Charting Gallery to interpret the labels exactly as you have entered them in the X-axis column on the Data screen. What you type on the Data screen is exactly what appears on the X-axis. Textual labels can be either characters, numbers or a combination.

For example, if you select Textual Labels, and enter the following four numbers for your labels:

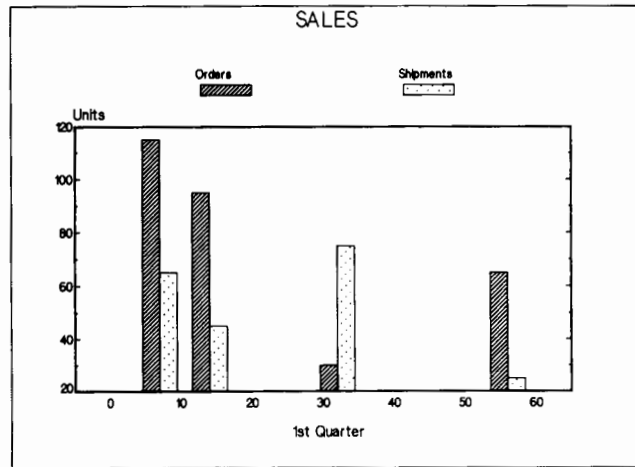
7, 14, 32, 56

the X-axis of your chart looks like Figure 2-9.



**Figure 2-9.**

If you have indicated these same numbers as Numeric labels, Charting Gallery adjusts for the uneven spacing of these numbers by including them within the next even interval. Therefore, instead of 7, 14, 32, and 56, Charting Gallery labels the X-axis with 0, 10, 20, 30, 40, 50, and 60 as shown in Figure 2-10.



**Figure 2-10.**

You choose Textual labels by selecting Textual Labels from the Data screen. Textual Labels corresponds to function key f1 and works as a toggle. A toggle is a function label or key that performs more than one function. When you select f1 labeled as Textual Labels, Textual is displayed at the top of the X-axis column on the Data screen to let you know which type of label is active. If you select f1 labeled as Numeric, Numeric is displayed at the top of the X-axis column.

To enter a Textual label:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Move the cursor to the X-axis column.
3. Select **Textual Labels** if not already selected. The X-axis column is labeled Textual X-Axis Labels when you select it.
4. Enter the labels.

### Period Labels

The X-axis is often labeled with time period units such as months or years. The Period Label option is displayed when you select Textual Labels on the Data screen. The Period labels you can select are:

- Day
- Month
- Quarter

When you select one of the period options, you are prompted for the first and last day, month or quarter. For example, if you select Day, you are asked for the number of the day you want to start with. If you want to start with Monday and end with Friday, you enter 1 for the first day, and 5 for the last day. Months are numbered 1 for January and up to 12 for December; Quarters are numbered 1 through 4. The results of selecting period labels are:

Days: Mon	Months: Jan	Quarters: 1st Q
Tue	Feb	2nd Q
Wed	Mar	3rd Q
.	.	4th Q
.	.	
.	.	



To enter a time period label:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Select **Textual Labels** if not already selected.
3. Select **Period Labels**.
4. Select **Days**, **Months**, or **Quarters**.
5. When prompted, enter a number for the first day, month, or quarter you want to use. If you do not want to change the values displayed on the prompt line, go on to step 6 without entering any numbers.
6. Press **Return**.
7. When prompted, enter a number for the total number of days, months or quarters you want to use.
8. Press **Return**. The textual labels for the range of days, months or quarters is displayed in the X-axis column.

### **Numeric Labels**

Numeric labels, like data, can be positive or negative numbers that can have fractional parts expressed as a decimal. If the number is greater than 999999, you can indicate the number with a scientific notation that is a kind of shorthand. For example, you could enter the number 3421.03 as 3421.03 or as 3.42103E+3.

You cannot enter text for an X-axis if you have selected Numeric for your X-axis type. If you do enter text, Charting Gallery beeps and prompts you to enter a number for the X-axis when you leave the Data screen.

When your chart is drawn, Charting Gallery adjusts numeric labels into even intervals that include the lowest and the highest number you enter. For example, if you enter 7, 14, 32, and 56 as numeric labels, Charting Gallery labels the X-axis of your chart as 0, 10, 20, 30, 40, 50, 60. If you want to label the X-axis with exactly the same numbers you type into the X-axis column, select the Textual label option instead of Numeric.

You select the Numeric Label option from the Data screen. The numeric option corresponds to the f1 function key and works as a toggle with the Textual label option. A toggle is a function label or key that performs more than one function. When you select f1 labeled as Numeric Labels, "Numeric" is displayed above the X-axis column, and "Textual" is displayed in the f1 key label.

To enter a numeric label:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Select **Numeric Labels** if not already selected. The X-axis column will be labeled Numeric X-Axis Labels when you select it.
3. Move the cursor to the top of the X-axis column.
4. Enter numbers and press **Return** for each label.

### **Year Labels**

Because many X-axis labels are in year units, Charting Gallery provides a Year Labels feature when you select the Numeric Label option that labels the X-axis with years for you.

When you select Year Labels, you are prompted for the first and last year you want as labels. In addition, you are asked to enter the number of years between each year label. The number you enter for this must be between the range Charting Gallery indicates. Charting Gallery calculates this range from the first and last years you enter.

Although you are prompted for years, the Year Labels subset can also be used as a shortcut for entering any sequence of numbers in a regular pattern.

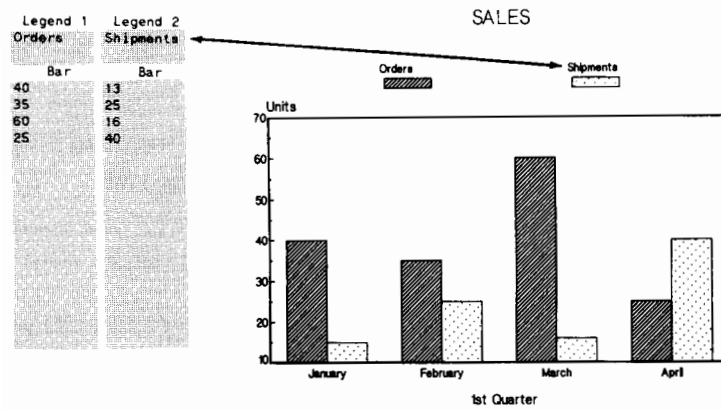
To enter year labels:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Select **Numeric Labels** if not already selected.
3. Select **Year Labels**.
4. When prompted, enter the first year (or number) and press **Return**. If you do not wish to enter a number, select **Cancel** to cancel the Year Labels feature.
5. When prompted, enter the last year (or number) and press **Return**.
6. When prompted, enter the number of years (or interval size) between each year label and press **Return**. The years (or numbers) are listed on the X-axis column of the Data screen.

### **Legends**

A legend indicates what a particular texture, line or marker style on your chart represents. Legends are like the keys on a map that tell you what certain symbols on the map mean. You can assign legends to bar, line and scattergram charts. Legends are not used on pie charts.

The texture and line and marker styles are chosen by Charting Gallery, but you can change them on the Edit and Draw screen.



**Figure 2-11. A Legend.**

A legend can be up to two lines with ten characters on each line. Legends can be made up of letters, numbers, or a combination of both. You can have up to five legends on a chart.

You enter legends above the data columns on the Data screen. If you do not enter any legends, no legends appear on your chart.

To enter a legend:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Move the cursor to a legend field on the Data screen.
3. Type the legend.
4. Press **Return** if you want to type a second line. If not, press **Tab** to move the cursor to the next legend.

Follow these steps to enter as many of the five legends as you want.

Legend specifications can be edited on the Edit and Draw screen. For information on changing legend specifications, see Chapter 3, Editing a Chart.

---

## Making a Partial Chart

You can choose to draw a partial chart by telling Charting Gallery to use only a portion of the data you have entered on the Data screen. For example, if your chart displays sales for several regions, you can show the sales for one particular region by marking just those rows of data that apply to the region you want to show. Selecting or marking portions of data is also useful when you get data from another application and you do not want to use all of the information retrieved.

You indicate what portion of the data you want drawn on your chart by using the Mark Begin and Mark End functions on rows of data on the Data Screen. The portion of data rows not marked is highlighted with a vertical bar at the far left of the screen.

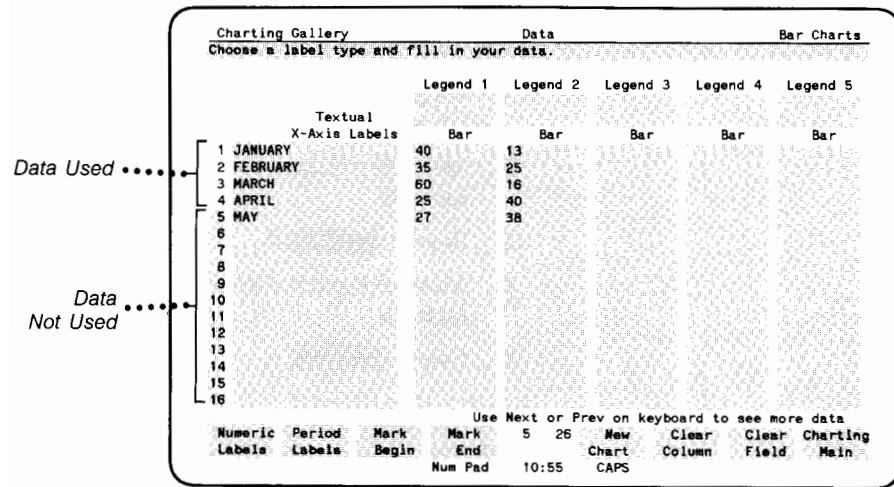


Figure 2-12. Marking Data.

When you are using a chart type (such as Pie charts) that cannot use all 64 rows of data, Charting Gallery automatically marks the extra data. If you select Mark End at the very end of the 64 rows of data, Charting Gallery moves the beginning mark down so that the range is no more than the maximum allowed.

To make a partial chart:

1. Display the Data Screen by selecting **Data** from Charting Main.
2. Move the cursor to the first row of data you want to include.
3. Select **Mark Begin**.
4. Move the cursor to the last row of data you want to include.
5. Select **Mark End**.

Only the data you have marked is included on your chart until you re-mark the data on the Data screen.

## Starting a New Chart

You can start over and create a new chart by selecting the New Chart function from the Data screen.

The **New Chart** function erases any information you have entered on the Data screen for your current chart, and displays a new Data screen. All titles on your chart are set to "Main Title", "Subtitle", and so on, as they are when you first begin a chart. Before your data is erased, Charting Gallery asks you to confirm. You select **Yes, Continue** if you want to continue, or **No, Cancel** if you want to cancel the function.

If you want to save the information you have entered before beginning a new chart, select **Get and Save** from Charting Main. See Chapter 4, Getting and Saving A Chart, for information on saving your chart. Select the New Chart function only when you are sure you do not want to save your current chart.

To begin a new chart with the New Chart function:

1. Display the Data screen by selecting **Data** from Charting Main.
2. Select **New Chart**.
3. Select **Yes, Continue**, if you want to erase the data on the data screen and enter new data. Select **No, cancel** to cancel the function and leave the current data on the Data screen.





# 3



## Editing a Chart

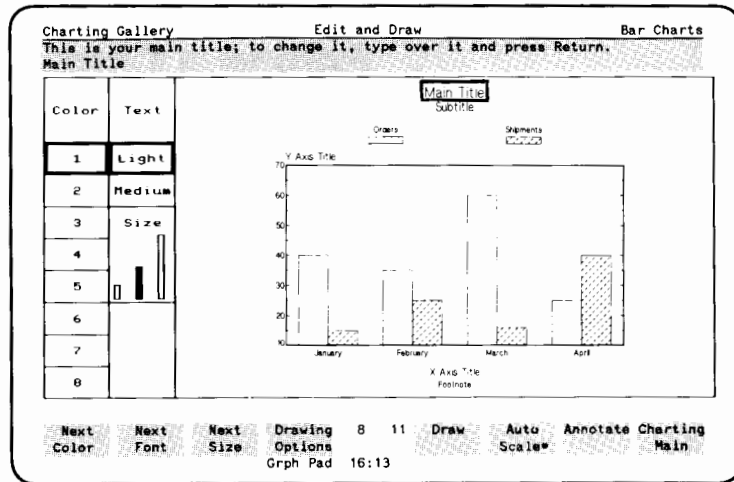
---

Editing a chart lets you see how your chart will look once it is drawn. When you edit a chart you can change its appearance and add finishing touches before actually drawing it on paper or transparency. You edit a chart after you have entered the information you want represented on it, but before you draw it.

When you edit a chart you can:

- Add titles and footnotes.
- Annotate your chart.
- Add lines and boxes.
- Change the font type and size of the text on your chart.
- Change the color of bars, lines, and pie segments.
- Change the X- and Y-Axis titles on line and bar charts.
- Change the line styles on line charts.
- Change marker styles for scattergrams.
- Change textures for bar and pie charts.
- Change legend text.
- Change the scaling of bar and line charts.
- Explode or sort pie chart segments.

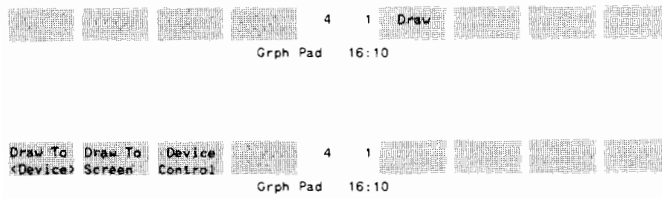
You adjust the appearance of your chart on the Edit and Draw screen. The Edit and Draw screen is displayed by selecting **Edit and Draw** from the Charting Main functions.



**Figure 3-1. Edit and Draw Screen for Bar Charts.**

### 3-2 Editing a Chart

From the Edit and Draw screen you can also draw your chart by selecting the **Draw** function. Selecting **Draw** displays a second set of functions that let you draw your chart to the current device, draw your chart to the screen, or display the Device Control screen to change drawing options.



**Figure 3-2. Drawing Functions.**

These drawing functions are discussed in Chapter 5, Drawing a Chart.

## Using the Edit and Draw Screen

The Edit and Draw screen shows you exactly what your chart will look like once it is drawn. You can bypass editing your chart and save and draw your chart without making any changes to your chart. If you want to check the appearance of your chart, or want to make any changes to it, edit it first.

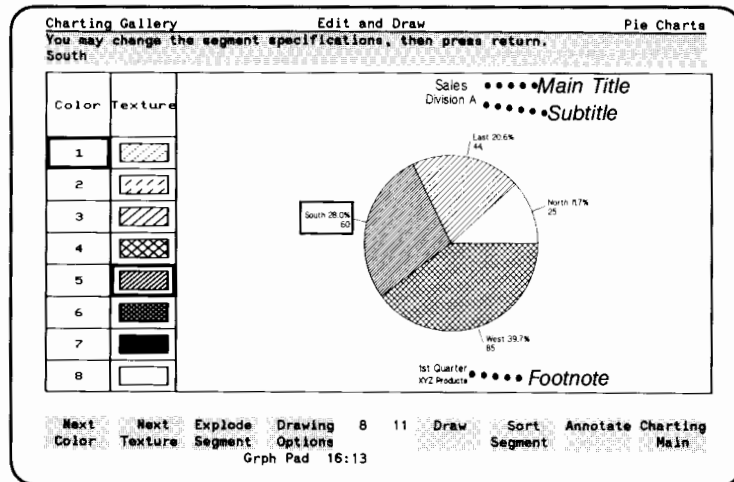
Each time you press **[Return]**, Charting Gallery “redraws” part or all of your chart on the Edit and Draw screen so that you can see how the change has affected the appearance of your chart. If you press **[Tab]** after a change, Charting Gallery moves to the next selection field without making the change or redrawing the chart. No changes are made to your chart until you press **[Return]**.

