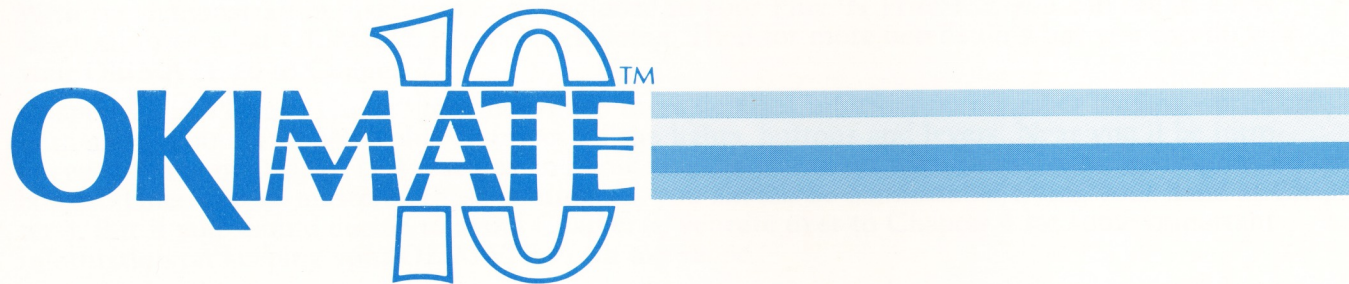# OKIMATE 10™

Printer Handbook

For Atari® Computers

OKIMATE 10™

THE PERSONAL COLOR PRINTER

INTRODUCTION TO YOUR OKIMATE HANDBOOK

To help you find your way around this handbook, here is a brief overview of the four chapters within:

Chapter 1, "Opening Moves" quickly explains just what you need to know to make sure your OKIMATE is working okay and helps to ease some of the initial tension of learning how to use a printer. With the demonstration disk or cassette included in your Plug 'N Print Kit, you can see in a few short minutes what OKIMATE is capable of doing. Then for more details on what you can do with your OKIMATE go to Chapter 2.

Chapter 2, "A Player's Guide" provides much more detailed information on paper loading—printing with and without a ribbon—plus describes all the lights, buttons and levers. Next you'll be introduced to some of OKIMATE's features and how you can use them with the software package you just bought. Once you've mastered these commands, you should be comfortable trying your hand at Chapter 3. But if you should decide to avoid Chapter 3, venture over to Chapter 4 for some important information on keeping your OKIMATE in tip top shape.

Chapter 3, "Advanced Strategies" isn't for everyone. This chapter deals with the more complex capabilities of your printer and requires a level of programming knowledge beyond scoring 1,000,000 at Galaxian. This chapter includes information on how to perform fine line feeding, print black and white and color graphics and various other novelties, like repeating graphics for decorative borders. When you're an official OKIMATE expert be sure you spend a few seconds in Chapter 4 to keep the printer at its optimum.

Chapter 4, "Dealing With Trouble" gives the procedure for cleaning the printhead and fixing the ribbon if it snaps, plus includes a question and answer segment that is designed to help you remedy any difficulties you may experience. Here you'll find information for ordering supplies plus warranty and repair information—in case you ever need it.

We, at OKIDATA, hope you'll find both the OKIMATE and the OKIMATE HANDBOOK easy and fun to use.

TABLE OF CONTENTS

Opening Moves

The rules of printing with your OKIMATE are easy, like learning the basic moves of a game. Within the next few pages, you'll be printing away.

But the OKIMATE isn't all fun and games. It gets down to some serious business. As you progress with your skills and knowledge you'll learn the challenge of advanced strategy from special printing effects to color graphics. Follow this handbook to set up your pieces and to learn the basic rules.

From then on it's your move!

1
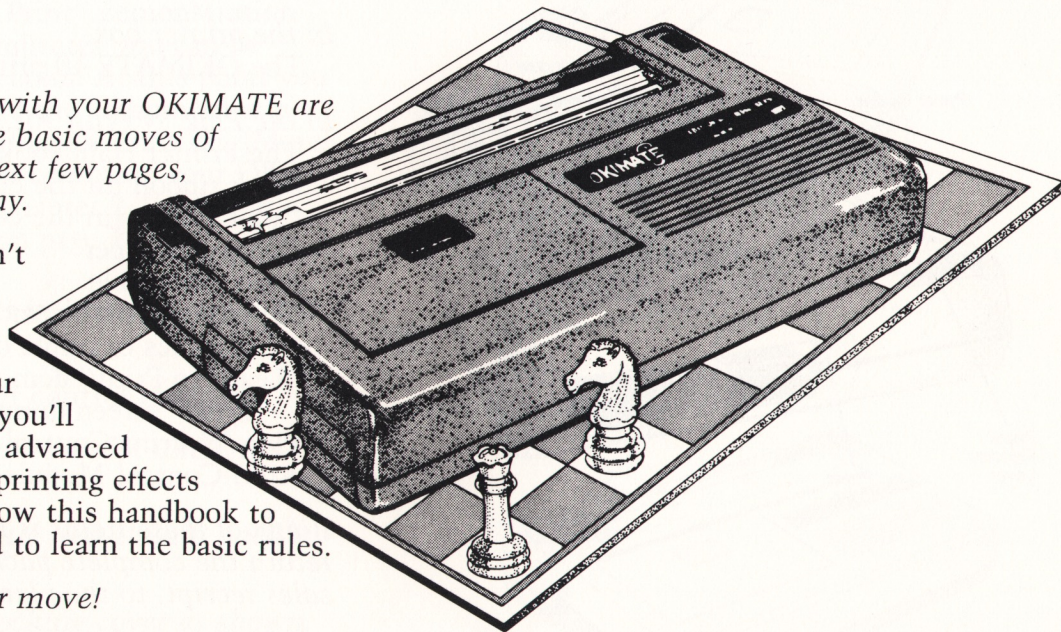
The Playing Pieces

Before you begin make sure you have the following:

In the printer box...
   The OKIMATE 10 printer, of course

In the Plug 'N Print Kit...
   The Printer Handbook
   Black ribbon (in the clear bag)
   Color ribbon (in the color bag)
   Computer paper
   Atari data cable
   "Learn to Print" demonstration and a color
      graphics example on cassette tape
   "Learn to Print" demonstration and "Color
      Print" screen dump on disk
   Plug 'N Print Control Module for Atari
   Atari Control Module locking cover

If any of these items is missing or damaged, return the complete package, along with your sales receipt, to the place of purchase.

The illustration on the left is labeled with: Paper Guides, Paper Window, ON/OFF Switch, Ribbon Door, Paper Release Lever, Paper Door, Atari Control Module.
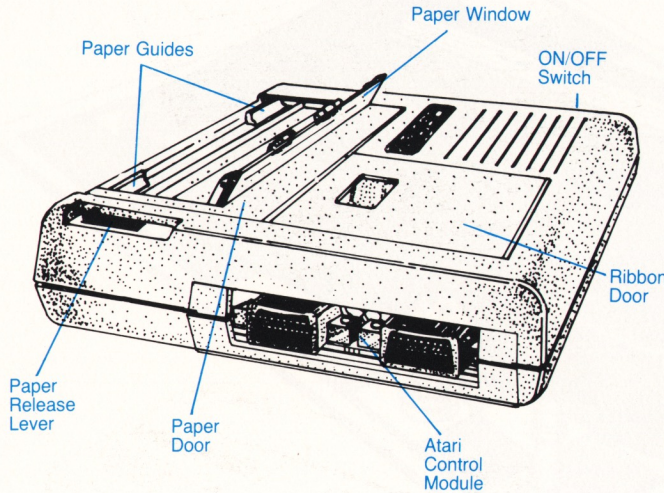
Inserting the Control Module

Follow the directions on the next seven pages and run the "Learn to Print" demonstration program. In about 15 minutes you can be printing in black or in color. At this point you only need the paper and the equipment supplied with your Atari Plug 'N Print kit. (More detailed information on operating your OKI-MATE is provided in Chapter 2, "A Player's Guide" which begins on page 15.)

Don't plug your printer in just yet—we'll tell you when you can.
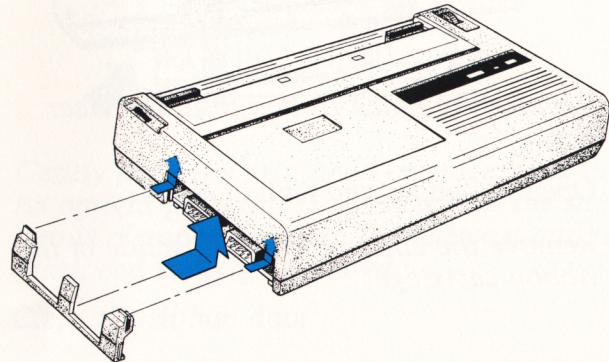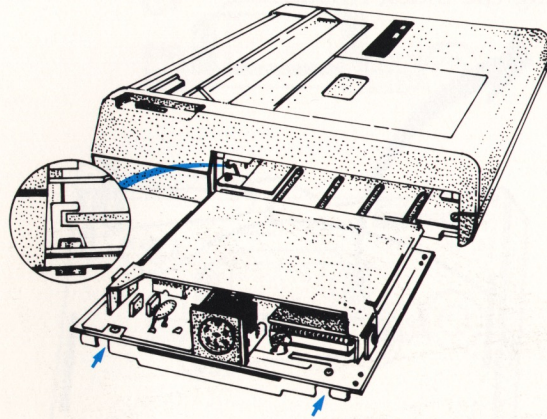
Insert the Plug 'N Print control module:

Slide the module into the slot until it is firmly in place.

