INTRODUCTION

NOTE: Please read this manual carefully and thoroughly before operating your ATARI® 820™ Printer. The Printer is a delicate machine and can be damaged by improper use.

The ATARI 820™ Printer provides printout for the ATARI 400™ and the ATARI 800™ Personal Computer Systems. Many combinations of hardware and software make use of the Printer. Application programs provide an option to print out results whenever appropriate. BASIC and ASSEMBLY LANGUAGE Cartridges include Printer commands, as does the ATARI FILE MANAGER & DISK OPERATING SYSTEM (DOS), which is available for the ATARI 800.

UNPACKING

Your ATARI 820 Printer comes with:

- Printer
- Bond Paper Roll
- Paper Mandrel
- Ribbon
- Data Cord
- Instruction Manual
- Attached Power Cord

Save your original packing materials and reuse them if you need to ship your Printer or store it for long periods.
Follow the steps below to set up your Printer and connect it to the computer. You will find detailed diagrams and instructions on the following pages.

DO NOT OPERATE THE PRINTER WITHOUT RIBBON OR PAPER or you may damage the printing head solenoids.

1. Plug the power cord into a 110-115 volt AC outlet (with the power switch OFF).
2. Plug the data cord into the serial I/O port (labeled PERIPHERAL on the Console), or if another peripheral is in use, into the jack labeled I/O CONNECTOR on that peripheral. Plug the data cord into either jack labeled I/O CONNECTOR on the printer.
3. Turn the power switch (PWR.) ON.
4. Press the paper advance (PAPER ADV.) button once.
5. Open the printer cover and load the paper around the platen as shown in the photos on the following pages.
6. Check the ribbon for proper installation.

PRINTER TIMEOUT

In order to prevent overheating, the Printer is equipped with an automatic timeout cycle which halts printing for approximately three seconds. During continuous use you will notice that the printer stops periodically and then continues. Frequent timeouts indicate that the Printer is operating CORRECTLY. Any attempt to override the timeout period is likely to damage your Printer.
FRONT VIEW

- Paper Advance Button - Advances paper automatically.
- ON
- Power ON/OFF Switch
- OFF
- Power Indicator Light

BACK VIEW

- Fuse - Twist in direction of arrow to remove and replace fuse.
- I/O Connectors - Identical jacks accommodate data cords from Console or other peripheral components. Connections may be made in any order with either jack.

IMPORTANT - Always replace a fuse only with one that has the same electrical ratings. (2 AMP, Type 3AG)

INSTALLING THE RIBBON

Remove the two ribbon spools from the package. The white spool (containing the new ribbon) fits on the right ribbon post; the blue spool (which is the empty one) fits on the left ribbon post. The ribbon must follow the same path as shown in the illustration. When properly installed, the ribbon is positioned in front of the ribbon tension bracket (the side closest to you), and around the two ribbon guides (the side farthest away from you).

Make certain the ribbon is installed correctly before operating the Printer.
LOADING THE PAPER

Open the printer cover by pulling up on both sides. Check the printer mechanism — make sure the printing head is on the left side as shown in the illustration. If necessary, press the PAPER ADV. button to position the printing head properly. This must be done before attempting to load the paper and no attempt should be made to position the printing head manually.

DO NOT ATTEMPT TO LOAD PAPER OR INITIATE PRINTING WHEN THE PRINTING HEAD IS IMPROPERLY POSITIONED OR YOU MAY DAMAGE THE PRINTER.

The manual paper advance should turn counterclockwise or away from yourself with moderate pressure. Turning the manual paper advance clockwise or toward yourself could damage it as could forcing it in any manner.

For easiest loading, cut off the end of the paper to create a smooth edge. You may want to leave the paper roll out of the Printer and off to the side when loading, or you may want to place the roll in the depression behind the platen, whichever is easiest for you. Slide the mandrel into the paper roll. If loading from the depression behind the platen, be sure the ends of the mandrel click into their slots in the printer case. When the paper is properly installed the Printer will close easily over a full roll (3¾-inch diameter).

The paper roll sits in the depression behind the platen. The paper passes over the metal bar which is visible below and behind the platen and is guided by two white nylon sliders on the bar. It feeds around the platen, under the clear plastic paper guide, the ribbon, and the tear bar, and then out the top of the Printer.

Feed the end of the paper over the bar and under the back edge of the platen. To advance the paper around the platen, press the PAPER ADV. button and hold it until the paper comes out from under the tear bar OR turn the manual paper advance counterclockwise (away from yourself). It may help to pull the PAPER RELEASE LEVER forward when loading the paper.

Always check to make sure the paper is straight. If you need to align the paper around the platen pull the PAPER RELEASE LEVER forward and pull up the paper roll a few inches.
PRINTER COMMANDS

Each piece of software, whether cartridge, cassette, or diskette based, will have its own commands for activating the Printer. Consult the software manual which accompanies the software you wish to use with the Printer for complete Printer commands.

