

SM-H-17-4

# Floppy Disk Drive

Service Manual



ZENITH DATA SYSTEMS  
SAINT JOSEPH, MICHIGAN 49085

585-11-01

Copyright © 1982  
Zenith Data Systems  
All Rights Reserved

Printed in the United States of America

## TABLE OF CONTENTS

SPECIFICATIONS .....	1-1	SERVICE .....	4-1
SETUP .....	2-1	Quick Checks .....	4-1
Programming .....	2-1	Rotational Speed Test .....	4-2
Cable Connections .....	2-2	REPLACEMENT PARTS LIST .....	5-1
OPERATION .....	3-1		

## SPECIFICATIONS

5-1/4" Floppy Disk Drive.

Rotational Speed — 300 rpm (200 octal).

96 TPI.

Power: +12 VDC.

Two Read/Write Gap Heads.



SETUP

Programming

Refer to Figure 2-1 (fold-out from this page) for the following programming steps.

To set up a programming module, you may either cut the link on the module or bend out the appropriate leg. The advantage of bending out the leg is that you may return the module to its original state.

If this Drive is to be hardware unit 0, cut the programming plug as shown in Part A of the Figure.

If this Drive is to be hardware unit 1, cut the programming plug as shown in Part B of the Figure.

If this Drive is to be hardware unit 2, cut the programming plug as shown in Part C of the Figure.

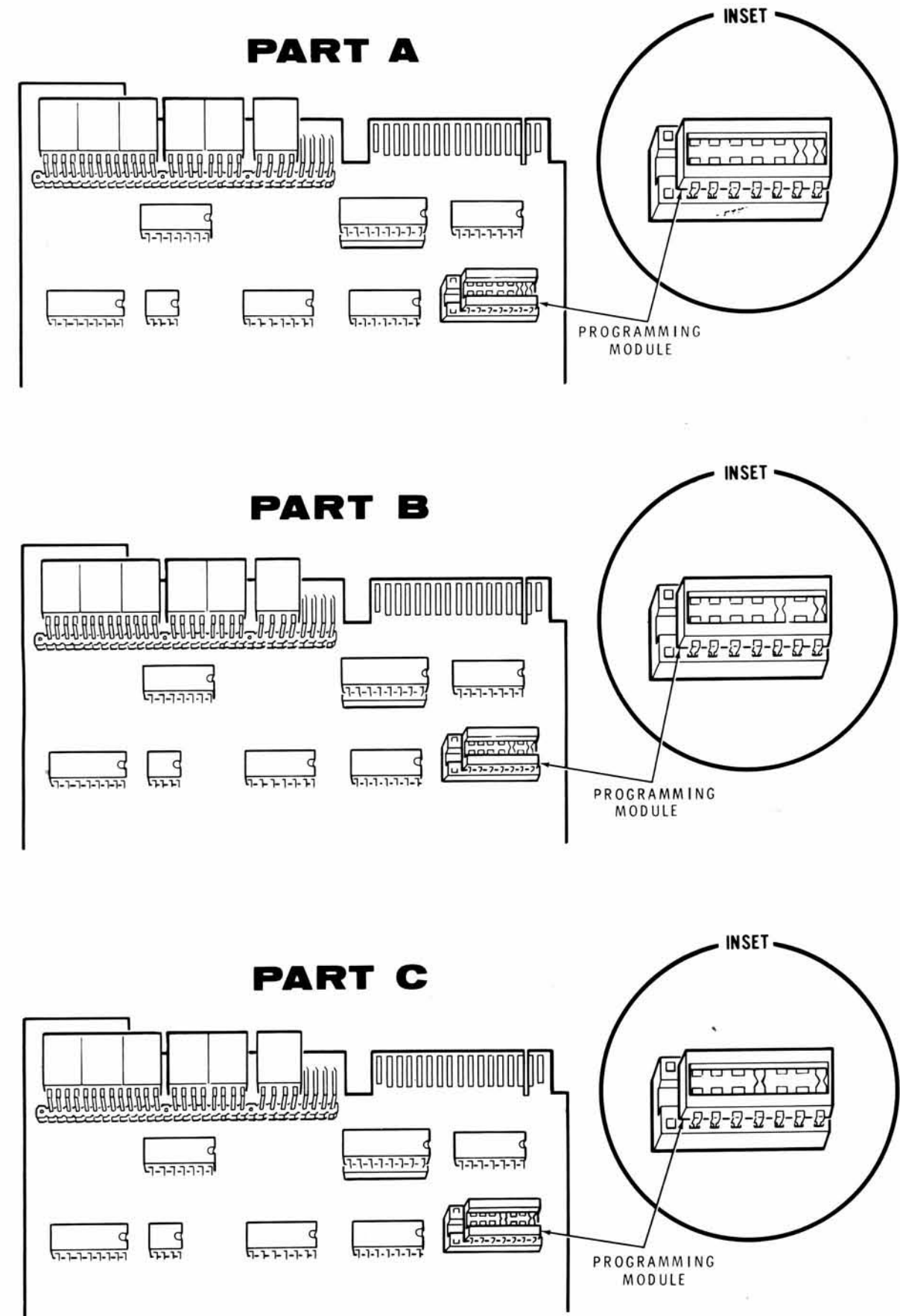
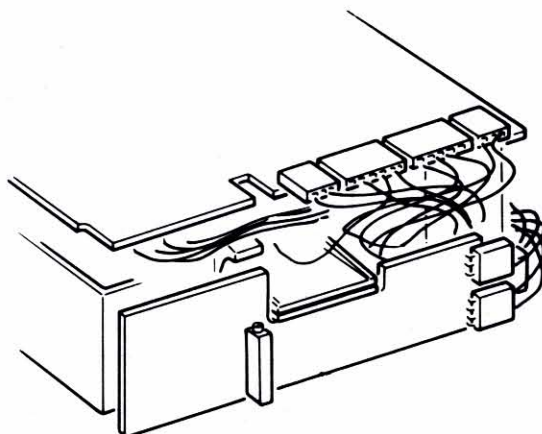