Push the module with your thumb until it sits in firmly.

Insert the module locking cover as shown.

IMPORTANT: **Always turn OKIMATE off before inserting or removing the control module. Directions for removing the control module are found on page 44.**

Loading the black ribbon:
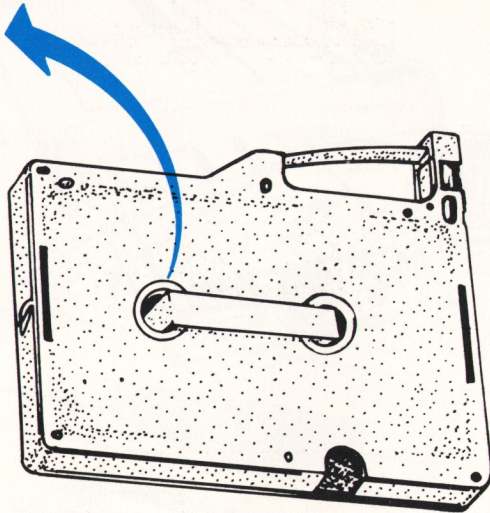
Remove the black ribbon from the clear bag.

Open the paper and ribbon doors.

Remove the clip from the underside of the ribbon cartridge.
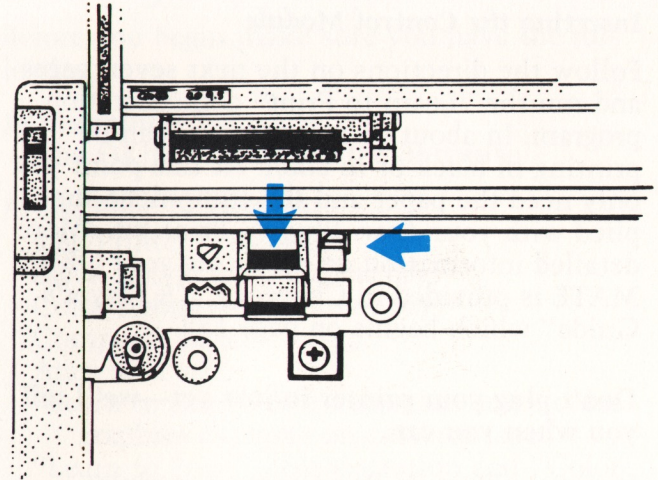
Slide the printhead to the left side of the printer.

Grasp the printhead carriage with your thumb and index finger then pull it towards you.
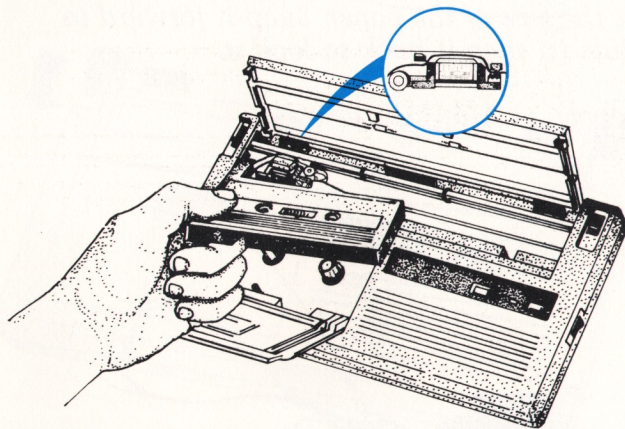
NOTE: The ribbon must be between guides for proper ribbon path.

Lower the ribbon cartridge onto the plate, slipping the exposed ribbon in front of the printhead before setting the cartridge onto the plate.
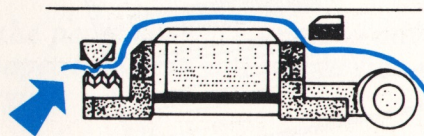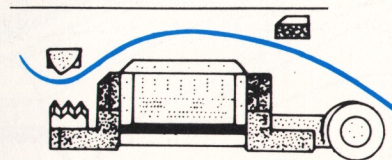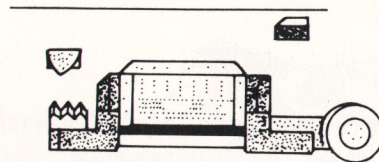
Gently push the printhead carriage back to its upright position. Make sure that the ribbon is clamped between the left post and the printhead exactly as shown.

Close the ribbon door.

5

Insert Paper:

Open the paper window.

Align the border (sprocket) holes with the outer marks on the paper guides.
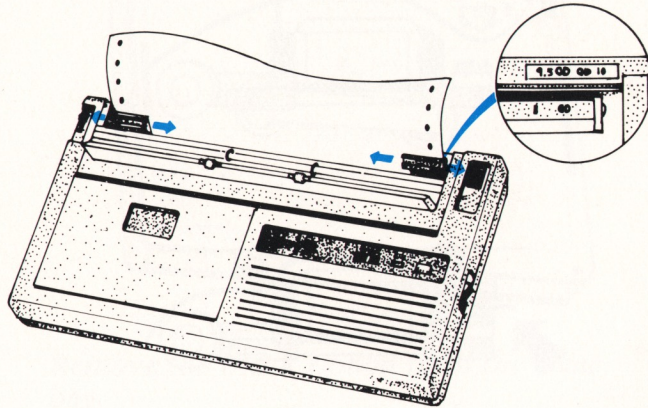
If necessary, slide the right paper guide to fit the size of the paper. Snap it forward to slide it; snap it back to lock it.
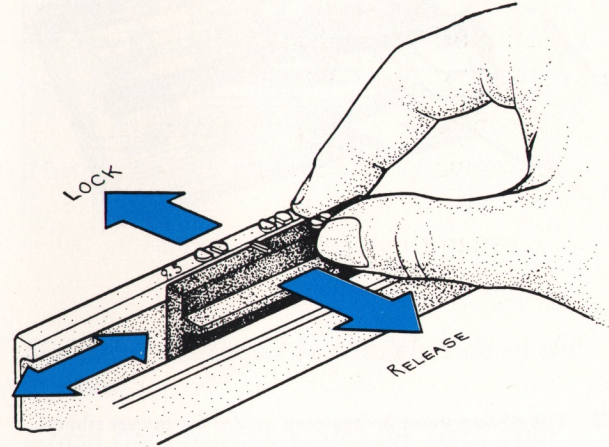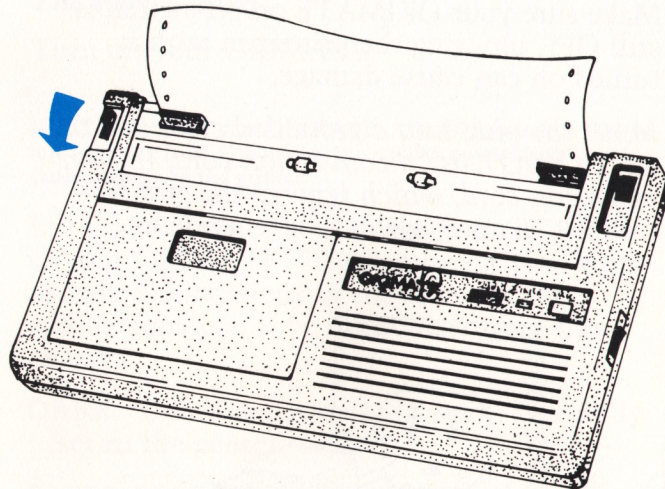
Open the paper release.

Slide the paper behind the paper guides
and under the rollers.
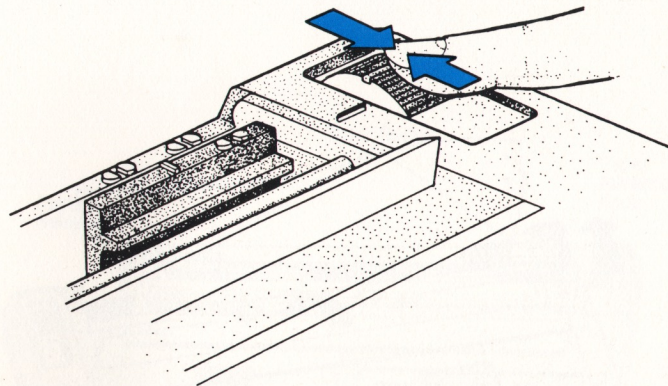
Use the paper advance knob to advance
the paper to where you would like printing
to begin.

Make sure your OKIMATE on/off switch is still OFF, plugging the printer in with it turned on can cause damage.