You can also make changes to your chart by touching the part of the chart you want to change and typing in something new, or touching a new option. Then, press **[Return]** or touch the center of the screen to redraw your chart with the change.

The titles and footnote area are labeled “Main Title”, “Sub-title”, and “Footnote” on the Edit and Draw screen to indicate their placement. These names appear on your chart unless you clear them or enter your own titles and footnote.

## Adding a Main Title, Subtitle or Footnote

A main title is a description of the major theme of your chart. A subtitle supports and adds detail to the main title, and a footnote adds an additional comment or information to a chart such as a date, author, or source of data. You can add a main title, subtitle or footnote to any chart.



**Figure 3-3. Titles and Footnotes.**

You give your charts a title, subtitle, or footnote by typing them on the Edit and Draw screen. You can also change the font type, text size, and color of text for the entire chart when you type the main title of your chart. The maximum length of a title or footnote depends on the size of text you choose.

Each time you select the Edit and Draw screen, you are prompted for the main title first, the subtitle second. The prompt for changing the footnote follows the prompts for changing the Y- and X-axis titles. If you don't want to make changes to any of these, use the **Tab** key to advance to the next one, or touch the one you want to change.

To add a title and footnote:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main. You are prompted for the main title.
2. Type the title and press **Return**.
3. Press **Tab**; you are prompted for the subtitle.
4. Type the subtitle and press **Return**.
5. Press **Tab** until you are prompted for the footnote, or touch Footnote on your screen. Type it and press **Return**.

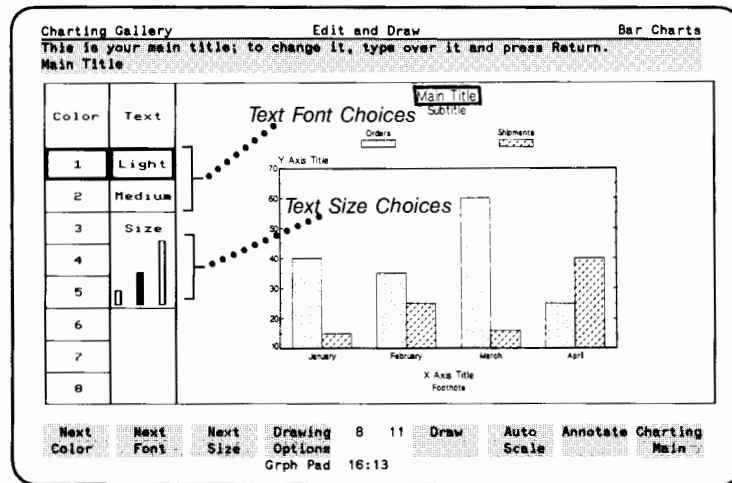
If you do not want a title, subtitle or footnote, space over the current one, press the **Clear line** key, or suppress them using the **Drawing Options** function on the Edit and Draw screen. See Chapter 5, Drawing A Chart, for information on this function.

X- and Y-axis titles are added in the same way. Charting Gallery prompts you for these titles after the subtitle and before the footnote. X- and Y-axis titles are discussed in the section Changing X- and Y-Axis Titles in Bar and Line Charts in this chapter.

## Changing Font Type and Size

Font refers to the amount of shading, light or medium, that the text on your chart has. Light is the font type that Charting Gallery uses until you change it.

Text size is how large the text appears on the chart. The three Size bars in the option selections portion of the Edit and Draw screen indicate the relative size of text: small, medium, and large. The middle size is the text size that Charting Gallery uses until you change it.



**Figure 3-4. Text Font and Size Choices.**

Use small text size for reports when your chart has lots of text. If you use the large text size, you cannot have as much text on your chart because extra space is taken up by the larger letters. When you use large lettering, you cannot have a subtitle, footnote, or more than one line for each legend. Choose large text when your chart has few words and is being used for a presentation, or is plotted very small.



You can change the Font type and size of the text for your entire chart from the Edit and Draw screen. When you are prompted for a Main title, the text font and size choices are listed in the Options Selection part of your screen. Text sizes are chosen by touching the text size box, or by selecting the **Next Size** function until the text bar you want is highlighted. The larger the text size, the fewer characters your title can have.

To change the text font:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. When the prompt for changing the main title appears on the prompt line select Light or Medium by touching the screen or by selecting **Next Font**.
3. Press **Return**. The text is redrawn using the new font.

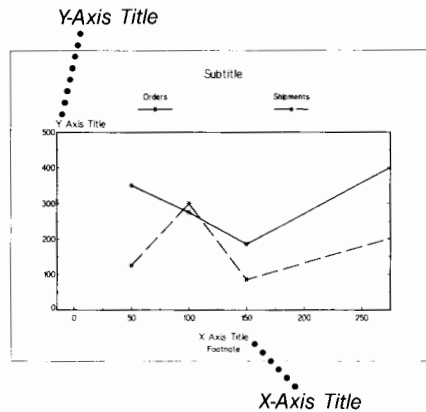
To change text size:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. When the prompt for changing the main title appears on the prompt line, select the size by touching the size field, or by selecting **Next Size** until the size you want is highlighted.
3. Press **Return**. Your chart is redrawn with the new text size.

Color can also be changed when you change text font and size. See the section Changing Color in this chapter of *Using Charting Gallery*.

## Changing X- and Y-Axis Titles on Bar and Line Charts

The X-axis title identifies the time series or other independent variable that you are plotting on your chart. The Y-axis title identifies the amounts, values or other dependent variables that you are plotting. Time is a typical independent variable, and dollar amounts or quantities are typical dependent variables.



**Figure 3-5. X- and Y-axis Titles.**

Each title can be up to 40 characters long. Charting Gallery automatically labels the X- and Y-axes with the dummy titles "X Axis" and "Y Axis" when your chart is drawn unless you blank them out, add your own titles, or suppress them using the **Drawing Options** function. The Drawing Options function is discussed in Chapter 5, Drawing a Chart.

To change the X- or Y-axis title:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Press the **Tab** key until the X- or Y-axis title is highlighted with an indicator box, or touch the title on your screen.
3. Type the X- or Y-axis title you want to use and press **Return**.

## Annotations

An annotation is a comment that provides special or unusual information on your chart. For example, you might want to point out that the sales figures on your chart are from a specific region by adding an annotation. You add text annotations to your chart and draw lines and boxes using the **Annotate** function on the Edit and Draw screen. Your charts can also be annotated using HP Drawing Gallery. See Appendix B, Using Charting Gallery with Other Applications.

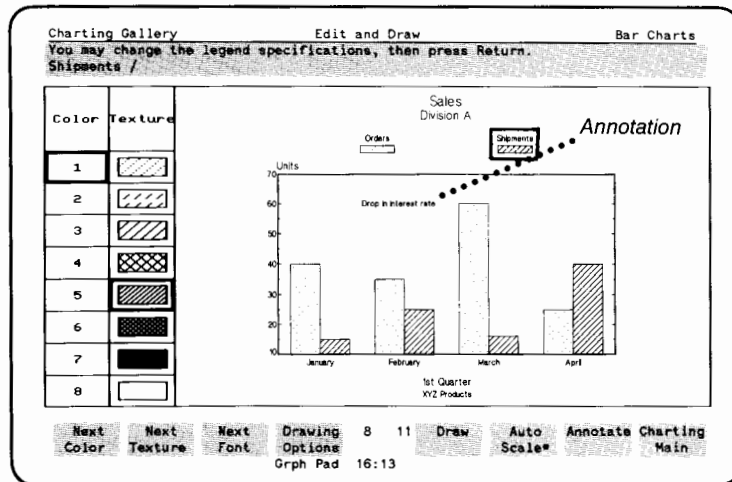


Figure 3-6. Annotation.

When you select Annotate from the Edit and Draw screen, you choose whether you want to add annotations or lines and boxes by selecting the f1 function. This function works as a toggle. A toggle is a function label or key that performs more than one function. When you select the f1 function once, it is labelled "Text", and the Line function is active. When you select f1 again, "Line" is displayed in the label and the Text annotation function is active. The Text annotation function is automatically selected by Charting Gallery until you change it.

Annotations and lines can be added to any chart. You can:

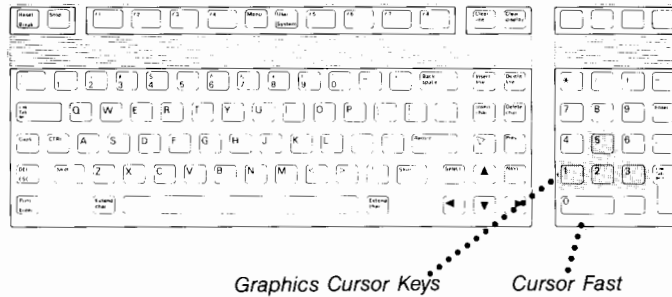
- Add annotations.
- Change annotations.
- Erase annotations.
- Draw lines and boxes.
- Erase lines and boxes.

### **Using the Graphics Cursor**

The Graphics cursor is the cross symbol (+) that is displayed on your screen when you select the Annotate function from the Edit and Draw screen. The Graphics cursor tells Charting Gallery where you want to add or erase annotations, lines, and boxes on your chart. Its function is similar to the alpha cursor (␣) you use on other Charting Gallery screens to tell Charting Gallery where you want to add or delete information.

## The Graphics Cursor Keys

Use the graphics cursor keys to move the graphics cursor (+) when you add or erase annotations, lines or boxes to your chart. The graphics cursor keys correspond to the 1, 2, 3, and 5 keys on the numeric pad to the far right of the keyboard. Place the graphics template that is supplied with your HP Personal Computer on the numeric key pad to use these keys more easily.



**Figure 3-7. Graphics Cursor Keys.**

- ← (1) Moves the graphics cursor to the left.
- ↓ (2) Moves the graphics cursor down.
- (3) Moves the graphics cursor to the right.
- ↑ (5) Moves the graphics cursor up.

## Adding an Annotation

When you choose Text annotations, the **Erase Text**, **Add Text**, and **Modify Text** functions are displayed. Only one of these functions can be performed at a time. The function you choose will contain an asterisk in the key label to indicate that it is the current or active function. When you have added the maximum number of annotations, an asterisk moves to the modify text key, and Charting Gallery displays a message on the top line of the screen.

Your chart can have up to 10 text annotations with 60 characters per annotation, and a maximum of 30 line annotations.

To add a text annotation:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Annotate**. Text is automatically active, and "Line" is displayed in the f1 label. The **Add Text** label displays an asterisk, indicating that it is active.
3. Type the annotation you want on the user input line.
4. Move the graphics cursor (+) where you want the annotation to appear, then press **Return**.
5. If you want to add lines as well, select f1 until "Text" appears in the f1 label. If you are finished adding annotations, select **Done**. Your chart is redrawn with the annotations, and you return to the Edit level of the Edit and Draw screen.

## Editing and Moving Annotations

You can edit and move annotations that have already been added to your chart. To edit and move an annotation:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Annotate**.
3. Select **Modify Text**. An asterisk appears next to the function label when you select it.

4. Use the `Tab` key to move the graphics cursor to the annotation you want to edit. The annotation is highlighted with an indicator box.
5. Edit the annotation on the user input line by inserting or deleting letters using the cursor movement and editing keys, or by typing over the existing annotation.
6. If you want to move the annotation, move the graphics cursor (+) to the new location using the graphics cursor keys on the graphics key pad.
7. Press `Return`.
8. If you are finished annotating, select `Done`. Your chart is redrawn with the modified annotation.

## Erasing Annotations

Annotations can be erased when you no longer want them to appear on your chart.

To erase annotations:

1. Display the Edit and Draw screen by selecting `Edit and Draw` from Charting Main.
2. Select `Annotate`.
3. Select `Erase Text`. An asterisk appears next to the function label when you select it to indicate that it is active.
4. Press `Tab` until the text you want to erase is highlighted with an indicator box.
5. Press `Return`.
6. If you are finished annotating, select `Done`. Your chart is redrawn without the annotation.

## Drawing Lines

You draw lines on your chart to emphasize and draw attention to a particular part of your chart. Lines are drawn using the f1 function. The f1 function works as a toggle. A toggle is a function label or key that performs more than one function. When f1 is selected and "Text" is displayed in the label, the Line function is active. When you select f1 and "Line" is displayed in the label, the Text function is active.

To draw a line on your chart:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Annotate**.
3. Select f1 until "Text" appears in the label. This means that the Line function is active.
4. Select f3 until an asterisk appears next to the word Lines.
5. Move the graphics cursor (+) to the point where you want to start the line.
6. Select **Start at Cursor**. The line trailing the cursor disappears.
7. Move the cursor to the point where you want the line to end. There is a trial line from the start location to the cursor to guide you.
8. Select **Draw to Cursor** to draw the line. The line is highlighted with an indicator box.
9. If you are finished annotating, select **Done**. Your chart is redrawn with any lines you have added.



## Drawing Boxes

You draw a box by using the **Lines/Boxes** function. This function is displayed when you select **Line** from the f1 label. **Lines/Boxes** works as a toggle, displaying an asterisk next to either Lines or Boxes to indicate which function is active.

To draw a box:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Annotate**.
3. Select f1 until "Text" is displayed in the label. This means that the Line function is active.
4. Select f3 until asterisk is displayed next to the word Boxes.
5. Move the graphics cursor (+) to where you want a corner of the box drawn.
6. Select **Start at Cursor**.
7. Move the cursor to where you want the opposite corner of the box drawn.
8. Select **Draw to Cursor**. The last line is highlighted with an indicator box.
9. Select **Done** when you are finished adding boxes. Your chart is redrawn with the boxes.

## Erasing Lines or Boxes

Lines or boxes can be erased if you make a mistake or change your mind.

To erase a line or box:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Annotate**.
3. Select f1 until "Text" is displayed in the label. This means that the Line function is active.
4. Press **Tab** until the line you want to erase is highlighted with an indicator box.
5. Select **Erase Line**.

6. Repeat steps 4 and 5 to erase more lines. You must erase each of the four lines that make the box.
7. When you are finished annotating, select **Done**. Your chart is redrawn without the line or box.

## Changing Color



Color helps to differentiate and emphasize the various parts of a chart. You can select the color you want to use for:

- texture on bar and pie charts
- markers on scattergrams
- lines on line charts
- text
- grid

You select color by choosing one of the color numbers from the Option selections field on the Edit and Draw screen.

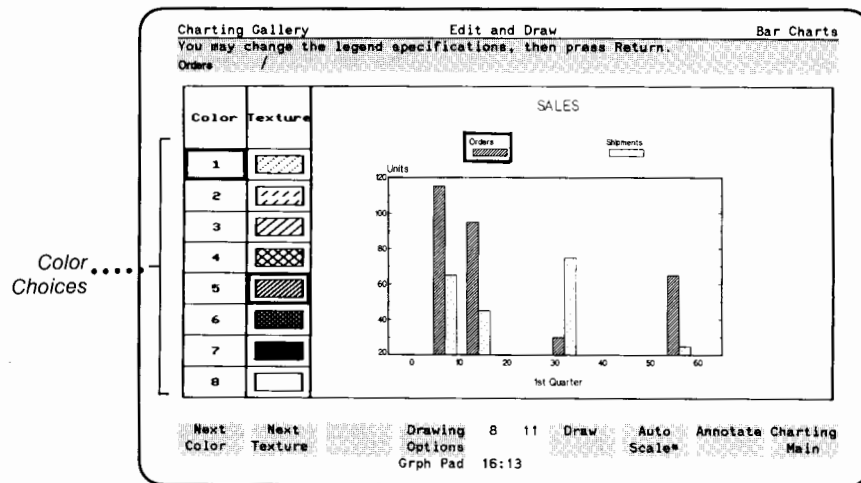


Figure 3-8. Selecting Color.

