

AT88SPD[®] SYSTEM DRIVE

PERCOM DATA
CORPORATION

AT88SPD
DOUBLE DENSITY
SYSTEM DRIVE
WITH
A PRINTER PORT
FOR THE
ATARI COMPUTER

Manual Number
050-1350-001

PERCOM DATA CORPORATION
11220 Pagemill Road
Dallas, Texas 75243

RADIO FREQUENCY INTERFERENCE PROTECTION

This equipment generates and uses radio frequency energy. If not installed and used properly, that is, in strict accordance with Percom Data installation and operation instructions, it may cause interference to radio and television reception. There is no guarantee, however, that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, we encourage you to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet in order for the computer and the receiver to be on different branch outlets.

If necessary, 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 United States Government Printing Office, Washington, DC 20402, Stock Number 004-000-0035-4.

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STATEMENT OF LIMITED WARRANTY

For a period of 90 days from the date of delivery, PERCOM DATA CORPORATION warrants to the original purchaser that the computing equipment described herein shall be free from defects in material and workmanship under normal use and service. During this period, if a defect should occur, the equipment must be returned to the PERCOM DATA CORPORATION Service Facility. The purchaser must prepay all shipping and insurance charges and must supply proof of purchase from PERCOM DATA CORPORATION or an authorized PERCOM DATA dealer or distributor. Purchaser's sole and exclusive remedy in the event of defect is expressly limited to the correction of the defect by adjustment, repair or replacement at Percom Data's election and sole expense, except there shall be no obligation to replace or repair items which by their nature are expendable. This warranty is voided if the unit has been opened, or if the unit has been subjected to improper or abnormal use, or if the unit is altered or modified. No representation or other affirmation of fact, including, but not limited to, statements regarding capacity, suitability for use, or performance of the equipment, shall be deemed to be a warranty or representation by PERCOM DATA CORPORATION, for any purpose, nor give rise to any liability or obligation of PERCOM DATA CORPORATION whatsoever. EXCEPT AS SPECIFICALLY PROVIDED IN THIS AGREEMENT, THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND IN NO EVENT SHALL PERCOM DATA CORPORATION, BE LIABLE FOR LOSS OF PROFITS OR BENEFITS, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER SIMILAR DAMAGES ARISING OUT OF ANY BREACH OF THIS WARRANTY OR OTHERWISE.

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Good data processing procedure dictates that the user test the program, run and test sample sets of data, and run the system in parallel with the system previously in use for a period of time adequate to insure that results of operation of the computer or software/firmware are satisfactory.

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- 1-1 What Does It Do?
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Chapter One — Introduction

- 1-1 What Did I Buy?
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Chapter One is an introduction.

What Did I Buy?

You bought a Percom Data AT88SPD System Floppy Disk Drive and the OS/A+ Operating System for the Atari 800 or 400 Computer.

What Does It Do?

Your AT88SPD operates in Single-Density and Double-Density. You can use either OS/A+ in Single-Density or Double-Density, or Atari DOS 2.0S in Single-Density.

An added printer port on the Percom Data System Drive (Drive 1) allows you to connect any printer with a Centronics standard compatible parallel printer interface.

You can connect your Percom Data System Drive directly to your Atari 810 Drive and to as many as three Percom Data Add-On Drives.

What Do I Need to Do?

Cable your system as described in Chapter 2.

Test your System Drive (Drive 1) and your printer (if you have one) in Chapter 3.

Any Accessories?

You can purchase one, two, or three Percom Data Add-On Floppy Disk Drives for your system.

Percom Data sells a printer cable that is connected between your System Drive (Drive 1) and your printer.

A Data/Clock separator circuit is also available; the SEPARATOR plugs into an Atari 810 Disk Drive and virtually eliminates problems associated with reading diskettes on the Atari 810 Drive.

For more information about Percom Data products for your Atari computer, visit or telephone 1-800-527-1222 (outside of Texas) or (214) 340-5800 (within Texas) for an authorized Percom Data retailer.