Insert the plug into a grounded electrical outlet. DO NOT use a conversion cord, like an extension cord, which ignores the ground—OKIMATE must always be grounded.
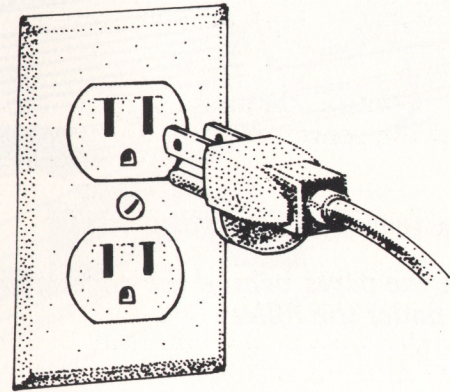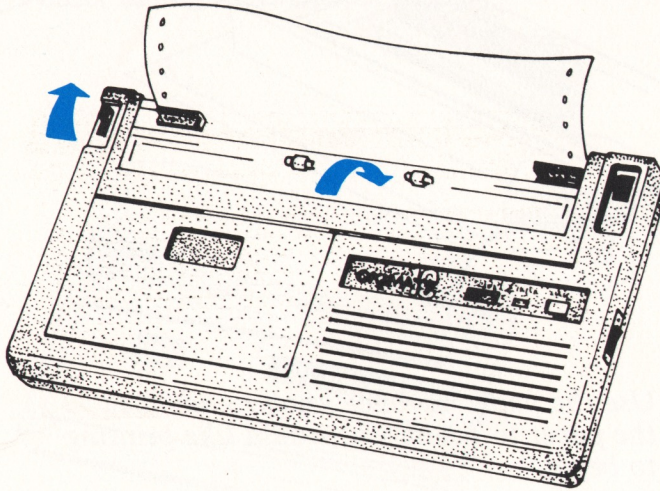
Gently pull the printhead carriage back to make sure the ribbon is still in place.

Close the paper release.

Close the paper window.

The Players Meet

Turn off your OKIMATE.

CAUTION: Make sure OKIMATE's ON/OFF switch is OFF before plugging it in. Otherwise, the sudden power surge could cause damage to the printer.

Let's take a closer look at the control center of your OKIMATE. The picture on your right reveals the locations of the levers, lights and buttons you'll be introduced to in this chapter.

DARK: Controls darkness of print. Normally set in the center.

PAPER RELEASE: OPEN for straightening paper; CLOSE for printing.

SELECT: This is the PAUSE/RESTART button. To stop the printer while it is printing, press this button and continue to hold it down until the printhead reaches the end of a line. Once the printhead is at the end of a line, release the SELECT button and the printer will stop printing. At that time, the READY light will blink slowly indicating that printing has been stopped.

9
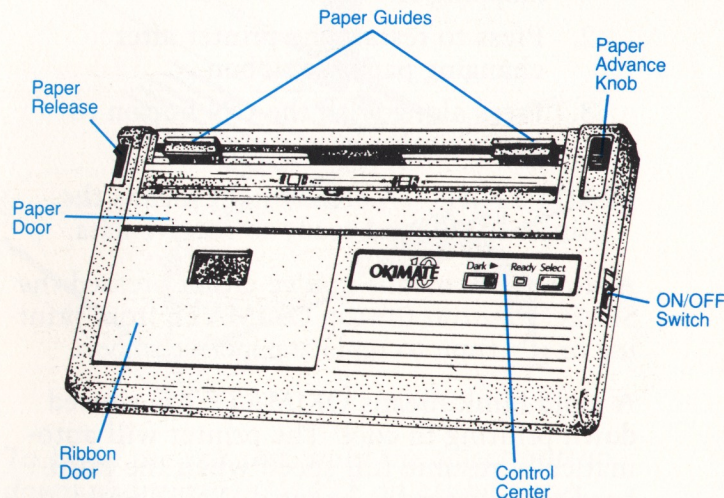
The SELECT button has three other functions:

1. Press to restart the printer after stopping it.
2. Press to restart the printer after changing paper or ribbon.
3. Press along with the ON button to begin a self test.

READY LIGHT: A steady light means the printer is ON and ready to receive data.

A slow blink means you've either pressed the SELECT button to stop OKIMATE from printing or it's time to replace paper or ribbon.

A rapid blink means OKIMATE has slowed down printing to cool. The printer will automatically resume full speed when the printhead temperature is lowered. This should happen infrequently, if at all, when OKIMATE has handled enormous amounts of data.

NOTE: If you use the SELECT button to stop printing color graphics, the OKIMATE will first print all the colors selected for a line before stopping—blue is the last color to print.

Setting the Top of Form:
When you first turn OKIMATE on, the top margin will be set at the line where the printhead is located. Therefore, to set the first printing line to 1/2 inch from the top of the page, just turn off your OKIMATE, align the paper with the front edge of the paper window and then turn OKIMATE on. The first line printed will be 1/2 inch from the top of the page and each subsequent page will begin 1/2 inch from the top of the page until OKIMATE is turned off.

When using standard 11" continuous forms, OKIMATE will automatically skip to the predetermined top of form whenever it is 1/2" from the bottom of the page. This prevents OKIMATE from printing on the perforation.

Turn on your OKIMATE.

Turn off your OKIMATE.
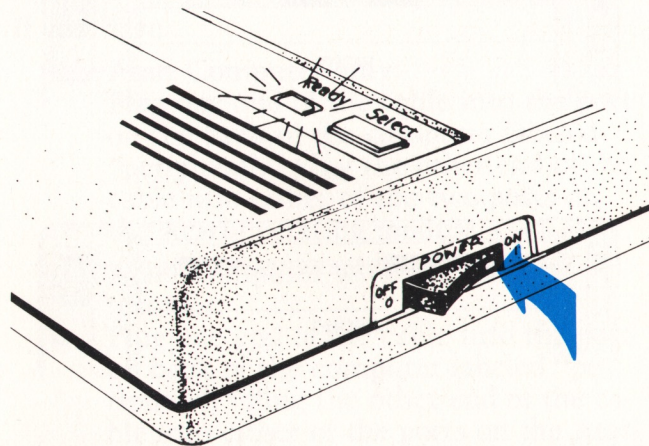
The ready light should come on. If it blinks, refer to page 10 to determine what went wrong. Then press the select button to try again.
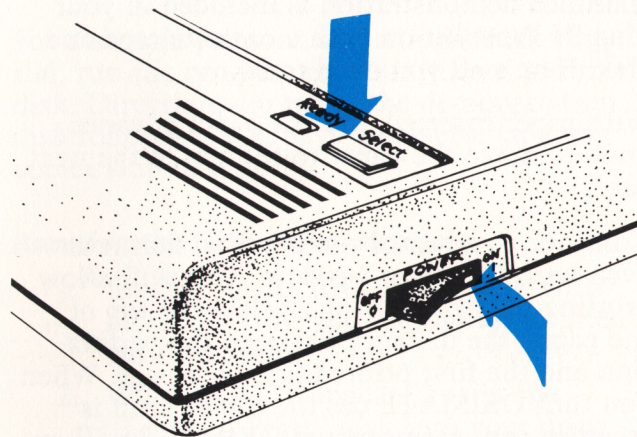
To begin the self test, hold the select button down and turn OKIMATE on at the same time. Count to 2 before releasing the select button and OKIMATE will print a test pattern.

To stop the test, turn off your OKIMATE.

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Now you're ready for a complete demonstration of OKIMATE's capabilities. A preprogrammed demonstration is included in your Plug 'N Print kit on both a cassette tape and disk. Here's all you need to do:

With paper inserted, use the paper advance knob to move the paper to the top of the next page.

Continue to advance the paper so that it is even with the paper window. This will allow printing to begin 1/2 inch below the top of the page—the distance between the perforation and the first printed line on a page. When you turn OKIMATE on, the top of form is recorded into memory and OKIMATE will automatically leave a bottom and top margin on succeeding pages.

Check the position of the paper rollers, making sure they are evenly spaced between the right and left paper guides. If both rollers are to the left or all the way to the right, you may have difficulty inserting paper. To adjust the rollers:

RIGHT

WRONG
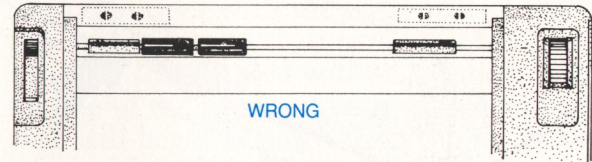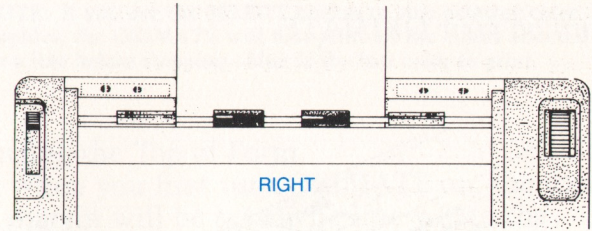
1. Locate the rollers and brackets in the paper slot at the back of the printer.

2. Slide them out so that they are about the same distance from the printer's sides as the two white rollers on the paper window.

Connect your OKIMATE to your Atari:

Make sure both the OKIMATE and the Atari are OFF.

If you have . . .

1. Atari Computer only:
   Plug one end of the cable into the port on the back of the computer labeled "peripheral." Plug the other end of the cable into either of the two ports on the Atari operating module.

2. Atari Computer with 410 cassette recorder:
   Plug one end of the cable into the port on back of the computer labeled "peripheral." Plug the other end of the cable into either of the ports on the Atari operating module. Plug the 410 cassette recorder cable into the other port on the operating module.

3. Atari Computer with 1010 cassette recorder or disk drive:
   Plug one end of the cable into either Okimate operating module ports and the other end into either port on the 1010 recorder or disk drive. The Atari computer can then be connected to either the Okimate or the 1010 cassette/disk drive.