The numbers listed in the option selections field correspond to the pen numbers your plotter uses. You can select from pen numbers 1 through 8, even though your plotter may only have 2 or 6 pens. If you choose a number higher than the number of pens available in your plotter, Charting Gallery pauses when you are drawing your chart prompts you to change pens. Pen 1 is used unless you choose otherwise.

It is a good idea to set up your own color scheme conventions by assigning a particular plotter pen number to a particular color. For example, if you usually use black for legend specifications and titles, you could assign pen #1 to be black. Then, you always know to use color #1 for those basic parts of your chart. Using a color scheme saves time when you redraw the same chart at a later time, and also insures that the chart has the same colors as the original chart did.

To select a color:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select the part of the chart you would like to specify color for. The color for all the text on your chart can be changed when you select the main title.
3. Select a color by touching one of the color numbers on your screen, or by selecting **Next Color** until the color number you want is highlighted with a box indicator.
4. Press **Return** to save the change.

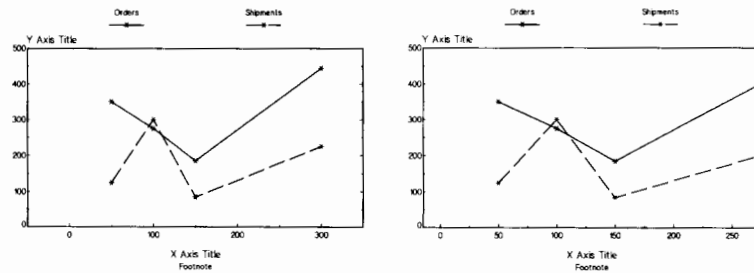
This color is used when you draw your chart with a plotter.

Line and marker styles, text font and size, and titles and footnotes can be changed at the same time you change color. Each of these is discussed in this chapter.

## Changing the Scale on Bar and Line Charts

The scale of your chart is the range of values or time on the X- and Y- axes. This range is initially determined from the information you enter on the data screen. You can adjust the scaling on your chart to show more or less detail depending on your charting needs. Specifically, you can change:

- minimum axis value
- maximum axis value
- major interval value
- number of minor intervals per major interval



**Figure 3-9. Changing X and Y-Axis Scale.**



You cannot change the scaling of the X-axis if it is textually labeled.

Charting Gallery determines the X and Y-axis scales from the data values you enter on the Data screen. When you enter new data, your chart is always rescaled if the Auto Scale function is on. Your chart is never automatically rescaled if the Auto Scale function is off. The Auto Scale function is discussed in the Automatic Scaling section in this chapter.

Charting Gallery redraws your chart after you have changed or kept the scaling values.

## Changing Axis Values

Axis value refers to the delineations on the axis scale. There are four values: the smallest or minimum, the largest or maximum, the values in between, or the major and minor intervals.

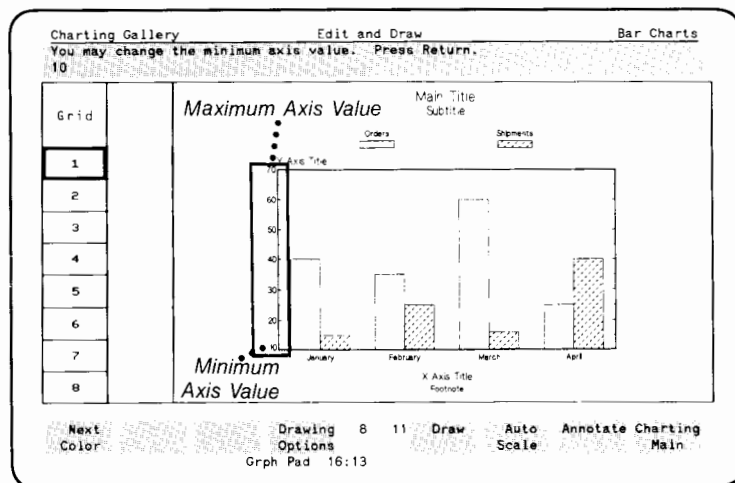
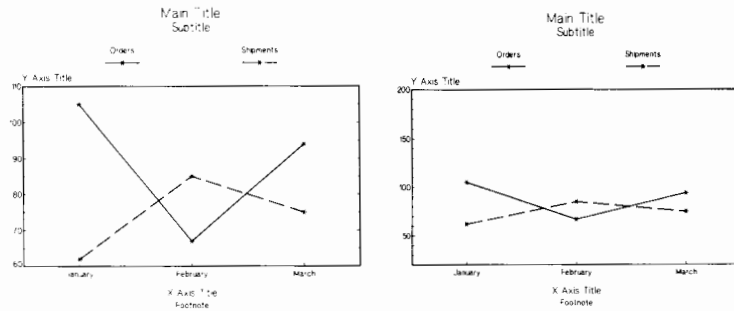


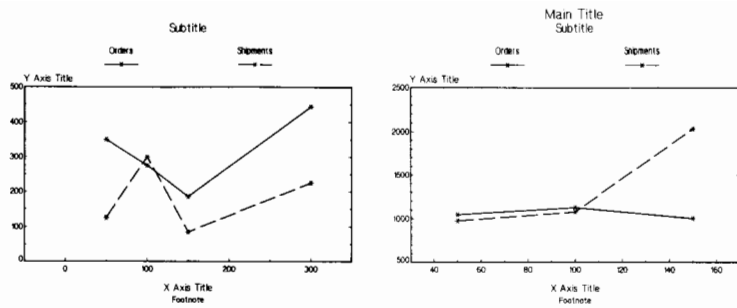
Figure 3-10. Axis Values.

When you change the minimum and maximum axis values, you adjust the amount of detail your chart shows. For example, if you adjust the range between the minimum and maximum axis values to be larger, your chart shows less detail than if the range between the minimum and maximum value was less.



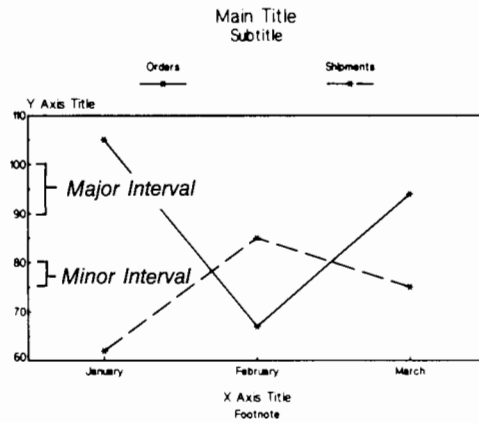
**Figure 3-11. Minimum and Maximum Axis Values (Y-axis).**

In a similar way the minimum and maximum values for the X-axis affect how much data is shown on your chart. Decreasing the range between the minimum and maximum axis values on the X-axis spreads the data out, sometimes causing your data not to plot at all.



**Figure 3-12. Minimum and Maximum Axis Values (X-axis).**

Intervals on the axis show more or less detail on the axis itself. The major and minor intervals do not affect the detail on your chart as the minimum and maximum axis values do.



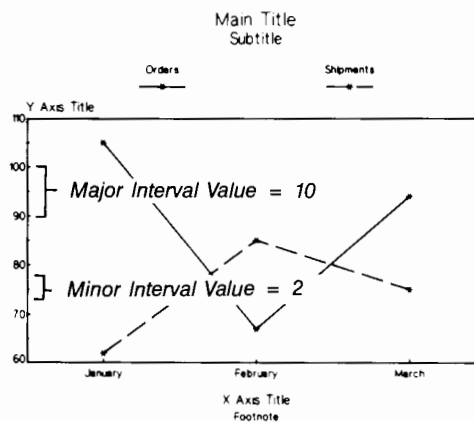
**Figure 3-13. Major and Minor Intervals.**

## Changing Minimum and Maximum Axis Values

Charting Gallery lets you change all of the axis values if you change any of them. To change the maximum axis value or the major and minor interval values, you must either change the minimum axis value when prompted, and/or press `Return`. The prompt to change the maximum value follows automatically when you have changed the minimum value, and indicates a minimum value range that you can enter. The maximum value that you enter must be greater than the minimum value you enter.

## Changing Interval Values

Interval refers to the range between values on the X- and Y-axis. The major interval is the numeric difference between the labeled values on the axes, and the minor interval is the number of tick marks between each of the values on the axes. Major and minor interval values are automatically calculated when minimum and maximum axis values are changed.



**Figure 3-14. Interval Values.**

Interval values change the amount of detail on the axis, but not the amount of detail on the chart.



You change interval values on the Edit and Draw screen when you change minimum and maximum axis values. The prompt line indicates a value range in which the new interval value must fall. This range is determined by the values you have entered for the minimum and maximum axis values.

**To change the minimum, maximum or interval values:**

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Press the **Tab** key until the horizontal or vertical axis is highlighted with a box, or touch the horizontal or vertical axis on your screen.
3. Type the new minimum value over the old value (if you want to change it) and then press **Return**.
4. You are prompted to change the maximum value. Type the new value over the old value and press **Return**.
5. You are prompted to change the major interval value. Type the new value over the old and press **Return**.
6. You are prompted to change the minor interval value. Type the new value over the old and press **Return**.

Your chart is redrawn with the new axis and interval values.

A **Cancel** function is displayed once you have entered a new minimum axis value or pressed **Return** to keep the old one. Selecting **Cancel** returns you to the minimum axis value prompt and displays the old value.

## Automatic Scale

Automatic scaling means Charting Gallery calculates axis values from the data values you have entered on the Data screen. The automatic scaling function works as a toggle. A toggle is a function label or key that performs more than one function. An asterisk next to the automatic scaling label means that the function is active, and that Charting Gallery rescales the Y-axis or numeric X-axis whenever the data on the Data screen changes. When no asterisk appears next to the label, the axes are never rescaled.

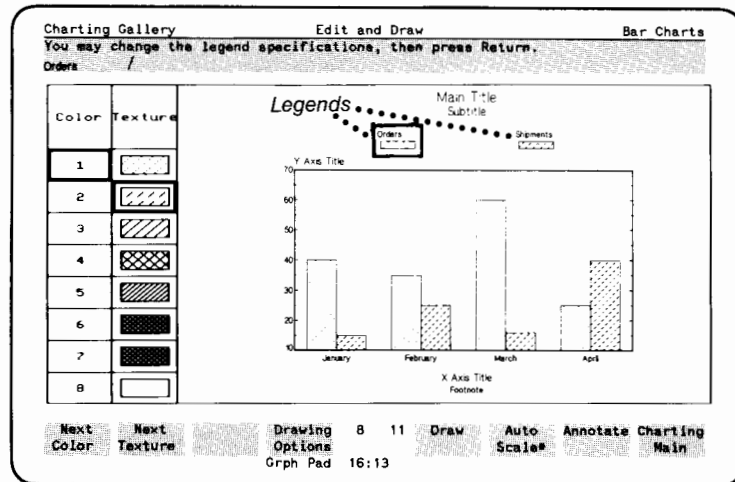
Automatic scaling is active and has an asterisk next to the function label until you select the function and no asterisk is on the label.

To turn automatic scaling off:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Auto Scale** until there is no asterisk next to the label.

## Changing Legend Specifications on Bar and Line Charts

A legend is a description or key on your chart that specifies what a particular color or pattern used on your chart stands for. Legends are used on bar and line charts. A legend specification is the color, texture, and title a legend has.



**Figure 3-15. Legends.**

You originally enter legends on the Data screen under the columns labeled Legend. You can change legend specifications on the Edit and Draw screen.

To change the legend specifications:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Touch the legend you want to change, or press **Tab** until that legend is highlighted with an indicator box.
3. Type the new title for each line of the legend over the old title.

The first and second lines of each legend are separated with a diagonal slash (/). You change both lines at the same time. If you choose the large text size, only one line of legend will fit.

4. Press **Return**.
5. To change other legends, touch the legend on your screen, or press **Tab** until the legend is highlighted with an indicator box, and follow the same steps.

You can also change color and texture for bars, lines, and markers when you change legends. Refer to these sections in *Editing a Chart* for information.

## Changing Segment Labels On Pie Charts

A segment label identifies what a particular segment on a pie chart stands for. Segment labels are originally entered on the Data screen on the column labeled Segment Labels. These labels can be changed on the Edit and Draw screen.

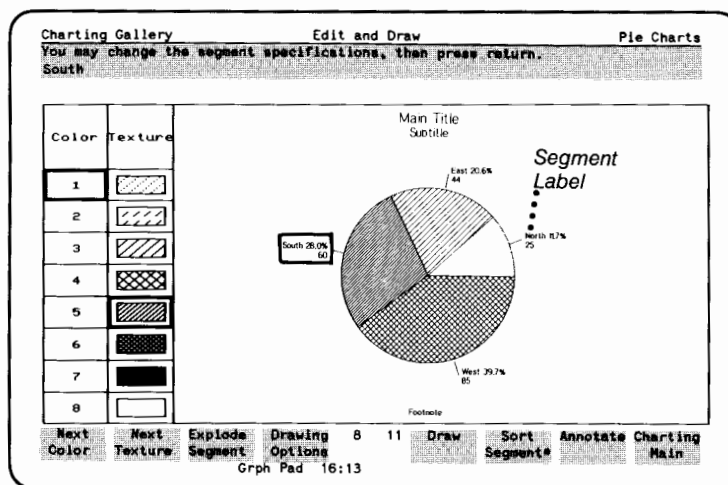


Figure 3-16. Segment Labels.

To change a segment label:

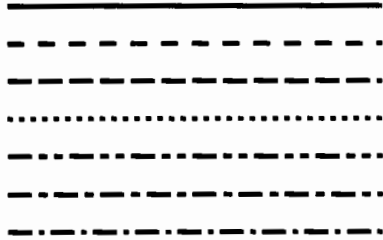
1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Touch the label you want to change, or press **Tab** until that segment is highlighted with an indicator box.
3. Type the new label over the old label on the user input line.
4. Press **Return**.
5. To change other segment labels, touch the label on your screen or press **Tab** until the label is highlighted with an indicator box and follow the same steps.

You can also explode pie chart segments at the same time you change the segment label. See the section Exploding Pie Chart Segments in this chapter.

## Changing Line Styles on Line Charts

Line styles are the different kinds of lines that are used to differentiate between the different kinds of data represented by the legend on your line chart. The styles from which you can choose are:

### Line Styles



**Figure 3-17. Line Styles.**

Charting Gallery initially chooses as many line styles as are needed to represent the data you have entered on the Data screen, starting with the solid line. You change the line styles on your line chart by selecting the style you want from the Option Selection field of the Edit and Draw screen. Line color can be changed at the same time you change the line style. For information on changing color see the section Changing Color in this chapter.

To change a line style:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Use the **Tab** key to tab to the legend you want to change, or touch the legend. The legend and the current line style are highlighted with an indicator box.
3. Select the style you want from the Option Selections by touching that style, or select **Next Style** until the style you want is highlighted.
4. Press **Return**. Your chart is redrawn with the new line style.

## Draw Marker

You can choose to have a \* marker at each data point of your line chart by selecting the **Draw Marker** function when you change line styles. The **Draw Marker** function works as a toggle. A toggle is a function label or key that performs more than one function. When an asterisk is displayed in the **Draw Marker** label, the function is active. When no asterisk is displayed, the function is not active, and no markers are drawn.

The **Draw Marker** function is displayed when you change the line style of a line chart. Charting Gallery does not draw markers on a line chart unless you select this function.

To draw markers on a line chart:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Use the **Tab** key to select the legend you want to change, or touch the legend on your screen. The legend and the current line style are highlighted with an indicator box.

3. Select **Draw Marker** until an asterisk is displayed in the label.
4. Press **Return**. Your chart is redrawn with markers at each data point for the particular line you selected.

You must select **Draw Marker** for each line that you want markers drawn on.