What Do I Need?

To use Percom Data AT88SPD Drives with your Atari computer, you need the following:

- An Atari 800 or an Atari 400 computer with 32 kilobytes of RAM and a compatible display system.
- One printer (optional) with a Centronics standard compatible parallel printer interface.
- One printer cable (optional).
- Operating system OS/A+ 4.00/4.10 or Atari DOS 2.0S and the appropriate manual.
- Two blank diskettes.

A Final Word

Please be sure your computer is operating properly before attempting to expand it with a disk drive system or other peripheral devices. Adding new devices to a system with a problem may further complicate the problem and make troubleshooting more difficult.

Every effort has been made to ensure that this manual accurately documents your Percom Data AT88SPD Drive. If you have any comments, you are welcome to call or write us at Percom Data. We are continuously improving and updating both the software and the hardware and therefore Percom Data Corporation cannot absolutely guarantee the accuracy of this publication.

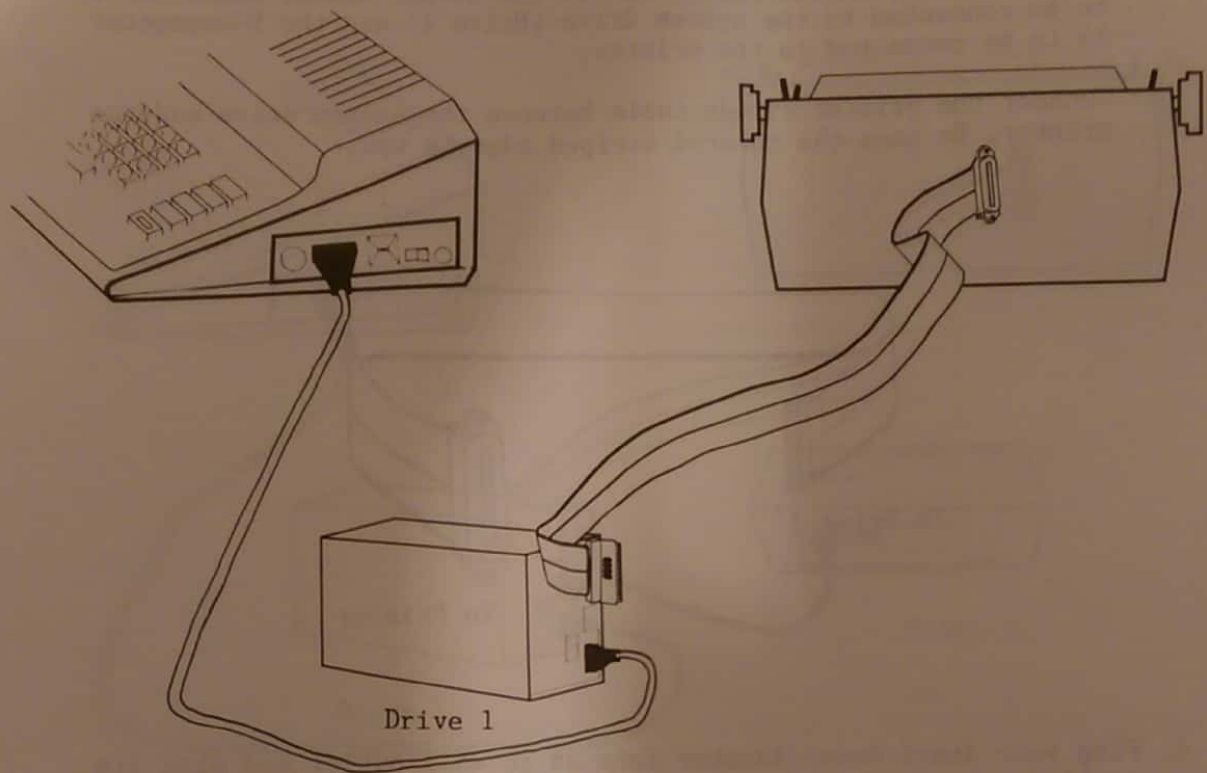
Chapter Two — Build Your System

2-1 If You Have a Percom System Drive

2-3 If You Have a Percom System Drive
and an Atari 810 Drive

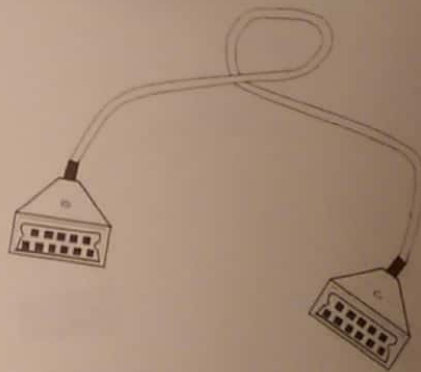
Chapter Two describes how to build
your system.

If You Have a Percom System Drive



1. Caution - Be sure all your devices are disconnected from any wall outlets.
2. Look at the system drive data cable; it has a D-connector at both ends.

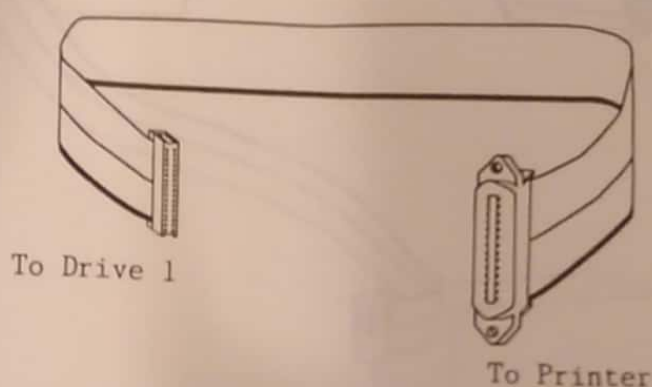
Connect the system drive data cable between your computer and your system drive (Drive 1). (There are two D-connectors at the base of the system drive: Either connector can be used.)



3. You should have already bought, from Percom Data, a ribbon cable for your particular printer model.

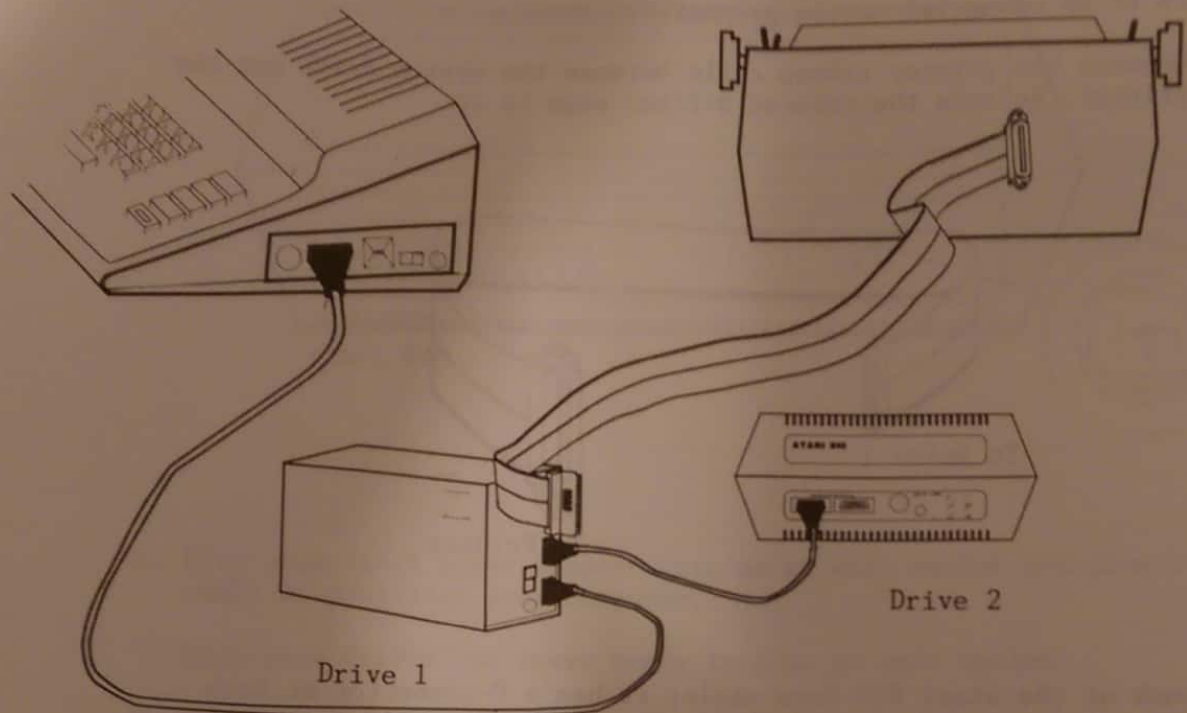
Look at the printer ribbon cable. Notice the colored striped edge (probably red) on the ribbon cable. The 34-pin header connector is to be connected to the system drive (Drive 1) and the D-connector is to be connected to the printer.