For a sample printout and an on-screen tutorial, run the program on your "Learn to Print" disk. Directions for using the demonstration disk follow—if you have a cassette tape recorder skip to page 14.

Running the Disk Demonstration

1. Insert your ATARI Master disk with DOS2.X. Turn your computer off then back on again.

2. When READY appears, insert the "Learn to Print" disk into your drive with the side for your model computer facing up—one side is for the 800XL, the other is for all other ATARI models.

2. LOAD "D:LEARN"

3. Press the RETURN key.

4. When you see the READY prompt, type: RUN

5. Press the RETURN key.

After a minute or so to load, the program will begin. First you'll have the opportunity to see black and white and color demonstrations—you'll get a hard-copy sample of everything you can do with your OKIMATE. Then the program will go through on-screen discussions of using OKIMATE with software packages, writing your own programs and basic trouble-shooting. You can see some sample programs run on your printer (handy for reference), and you can skip over topics that don't interest you. Just sit back and relax and when it's all over, go to Chapter 2 "The Player's Guide" on page 15 to see what you can do with your OKIMATE 10.

Running the Cassette Tape Demonstration

Due to the lack of memory on the cassette tape, the tape demonstration is an abbreviated version of the demonstration on disk.

1. Put the cassette tape into your recorder with the side labeled for your model ATARI facing upwards—one side is for the 800XL; the other side is for other ATARI models.

2. Make sure the tape is rewound and the counter is set to zero.

3. Advance the tape to 10 count.

4. Type: `RUN "C:"`

5. Press the RETURN key twice.

The program will take a while to load, so be patient. It will print a sample of what OKIMATE can do along with a handy programming reference guide. Once the demonstration is completed, you should feel comfortable enough with OKIMATE to learn more about what you can do on your own, so proceed to Chapter 2, "The Player's Guide" for some fancy maneuvering.

A Player's Guide

Puzzled about what to do next?

This section will give you time to understand much more about the printer, helping you to piece everything together.

Here you'll learn about the switches, levers and lights on your OKIMATE plus you'll discover what kind of paper can be used. You'll be introduced to some printing fundamentals, enough to do normal correspondence and basic reports.
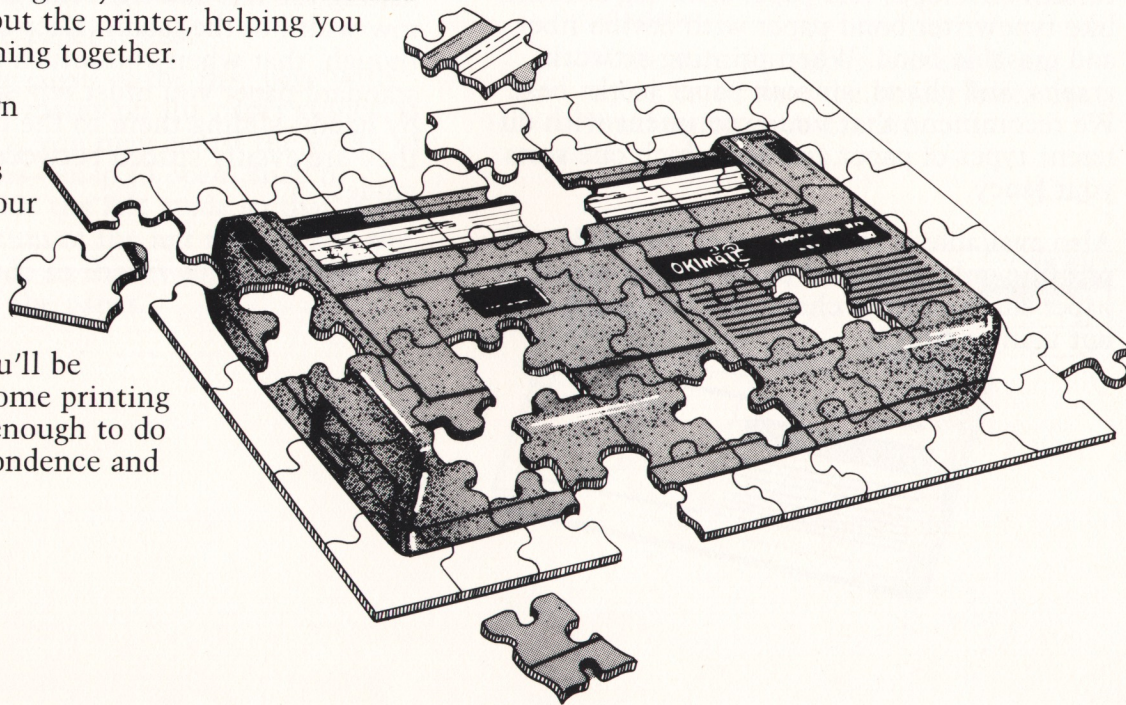
Picking the Proper Paper

When used like a typewriter to print letters and reports, OKIMATE prints well on just about any type of paper, with the exception of certain envelopes and paper with rag content, like typewriter bond paper with cotton fiber and erasable bond. When printing artwork, graphs, and charts, smooth paper works best. We recommend that you experiment with different types of paper and see which one suits your fancy.

Also available is thermal paper for black printing only. Thermal paper is heat-sensitive paper that imprints characters on a page without using a ribbon.

You can print on acetate sheets up to .005"— Scotch/3M 544 Transparency Notepad works well, as do other very thin transparencies.

You can also print on mailing labels by adjusting the left and right margins to the narrow width of the labels. Keep in mind, though, that when you return to printing on standard paper you must reposition the rollers by hand—sliding them to the right so that they are evenly spaced between the paper guides.

Inserting Computer Paper

1. Set a small stack of computer paper on the table or place a carton of paper on the floor behind the OKIMATE.

2. Open the paper window.

3. Open the paper release.

4. Align the edges of the first page with the outer marks on the paper guides. If necessary, you may adjust the width of the guides—snap to open; snap to close. Slide the left guide so that it sets the position of the left margin and the right guide so that it adjusts to the width of the paper.

5. Insert the paper behind the paper guides.

6. Advance the paper with the paper advance knob.

7. Close the paper release and the paper window.

8. Make sure the paper is even. If not, check to be sure the border holes are lined up on each margin.
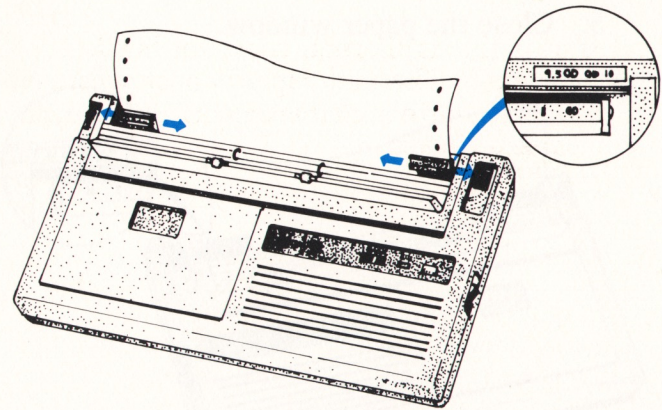
Inserting Single Sheets

1. Lift up the paper window.
2. With a sheet of standard paper (8 1/2" × 11"), align the edges with the inner marks on the paper guides—snap to open; snap to close.
3. Advance the paper using the paper advance knob.
4. Make sure the paper is even, then close the paper release.
5. Close the paper window.
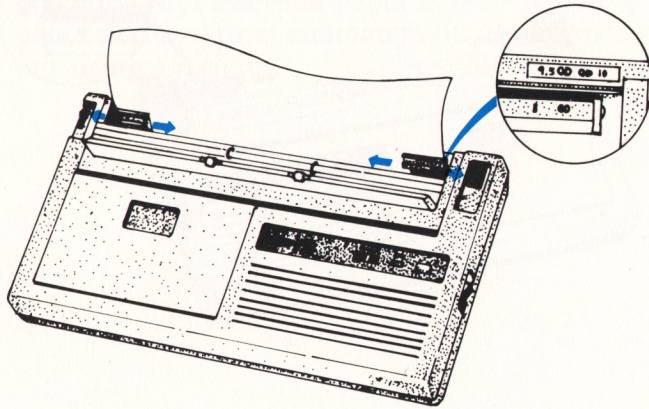
The Rules of the Game

Chances are that you want to use your OKI-MATE to print information from a software package, whether it's a record of your budget from a financial program or a letter to Aunt Mary on your word processor. It's easy to do because these packages almost always have a feature that controls printing, so that all you have to do is follow the instructions provided with your software. Keep in mind that from the computer's point of view, OKIMATE works the same way as the Atari 1025 printer does, so follow any instructions given for that printer.

There are so many software packages available for Atari computers that we simply can't go into detail on how each and every one works with OKIMATE. We can, however, give you some general guidelines that will make things easier for you.

Some programs ask you to select which printer you have from a list called a "menu"; if the menu doesn't include OKIMATE look for "ATARI 1025."

Your software may give provisions for using OKIMATE's special features, like different sizes and styles of type, although the flexibility of these packages often varies. You'll need to know the special codes that control the features you want—check the handy reference chart on the back cover foldout of this handbook—and how your software handles those codes—check your software instructions.