## Changing Marker Styles on Scattergrams

A marker is the symbol used to plot information on a scattergram. Markers are initially chosen for you when you enter the information for the scattergram on the Data screen. The marker styles available are:

### Marker Styles



**Figure 3-18. Marker Styles.**



Beginning with the asterisk (\*) marker, Charting Gallery chooses as many markers as necessary to differentiate between the columns of information you are charting on your scattergram. You change marker styles by selecting them from the Option Selection field on the Edit and Draw screen.

To change a marker style:

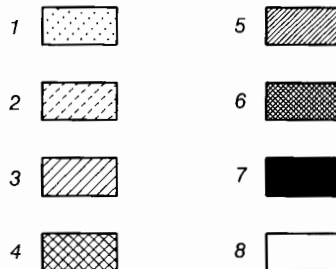
1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select the legend you want with the **Tab** key or by touching the legend. The legend and current marker style are highlighted.
3. Select the style you want from the Option Selections by touching it or by selecting **Next Marker** until the style you want is highlighted.
4. Press **Return**. Your screen is redrawn with the new markers.

The color of the markers can be changed at this time, too. For information on changing marker color, see Changing Color in this section.

## Changing Textures on Bar and Pie Charts

Textures are used on the legends of bar charts and the segments of pie charts to distinguish the different elements or items of comparison. There are 8 textures.

### Textures



**Figure 3-19. Textures.**

Charting Gallery automatically uses as many of the first 6 textures as are needed to compare your chart's data. The final two selections (solid and empty) are never automatically picked by Charting Gallery, but are available for your selection. The solid texture (7) has the visual effect of receding, and the open texture (8) has the visual effect of standing out, unless these textures are used for all the bars and segments.

You change textures for bar and pie charts on the Edit and Draw screen.

To change textures:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select the legend or segment label by tabbing to it or touching the screen. The legend or segment label and current texture are highlighted with an indicator box.

3. Select a texture by touching one on the Option Selections or by selecting **Next Texture** until the texture you want is highlighted.
4. Press **Return**. Your chart is redrawn with the new texture.

## Exploding Pie Chart Segments

Exploding a pie chart segment separates it from the rest of the pie segments. This has the effect of making the exploded segment the center of attention without destroying the unity of the chart.

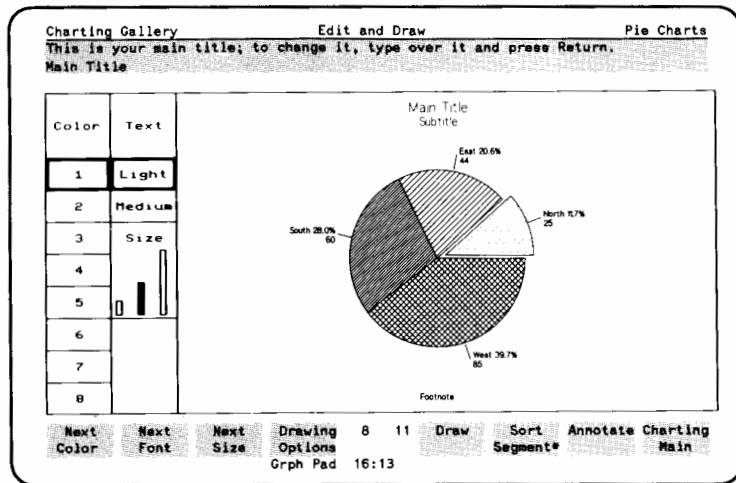


Figure 3-20. Exploded Pie Chart Segment.

The **Explode Segment** function works as a toggle. A toggle is a function label or key that performs more than one function. When an asterisk is displayed in the **Explode Segment** function label it is active.

To explode or separate a pie chart segment:

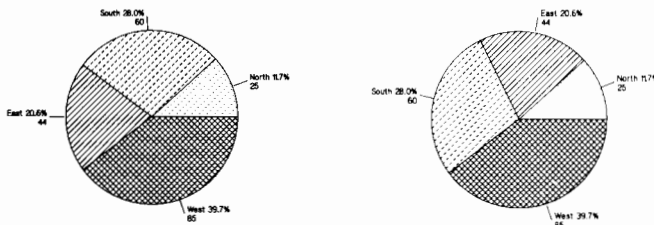
1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Touch the pie segment label you want to separate, or press **Tab** until the label you want is highlighted.
3. Select **Explode Segment** until an asterisk is displayed in the label.

You can also change the pie segment label at this time. See the section Changing Pie Segment Labels in this chapter.

4. Press **Return**. Your chart is redrawn with the exploded segment.

## Sorting Pie Chart Segments

Pie chart segments can be sorted or unsorted using the **Sort Segment** function. Sorted segments are arranged in order of value from largest to smallest clockwise on the chart. Unsorted segments are left in the order you entered them on the Data screen.



**Figure 3-21. Sorted Pie Chart Segments.**

The **Sort Segment** function works as a toggle. A toggle is a function label or key that performs more than one function. When an asterisk (\*) is displayed in the **Sort Segment** label, the function is active and your pie chart segments are sorted. When you select **Sort Segment** so that no asterisk appears in the label, the function is not active, and pie chart segments appear in the same order as you entered them on the Data screen.

Pie charts are sorted until you select the **Sort Segment** function so that no asterisk appears in the label. Use unsorted pie charts if you are comparing several pie charts that have the same logical segments with varying values.

To display a pie chart with unsorted segments:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Sort Segment** until there is no asterisk next to the label. The segments are drawn in the order you entered them on the Data screen.



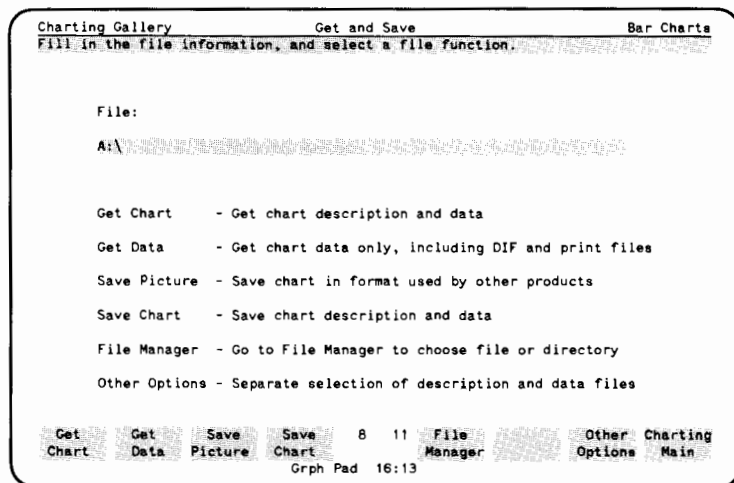


# 4

## Getting and Saving Charts

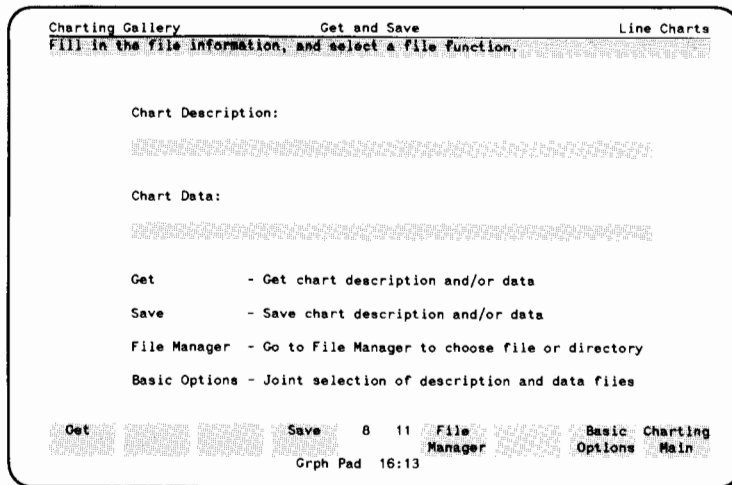
Charts can be saved and used again so that you do not have to create the same (or similar) chart over and over. When you leave Charting Gallery, it automatically saves the last chart you worked on in a workfile. Any previous charts that you worked on are not automatically saved. If you are working on more than one chart, you should save each one before you print or draw it, and before you leave Charting Gallery.

You save and retrieve charts from the Get and Save screen. The Get and Save screen has two levels, the Basic Options level and the Other Options level.



*Basic Options*





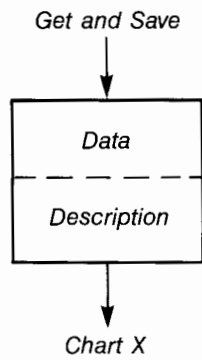
*Other Options*

**Figure 4-1. Get and Save Screen.**

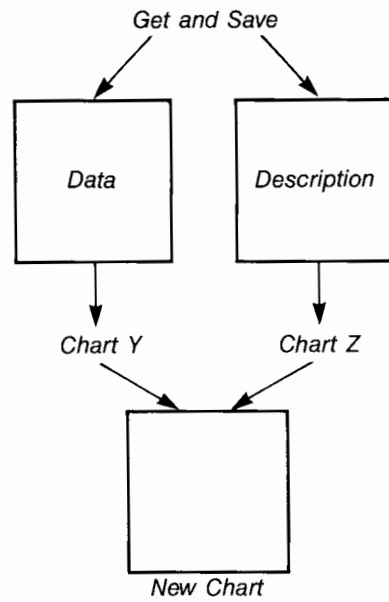
Charting Gallery keeps track of a chart in two parts — the chart data and the chart description. The chart data are the numeric values that you enter on the Data screen in the columns labeled “Bar”, “Line”, or “Pie”. The chart description is the information about how the chart looks, such as type of chart, title, color, texture, and so on. The Basic options level lets you get and save entire charts; that is, both the chart description and data. The Other Options level lets you get and save just descriptions or just data to mix and match new charts with existing information.

**4-2 Getting and Saving Charts**

Basic Options



Other Options



**Get and Save Basic Options**

From the Basic Options level you can:

- Get Chart and Save Chart.

These basic options let you get or save a chart's data and description.

- Get Data only.

This feature is used when you want to plot information from spreadsheets or print files. Information on using DIF (spreadsheet) and print files with Charting Gallery is discussed in Appendix B, Using Charting Gallery with Other Applications.

You also use this option to get a Charting Gallery data file without the chart description. Chart data files are used when you want to match data from one chart and a chart description from a different chart.

■ Save Picture

This save option is used when you want to save your chart as a picture file. Picture files can be used with other applications such as Drawing Gallery and Executive MemoMaker to draw logos and combine text and graphics. Picture files are discussed in Appendix B, Using Charting Gallery with Other Applications.

■ File Manager

This function lets you use the File Manager application to display a list of your files. This is helpful when you have drawn several charts and have forgotten a file name. You can also use File Manager for other file management tasks such as renaming, copying, and deleting files.

You can also return file names to the field labeled "File:" and change the default directory for a particular session.

■ Other Options

This function lets you display the second Get and Save level, Other Options.

### **Get and Save Other Options**

The Other Options level of the Get and Save screen lets you retrieve or save chart data from one chart to use with data or descriptions from other charts. Use the Other Options level when you want to update chart data or plot existing data on a different chart.

From the Get and Save Other Options level you can:

- Get or Save chart descriptions and/or data.
- Access File Manager.
- Display the Get and Save Basic Options screen.

You save and retrieve charts by typing the file name for the chart and a directory and disc drive, if needed. The Basic Options and Other Options functions let you move between the two screens. To display the Get and Save screen, select **Get and Save** from Charting Main.

## **File Names and Directories**

To save or retrieve a chart, you must tell Charting Gallery the chart name and its location. Charts are saved as MS-DOS files. Chart files have the same naming conventions as other MS-DOS files. Refer to the manuals that come with your HP Personal Computer if you need this information.

You must also tell Charting Gallery where to look for your file. Files are kept in directories. When getting and saving charts, Charting Gallery looks for your file in a directory in the same way you would look up a name in a telephone directory. If you maintain only one directory for all the files on your disc, you do not need to specify a directory name when you save or retrieve a chart. This directory is known as the current or root directory, and Charting Gallery always looks here unless you specify differently. Directory names are specified with a backslash (\) followed by the name of the directory.

In addition to knowing the directory, Charting Gallery must also know the disc drive where your file is located. You do not need to specify the disc drive if the file you are saving or retrieving is on the disc drive containing the application.

For example, if you want to retrieve the chart named FORECAST in the directory SALES located on drive B:, you would specify:

```
B:\SALES\FORECAST
```

If the directory SALES is the current or root directory, and drive B: is the current drive, you would not need to specify it. Instead, you would simply type:

```
FORECAST
```

Charting Gallery automatically fills in the current directory and disc drive for you when you first display the Get and Save screen.

## **File Manager**

File Manager is a facility that performs the most commonly used MS-DOS functions. File Manager is accessible in Charting Gallery from both levels of the Get and Save screen. File Manager lets you:

- Retrieve a file.
- Choose a new directory or drive.
- Delete, copy or rename a chart file.

File Manager lets you maintain your files easily by providing MS-DOS functions that you can select from the screen. When you select File Manager, the current file directory is displayed, showing all the charts you have saved. This is helpful when you have many charts and cannot remember the specific name of the chart you want to get, or you want to see how you saved a chart by noting its extension. For example, charts saved as picture files have a .GAL appended to their file name. To retrieve a file, select one by touching the screen.

To access File Manager:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Select **File Manager**.

This displays your current directory, any subdirectories, and the files for that directory. The function labels for other File Manager functions, such as renaming and copying files, are also displayed.

### Returning a Chart

You can return a chart file name to the Get and Save screen using the Return File function in File Manager. The Return File function is used when you are viewing the list of files contained in a directory. When you find the file you want to get or save, touch name of the file on the screen or type the file name on the input line; then select the **Return File** function. The file name is then displayed in the field labeled **File:** of the Basic Options screen and the field in which the cursor is located (**Description:** or **Data:**) on the Other Options screen. You can then select the get and save functions for the file from the Get and Save screen.

To return a chart file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Select **File Manager**.
3. Select **Charting File**. This displays the list of chart files for the directory that is currently active.
4. Select the file name that you want to return by touching it on the screen or by typing it on the input line at the top of your screen.
5. Select **Return File**.

A **Cancel** function is available also if you change your mind.

6. Select **Back to Charting** to return to the Get and Save screen.

## Returning a Directory

You can change the directory you want to save your files to, and get your files from, for a particular session using the **Return Directory** function in File Manager. The directory that is automatically used is the directory your Charting Gallery application is on. This directory is known as the "default" directory. For example, if your application disc is in drive A:, A: is the default directory. All your files are saved and retrieved from that directory unless you specify differently when getting or saving a file. Return Directory lets you change the default directory so that you do not have to specify a different directory each time you get or save a chart. This directory is only the default until you leave Charting Gallery and return to P.A.M. At that time the directory your application is on is once again the default directory.

To return a directory:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Select **File Manager**.
3. Select **Charting Dir**.
4. Select the directory you want returned.
5. Select **Return Dir** to return the directory, or **Cancel** if you change your mind.

The retrieved directory is not displayed in the field labeled **File:**, but does become the current directory.

6. Select **Back to Charting** to return to the Get and Save screen.

For information on other File Manager functions, refer to the manuals that come with your HP Personal Computer.

## Saving and Retrieving Chart Files

The most basic way of saving or retrieving a chart is as a chart file. When you save or retrieve a chart as a chart file, Charting Gallery treats the chart description and the chart data as a unit.

To save a chart as a chart file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Type a file name in the field labeled **File**:
3. Select **Save Chart**.

Charting Gallery saves your chart and confirms with a message.

Charts saved as chart files are automatically saved with the file extension .GPH (chart specifications) and .GPD (chart data).

To retrieve a chart file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. In the field labeled **File**, type the file name of the chart you want to get.
3. Select **Get Chart**.

Your chart is retrieved and its data is displayed on the Data screen.