**BASIC** — When you are familiar with **ATARI BASIC** Computing Language you will know how to use the commands **PRINT** and **LIST**. To **PRINT** on the Printer instead of the screen, replace **PRINT** with **LPRINT** in your **BASIC** source programs. To **LIST** on the Printer, use **LIST"P:"** or **L"P** instead of **LIST**. (No closing quotation marks needed.) Here’s an example: Type this **BASIC** Program into your computer:

```
DO THIS
  TYPE
  10 PRINT "THE PRINT COMMAND COMES OUT HERE."
            RETURN
  20 LPRINT "THE LPRINT COMMAND COMES OUT HERE."
            RETURN
```

When you **RUN** this program each **PRINT** statement will appear on the screen like this:

```
DO THIS
  TYPE
  RUN
  PUSH
            RETURN

SEE THIS
  READY
  RUN
  THE PRINT COMMAND COMES OUT HERE.
  READY
```

Your Printer will print only the **LPRINT** lines like this:

```
THE LPRINT COMMAND COMES OUT HERE.
```

To see your program again:

```
DO THIS
  TYPE
  LIST
  PUSH
            RETURN

SEE THIS
  10 PRINT "THE PRINT COMMAND COMES OUT HERE."
  20 LPRINT "THE LPRINT COMMAND COMES OUT HERE."
            READY
```
To get a printout of your program:

```
DO THIS
TYPE
LIST "P"
PUSH
RETURN
```

```
SEE THIS
10 PRINT "THE PRINT COMMAND COMES OUT HERE."
20 LPRINT "THE LPRINT COMMAND COMES OUT HERE."
```

The **ATARI BASIC REFERENCE MANUAL** contains a complete description of all **ATARI BASIC** Language commands. (Also see **News Bits No. 2**)

**ATARI FILE MANAGER & DISK OPERATING SYSTEM (DOS)** — The Disc Operating System Manual will provide you with complete instructions on using the DOS software to access the Printer and other peripheral components.

### TECHNICAL SPECIFICATIONS AND REORDER NUMBERS

**ATARI 820 Printer**
- high resolution, 5 X 7 dot matrix, impact printer
- 40 characters per line
- horizontal and vertical alphanumeric characters
- power switch and indicator light
- paper advance button
- built-in microprocessor
- crystal controlled for data accuracy

**Standard Roll Paper**
- width, 3 7/8 inches × 3-1/4 inches diameter
  available at most stationary stores

**Mandrel Ribbon**
- ATARI part no. C014853
- 5/16-inch
- ATARI part no. C014854
  Addressograph/Multigraph part no.
  116-2395-366

**Printing Speed**
- approximately 1000 lines per minute

**Data Cord**
- ATARI part no. CA14122

**Fuses**
- 2 AMP type 3AG fast blow ATARI part no.
  46-2032001

Locations for ordering inked ribbons:

- **AM OFFICE SUPPLY**
  7209 St. Clair Ave.
  Cleveland, OH 44103
  (Or your nearest Addressograph/Multigraph (AM) dealer.)

- **CALIFORNIA RIBBON & CARBON CO.**
  5816 Pine Avenue
  Maywood, CA 90270

- **COLUMBIA RIBBON & CARBON MFG. CO., INC.**
  45 Executive Drive
  Plainview, NY 11803

- **KLEEN STRIKE MFG. CO., INC.**
  8173 Main Street
  Ellicott City, MD 21043
ENTRY LEVEL PRINTER & DISK DRIVE OPERATIONS IN BASIC

When the power is turned OFF on a computer, all programs or data stored in memory are lost. The 810 Disk Drive is used to store programs and to insert (load) programs back into the computer memory bank when required for use.

Reference

1. To store and retrieve programs on diskette:
   A. Power up disk unit
   B. Put diskette in disk unit
   C. Power up computer
   D. To save program on diskette—
      1. Type in program

Sample Program

```
100 REM*** INTEREST
110 PRINT "IF YOU TYPE THE AMOUNT OF PRINCIPAL, YEAR, I WILL"
120 PRINT "AND THE INTEREST RATE PER YEAR, I WILL SHOW YOU HOW YOUR MONEY GROWS YEAR BY YEAR."
130 PRINT "TO STOP ME, PRESS THE BREAK KEY."
140 PRINT "YEAR TO STOP ME, PRESS THE BREAK KEY."
150 PRINT
160 PRINT "PRINCIPAL:"
165 INPUT P
170 PRINT "INTEREST RATE:"
175 INPUT R
180 LET N=1
190 PRINT
200 LET A=P*(1+R/100)^N
210 PRINT "YEAR = "N
220 PRINT "AMOUNT = "A
230 LET N=N+1
240 GOTO 190
```

RUN

SEE THIS

IF YOU TYPE THE AMOUNT OF PRINCIPAL AND THE INTEREST RATE PER YEAR, I WILL SHOW YOU HOW YOUR MONEY GROWS YEAR BY YEAR. TO STOP ME, PRESS THE BREAK KEY.

PRINCIPAL? 1000
INTEREST RATE? 6
YEAR = 1
AMOUNT = 1059.9999
YEAR = 2
AMOUNT = 1123.69997
YEAR = 3
AMOUNT = 1191.01596

PUSH BREAK to stop program.