The way printer control codes are handled differs from package to package. Some have special codes that go before OKIMATE's codes. Others have ways you can assign OKIMATE's codes to characters you're not likely to use, such as the @ symbol, so that you can change printing styles with a single keystroke. The

instructions which came with your software packages should explain how it deals with printers.

Remember that your software package may not let OKIMATE do all the things it's capable of—an accounting package, for example, will probably let you pick a style of type for the entire document but will not allow you to change features within the document.

GRAPHICS

```
LOAD"D:COLOR"
RUN
```

Printing Software Graphics

One of OKIMATE's most exciting features is its ability to print color pictures from the display screen of your computer. The key to this is a program called "Color" on your Learn to Print disk. This is a screen dump program—it takes an image directly from the screen and translates it into information for the printer. Then the printer reproduces the screen image on paper in vivid color.

There are a few limitations. "Color" will only work with the ATARI 800XL using DOS 2.0 or DOS 2.2. with a compatible graphics software package, like Super Sketch or Koala Pad. You can't print the final screen of your triumph with Zaxxon; you can only print pic-

tures you've previously created and saved using a compatible software package. Okidata is working with many other software manufacturers and new programs are being added weekly. Simply mail in your warranty registration card with the box checked that gets you placed on our mailing list and we'll keep you up-to-date on the latest additions combined with information on how to keep your disk library current.

To use the color screen print program, create your masterpiece using one of the packages listed above. (If you don't have one yet, try some of the sample pictures on the OKIMATE 10 demonstration disk.) Then load and run the color screen print program like this:

1. Insert your ATARI Master disk with DOS2.X. Turn your computer off and back on again.

2. When READY appears insert the Learn to Print disk in your drive with the side labeled "Learn to Print" and "Color" facing up.

3. Type: `LOAD"D:COLOR"`

4. Press the RETURN key.

5. When the READY prompt appears, type: `RUN`

6. Press the RETURN key.

After about a minute, you'll see the main title frame. The program will then ask you if you want instructions. We suggest that you answer "Y" for "Yes" the first time you use "Color." You'll then be asked to set up OKI-MATE and put in the black ribbon. The program prints out an instruction sheet that explains exactly how to print a picture—and it's a good idea to keep this handy for reference. The sheet also gives technical details on picture file format; if you're an experienced programmer you can use this information to write your own graphics programs for OKI-MATE.

"Color" is completely self-documenting, so all you have to do is follow the directions on the screen at each step to choose the format you're using and the picture you wish to print. The program will even tell you if OKI-MATE isn't ready to print, and will give you a list of things to check. Once you've made your selections and the printer is ready—don't forget to put in the color ribbon!—just press the RETURN key and watch OKIMATE paint your picture. It takes a little while because it has to print each line three times, once for each of the three colors on the ribbon.

```
10 LPRINT "I'm your OKIMATE"
20 LPRINT "I print fast!"
30 GOTO 10
```

Will give you this:

```
I'm your OKIMATE
I print fast!
```

Using ATARI basic to write programs for use with your OKIMATE is simple. For starters, all that's needed is an LPRINT command. At the end, you simply type RUN.

If you write programs using the commands which follow, you can produce many special effects to add extra flair to your documents. Just add these commands to your LPRINT statement with the CHR$ function.

For most features you'll only need an LPRINT statement. A few, however, use an OPEN# and PRINT# statement that takes the place of LPRINT. This is because LPRINT, when used in certain instances, resets OKIMATE to its default settings—ten characters per inch, ASCII character set and six lines per inch. We'll point these features out when we come to them.

An OPEN statement looks like this:

```
10 OPEN#3,8,0,"P:"
```

This statement opens a channel from the ATARI to your OKIMATE. The first number after OPEN# describes the channel and can be any number from one to seven—we used three. The other numbers and symbols (`8,0,"P:"`) always remain the same with OKIMATE. These commands determine the output device you're using. For more information on these numbers, see your ATARI reference manual.

A PRINT statement looks like this:

```
PRINT#3; "Put text here"
```

Use the PRINT# statement as you would the LPRINT statement. The number after PRINT# must be the same as the first number in your OPEN statement—in this case 3.

```
10 OPEN#3,8,0,"P:"
20 PRINT#3; "This is an example
   of a print statement."
```

```
10 LPRINT CHR$(27);CHR$(20);"THIS IS FINE
   PRINT";CHR$(27);CHR$(14);"AND THIS IS BOLD PRINTING"
20 LPRINT CHR$(27);CHR$(15);"THIS IS NORMAL
   PRINT";CHR$(27);CHR$(14);"AND THIS IS WIDE PRINTING.''
```

Will give you this:

THIS IS FINE PRINT **AND THIS IS BOLD PRINTING**
THIS IS NORMAL PRINT **AND THIS WIDE PRINTING**

Wide and Bold

For extra emphasis, you can double the width of normal and fine printing—5 characters per inch (cpi) or bold printing at 8.5 cpi.

CHARACTER SIZE	
CHR$(27);CHR$(15)	NORMAL
CHR$(27);CHR$(20)	FINE
CHR$(27);CHR$(14);	
CHR$(27);CHR$(15)	WIDE
CHR$(27);CHR$(14);	
CHR$(17);CHR$(20)	BOLD

Normal and Fine Printing

Normal printing measures ten characters per inch just like a pica typewriter. For fine printing—17.1 characters per inch—add this command to your print statement:

$$CHR\$(27);CHR\$(20)$$

You will notice that an LPRINT statement prints fine for one line only. For continuous fine printing, use the OPEN and PRINT statements.

EUROPEAN CHARACTERS

CHR$(27);CHR$(23)	Start
CHR$(27);CHR$(24)	Stop

FORM FEED

CHR$(140)	Advance to next page
CHR$(27);CHR$(65)	Skip over perforation (ON)
CHR$(27);CHR$(66)	Skip over perforation (OFF)

European Characters

If you plan to print in a European language, you'll find this feature rather useful. Using the command CHR$(27);CHR$(23) allows you to print the European characters shown in the chart below for one line only. The command, CHR$(27);CHR$(24) cancels the European characters.

0=ä	11=ä	22=Ñ	0=á
1=ù	12=ö	23=è	96=¡
2=Ñ	13=ú	24=â	123=Ä
3=è	14=ó	25=à	
4=ç	15=ö	26=Å	
5=8	16=ü	27=	
6=ò	17=â	28=↑	
7=ì	18=û	29=↓	
8=£	19=í	30=←	
9=ï	20=é	31=→	
10=ü	21=è		

NOTE: When you write a program you may switch from normal to wide printing in the middle of a line, but you can't switch from normal to fine (or vice versa) on the same line.

Form Feed

The CHR$(140) form feed command makes the printer advance the paper to the top of the next page. When printing begins, the OKI-MATE automatically skips one inch both above and below the page perforation.
If you are using non-perforated paper and want to turn this feature off, simply enter the CHR$(27);CHR$(66) command. Turn the perforation skip on again with the CHR$(27); CHR$(65) command.

<table>
<tr><td colspan="2">

LINE SPACING

</td></tr>
<tr><td>

```
CHR$(27);CHR$(54)
CHR$(27);CHR$(56)
```
</td><td>
6 lines per inch
8 lines per inch
</td></tr>
</table>

<table>
<tr><td colspan="2">

MARGIN WIDTH

</td></tr>
<tr><td>

```
CHR$(27);CHR$(76)
CHR$(27);CHR$(83)
```
</td><td>
Standard margins
Narrow margins
</td></tr>
</table>

Line Spacing

OKIMATE normally prints six lines per inch. By inserting this command you can print eight lines per inch:

```
CHR$(27);CHR$(56)
```

Again you must use the OPEN and PRINT statements instead of LPRINT or the default setting of six lines per inch will override your selection. Of course, you can use LPRINT or the following command to return to six lines per inch:

```
CHR$(27);CHR$(54)
```

Margin Width

OKIMATE gives you the option to print lines using two margin sizes. Standard margins have up to 80 characters per line (in normal print width), but the narrow margins only provide for 64 characters per line at 10 cpi. Here are the other character counts:

Print	Standard	Narrow
Wide	40	32
Normal	80	64
Fine	136	106
Bold	68	53

```
10 OPEN#3,8,0,"P:"
20 PRINT#3;CHR$(27);CHR$(83)
30 PRINT#3;"THIS PRINT SAMPLE IS BEING USED TO SHOW YOU THOSE NARROW
   MARGINS"
40 PRINT#3;CHR$(27);CHR$(76)
50 PRINT#3;"THIS LINE SHOWS YOU HOW MUCH MORE SPACE YOU HAVE WHEN YOU
   USE NORMAL MARGINS"
```

Will give you this:

```
      THIS PRINT SAMPLE IS BEING USED TO SHOW YOU THOSE NARROW MARGINS

THIS LINE SHOWS YOU HOW MUCH MORE SPACE YOU HAVE WHEN YOU USE NORMAL MARGINS
```

Your OKIMATE will print with standard margins unless you send the narrow margin command—CHR$(27);CHR$(83). To return to standard margins use the CHR$(27);CHR$(76) command.

```
10 LPRINT "THIS IS BLACK ON WHITE."
20 LPRINT CHR$(146);"THIS IS REVERSE";CHR$(147); "BLACK ON
   WHITE AGAIN ";CHR$(146);"WHITE ON BLACK"
30 LPRINT "THIS IS BACK TO NORMAL"
```

Will give you this:

```
THIS IS BLACK ON WHITE.
THIS IS REVERSEBLACK ON WHITE AGAIN.WHITE ON BLACK
THIS IS BACK TO NORMAL
```

Reverse Image

Your OKIMATE prints black characters on the white background of paper. With the reverse command, CHR$(146) you can print a black background with white letters for one line only. CHR$(147) returns printing to normal.

| REVERSE IMAGE	
CHR$(146)	Reverse image
CHR$(147)	Normal image

Advanced Strategies

Don't read this chapter unless you've mastered the other features of your OKIMATE listed in "The Player's Guide." The controls explained below are intended to "fine tune" your printer for extra-special effects.