## Saving Picture Files

A chart that is saved as a picture file can be used with other HP Graphics products such as Drawing Gallery or Executive MemoMaker. Using Drawing Gallery, you can change the picture part of your chart, adding a logo, for example, or other artistic enhancements. Saving your chart as a picture file means you have greater flexibility in controlling the chart as the total picture.

For information on using picture files with other applications, see Appendix B, Using Charting Gallery with Drawing Gallery, and Using Charting Gallery with Executive MemoMaker.

When a chart is saved as a picture file, the data is not saved, so the chart cannot be retrieved. If you want to continue to use Charting Gallery to change your chart's data and any descriptive information such as color, textures, titles, and so on, you should also save your chart as a chart file.

To save your chart as a picture file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Type a file name in the field labeled **File:**.
3. Select **Save Picture**.

Unless you give a picture file an extension, picture files are automatically saved with the extension .GAL added to the chart name. If you add your own extension, be sure to include it when you specify file names. Using File Manager you can list your directory and determine how your charts have been saved.

## Retrieving Data Files

You can retrieve data from spreadsheets such as Lotus 1-2-3, and data bases such as dbase II. Spreadsheet data is retrieved as DIF files, and data base data is retrieved as print files. DIF and Print files are retrieved by selecting **Get Data** from the Basic Option level of the Get and Save screen.

Because the Get Data option is used to retrieve chart files as well as DIF or Print files, you need to indicate the type of file you want Charting Gallery to get. If you select the Get Data option using just a file name with no extension, Charting Gallery assumes you want a chart file and automatically adds the extension .GPD to the file name. If you want to retrieve a DIF or Print file, include an extension when you specify the file name. If the file has no extension, type a period after the file name.

To retrieve a DIF or Print file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Type the name of the DIF, Print, or chart data file, adding a file extension or period to the file name.
3. Select **Get Data**.

The file is retrieved and the data is displayed on the Data screen. To display the Data screen, select **Data** from Charting Main.

For information on using DIF and Print files in Charting Gallery, see Appendix B, Using Charting Gallery with Other Applications.

## Saving and Retrieving Chart Data and Descriptions

You can also retrieve data from one chart and descriptions from another to make a third chart. Mixing and matching data can save you time and duplication of effort. Mix and match chart data and descriptions when:

- You want to use a standard type of chart you have already created with the same range of values, titles and annotations, but have a different set of data.
- You want to do periodic reporting and add new data each month.

Chart data and descriptions are saved and retrieved on the Other Options level of the Get and Save screen.

To save or retrieve data from one file and/or descriptions from another:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Select **Other Options**.
3. Type in the file name for description in the space labeled **Chart Description**. Include the directory and disc drive if needed.
4. Type in the file for data in the field labeled **Chart Data**. Include the directory and disc drive if needed.
5. Select **Get** to retrieve the file or files. Select **Save** to save the file or files.

Charting Gallery confirms the retrieval or save with a message.



# 5

## Drawing a Chart

---

When you have entered the data for your chart and designed its appearance on the Edit and Draw screen, you are ready to draw the chart. You can draw a chart:

- on the screen
- on paper using a plotter
- on transparency using a plotter
- on a printer with graphics capabilities

### **Before You Draw Your Chart**

Before you can draw a chart, your plotter and/or printer must be configured and connected to your computer. If you need help in configuring and connecting your plotter or printer, refer to the manuals that come with your HP Personal Computer.

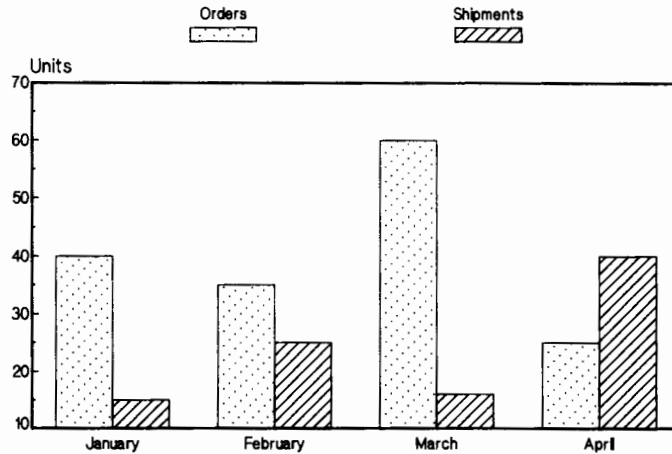
### **Using the GOLD Disc**

If you are using a single sided flexible disc drive, you need to replace the data disc in drive B: with a copy of the Graphics Output Library Disc, or GOLD disc. You will be prompted to insert the GOLD disc before you draw your chart to a specified device, and before you can display the Device Control screen. Charting Gallery prompts you with `Insert GOLD disc; press Retry` on the message line of the screen when you need to do this.

If you have a double sided flexible disc drive or a fixed disc drive, you do not need to change discs if you have copied and installed the GOLD disc. Instructions for this can be found in Chapter 1, Getting Ready to Use Charting Gallery.

## Drawing on the Screen

You can draw your chart on the full screen to see how it will look when it is drawn on paper or transparency. The chart is displayed on the whole screen as it would be if you plotted or printed it, that is, without any Charting Gallery menu options on the screen.



**Figure 5-1.**

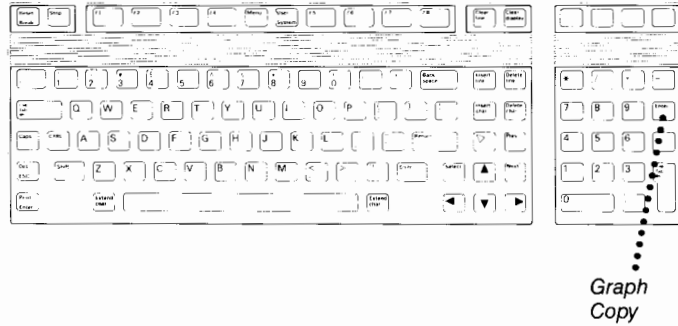
To draw a chart to the screen:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Draw**. A new set of function labels is displayed.
3. Select **Draw To Screen**.
4. When you are finished viewing your chart, touch the screen, or press any key to return to the Edit and Draw screen.

### 5-2 Drawing a Chart

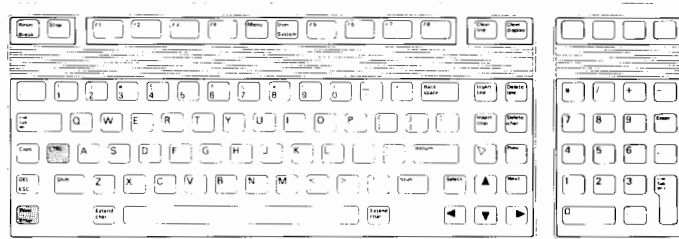
## Getting a Draft Print

You can get a draft print of your chart after you have drawn your chart to the screen ( **Draw To Screen** ) by using the **Graph Copy** key located on the graphics pad at the right of your keyboard. If you do not have the graphics template that is supplied with your HP Personal Computer, this key is labeled **Enter**.



**Figure 5-2. Graph Copy/Enter Key.**

You can also get a draft print of your chart by pressing the **CTRL** and **Print Enter** keys. The **Print Enter** key is located at the bottom left of your keyboard.



**Figure 5-3. Print Enter Key.**

Graph copy can only be used when your computer is in terminal mode, and only on printers supported by the terminal. For a list of those printers that can be used, refer to the manuals that come with you HP Personal Computer.

You must tell your terminal what printer you are using as the destination device. This is done through the User System function key at the top of your keyboard. To set your printer as the destination device:

1. Set your computer to Terminal mode.
2. Press **User System**. This displays a new set of function labels on your screen.
3. Press device control, **f1**. This displays a new set of function labels.
4. Press "to" devices, **f3**.

From this set of functions, select the device you want to print your draft copy.

#### **5-4 Drawing a Chart**

For more information on this process, refer to the manuals that come with your HP Personal Computer.

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## Drawing Your Chart

You draw your chart to a plotter or printer from the Edit and Draw screen using the **Draw To <Device>** function. This function label contains the printer or plotter device name selected on the Device Control screen. Charting Gallery automatically selects plotter as the drawing device until you indicate differently. If you change back and forth between printer and plotter, you need to display the Device Control screen and select the device, printer or plotter, each time you change. Before you draw your chart, your printer or plotter must be connected to your computer, turned on and ready to go. If you need help connecting your printer or plotter, see the manuals that come with your HP Personal Computer.



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If you are using a single-sided disc drive, you will be prompted to insert the GOLD disc in drive B:

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To draw your chart:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Draw** to display the **Draw To <Device>** function.
3. If you are prompted, insert the GOLD disc in drive B;; then select **Retry**.
4. Be sure that the **Draw To <Device>** label has the name of the printer or plotter you want to use. If it does not, see the section Configuring Charting Gallery for your Printer or Plotter in this chapter.
5. Select **Draw To <Device>**. The printer or plotter begins drawing your chart. If you want to stop the device before your chart is drawn, select **Stop Drawing**.



## Choosing What to Draw

You can choose which parts of your chart you want to draw using the **Drawing Options** selection on the Edit and Draw screen. In some cases, you will want to draw the entire chart, while at other times you will want to omit some portions that are not necessary.

You can choose to include or exclude:

- titles
- axes titles (Line and Bar charts)
- data
- legends (line and bar charts)
- X-Grid (Line charts)
- Y-Grid (Line and Bar charts)
- border
- labels (pie charts)
- values (pie charts)
- percent (pie charts)

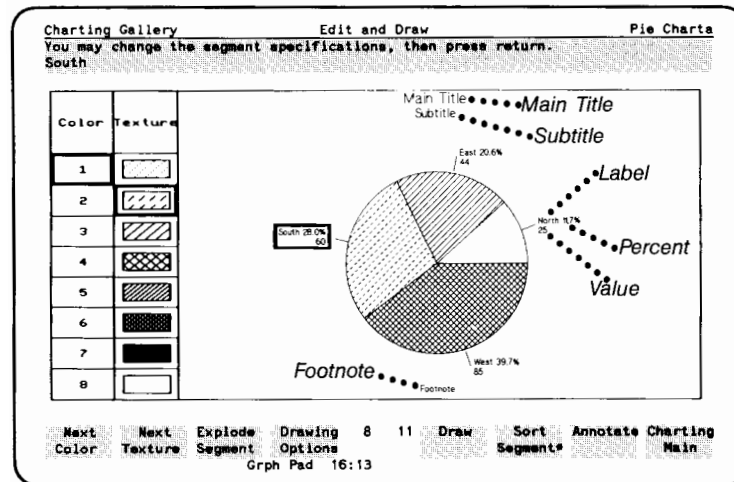
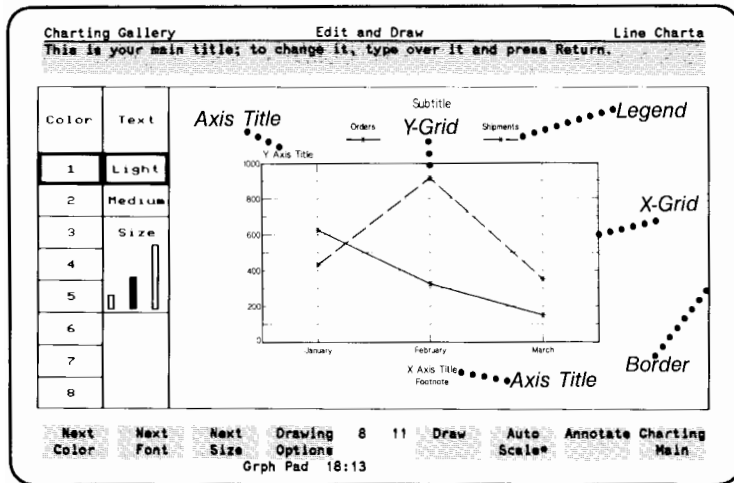


Figure 5-4. Drawing Options.

The choice you can select depends on the chart type you are using. For example, percents are only used on pie charts, so this choice is only displayed when you are drawing a pie chart. An asterisk is displayed next to the function label of these items when they are included.

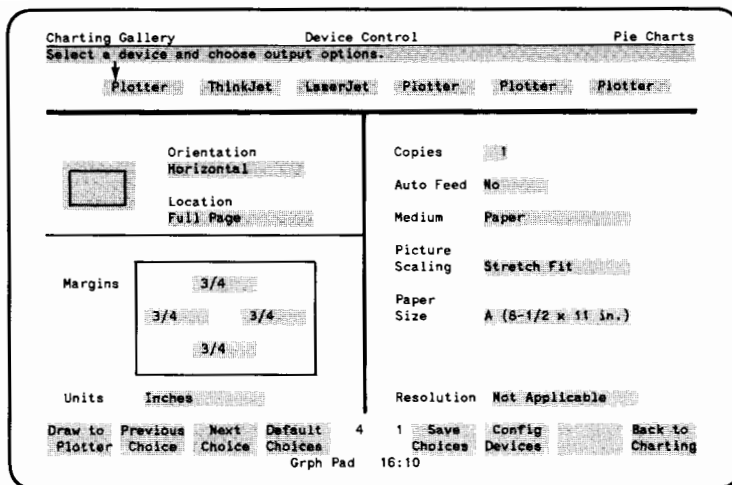
To eliminate items in a drawn chart:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Drawing Options**.
3. Select the item so that there is no asterisk next to the function label.
4. Select **Done**. Your chart is redrawn on the Edit and Draw screen to reflect what you have excluded.

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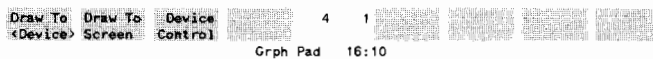
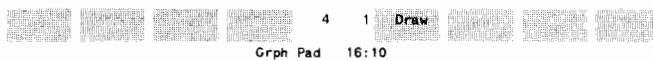
## Selecting Device Control Options

You can select various drawing choices such as margins and page size, as well as choose the device, printer or plotter, you want to draw your chart to. You choose the drawing device and device control options from the Device Control screen.



**Figure 5-5. Device Control Screen.**

The Device Control screen is displayed by selecting Draw from the Edit and Draw screen. This displays a second set of functions that includes Device Control.



From Edit and Save:

**Figure 5-6. Displaying Device Control Screen.**

## Choosing a Device

You select the device you want to draw your chart to on the Device Control screen. There are six labels at the top of the screen. You can use those printers that have been selected by Charting Gallery, or you can enter the names of other printers and plotters supported by Charting Gallery. You need to select the appropriate device each time you change devices. Each printer or plotter you use needs to be configured for Charting Gallery before it is used. See the section Configuring Charting Gallery for your Printer or Plotter in this chapter.

To choose a device:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Draw**. This displays a second set of functions.
3. Select **Device Control**.
4. Touch the device label on your screen until the name of the device you want to use is highlighted, or press **Tab** until there is an arrow above the device you want to use. If you have selected the device using **Tab**, press **Select** to highlight the device label.
5. Select **Draw to <device>** to draw your chart.
6. Select **Back To Charting** to return to the draw functions.

## Device Control Options

The device control options you can change are:

- Orientation
- Location
- Margins
- Units of Measurement
- Copies
- Auto Feed
- Medium
- Picture Scaling
- Paper Size
- Resolution

All of these choices can be set once for each device you use and saved so that you do not have to set them again until you want to make a change to some or all of the choices. Some device control choices, such as Resolution, only apply to printers. All of the options are explained below.

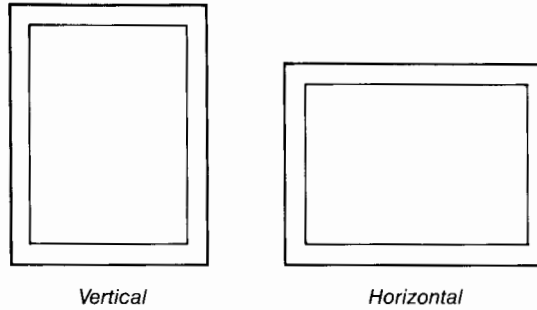
See the end of this section for the procedures on how to change these options.