DO THIS

TYPE

SAVE "D:INTEREST"

Above Program is recorded on Diskette.
Reference

E. To retrieve program from diskette—
1. Type LOAD "D:NAME"
2. Program can now be RUN, changed, etc.
3. Type LIST

F. To RUN program from diskette
1. Type RUN "D:NAME"

Sample Program

DO THIS
TYPE
LOAD "D:INTEREST"
SEE THIS

DO THIS
TYPE
RUN "D:INTEREST"
SEE THIS

DO THIS
TYPE
LIST "D:INTEREST" 150, 240
SEE THIS

If you have a program that you wish to edit (change), use the commands listed below. Or, if you wish to save the original program, as well as the modified version, give the modified program a new name.

G. To save listed version on diskette—
1. Type LIST "D:NAME", N, M Lines N through M will be listed to diskette

H. To retrieve listed version on diskette—
1. Type ENTER "D:NAME"
   This will merge diskette file with data which is already in memory.
2. Type LIST

Change name of the revised program if you wish to retain both the original and revised programs.

NOTE: Numbers 100 to 140 were deleted from program.
Reference

II. To store and retrieve data on diskette from a program:

A. Power up disk unit
B. Put diskette in disk unit
C. Power up computer
D. To store data on diskette from program:
   1. OPEN #1, 8, 0, "D:DATA"
      tells computer to allow writing to diskette file named DATA
   2. PRINT #1; X; ";"; Y; ""; Z
      writes a record that looks like: X, Y, Z
      (X, Y, & Z are numbers)
   3. CLOSE #1
      When program is done this tells computer that file is finished.

Sample Program

Write

DO THIS
TYPE

1 REM THIS PROGRAM WRITES A FILE OF
2 CHECK NUMBERS AND THEIR AMOUNTS
3 DIM CHECKNAME$(40)
10 OPEN #1, 8, 0, "D:CHECKS"
20 CHECKAMT=0, CHECKNAME$=""
25 PRINT "CHECK NUMBER:"
30 INPUT CHECKNUM
35 IF CHECKNUM=0 THEN 80
40 PRINT "CHECK AMOUNT:"
50 INPUT CHECKAMT
60 PRINT "WHO WAS CHECK TO:"
70 INPUT CHECKNAME$
80 PRINT #1;CHECKNUM;$;CHECKAMT$;"";CHECKNAME$
90 IF CHECKNUM>0 THEN PRINT: GOTO 20
100 CLOSE #1

This is RUN of above program:

SEE THIS

CHECK NUMBER100
CHECK AMOUNT12.51
WHO WAS CHECK TO? JOHN SMITH
CHECK NUMBER101
CHECK AMOUNT24.35
WHO WAS CHECK TO? GEORGE BROWN
CHECK NUMBER102
CHECK AMOUNT102.67
WHO WAS CHECK TO? HEAVY CHEVY
CHECK NUMBER70

This is what the information looks like on disk:

100,12.51,JOHN SMITH
101,24.34,GEORGE BROWN
102,102.67,HEAVY CHEVY
0,0
Reference

E. To retrieve data from diskette from program—

1. OPEN #1, 4, 0, "D:DATA"
tells computer to allow reading from diskette file named DATA

2. INPUT #1, X, Y, Z
Reads a record like the one created in D above.

3. CLOSE #1
Tells computer you are done with file.

Sample Program
Read

SEE THIS

1 REM THIS PROGRAM READS A FILE OF CHECK NUMBERS AND THEIR AMOUNTS  
5 DIM CHECKNAME$(40)  
10 OPEN #1:4:0, "D:CHECKS"  
15 PRINT "CHECK # AMOUNT WHO TO"  
17 PRINT  
20 INPUT #1:CHECKNUM:CHECKAMT:CHECKNAME$  
30 IF CHECKNUM=0 THEN 100  
40 PRINT CHECKNUM:*"*"*CHECKAMT:*"*"*CHECKNAME$  
50 GOTO 20  
100 CLOSE #1

PRINT
Reference

I. To Print to Printer:

A. Power up computer and Printer

B. Type LPRINT "HELLO" and HELLO will be typed on Printer

C. Wherever you can use PRINT you can use LPRINT

Print-Out of above program:

<table>
<thead>
<tr>
<th>CHECK #</th>
<th>AMOUNT</th>
<th>WHO TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>$12.51</td>
<td>JOHN SMITH</td>
</tr>
<tr>
<td>101</td>
<td>$24.35</td>
<td>GEORGE BROWN</td>
</tr>
<tr>
<td>102</td>
<td>$102.67</td>
<td>HEAVY CHEVY</td>
</tr>
</tbody>
</table>

See the DISK OPERATING SYSTEM (DOS) manual for complete details.
OPEN $1,8,0, "D:DATA"

Name of file on disk
Disk 1 is assumed
P means printer
Not used in disk
8 means write a file
4 means read a file
12 means both read & write
IOCB number. Users can assign numbers from 1 to 5.
Means to allow access to a device or file.