If you do decide to skip this section or plan to wait for a rainy day to try it out, take a look at "Dealing with Trouble" beginning on page 38 before putting this handbook in a drawer somewhere. That way, you won't miss out on the information about cleaning the printhead and a few suggestions for keeping OKIMATE at its best.
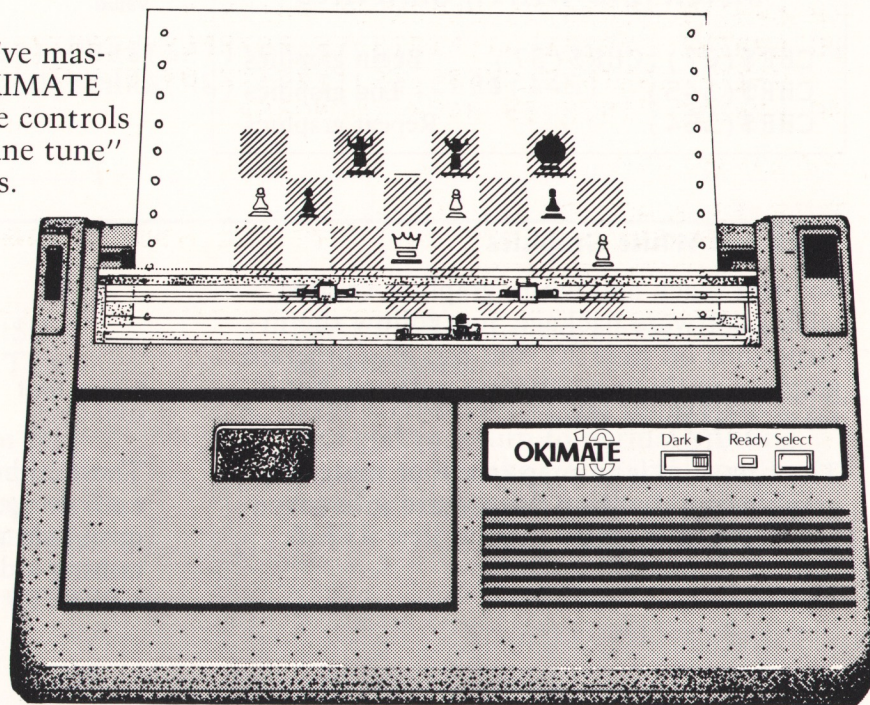
BLACK AND WHITE GRAPHICS

```
CHR$(27);CHR$(37)     Begin graphics
CHR$(145)             End graphics
CHR$(154)             Repeat graphics
```

Black and White Graphics

To print black and white graphics created with a software package, just follow the instructions on page 20. You can also program graphics without a software package, but it takes a bit more time.

The first step is to map out your image on graph paper, dividing the picture into seven row strips like this:

Value	Rows						
	1	2	3	4	5	6	7
1	○						
2	○	○					
4	○		○				
8	○			○			
16	○				○		
32	○					○	
64	○	○	○	○	○	○	○
Column total	127	66	68	72	80	96	64

The numbers on the left show the value at each dot position in a column. For each column, add up the values for each position containing a dot. Now put everything together in a PRINT# statement. Here's how:

```
10 OPEN #3,8,0,P:"
20 PRINT#3;CHR$(27);CHR$(37);CHR$(127);CHR$(66);
   CHR$(68);CHR$(72);CHR$(80);CHR$(96);CHR$(64);CHR$(145)
```

Will give you this:

◣

---

1. Begin with the CHR$(27);CHR$(37) command which tells OKIMATE to print graphics.

2. Put numbers you calculated on the graph in CHR$ form. For example, the total of column 1 is 127, so after we've entered the begin graphics command we would enter CHR$(127).

3. Enter the data for the seven columns in your image.

4. Type CHR$(145) to end the graphics data and to return to normal printing. Be sure to use the CHR$(145) command when you're finished or the OKIMATE will remain in graphics mode.

```
 5 DIM G$(100)
10 FOR I = 1 TO 7
20 READ G
30 G$(LEN (G$)+1)=CHR$(G)
40 NEXT I
50 DATA 127,66,68,72,80,96,64
60 LPRINT CHR$(27);CHR$(37);G$;CHR$(145)
```

Will give you this:

⌐

Data Statements

There's an easier way to enter all the graphic data than we just did and that's with a data statement. Basically, a data statement allows you to combine all the graphics data into one sentence, substituting the word "data" for all those CHR$.

NOTE: **Your OKIMATE prints a maximum of 480 graphic columns with standard margins and 384 columns with narrow margins. If you send more than this amount, the printer will continue printing at the left margin of the next line.**

Repeating Graphics

If you're creating a decorative border, bar chart or similar graphics, you'll find this repeat command useful. The repeat command, CHR$(154) repeats one column of data up to 255 times. Here's how it works:

1. To enter the begin graphics command, type CHR$(27);CHR$(37)

2. Next enter the repeat graphics command, CHR$(154)

32

```
10 LPRINT CHR$(27);CHR$(37);CHR$(154);CHR$(255);CHR$(127);
   CHR$(154);CHR$(255);CHR$(85);CHR$(145)
```

Will give you this:

3. Using a CHR$ indicate the amount of repetitions. For example, CHR$(100) would cause the pattern to repeat 100 times.

4. Enter the graphics data for the pattern you want—again in CHR$ form.

5. Use the end graphics command, CHR$(145), to end graphics.

FINE PRINT POSITIONING

```
CHR$(144);n
```

Fine Print Positioning

This feature lets you start printing at a specific distance from the left margin measured in dot columns, which are 1/60" wide. (There are 480 dot columns in a long margin line.) Start by adding these codes:

```
LPRINT CHR$(144);n
```

```
10 LPRINT CHR$(144);"180THREE INCHES (180 DOTS) FROM LEFT MARGIN"
```

Will give you this:

```
                    THREE INCHES (180 DOTS) FROM LEFT MARGIN.
```

where n equals the number of dot columns from the left margin. For example, if you wanted to print at the 180th dot column, which is three inches from the left margin, the print statement would look like the example above.

Do-It-Yourself Color

You already know how to print color graphics from a software package, but it's a little more complex to write your own programs to print color. Before you attempt color printing on your own, it's a good idea to understand how your OKIMATE prints colors.

The color ribbon cartridge consists of three 8″ color strips (yellow, magenta, and blue) plus a marker strip with a short black ribbon followed by a clear ribbon. The marker strip does not print and is used to align the ribbon. The color strips are for printing.

The OKIMATE printhead passes each line of a color pattern three times, once for each color strip. Like an artist mixing colors on a palette, the final color that appears on paper depends on the mix of colors you use.

When the OKIMATE receives the ribbon align command, CHR$(153), the printhead is aligned with the ribbon's marker strip. Any

```
10 OPEN #3,8,0,"P:"
20 PRINT#3;CHR$(153);"   4   TEXT COLORS:   5   ORANGE YELLOW
   GREEN   8   BLACK"
30 PRINT#3;"   4   TEXT COLORS: RED ORANGE      14        PURPLE BLACK"
40 PRINT#3;"   4   TEXT COLORS:        19        GREEN PURPLE BLACK
   BLUE";CHR$(155)
```

Note: The blue numbers indicate the number of times to space. For example, line 30 has 4 spaces followed by text and then 14 spaces.

data given in the next print statement is printed in yellow. The following print statement prints in magenta and the one after that prints in blue.

When the ribbon feed code, CHR$(155), is received, the ribbon is advanced to the next marker strip. By choosing which colors you will and will not print on each line, you can mix combinations of three basic colors to achieve a spectrum of color choices.

Programming Hint

There's a way to save typing time when you use different printing features frequently. Let "string variables" define the codes you want to use and add the variables to your PRINT statements.

String variables consist of one or more letters followed by a dollar sign. A DIM statement defines the size of the string variable. For more information on these BASIC programming steps, read your ATARI manual.

Whenever possible, try to pick variable names that will remind you of their function (FF$ for form feed) and be consistent in all your programs. Remember to save them in a file and use them whenever you write programs.

The REM statements we've included at the end of each line tell you what each string variable means. You can save typing time and memory space by leaving these statements out when you enter this program in your ATARI.