### Placement of Your Chart

Your chart is placed on the page using the Orientation, Location and Margin options. Orientation lets you determine whether you want your chart drawn with the page placed horizontally or vertically. Location lets you determine where on the page, such as top half or bottom quarter, you want your chart drawn. The Margins option interacts with Location to determine where on the page your chart is drawn.

## Orientation

Orientation is how the paper is placed when your chart is drawn. You can choose to place the paper horizontally or vertically.



**Figure 5-7. Orientation.**

The orientation you choose affects the location options you can select. For example, if your paper is placed horizontally, a chart can be drawn on the left half of the page or the right half, but not the top or bottom halves.

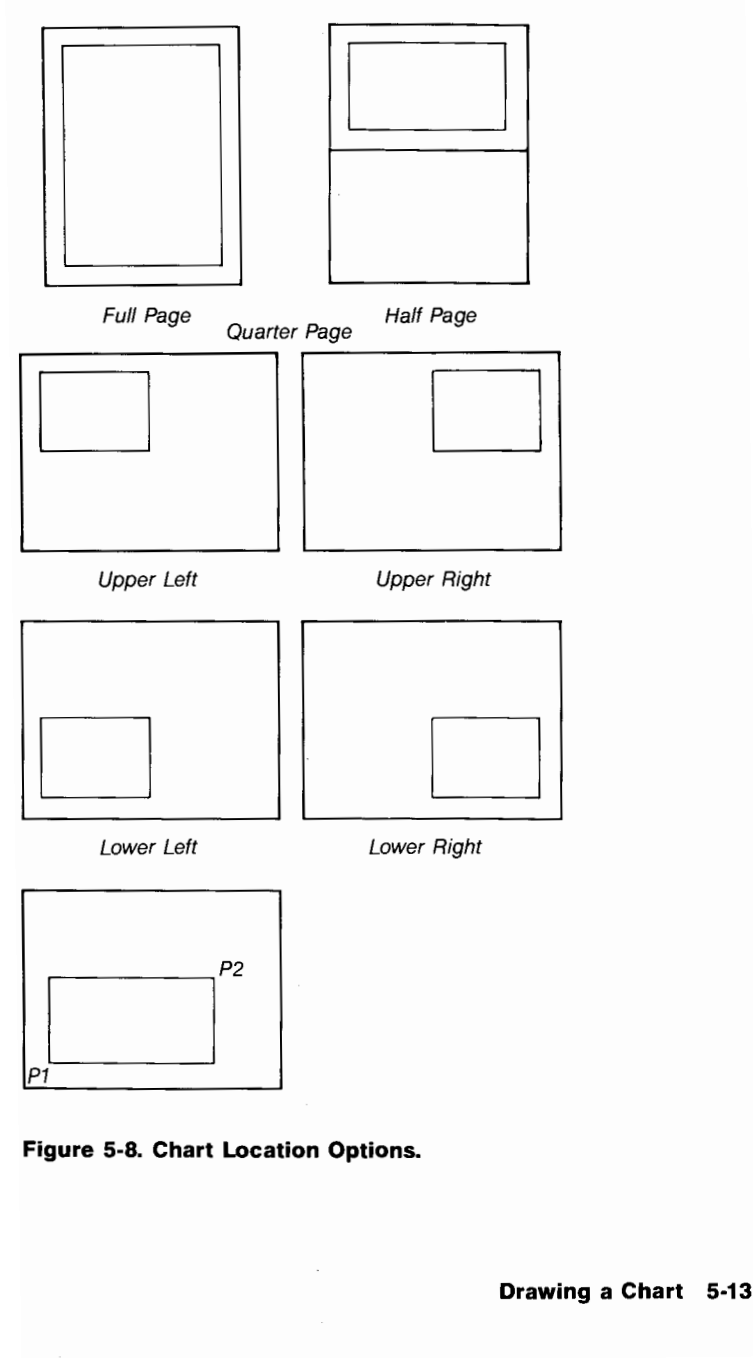
Until you change the Orientation choice, Charting Gallery uses the Horizontal orientation.

## Location

Location refers to the area on the page or transparency in which you want your chart drawn. You can draw a chart on a full page, half page or quarter page, or any area you determine. The choices are:

- full page
- half page
- quarter page
- P1,P2

Choosing a particular location lets you add charts to a page that already has something else drawn or printed on it, or draw more than one chart on a page.



**Figure 5-8. Chart Location Options.**



The location options you can choose depend on the orientation, horizontal or vertical, you choose. If you choose a vertical orientation, the half page options available are top and bottom. If you choose a horizontal orientation, your chart can be drawn on the left or right half of the page.

P1 and P2 define the lower left and upper right corners of your drawn chart when you are drawing your chart on a plotter. This lets you fit the chart into an exact area so that a chart can be plotted on a page that already has text or other drawings on it. When you select this option, the margins option is ignored.

Selecting this option and using a printer to draw your chart has the same effect as selecting the full page location option.

P1 and P2 can only be set from the plotter keyboard. Refer to your plotter manual for information on how to set P1 and P2.

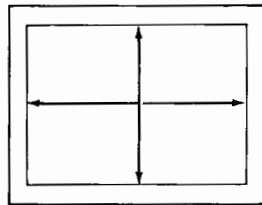
### **Margins**

You can also place a chart in an exact location on any size page by defining how much space you want to leave between the edge of the paper or transparency and the chart. For example, you can leave room for a three hole punch or binding for reports by leaving the top, bottom, and right margins at the settings Charting Gallery has set, and making the left margin larger.

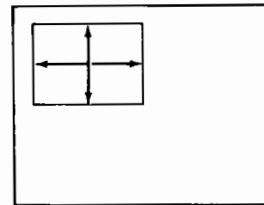
Margins are measured in inches or millimeters, and are incremented by 1/16 inch or 1 millimeter when you select **Next Choice**. Margins are decreased by 1/16 inch or 1 millimeter by selecting **Previous Choice**.

Many printers may not be able to place the picture with this degree of accuracy, but will place the chart as close as possible to the area you have specified. To print your chart in the specified area as accurately as possible, place the top edge of the paper under the printhead before you print a chart.

The margin option works with the location option. The margins of your chart are measured from the edge of the space you define as the chart location. If you choose the full page location, you can use the Margin option just like the Location option to draw your chart on the top half, lower left corner, or any location on the page. If you use the P1,P2 location option, any margin options you set are ignored.



*Full Page*



*Quarter Page*

Until you change this choice, margins are defined as  $\frac{3}{4}$  inch.

## **Units**

Units means the measurement units for the margins. Margins can be measured in inches or millimeters. Until you change this choice, margins units are defined as inches.

## **Copies**

This option lets you indicate how many copies of your chart you want drawn. The maximum number of copies you can make is 99. If you do not change this option, Charting Gallery draws one copy.

## **Auto Feed**

Auto Feed is the automatic feed feature that printers and some plotters use. If you want to use automatic feeding, and your device is capable of auto feeding, select Yes for this option. The No option lets you feed the paper manually so that you can draw multiple charts on a single page. If you do not change this option, Charting Gallery uses the Yes option for printers, and the No option for plotters.

This option applies to both continuous and single sheet feeder printers and the 7550 plotter.

## **Medium**

Medium is the paper or transparency you choose to draw your chart on. This option only applies when you are drawing your chart on a plotter. Because ink does not dry as fast on transparencies, drawing your chart on this medium takes a bit longer. If you do not change this option, Charting Gallery assumes you are drawing your chart on paper.

## Picture Scaling

Picture scaling is how Charting Gallery adjusts the horizontal and vertical aspects of your chart and centers it in relation to the space in which you choose to draw it.

There are two picture scaling options you can choose:

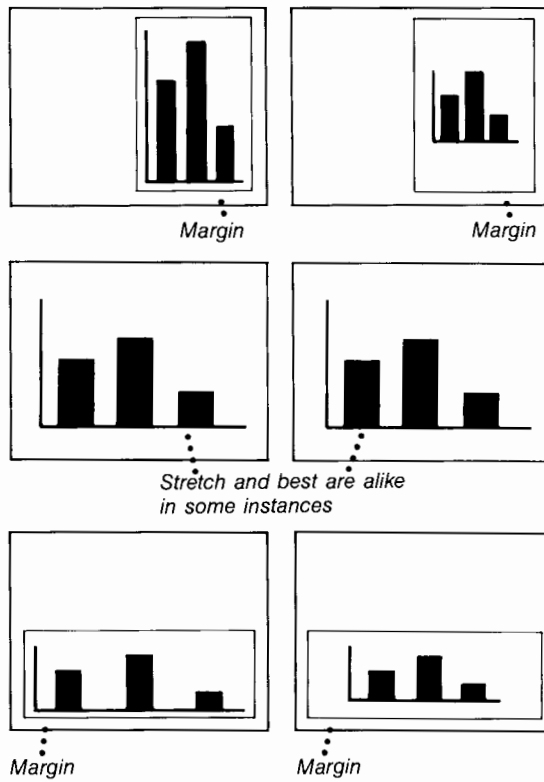
- Stretch to Fit
- Best Fit

When you select Stretch to Fit, Charting Gallery fits the chart within the space you have given it with the location and margin options. Your chart is expanded to be as big as possible within the space provided, adjusting the ratio of its horizontal and vertical dimensions. An exception is made with pie charts. The shape of pie charts is preserved, and they always remain in round. When your chart is stretched so that it becomes taller than it is wide, less text fits on the chart. Text that fits is always preserved; any text that does not fit is truncated.

Charting Gallery uses the stretch to fit option when you draw your chart until you change this option to Best Fit.

When you select Best Fit, Charting Gallery centers your chart in the space you have defined, making it as big as possible without changing its shape. Charts always start out with a horizontal (landscape) shape. The Best Fit option always produces a chart that is wider than it is tall.

The following figures show how several charts look using both the Stretch to Fit and Best Fit picture scaling options.



**Figure 5-9. Picture Scaling.**

## Paper Size

This option sets the size of the paper on which you are drawing your chart. There are five paper-size options for paper measured in inches, and they are labeled A through E:

- A ( 8.5 × 11 inches)
- B (11 × 17 inches)
- C (17 × 22 inches)
- D (22 × 34 inches)
- E (34 × 44 inches)

There are five choices for paper measured in millimeters:

- A4 (210 × 297 mm)
- A3 (297 × 420 mm)
- A2 (420 × 594 mm)
- A1 (594 × 841 mm)
- A0 (841 × 1189 mm)

If you do not select a paper size, your chart is drawn on the 8 1/2 × 11 inch size.

## Resolution

Resolution refers to how clearly and distinctly your chart is drawn. Resolution is measured in dots per inch or DPI. Generally, the higher number of dots gives you a higher resolution or clearer picture. The more dots you use, the longer it will take to draw your chart.

The number of choices you have for this option depends on the printer you are using. Some printers will only have one DPI size, while others will have several to choose from.

If you do not select a resolution option, Charting Gallery uses the lowest resolution available on your printer. This option only applies to printers.

### **LaserJet Printer**

The LaserJet printer lets you place multiple pictures on a page as long as the combined pictures fit into the memory size limits. Multiple picture placement is done with the page placement selector just as you do when using a plotter. You must set the Autofeed option to NO until just before the last picture is printed. Otherwise, the page ejects after the first picture is printed.

The LaserJet printer has four available resolution modes. The square inch and page values given are approximate.

75 DPI  $\approx$  85.9 sq. in.  $\approx$  Whole page

100 DPI  $\approx$  48.3 sq. in.  $\approx$  Half page

150 DPI  $\approx$  21.5 sq. in.  $\approx$  Quarter page

300 DPI  $\approx$  5.4 sq. in.  $\approx$  2 x 2 1/2 inches

Notice from the table above that when you select the higher resolutions, graphics can only occupy part of the page. The printer stores the whole picture in memory and prints the picture at one time. The higher the resolution you use, the more memory is required. If the printer's available memory runs out, the page ejects and an error indicator on the printer lights up.

## Saving Device Control Options

You can save device control options once you have set them by selecting **Save Choices** before leaving the Device Control screen.

To change device control options:

1. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.
2. Select **Draw**.
3. Select **Device Control**.

If prompted, replace the data disc with the GOLD disc, and select **Retry**.

4. Use the **Tab** key to select the printer or plotter you are using, or touch the selection on the screen. If you select the device by touching, the device is highlighted. If you use the **Tab** key, the device you select is indicated with an arrow above it; press **Select** on your keyboard to highlight it.

The selection you make is displayed in the **Draw To <Device>** label when you select **Draw** from the Edit and Draw screen.

5. Tab to the option you want to change, or touch the option on the screen. The option is highlighted when you select it.
6. Select **Next Choice** or **Previous Choice** until the setting you want is displayed.
7. Repeat steps 3 and 4 for each option you want to change.
8. **Save Choices** if you want to save the new option settings.

If you do not save your choices, they are only used until you exit Charting Gallery. If you do save your choices, they are still in effect when you use Charting Gallery again.

9. Select **Back to Charting** to return to the Edit and Draw screen.



## Configuring Charting Gallery for your Printer or Plotter

You should have already configured your printer and/or plotter for your HP Personal computer using the program EASYCONFIG. If you have not done this, refer to the manuals that come with your HP Personal Computer.

Before you can draw your chart, you must tell Charting Gallery some information about your printer or plotter. You tell Charting Gallery:

- the name by which you want to designate the printer or plotter
- the model number of the printer or plotter
- the system device name of the printer or plotter

You enter this information on the Config Devices menu. The Config Devices menu is displayed by selecting the **Config Devices** function from the Device Control screen. The Device Control screen is displayed from the Edit and Draw screen by selecting Draw, then Device Control.

From Edit and Draw screen:

```

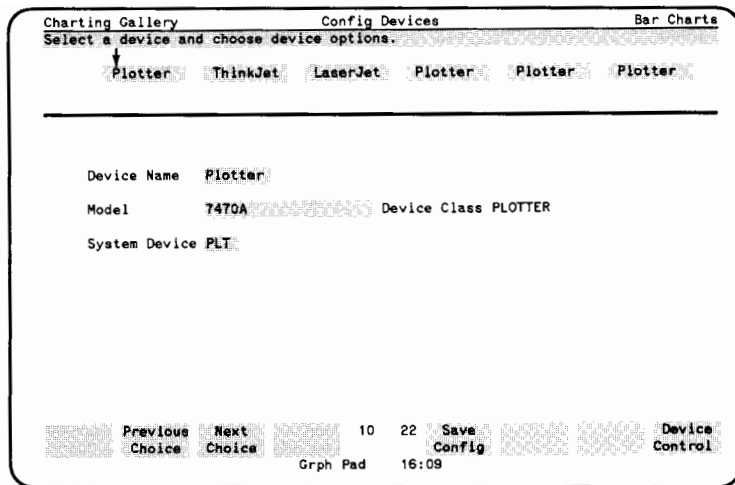
          4  1  Draw
          Grph Pad  16:10
```

```

Draw To Draw To Device  4  1
<Device> Screen Control  Grph Pad  16:10
```

```

Draw to Previous Next Default  4  1 Save Config Back to
Plotter Choice Choice Choices  Grph Pad  16:10
          Choices Devices Charting
```



**Figure 5-10. Config Devices Menu.**

### Selecting a Device

You must first select printer or plotter from the top of the menu to tell Charting Gallery where you want to draw your chart. Charting Gallery automatically chooses plotter as the device until you select another device.

Charting Gallery provides six slots at the top of this menu for devices. You can use the names Charting Gallery provides, or you can name these devices anything you want. If you occasionally work at someone else's station that is configured for a device different from your own, one of the device slots can be set up for that device so that you only need to configure the device once.