Connect the printer ribbon cable between the system drive and the printer. Be sure the colored striped edge is up.



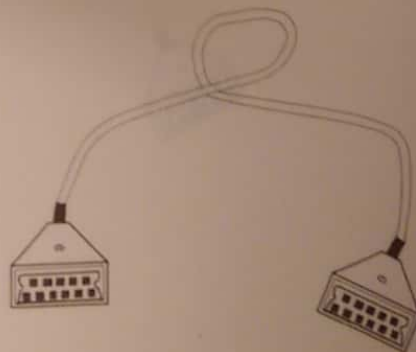
4. Plug your Atari Power Adapter into an ac wall outlet and plug its small dc plug into your computer.
5. Plug your drive's ac power cord into an ac wall outlet.
6. Continue with Chapter 3 for the checkout procedure.

If You Have a Percom System Drive and an Atari 810 Drive



1. Caution - Be sure all your devices are disconnected from any wall outlets.
2. Look at the system drive data cable; it has a D-connector at both ends.

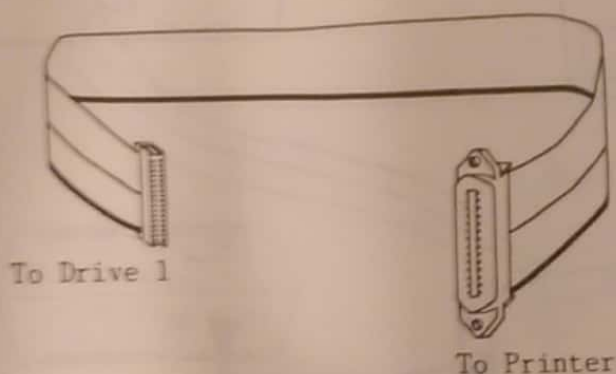
Connect the system drive data cable between your computer and your system drive (Drive 1). (There are two D-connectors at the base of the system drive: Either connector can be used.)



3. You should have already bought, from Percom Data, a ribbon cable for your particular printer model.

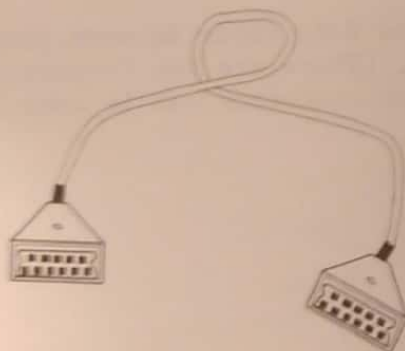
Look at the printer ribbon cable. Notice the colored striped edge (probably red) on the ribbon cable. The 34-pin header connector is to be connected to the system drive (Drive 1) and the D-connector is to be connected to the printer.