PERFECT COMBINATION

```
10   REM SAVE "D:FUNCTION"
20   DIM ESC$(1):ESC$=CHR$(27):REM ESCAPE
30   DIM DW$(1):DW$=CHR$(14):REM DOUBLE WIDTH
40   DIM NP$(1):NP$=CHR$(15):REM NORMAL PRINT
50   DIM FP$(1):FP$=CHR$(20):REM FINE PRINT
60   DIM EP$(1):EP$=CHR$(23):REM EUROPEAN PRINT
70   DIM CAN$(1):CAN$=CHR$(24):REM CANCEL EUROPEAN
80   DIM SG$(2):SG$=CHR$(27):SG$(LEN(SG$)+1)=CHR$(37)
```

```
90   DIM L6$(1):L6$=CHR$(54):REM 6 LPI
100  DIM L8$(1):L8$=CHR$(56):REM 8 LPI
110  DIM WM$(1):WM$=CHR$(76):REM WIDE MARGINS
120  DIM NM$(1):NM$=CHR$(83):REN NARROW MARGINS
130  DIM DOT$(1):DOT$=CHR$(144):REM DOT COLUMN
140  DIM CG$(1):CG$=CHR$(145):REM CANCEL GRAPHICS
150  DIM RI$(1):RI$=CHR$(146):REM REVERSE IMAGE
160  DIM NI$(1):NI$=CHR$(147):REM NORMAL IMAGE
170  DIM AR$(1):AR$=CHR$(153):REM ALIGN RIBBON
180  DIM RG$(1):RG$=CHR$(154):REPEAT GRAPHICS
190  DIM LF$(1):LF$=CHR$(138):REM FINE LINE FEED
200  DIM FF$(1):FF$=CHR$(140):REM FORM FEED
210  DIM EOL$(1):EOL$=CHR$(155):REM END OF LINE
220  DIM ON$(1):ON$=CHR$(65):REM PERFORATION SKIP ON
230  DIM OFF$(1):OFF$=CHR$(66):REM PERFORATION SKIP OFF
240  LPRINT "THIS IS NORMAL PRINT"
250  LPRINT ESC$;FP$;"THIS IS FINE PRINT"
260  LPRINT RI$;"REVERSE IMAGE"
```

Will give you this:

```
THIS IS NORMAL PRINT
THIS IS FINE PRINT
```
REVERSE IMAGE
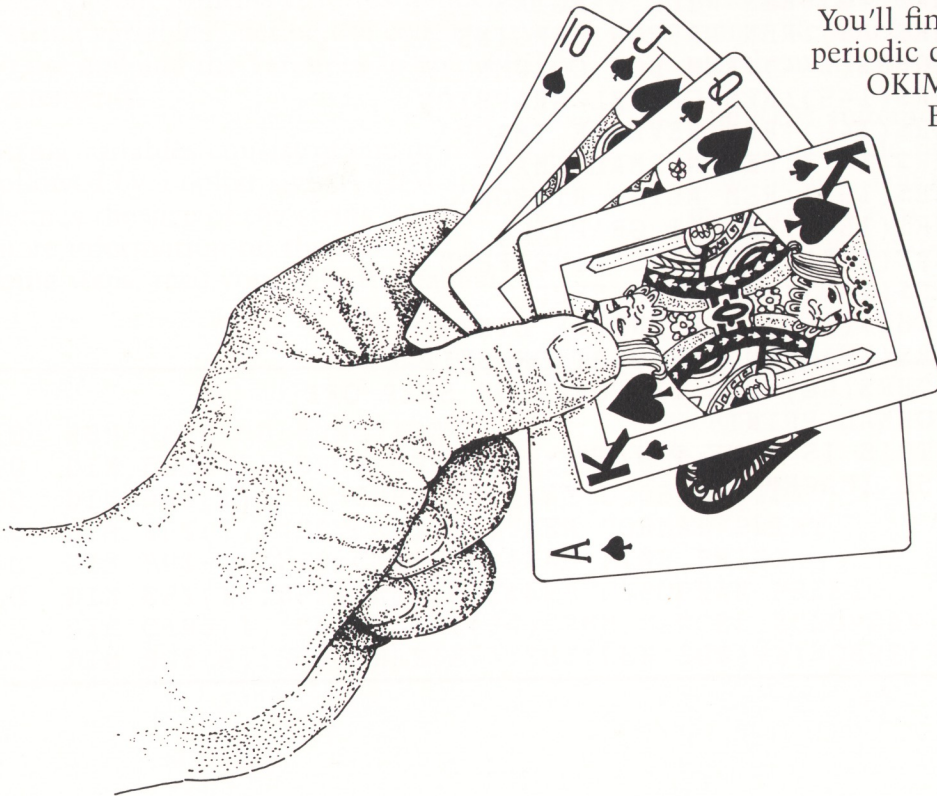
You'll find that with the recommended periodic cleaning of the printhead, your OKIMATE is the best deal in town. But if it's in the cards that you someday have problems with your printer, this section is designed to give you a hand.

You don't have to be a computer ace to handle the minor problems listed here. However for problems you can't deal with, don't gamble on fixing them yourself, use the repair and warranty information on page 45.

Cleaning Up

Wipe the OKIMATE paper window with a clean, damp, lint-free cloth whenever ribbon ink or dust begins to accumulate.

Clean your OKIMATE printhead after four ribbon changes or whenever you notice the print fading or missing dots.

1. Turn off your OKIMATE.
2. Unplug your OKIMATE.
3. Open both the paper and ribbon doors.
4. Remove the ribbon cartridge, returning the printhead to its upright position.
5. Unsnap the printhead lock lever, leaving the printhead in its upright position.
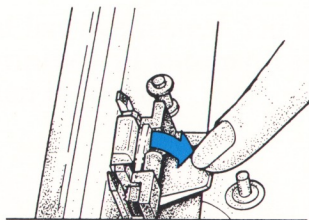
6. Grasp the tab attached to the printhead and lift the printhead out of the assembly.
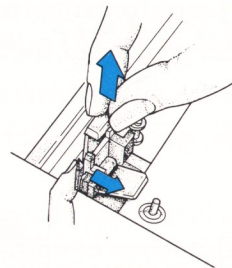
7. Wipe the dark surface of the printhead with a clean, lint-free cloth that has been dipped in alcohol or an alcohol-based typewriter cleaning solution.
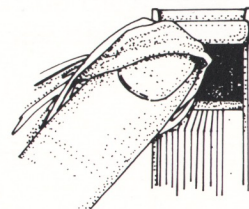
8. Wipe off all ink and paper lint.

9. Replace the printhead—make abso-
lutely certain that the black thermal
surface faces towards the paper.
10. Close the printhead lock lever.
11. Replace the ribbon cartridge.
12. Close the paper and ribbon doors.
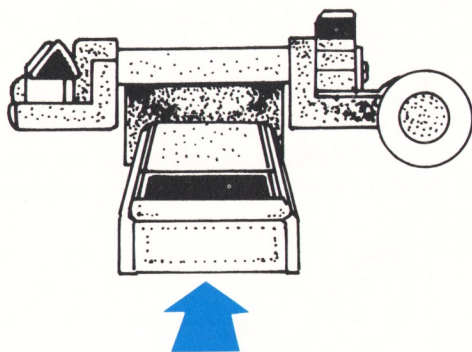
Replacing the Printhead

If you notice the characters or graphics
printed by your OKIMATE are not fully
formed, with one or more dots consistently
missing, your printhead may need replacing.
Clean the printhead first, according to the di-
rections on page 39 and then if the problem
still persists, replace the printhead. (Ordering
information available on page 44.)

To replace the printhead, remove it following
the steps described in "Cleaning Up" on page
39. Insert a new printhead in its place—mak-
ing absolutely certain that the dark thermal
side of the printhead faces the paper and the
printhead carriage is in its upright position.

Check'Mate

Use this handy troubleshooting guide if you have any problems with your printer:

What happens if. . .
. . . the printer doesn't work and the READY light is not on?

Check the data cable and the Plug 'N Print control module connections. Make sure both your printer and computer are switched on.

. . . the READY light blinks slowly?

Your printer is out of paper or ribbon. Replenish the supply and press the SELECT switch when ready to continue.

. . . the READY light blinks rapidly and the printer slows down?

The printhead has overheated. Do not shut off power—the printer will automatically resume full speed when it cools.

. . . printing becomes faded or blurred?

The printhead needs cleaning. Follow the steps in "Cleaning Up" on page 39.

. . . one or more printing dots is consistently missing from characters or graphics even after cleaning the printhead?

The printhead needs to be replaced. Use the order form enclosed to order a new printhead, then replace it following the directions on page 40.

. . . the ribbon becomes loose or tangled?

Carefully remove the ribbon cartridge from the printer. Turn the thumbdial (located on the left side of the cartridge) counter-clockwise to take up the slack. Before reinserting, make sure the ribbon is not twisted.

. . . one of the ribbons snapped?

You can repair a damaged ribbon by following these steps:

1. You'll need tape, scissors and a flat-headed screwdriver.

2. Pry open the ribbon cartridge by inserting the screwdriver into the slots on the sides of the casing.
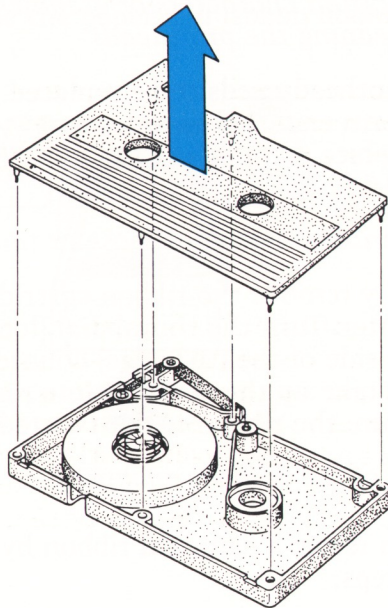
3. Once the cartridge is open, pull the ribbon clockwise so that you have a few inches of undamaged ribbon to work with.