This information is stored on your application disc.

Charting Gallery also stores device control options for each of the devices you use. You can set up several slots for the same device, and define different output device options for each. These options are then stored on your application disc. For example, you may want to define the location and margins in one way for one chart, and define them in another way for another chart you draw frequently.

### **Device Name**

If you want to provide your own name for a printer or plotter, you can type it in on the `Device Name` field. The name in this field is the name that is displayed on the `Draw To <Device>` function label. The name of the printer or plotter is the name Charting Gallery automatically uses. For example, if you are using a LaserJet printer, Charting Gallery uses LaserJet in the device name field. If you want to use the name Charting Gallery provides, you do not have to change this field.

### **Model**

You must also select the model name or number of the device you are using. The model name or number is printed on the front panel of your device. In most cases, model will be a number. In the case of some newer printers, model will be a name such as THINKJET. Select the `Next Choice` function to choose the model option for your device. Using `Next Choice` lets you see all of the devices that Charting Gallery supports. It is important that you select the correct model name or number when you are using a printer as the drawing device. In most cases, Charting Gallery does not produce good prints if the printer model is wrong, or if the device class that is configured is wrong. Charting Gallery does produce quality plots of your charts even if the model number you select for your plotter is incorrect.

## System Device

Finally, you need to indicate the system device. This is the device name by which your computer knows the printer. The system device name choices are AUX, PRN, LST, and PLT. The system device name is determined when you configure your computer for a printer and/or plotter.

PLT must be used as the system device name for plotters. Charting Gallery automatically selects PLT when you select a plotter as the device you want to use.

You only need to fill in this menu once for your plotter or printer until you change the plotter or printer you are using. You can save the configuration information from this menu on your application disc by selecting **Save Config** when you are finished. If you need to use another printer or plotter temporarily, change this menu to match that device, but do not save the information. When you return to your regular printer or plotter, the configuration information you saved is automatically used.

To configure your printer or plotter for Charting Gallery:

1. Display the Edit and Save screen by selecting **Edit and Draw** from Charting Main.
2. Select **Draw**.
3. Select **Device Control**. This displays the Device Control Screen.

If prompted, replace the data disc with the GOLD disc, and select **Retry**.

4. Select **Config Devices** from the Device Control Screen.
5. Select the device you want to use by touching the field at the top of the screen or by pressing **Tab**. If you select by touching, your choice is highlighted. If you use **Tab**, an arrow is displayed above your choice; press the **Select** key on your keyboard to highlight it.
6. Tab to the **Device Name** field and type a device name if you want to use a different name.

7. Tab to the Model field and select `Next Choice` until the model name or number you need is displayed.
8. Tab to the System Device field and select `Next Choice` until the system device name for your printer is displayed. If you are using a plotter, PLT is automatically used and `Next Choice` and `Previous Choice` have no effect.
9. Select `Save Config` to save this information.
10. Select `Device Control` to return to the Device Control screen.

### **If You Have Trouble Printing Your Charts**

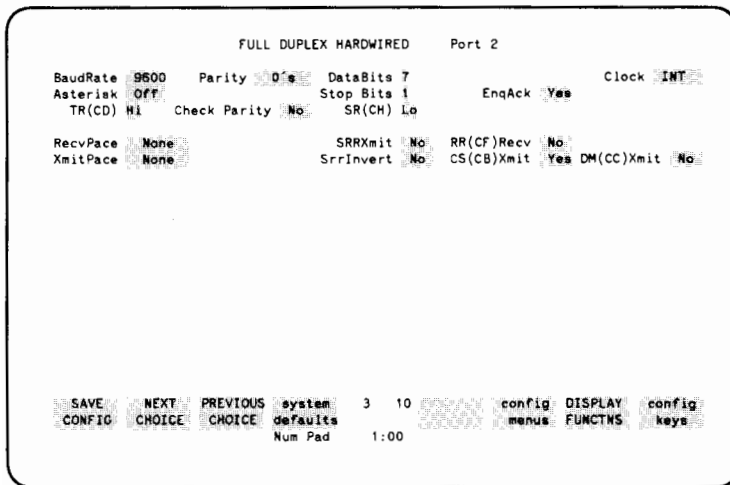
Occasionally your printed charts may have white or black horizontal stripes passing through them. If this happens, try the following procedures to eliminate the stripes:

1. If you are using an RS-232C printer, set the Data Bits to "8" and the Parity to "None" on the Data Comm Menu for the port you are using on your HP Personal Computer. See the manuals that come with your HP Personal Computer if you need help.
2. Configure your printer for 8-bit data.
3. If you are using a ThinkJet printer, check the ink jet cartridge.

### **If Your Plotter Is Connected with an RS-232-C Cable**

If your plotter is connected with an RS-232-C cable, you must tell your system how it will receive and send data, that is, what speed, or baud rate will be used. Check to see that your plotter is connected to Port2, then display the

Port2 Configuration Menu. If you need help with this, refer to the manuals that come with your HP Personal Computer. When you have entered the required information, the Port2 Configuration Menu will look like this:



**Figure 5-11. Port2 Configuration for HP Plotters.**

Remember to save the configuration menu by selecting **Save Config** or your plotter will not work correctly.

Be sure that your plotter is set up to work with the same baud rate as you have set in your Port2 menu. If you need help with this, refer to the manuals that come with your plotter.

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## **Future Printer and Plotter Compatibility and Support**

In future releases of Charting Gallery other printers and plotters will be supported in addition to those listed in Appendix A of *Using Charting Gallery*. Until that time, some devices that are not officially supported may work with Charting Gallery. Check to see if the manufacturer of the device you want to use has specified it to be fully compatible with an HP supported device. If it has, then you can use it with Charting Gallery by selecting the name of the HP supported printer or plotter on the Config Devices Menu. In this way, Charting Gallery treats the device as though it was supported.



This capability is provided as a convenience and Hewlett-Packard cannot be responsible for support of devices that it has not fully tested.

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# A

## Printers and Plotters

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The following is a list of printers and plotters that can be used to draw the charts you make with Charting Gallery.

- Plotters:**
- 7470A
  - 7475A
  - 7550A
  - 7580A
  - 7580B
  - 7585B
  - 7586B
  - 9872B
  - 9872C
  - 9872S
  - 9872T
  - 7220A
  - 7220C
  - 7220S
  - 7220T





**Printers: Hewlett-Packard:**

- 2674A
- ThinkJet (HP mode)
- ThinkJet (Alternate mode)
- LaserJet
- 82905
- 82906
- 2932
- 2933
- 2934

**Epson:**

- RX-80
- RX-100
- FX-80
- FX-100
- Gemini 10
- Gemini 10X
- Gemini 15X

**Mannesmann Tally:**

- Spirit-80

**Okidata:**

- $\mu$ 92
- $\mu$ 93



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All of the printers listed above that are not Hewlett-Packard printers have been tested and verified, but are not supported by Hewlett-Packard. All Hewlett-Packard printers and plotters in the list above are supported.

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## **Future Printer and Plotter Compatibility and Support**

In future releases of Charting Gallery other printers and plotters will be supported in addition to those listed in Appendix A of *Using Charting Gallery*. Until that time, some devices that are not officially supported may work with Charting Gallery. Check to see if the manufacturer of the device you want to use has specified it to be fully compatible with an HP supported device. If it has, then you can use it with Charting Gallery by selecting the name of the HP supported printer or plotter on the Config Devices Menu. In this way, Charting Gallery treats the device as though it was supported.



This capability is provided as a convenience and Hewlett-Packard cannot be responsible for support of devices that it has not fully tested.

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# B

## Using Charting Gallery with Other Applications

You can use Charting Gallery to plot spreadsheet and database information, or any ASCII file containing columns of numbers in a format similar to the Data screen. You do this by saving the information from your spreadsheet or database in special files that can then be read by Charting Gallery. Spreadsheet data is saved as DIF files or Print files, and database information is saved as Print files.

### DIF Files

DIF, or Data Interchange Format, is a file format used by spreadsheet applications such as VisiCalc® and Lotus™ 1-2-3™ to store cell values only. Files that are in DIF format contain none of the other information that your spreadsheet has such as formats or formulas. DIF files are similar to Chart data files in this way; chart data files only contain the numeric information from your chart. Descriptive information such as titles, textures, and so on are not stored in chart data files. When you save your spreadsheet as a DIF file, you can retrieve it from the Charting Gallery Get and Save screen and plot the cell values on a chart.

*Visicalc® is a U.S. registered trademark of VisiCorp.  
Lotus™ and 1-2-3™ are U.S. trademarks of Lotus Development Corp.*

## Print Files

Print files are files that are read character by character so that an exact copy of your file is brought into Charting Gallery. You can save spreadsheet information and database information as print files to be plotted or sent to a word processor and printed. Textual information in Print files that is represented in numeric form such as 1984, or a part number such as 42387, could be interpreted incorrectly as numeric information. The same information in DIF files can be tagged as textual by labeling the cell type in the spreadsheet as Textual.

To chart database information from Condor™ and dBase II®, you need to save your file as a Print file. You retrieve this file from the Charting Gallery Get and Save screen and plot the information into a chart.

If you save your spreadsheet as a Print file, some information needed by your spreadsheet application has been lost, so you cannot transfer the information back into the spreadsheet.

*“Condor™” is a U.S. trademark of Condor Computer Corp.  
dBase II® is a U.S. registered trademark of Ashton-Tate*

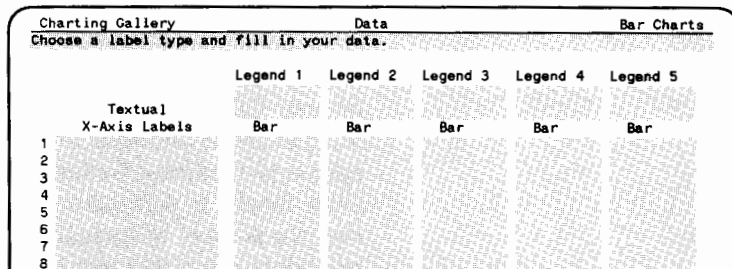
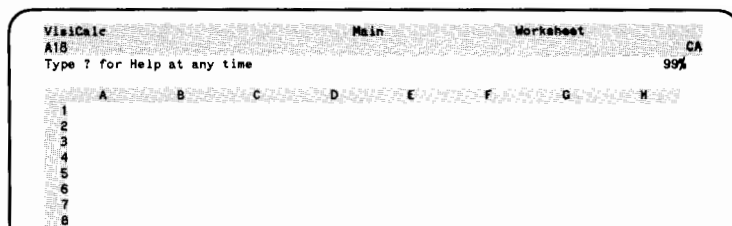
## **How DIF Files Are Used by Charting Gallery**

Charting Gallery tries to match the rectangle of data you saved from your spreadsheet as accurately as possible when it enters these values onto the data screen. Your chart can have up to five legends of one or two lines each, and X-axis labels as well as data. Charting Gallery determines how you want a cell value interpreted (as legend, X-axis label or data) by checking to see if a cell is a numeric value or a text string.

In addition to checking whether a cell contains a number or text, Charting Gallery also checks to see if the X-axis label is set at Numeric or Textual. Numbers and text correspond to Charting Gallery's numeric and textual modes for chart labels. If you want a text cell interpreted as text, set the X-axis label to textual. If you want a number cell interpreted as a number, set the X-axis label to numeric. You must set the X-axis label mode before you bring the DIF file into Charting Gallery unless you are using years for the X-axis label. In that case, bring the DIF file into Charting Gallery first, then set the label mode to Textual.

You set the numeric/textual label mode on the Data screen. See Chapter 2, *Creating A Chart*, for complete information.

It is important to indicate the type of cell you have on your spreadsheet (text or number), and to indicate the label type in Charting Gallery so that your chart reflects the data in your spreadsheet as accurately as possible.

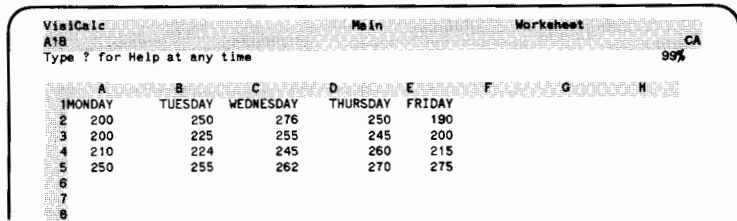


**Figure B-1.**

Charting Gallery checks row by row for the first cell that is a number. This is matched to the first chart data cell. If any cells fall into the legend or X-Axis sections of the chart data format, these cells are checked against the X-Axis label type you have set. Legends must begin with text; you can have no numeric legends. Any cells that fall into the X-Axis label area of the chart data format must match the label type you have set. For example, if you have set the X-Axis labels at textual, the first cell that falls into the label section of the data format must be a string.

Figures B-2 and B-3 illustrate this process.

DIF File with X-Axis labels set at Textual

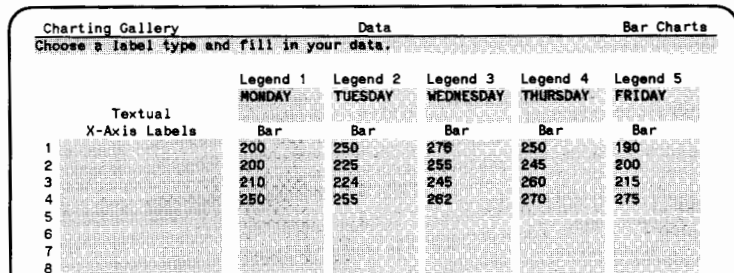


VisiCalc Main Worksheet CA 99%

Type ? for Help at any time

	A	B	C	D	E	F	G	H
1	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY			
2	200	250	276	250	190			
3	200	225	255	245	200			
4	210	224	245	260	215			
5	250	255	262	270	275			
6								
7								
8								

is read into Charting Gallery format as:



Charting Gallery Data Bar Charts

Choose a label type and fill in your data.

	Legend 1	Legend 2	Legend 3	Legend 4	Legend 5
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1	200	250	276	250	190
2	200	225	255	245	200
3	210	224	245	260	215
4	250	255	262	270	275
5					
6					
7					
8					

Figure B-2. DIF Diagram 1.



## DIF File with X-Axis labels set at Numeric

VisiCalc		Main				Worksheet		CA	
A18		Type ? For Help at any time							99%
	A	B	C	D	E	F	G	H	
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY				
2	200	250	276	250	190				
3	200	225	255	245	200				
4	210	224	245	260	215				
5	250	255	262	270	275				
6									
7									
8									

is read into Charting Gallery format as:

Charting Gallery		Data				Bar Charts
Choose a label type and fill in your data.						
		Legend 1	Legend 2	Legend 3	Legend 4	Legend 5
		TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
	Numeric					
	X-Axis Labels	Bar	Bar	Bar	Bar	
1	200	250	276	250	190	
2	200	225	255	245	200	
3	210	224	245	260	215	
4	250	255	262	270	275	
5						
6						
7						
8						

**Figure B-3. DIF Diagram 2.**

## Saving DIF Files

When you save your spreadsheet information as a DIF file, it is best to save the spreadsheet by columns. If you save the information by rows, the data matrix is transposed when read into Charting Gallery. The Lotus 1-2-3 program that translates saved files to DIF files automatically stores data in column format.

See the *HP 150 VisiCalc User's Guide* for information on saving VisiCalc data by rows or columns.

## B-6 Using Charting Gallery with Other Applications

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## **Saving DIF Files in Lotus 1-2-3**

Because the main Lotus 1-2-3 program only saves .WKS files, you need to use the translate program on the 1-2-3 utility disc to convert a .WKS file to a .DIF file.

First, save the 1-2-3 file using either /file save or /file xtract. If your worksheet has information that you do not want on your chart, use xtract. The information on your spreadsheet should visually resemble the way it would if you were typing it onto the Charting Gallery Data screen.