Connect the printer ribbon cable between the system drive and the printer. Be sure the colored striped edge is up.

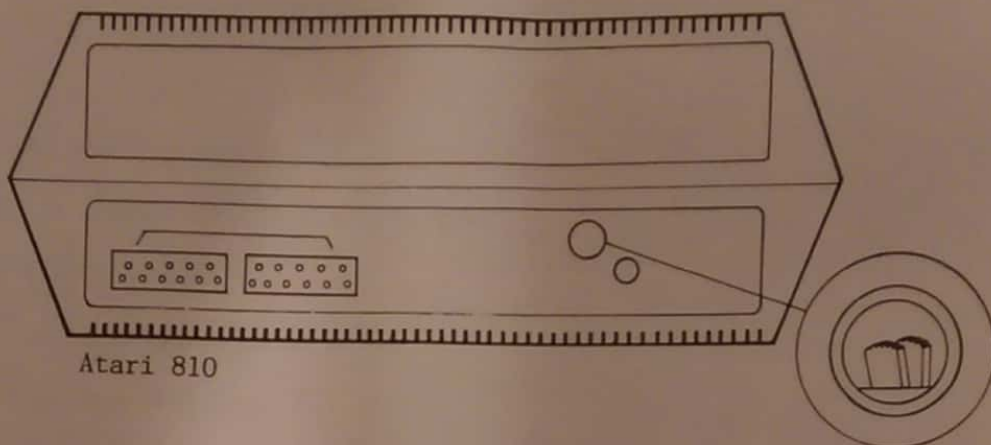


4. Look at the Atari 810 data cable; it has a D-connector at both ends. (The system drive data cable and the Atari 810 data cable are interchangeable.)

Connect the Atari 810 data cable between your system drive (Drive 1) and the Atari 810 drive. (There are two D-connectors at the base of the system drive: Either connector can be used.)



5. Set the Drive Code Switches on the back of the Atari to 2. Set the white switch to the left and set the black switch to the right.



Atari 810

6. Plug your Atari power Adapter into an ac wall outlet and plug its small dc plug into your computer.
7. Plug your drives' ac power cords into an ac wall outlet.
8. Continue with Chapter 3 for the checkout procedure.

Chapter Three — Check Your System

- 3-1 Is the System Cabled?
- 3-1 Get Familiar with the Diskettes
- 3-1 The Checkout
- 3-1 Checkout the System Drive
- 3-3 You Are Finished If...
- 3-3 Checkout the Printer Port
- 3-4 Print a BASIC File on Your Printer

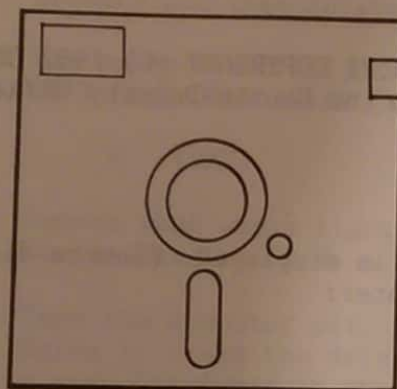
**Chapter Three describes how to check
your system.**

Is the System Cabled?

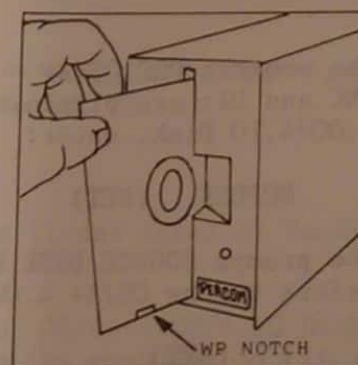
Please be sure to cable your system, as shown in Chapter 2, before continuing with Chapter 3.