4. Cut off the damaged ribbon.

5. Remove the spring from the blue thumbdial.

6. Remove the blue thumbdial.
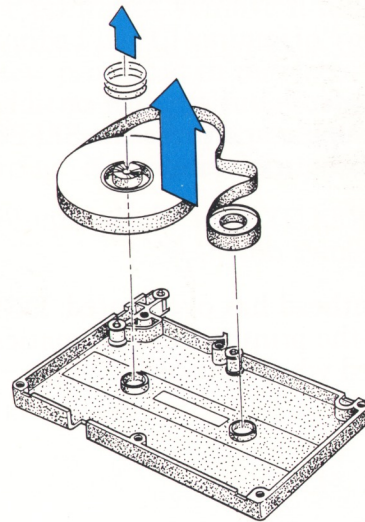
7. Tape the new ribbon end to the blue thumbdial.

8. Thread the ribbon around the left side of the three black rollers.

9. Reinsert the blue thumbdial and wrap the ribbon around it about 10 times counter-clockwise until the ribbon is secure and moving freely.
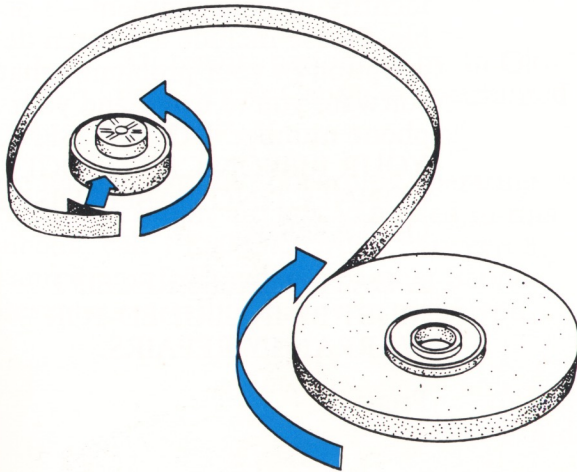
10. Replace the spring.

11. Line up the top and bottom of the casing and snap them together.

12. Take up any loose ribbon by turning the thumbdial.

. . . I forget to take the color ribbon out when printing text?

Your document will be printed in a random variety of colors. If you want to print text in color, it can be done, but follow the directions on page 34.

. . . I want to remove the control module from the printer?

Turn both the OKIMATE and the ATARI off. Disconnect the power cord and the data cable. Remove the locking cover and insert the tabs in the cover into the slots on the module. Holding on to the cover, gently slide the module out of the printer. Don't use the ports to pull the module out, they may snap off.

Who you call depends on the nature of your problem. If you are missing an item in your Plug 'N Print Kit, take the entire kit back to the place of purchase. If you need additional supplies, complete the OKIMATE 10 order form and mail it to:

OKIDATA Supplies
CN-8492
Trenton, NJ 08650

If you require service on your OKIMATE, contact one of the three service centers listed on page 48. All service on OKIMATE 10 printers must be performed by an Okidata Repair Center. Repairs needed within the 90-day warranty period will be performed at no charge. Repairs after the expiration of the warranty will be performed at a flat rate of $55.00. Here's what you'll need to do:

How to Pack

Use the original carton and styrofoam if possible. Otherwise pack your printer in a strong, corrugated cardboard box and surround it with at least three inches of crumbled newspaper.

What to Ship

Send the printer, the operating module (plugged into the side of the printer), and a print sample identifying your problem—if possible. Please include a written description of your problem, what software you're using and your phone number. DO NOT SEND YOUR RIBBON CARTRIDGE, CONNECTING CABLE, DISKS OR TAPES.

A DATED SALES RECEIPT MUST BE INCLUDED FOR WARRANTY REPAIRS.

How to Ship

Prepaid

Where to Ship	Send to the Okidata Repair Center nearest you. There's a listing on page 48.
Repair Cost	Fifty-five dollars ($55.00) flat rate for all repairs after the warranty period. A check or money order payable to Okidata must accompany the printer. Do not send cash.
Repair Warranty	All repairs performed by an Okidata Repair Center are warranted for 30 days.

If you have questions concerning operating the OKIMATE that are not addressed in this handbook, call 1-800-OKIDATA between 8 a.m and 7 p.m EST and a Customer Service Representative will be happy to assist you.

Specifications—OKIMATE 10

Print Method

Method:	Thermal Transfer Dot Matrix
Format:	Unidirectional printing

Characters

Character size:	9H × 9V dots
Lower case:	True, below-the-line descenders
Character pitches: (CPI = characters per inch; CPL = characters per line)	Wide print: 5 CPI/40 CPL Bold print: 8 CPI/66 CPL Text print: 10 CPI/80 CPL Fine print: 17 CPI/136 CPL
Line spacing:	6 or 8 Lines per inch
Reverse printing:	Yes
Special characters:	European characters

Graphics

Density:	60H × 72V dots per inch
Printline:	480H × 7V dots
Line spacing:	14/144″ or variable n/144″

Speed

Text:	Speed—60 characters per second Throughput—240 words per minute
Graphics:	Speed—18 characters per second

Paper

Type:	Plain or thermal
Paper feed:	Pin feed for computer paper and friction feed for single sheets or roll paper
Width:	5″ to 10″
Special features:	Paper out detector Top of page setting (skip over perforation) with automatic top and bottom margins on computer paper

Printhead

Print elements:	9
Dot type:	Square dots for full coverage
Replacement:	Snap in—No tools required.

Ribbon

Type:	Black or color Single-strike
Ribbon:	Easy load, "clean hands" cartridge
Ribbon life:	120K characters or about 75 average pages in black. About 35K characters or 10 screen prints in color.
Special features:	Ribbon near-end detector Ribbon-saving (ribbon does not advance when multiple spaces are printed).

Controls

Power:	ON/OFF switch
Select:	PAUSE/RESTART push button
Ready lamp:	Indicates READY/NOT READY to print
Print darkness:	Slide switch
Paper handling:	Typewriter-like paper release lever and paper advance knob

Color

Ribbon:	3 colors
Text:	7 colors
Screen print:	16 screen colors
Color graphics:	40-50 or more

Physical

Size:	13″L × 7.5″W × 2.25″H
Weight:	7 lbs.
Power:	115 volts AC, 40 watts

Features

Includes everything you need to print.	Atari control module Data cable Black ribbon Color ribbon Learn-to-Print software package on disk and tape Color Screen Print software package on disk Printer Handbook Computer paper

Specifications subject to change without notice.
*Atari is a registered trademark of Atari, Inc.

Warranty and Repair Information

LIMITED WARRANTY

Okidata, Division of OKI AMERICA, Inc. ("Okidata") warrants this OKIMATE Printer to be free from defect in material and workmanship and will remedy any such defect according to the terms of the Limited Warranty. This limited warranty does not extend to printer ribbon, a consumable item.

Okidata will repair (or at its option, replace) at no charge any defective component(s) of the OKIMATE Printer for ninety (90) days from the date of purchase. This Limited Warranty extends to the original purchaser only.

To make request or claim for service under this Limited Warranty, the original purchaser must return the Okidata product, shipping prepaid, in the original shipping container or equivalent, to Okidata or an Okidata authorized service or repair center and assume the risk of loss or damage in transit to Okidata. Proof of purchase for the product showing the date of purchase, dealer's name, (serial number) and item purchased must accompany any request for work to be performed under this Limited Warranty.

This Limited Warranty shall not apply if the product has been damaged due to abuse, misuse, misapplication, accident, or as a result of service or modification by any other than an authorized Okidata repair center.

THERE ARE NO EXPRESS WARRANTIES OTHER THAN THOSE ON THE FACE HEREOF AND DESCRIBED ABOVE. NO WARRANTIES WHETHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL EXTEND BEYOND THE WARRANTY PERIOD DESCRIBED ABOVE OF NINETY DAYS. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

OKIDATA SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OR LOSS ARISING FROM THE USE OF THIS PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This Limited Warranty applies to this product when sold in the continental United States. Additional information on obtaining service under this Limited Warranty is available by contacting Okidata at any of the repair centers listed below.

OKIDATA SERVICE CENTERS

WEST
3300 Keller Street
Suite 101
Santa Clara, CA
95050
(408) 496-0811

MIDWEST
1155A W. Dundee Road
Arlington Heights, IL
60004
(312) 253-8055

EAST
111 Gaither Drive
Mt. Laurel, NJ
08054
(609) 235-2600

This warranty for this product when purchased outside of the continental United States may vary. Contact your Okidata Dealer for warranty service information.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

48

Federal Communications Commission
Radio Frequency Interference Statement

WARNING: This equipment complies with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. These specifications are designed to minimize radio frequency interference in a residential installation; however, there is no guarantee that radio or television interference will not occur in any particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on when the radio or television is on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the radio or television receiving antenna.
- Relocate the printer with respect to the receiver.
- Move the printer away from the receiver.
- Plug the printer into a different outlet so that the printer and the receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402 by ordering Stock No. 004-00000345-4.

OKIDATA

an OKI AMERICA company