Next, exit Lotus 1-2-3 and enter the translate program on the utility disc. A menu is displayed for you to select the kind of file you want the WKS file converted to. Select WKS to DIF.

Follow the instructions in the Lotus 1-2-3 manual to complete the conversion. Once the WKS file is converted to a DIF file, the file is used in the same way as other spreadsheet programs.

---

## **Retrieving DIF and Print Files**

DIF and Print files are retrieved from the Get and Save screen. When you bring DIF formatted files into Charting Gallery, you must enter the file extension as well as the file name. The extension for DIF files is .DIF. For example, if you want to bring in the DIF file CALC, enter the name as CALC.DIF. If you do not supply the .DIF extension, Charting Gallery assumes the file is a chart data file with the extension .GPD.

## Transferring Spreadsheet Data to Charting Gallery

To bring VisiCalc or Lotus 1-2-3 data into Charting Gallery:

1. Convert your data to DIF file format, being sure to save it in Column format so that the orientation of the data matches the Charting Gallery Data screen.
2. Select the chart type you want from the P.A.M screen. Remember that when making pie charts, only one column of data can be used.

Set the label mode to Textual or Numeric on the Data screen before you retrieve the data unless you want Year labels for the X-Axis. See Chapter 2, Creating a Chart.

3. Select **Get and Save** from Charting Main.
4. Type the file name and extension.
5. Select **Get Data**.

If you want year labels for the X-Axis, set the label mode to Textual on the Data screen. See Chapter 2, Creating A Chart.

To make changes to the chart:

6. To make any label changes display the screen by selecting **Data** from Charting Main. See Entering Data On Your Chart in Chapter 2.
7. To see your chart before it is drawn, display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main.

To save your chart:

8. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
9. Type a file name. You must specify a new name so that the DIF file is not overwritten.
10. Select **Save Chart**.

To draw your chart:

11. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main. See Chapter 5, Drawing A Chart.

---

## Transferring Condor Data to Charting Gallery

To transfer data from Condor:

1. Using the WRITE command, copy your database for Charting Gallery. Use the B option to format the data correctly (BASIC OPTION format). The B option delimits each field in the record so that no leading blanks are brought into Charting Gallery.
2. Select the type of chart you want from the P.A.M. screen.
3. If you selected bar or line charts, select **Chart Type** from Charting Main to choose the type of bar chart, line or scattergram.
4. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
5. Type the name of the print file.
6. Select **Get Data**.

To make changes to the chart:

7. To make any X-Axis label changes display the Data screen by selecting **Data** from Charting Main.
8. To see your chart before it is drawn, display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main. See Chapter 3, Editing A Chart.

To save your chart:

9. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
10. Type a file name. You must specify a new name.
11. Select **Save Chart** to save the entire chart.

To draw your chart:

12. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main. See Chapter 5, Drawing A Chart.

---

## Transferring dBase II Data to Charting Gallery

To transfer data from dBase II:

1. "Use" the dBASE II database before you manipulate it in any way. (.USE "filename")

Copy the database and specify that the contents of the file is to be delimited with a comma. (.COPY TO filename DELIMITED WITH ,) Refer to your dBase II manual for information on the COPY command.

2. Select the type of chart you want from the P.A.M. screen.
3. If you selected bar or line charts, select **Chart Type** from Charting Main to choose the type of bar chart, line or scattergram.
4. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
5. Type the name of the print file.
6. Select **Get Data**.

To make changes to the chart:

7. To make any X-Axis label changes display the Data screen by selecting **Data** from Charting Main.
8. To see your chart before it is drawn, display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main. See Chapter 3, Editing A Chart.

To save your chart:

9. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
10. Type a file name. You must specify a new name.
11. Select **Save Chart** to save the entire chart.

To draw your chart:

12. Display the Edit and Draw screen by selecting **Edit and Draw** from Charting Main. See Chapter 5, Drawing A Chart.

---

## Using Charting Gallery with Drawing Gallery

You can enhance the charts you make with Charting Gallery by saving them as picture files and transferring them to Drawing Gallery, a drawing application for the HP Personal Computer. You use Drawing Gallery to add logos or other drawn figures to enhance the visual appearance of charts. Use Charting Gallery to make changes to the chart information and description; use Drawing Gallery to make changes to the chart as a picture.

You must save your chart as a picture file before using Drawing Gallery to add drawings to it. A picture file is a special format that Drawing Gallery requires to read its files. You save charts as picture files on the Get and Save screen.

To save a chart as a picture file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Type the name of the file.
3. Select **Save Picture**.

See the HP Drawing Gallery manual for information on how to retrieve a chart saved as a picture file.

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## Using Charting Gallery with Executive MemoMaker

You can integrate your charts with the memos and reports you make with Executive Memomaker by saving those charts as picture files. A picture file is a special format that Executive MemoMaker requires to add charts to the text it produces.

To save a chart as a picture file:

1. Display the Get and Save screen by selecting **Get and Save** from Charting Main.
2. Type the name of the file.
3. Select **Save Picture**.

See the HP Executive MemoMaker manual for information on how to retrieve a chart saved as a picture file.



# C

## Error Messages

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This appendix lists the messages that Charting Gallery displays when you make a mistake, or when something has gone wrong in the Charting Gallery application. A brief explanation of each message and a possible course of action or solution follows each message.

In most cases, the message displayed on your screen gives you complete information about what is wrong and what you should do. However, due to line lengths, the messages are sometimes abbreviated. Complete explanations for all the messages can be found in this appendix.

`This file exists. Rename your file or press Save again to replace it.`

Because a file with the file name you are saving already exists, that file will be erased and replaced with the file you are saving. If you do not want to erase the existing file, give the file you are saving a different name. If you want to replace the present file with the version you just made, select the Save function again.

`This number must be less than 1E+30.`

The number where your cursor (|) is located is too large for Charting Gallery to use. Re-type a number that is smaller than 1E+30. See Chapter 2, *Creating A Chart*, for information on data values.



This number must be greater than  $-1E+30$ .

The number where your cursor (—) is located is too small for Charting Gallery to use. Re-type a number that is larger than  $-1E+30$ . See Chapter 2, *Creating A Chart*, for information on data values.

Type in a label or remove the blank line.

An X-Axis defined with a Numeric type label must have a label. Type an X-Axis label on this line, or delete the line using the Delete line key on your keyboard.

Your drawing device does not respond. Check to see that it is connected and turned on.

Your device must be configured for your HP Personal Computer. If it is not, refer to the manuals that come with your HP Personal Computer. If your device is configured for your computer, check to see that:

1. The switch settings for the device, including the address switch are set properly.
2. Your device is connected.
3. Your device is turned on.
4. Your device is configured for Charting Gallery. See Chapter 5 in *Using Charting Gallery* for instructions.

If your device still does not work, contact your dealer or HP service representative.

Your plotter is not ready. Check that paper is loaded.

Your plotter is not ready to draw your chart. Check to see that there are paper and pens in your plotter. If you need help with this, refer to the manual that comes with your plotter.

The auto paper loading function for your plotter is not working.

Check to see that there is paper in your plotter, and that there is not a paper jam. If you need help with adding paper or clearing a paper jam, refer to the manual that comes with your plotter.

The plotter that is connected is not supported by Charting Gallery.

Charting Gallery does not support the particular plotter you are trying to use. Check to see that the plotter you are using is one that is contained in the list of supported plotters in Appendix A of this manual. If it is listed, check to see that:

1. The plotter is configured for your computer. See the manuals that come with your HP Personal Computer for help.
2. The plotter is configured for Charting Gallery. See Chapter 5 in this manual for help.

Charting Gallery cannot recognize the device connected.

Check to see that the plotter or printer you are using is one contained in the list of supported devices in the Introduction chapter of *Using Charting Gallery*. If it is, check to see that it has been configured correctly for both your computer and for Charting Gallery. Refer to the manuals that come with your HP Personal computer for help in configuring your device for your computer. See Chapter 5 in *Using Charting Gallery* for information on configuring your plotter or printer for Charting Gallery.

There is an error in Charting Gallery. Report error in plotter setup.

There is an error in Charting Gallery that you cannot fix. Record all details about the chart you are working on, including specific data values if possible, and report the error to your HP service representative.

Charting Gallery cannot find the font file, XXXXX.

The file Charting Gallery uses for the lettering on your chart cannot be found. You need to re-install Charting Gallery from your master application disc.

There is a problem with the data in the font file, XXXXX.

Charting Gallery cannot read the data in the font file it uses for the lettering on your chart. You need to re-install Charting Gallery from your master application disc.

Charting Gallery cannot create and open your picture file.

Check to see that:

1. The disc you are using has been configured correctly and that it is powered on.
2. There is enough space on your disc to create the file.
3. The subdirectory you specified is typed correctly and that it exists.
4. You are specifying a print file and not another file type such as a description file.

Charting Gallery is unable to read your print file.

Check to see that:

1. You have entered the file name, subdirectory (if specified), and file extension (if there is one) correctly.

There is an error in Charting Gallery. Report error number ###.

Charting Gallery has an error that you cannot fix. Record all details about the chart you are working on, including specific data values if possible, and what you were doing when the error occurred. Please contact your dealer or HP service representative and report the error to them.

Disc error: Your data disc is not in the drive or is damaged.

Check to see that your data disc is in the drive you selected, and that it is not write protected. Refer to the manuals that come with your HP Personal Computer if you need help in determining this. You may need to use your backup data disc if this error continues.

Disc error: Insert the XXXX Charts disc and press RETURN to continue.

XXXX is Bar, Line or Pie. You need to replace the chart application disc with the one specified in the message. Do not remove the disc until the P.A.M screen is displayed. You may not switch your chart application disc with a data disc while in Charting Gallery.

This needs to be a number.

Charting Gallery is expecting a numeric X-Axis label or a data value. Replace the text where the cursor (—) is located with a number.

Charting Gallery cannot use the specified chart description file.

Charting Gallery cannot read the file you have specified in the File field. Select **File Manager** and check to see that you have typed the name correctly. If you have added your own file extension to the name, it must be entered as part of the name.

If the file exists exactly as you have typed it, it may be an incompletely saved file or may be damaged. You should recreate the file or use your backup disc.

Charting Gallery cannot use the specified chart data file.

Charting Gallery cannot read the file you have specified in the File field. Select **File Manager** and check to see that you have typed the name correctly. If you have added your own file extension to the name, it must be entered as part of the name.

If the data file is from another application, check the manual for that application to be sure you have saved the file correctly, as well as Appendix B\_\_, Using Charting Gallery With Other Applications, in this manual.

You may need to recreate the file or use your backup disc to get this file.

Currently, there are no textual annotations.

You are probably trying to modify or delete annotations that are not there. Select **Add Annotate** to add an annotation or select **Done** to redraw your chart and display the other Edit and Draw functions.

Currently, there are no line annotations.

You are probably trying to modify or delete lines or boxes that are not there. Select **Line or Box** to add an annotation, or select **Done** to redraw your screen and display the other Edit and Draw functions.

You have entered the maximum number of textual annotations.

Charting Gallery cannot add more textual annotations to your chart. Delete some of the existing annotations to add more.

You have entered the maximum number of line annotations.

Charting Gallery cannot add more line annotations to your chart. To add more, delete some of the existing ones.

Charting Gallery cannot find File Manager.

Check to see that you are running Charting Gallery with P.A.M., the Personal Application Manager. You can only select **File Manager** from the P.A.M. screen, or from the Charting Gallery Get and Save screen. For more information on P.A.M., see the manuals that come with your HP Personal Computer.

Charting Gallery cannot find the chart that you requested.

Charting Gallery cannot find the file that you have specified in the **File** field. Select **File Manager** to see that you have spelled the file correctly, and have included an extension if you specified one when you saved the chart. If the file is not listed in **File Manager**, check your other work discs to see if it is on one of them.

Charting Gallery cannot find the data that you requested.

Charting Gallery cannot find the file that you have specified in the File or Chart Data field. Use **File Manager** to see that you have spelled the filename correctly and have included any file extensions that you specified when you saved the data. If you cannot find the file, check your other work discs.

The chart description and data will not fit on the specified disc.

There is not enough room to store your chart description and data on the disc you have specified. Save them on a disc that has more room.

This needs to be a positive, whole number.

X-Axis labels cannot be negative numbers or fractions. Change the number you have entered to a positive whole number.

This number must be less than 32767.

Type in a number less than 32767 and press **Return**.

This number must be greater than -32768.

Type in a number larger than -32768 and press **Return**.

Missing or invalid numeric labels on another page.

Charting Gallery will not let you leave the Data screen if you have text entered for an X-Axis label that you have defined as numeric, or if you have entered a negative number or fraction as a label. Correct those labels that have been entered incorrectly.

## C-8 Error Messages

Your form file, XXXXXXX, is missing or invalid.

The file specified in the message is damaged or missing. Replace the file on your disc by installing the files from your master disc or backup disc using File Manager.

Delete the blank row(s) on a previous page.

Charting Gallery cannot create a chart if there are blank rows within the data columns. Delete the blank lines by moving the cursor to it and selecting **Clear Field**.

Delete the blank row(s) on a following page.

Charting Gallery cannot create a chart if there are blank rows. Delete the blank lines by moving the cursor to each and pressing the **Delete line** key, or by selecting **Clear Field**.

Charting Gallery cannot understand your DIF or Print file format.

The data you are transferring to Charting Gallery must be in DIF or Print file format. The file may be a binary file rather than an ASCII file. See Appendix B, Using Charting Gallery with Other Applications, in this manual for more information.

Charting Gallery cannot get your file.

Charting Gallery is unable to retrieve the file you specified in the **File** field. Check to make sure you have typed the file name exactly as it was saved. If you do not find the file on the disc you are using, check to see if it was saved on another disc.

Charting Gallery cannot save your file.

Charting Gallery could not save your file as specified. Try to save the file again. If it still cannot be saved, the disc may be damaged or full. Try to save the file on another disc.



Charting Gallery cannot use this file name as specified.

The highlighted file name is not specified properly; there is a syntax error in the name.

Check to see that:

1. The file name you have specified is not longer than 12 characters.
2. The file name you have specified does not contain the following special characters: “;,+/[<>|?\*

If you have used a file extension, check to see that

1. The period and extension are at the end of the file name.
2. You have not specified an extension if you are using the basic Get and Save options **Get Chart** or **Save Chart**. In these cases Charting Gallery supplies its own extension.

Charting Gallery cannot open your file and so cannot get it.

Check to see that:

1. Your disc has been configured and powered on.
2. The subdirectory you have specified exists, and that you have entered the file and subdirectory names correctly.
3. The file you have specified (description or data) is the file type you want.

Charting Gallery cannot open your file and so cannot save it.

Check to see that:

1. The disc is configured and powered on.
2. The subdirectory you have specified exists, and that you have entered the file and subdirectory names correctly.
3. There is enough room on the disc to save the entire file.

Disc error: Insert the GOLD disc and press  to continue.

Check to see that your GOLD disc is in the drive.

Communication error with printer; press  to continue. Suggest try redraw.

An error in data transmission to your printer has caused a defect in your printed chart. Try redrawing the chart.

Insufficient computer memory to utilize printer/plotter support software.

Your computer system requires more memory to use the software library that provides the user interface for accessing and configuring your drawing device.

This size paper will not fit in your plotter.

You have selected a paper size that is incorrect for your plotter. Select a new paper size option from the Device Control screen. The Device Control options are discussed in Chapter 5.

Disc error: Unprotect the XXXX chart disc and press  to continue.

XXXX is Bar, Line, or Pie. Eliminate the write protection from your application disc; then, reinsert the disc into the same drive and continue.

Disc error: Unprotect the GOLD disc and press  to continue.

Eliminate the write protection from your GOLD disc; then, reinsert the disc into the same drive and continue.

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

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

















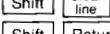
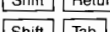
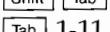


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


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
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


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