Get Familiar With the Diskettes

You need a Double-Density OS/A+ 4.00/4.10 disk that has a write-protect tab on it and a blank disk that is not write-protected.



Disk Is
Write
Protected



Disks are inserted into a Percom AT88SPD drive with the write-protect notch down.

The Checkout

The entire checkout procedure is to be performed in one sitting. Be sure to enter all responses with uppercase letters.

Checkout the System Drive

1. Turn on the following in this order: the Atari 810 (if you have one) and the Percom Data System Drive.
2. When the Percom Data System (Drive 1) Drive's spindle stops spinning (about 15 seconds), insert a write-protected Double-Density OS/A+ 4.00/4.10 Disk in Drive 1 and close the door. Turn the computer on.

3. If you insert a BASIC cartridge and have OS/A+ 4.00, enter:

DOS (RET) (RET means press the RETURN key)

A long introduction and a menu are displayed. To exit to OS/A+, enter:

9 (RET)

4. If you do not insert a BASIC cartridge and do not have OS/A+ 4.00, a long introduction and a menu are displayed. To exit to OS/A+, enter:

9 (RET)

5. The prompts OSS OS/A+ - ATARI VERSION 4.XX COPYRIGHT (C) 1982 OSS INC and D1: are displayed. To duplicate the Double-Density OS/A+ 4.00/4.10 Disk, enter:

DUPDSK (RET)

6. The prompt SOURCE DISK DRIVE (1,2,3,4) is displayed. (Source disk refers to the OS/A+ 4.00/4.10 Disk.) Enter:

1 (RET)

7. The prompt DESTINATION DISK DRIVE (1,2,3,4) is displayed. (Destination disk refers to a blank diskette.) Enter:

1 (RET)

8. The prompt FORMAT DESTINATION DISK (Y OR N) is displayed. Enter:

Y (RET)

9. The prompts PUT SOURCE DISK IN DRIVE 1 and WHEN READY HIT RETURN are displayed. The source disk is already in Drive 1. Enter:

(RET)

10. The prompts READING SOURCE DISK, PUT DESTINATION DISK IN DRIVE 1, and WHEN READY HIT RETURN are displayed. Remove the source disk from Drive 1, and insert a blank disk in Drive 1 and close the door. Enter:

(RET)

11. The prompts `FORMATTING DESTINATION DISK`, `WRITING DESTINATION DISK`, `PUT SOURCE DISK IN DRIVE 1`, and `WHEN READY HIT RETURN` are displayed. Remove the blank disk from Drive 1, and insert the source disk and close the door. Enter:

(RET)

12. The prompts `READING SOURCE DISK`, `PUT DESTINATION DISK IN DRIVE 1`, and `WHEN READY HIT RETURN` are displayed. Remove the source disk from Drive 1, and insert the destination disk in Drive 1 and close the door. Enter:

(RET)

13. You may have to repeat steps 11 and 12. Proceed according to the prompts and then do step 14.

14. The prompts `WRITING DESTINATION DISK`, `***DUPLICATE DONE***`, and `COPY SAME DISK AGAIN (Y OR N)` are displayed. Enter:

N (RET)

15. Remove what was a blank disk from Drive 1, and label it Backup Double-Density OS/A+ 4.00/4.10.

16. Turn the computer off, insert the Backup OS/A+ 4.00/4.10 Disk into Drive 1, close the drive door, and turn the computer on. If you get a menu displayed on the screen (or `READY`), everything is working properly.

If there is a problem, start again with step 1.

You Are Finished If . . .

If you do not have a printer, you are finished. If you have a printer, continue with the next section to check your printer.

Checkout the Printer Port

1. Turn on your printer.
2. Insert the Backup OS/A+ 4.00/4.10 Diskette into Drive 1 and be sure to have the prompt `D:` displayed on the screen.
3. To test your printer, print the file `SYSEQU.ASM`. Enter:

`COPY SYSEQU.ASM P:` (RET)

4. Wait about 15 seconds. The file `SYSEQU.ASM` should be printed on the printer.

Print a BASIC File on Your Printer

1. Insert a BASIC Cartridge into the computer.
2. Turn the computer on. The prompt READY is displayed.
3. Enter your file. For example, enter:

```
10 PRINT "HELLO" (RET)
20 END (RET)
LIST "P:" (RET)
```

The file will be printed on the printer.

Appendix

A-1 Specifications

A-2 Nothing Happened

A-3 How to Change the STARTUP.EXC File

Specifications

Media	5¼-inch diskette
Typical Media Life	3 million passes/track
Storage Capacity (Formatted); Single Density	88,000 bytes/side
Track Density	48 tracks/inch
Head Seek Time (track to track)	20 milliseconds
Data Transfer Rate	19,200 bits/second
Start/Stop Time	1 second (max)
Operating Temperature	10°C to 40°C
Operating Relative Humidity	20% to 80% (non-condensing)
Head Life (normal use)	20,000 hours
Input Power — Controller Drive Domestic Models Foreign Models	105-125 V, 1.0 A (max), 50-60 Hz 210-250 V, 0.5 A (max), 50-60 Hz
Input Power — Add-On Drive Domestic Models Foreign Models	105-125 V, 0.5 A (max), 50-60 Hz 210-250 V, 0.25 A (max), 50-60 Hz

Nothing Happened

If you read the manual and followed the instructions and your system is just sitting there looking back at you with no sign of life, try the following:

1. Cable your drive(s) to the computer. Make sure your cables are securely inserted and not loose.
2. If you have an Atari 810 drive, set the Drive Code Switches to the correct setting (refer to Chapter 2).
3. Plug your computer, disk drive(s), and printer into an ac wall outlet.
4. Turn on the following in this order: the Percom Data System Drive and the Atari 810 (if you have one).
5. When the Percom Data System (Drive 1) Drive's spindle stops spinning (about 15 seconds), insert a write-protected Double-Density OS/A+ 4.00/4.10 Disk into Drive 1.
6. The computer automatically boots. Your system is working if a long introduction and a menu are displayed.

How to Change the STARTUP.EXC File

When you first boot the computer with your Backup Double-Density OS/A+ 4.00/4.10 Disk, a long introduction is displayed on the screen. This introduction ends with the HELP command.

If you don't like this introduction and want to change it by deleting some commands or adding some commands, you need to create a new STARTUP.EXC file.

The following creates a new and shorter STARTUP.EXC file (CAUTION - the following steps will destroy the current STARTUP.EXC file and create a new and different STARTUP.EXC file):

1. Boot your system with the Backup OS/A+ 4.00/4.10 Disk.

2. Exit to OS/A+ by entering:

9 (RET)

3. Delete the current STARTUP.EXC file by entering:

ERASE STARTUP.EXC (RET)

4. The COPY command and the screen editor (E:) enable you to create a new STARTUP.EXC file. Enter:

COPY E: STARTUP.EXC (RET)

5. The screen clears.

Decide how you want to be greeted every time the computer is booted. Enter the commands that will greet you.

The following is an example of the commands that can greet you when the computer is booted. If you enter these commands, every time the system is booted, Drive 1 will be assigned double density and the directory will be printed. (Note - This is only a sample of what you can enter into your STARTUP.EXC file. You can enter any commands that you want.)

CONFIG 1D (RET)

DIR (RET)

Hold down the CTRL button and press 3 at the same time

6. The next time you boot your system, your personalized STARTUP.EXC file will be executed.

PROBLEM REPORT FORM

In case of a problem, please read the instructions on the last page of this manual. If you need to report a problem, please fill out this form completely and send it to Percom Data. If it is necessary to return equipment to solve the problem, include a copy of the problem report with the returned equipment. If you do not need to return equipment, mail this report to the Service Department at Percom Data Corp.

We suggest you retain a copy for reference.

a. Your Name _____ Date _____

Address _____

City _____ State _____ Zip _____

Telephone Number _____

b. Percom Data Product _____ Version _____

Date of Purchase _____ Dealer's Name _____

c. Description of Your Equipment

Computer _____ Version _____ Memory _____

Disk System _____ Make of Drives _____

Number of Drives _____ Number of Tracks Each Drive _____

Make and Model of Printer _____

Other Peripherals _____

Disk Operating System _____ Version _____

Other Software _____

(Continued)

(Problem Report Continued)

If you have made any modifications to your hardware or software, please describe fully, even if only minor.

Use an additional sheet if necessary.

If there is anything unique or unusual about your system configuration or your system memory map, please describe fully.

d. Problem Description

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

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IN CASE OF DIFFICULTY PLEASE, REREAD THE INSTRUCTION MANUAL

If you are unable to resolve your problem, either contact your Percom Data Retailer for assistance or mail us a letter with a completed Problem Report Form enclosed. A Problem Report Form is included at the end of this manual.

When your letter is received, your problem will be given to customer service. Every effort will be made to respond to your letter promptly. If necessary, customer service will attempt to duplicate your problem, and will confer with engineers and other technicians as required. Customer service may write or call you for more operation.

If you return equipment for repair, please be sure to follow the procedures given below. Be sure to enclose a completed Problem Report with the returned equipment.

HOW TO RETURN EQUIPMENT FOR REPAIR

Please read the above information under IN CASE OF DIFFICULTY before proceeding to return equipment for repair.

You have done everything you know how to do. You have read and reread the instruction manual and technical memos but you still cannot get your system to work!

It is time to let us help. We have yet to find a sick unit that cannot be restored to full health and vigor.

There are a few things you can do that will help us expedite your repair:

1. Write or call for return authorization before returning any merchandise. RETURNS WITHOUT AUTHORIZATION WILL BE REFUSED.
2. Copy the blank Problem Report, fill in the copy, and return the unit for repair. Questions that do not relate to the reason the unit is being returned for repair must be sent in under separate cover.
3. OUT-OF-WARRANTY repairs are performed for a labor charge, parts, and shipping. If we find that a unit is functioning properly as received and does not require any service, there will be a CHECKOUT CHARGE plus return shipping and insurance. Do not enclose any payment. The unit will be returned C.O.D. for authorized repairs and shipping.
4. When returning a unit for repair, pack it in a large carton with at least 3 inches of padding on all sides. We will not attempt to service any unit if there is shipping damage until the claim is settled. Ship prepaid by UPS or INSURED PARCEL POST to: Service Department, Percom Data Corporation, 11220 Pagemill Road, Dallas, Texas, 75243.

HOW TO ORDER MERCHANDISE BY MAIL

The following procedures will help us expedite your mail orders. We suggest, however, that you make your purchase from an authorized Percom Data Retailer whenever possible. If you do not know the name of a nearby Percom Retailer, call our toll-free order number and ask for Sales.

TOLL-FREE PHONE ORDERS: To save you money and insure prompt service, we have installed a toll-free number (1-800-527-1222) FOR PLACING ORDERS ONLY. We cannot transfer calls received on our toll-free number to other departments - please help us serve you better by dialing the correct number.

PROMPT SERVICE: We ship the cheapest, fastest way. We use UPS up to 50 pounds per item, 100 pounds per shipment. We use truck freight for large or heavy shipments. Transportation charges are collected on delivery.

C.O.D. ORDERS: C.O.D. orders are accepted where possible.

TEXAS SALES TAX: Texas law requires that we collect a 5% sales tax on all shipments within Texas.

MINIMUM ORDERS: We will add a handling charge of \$2.00 to all orders totaling less than \$15.00.

DAMAGED SHIPMENTS: Have the carrier note if the shipment is in damaged condition, then file a claim. If there is concealed damage, contact the carrier for an inspection and then file a claim. Save your shipping carton.