Figure 2-1

## Cable Connections

Refer to Figure 2-2 for a view of cable connections.



**Figure 2-2**

Floppy Disk Drive. Part number HE 150-113.

## OPERATION

### MEDIA

You may use only soft-sectored media with the H-17-4 Floppy Disk Drive.

### DISKETTE LOADING

Refer to Figure 3-1, open the front panel door, and insert the diskette, label towards the screen. Then close the door.

### DISKETTE HANDLING

The diskette can be easily damaged. Handle it carefully as follows:

1. Keep the diskette in its storage envelope whenever it is not in the Floppy Disk Drive.
2. Keep the diskette away from magnetic fields. Magnetic fields can distort the recorded data on the diskette.
3. Replace damaged or worn storage envelopes.
4. Write on the plastic jacket only with a felt-tip pen. Do not use a lead pencil or ball-point pen.
5. Keep the diskette away from hot or contaminating materials.
6. Do not expose the diskette to sunlight.
7. Do not touch or clean the surface of the diskette. Abrasions can alter stored data.

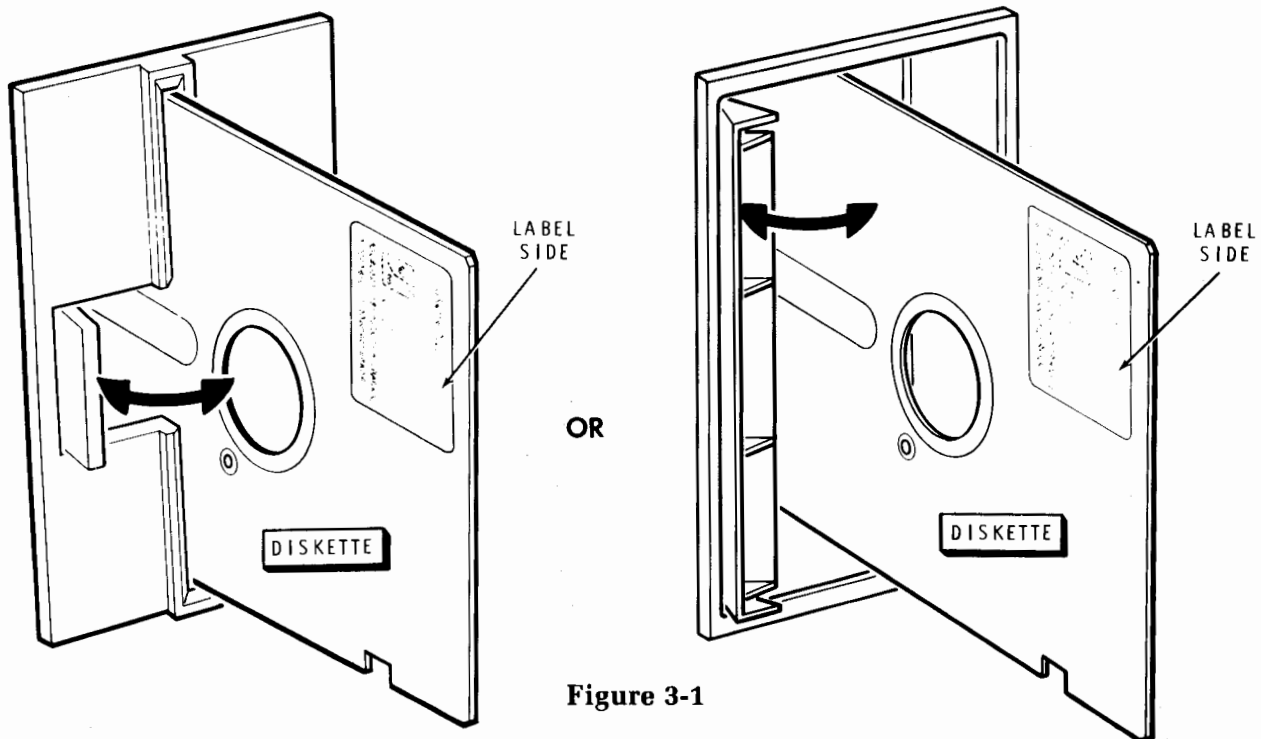


Figure 3-1

Greater centering accuracy is required when you are using 96 TPI drives. Therefore, it is imperative that the diskettes you use with your high capacity 5-1/4" floppy disk system have factory-installed mylar hub

reinforcing rings. All of the diskettes supplied by Zenith Data Systems have these rings, as well as Verbatim **Datalife** diskettes and several other brands. **Do not** use any diskettes that do not have these rings.



## SERVICE

### QUICK CHECKS

- Check the drive belt.
- Check the flat cable for proper connection to the drive.
- Check the power plug for proper connection to the drive.
- Check for 12 VDC at the power plug.
- Check the rotational speed.
- Check the programming plug for proper programming and check the drive for proper location.

## ROTATIONAL SPEED TEST

This test will check the rotational speed of the floppy disk drive for the Z-89 and Z-90 Computers. After the test starts, it will display the disk drive speed test message and a "speed equals" message as follows:

Disk drive rotational speed test

Drive speed =

The word "Working" will be flashed on and off at the home position and a drive speed number (in octal), which should be as close to 200 as possible, will update with each flash on the screen. The rotational speed tolerance is one percent. The displayed value should be between 166 and 212 (remember, octal numbers jump from 177 to 200). Do not adjust the speed unless it is out of tolerance.

Your drive unit has a control labeled R30 or R7 which is used to vary the drive speed. This control is located near the lower edge of the circuit board as shown in Figure 4-1.

This adjustment may be extremely sensitive so if an adjustment is necessary, do not turn it far in either direction. Less than one degree of rotation in either direction should bring the drive speed into tolerance. Turn the control clockwise to decrease the speed or counterclockwise to increase it.

As the drive bearings wear, the speed may change slightly. Fluctuations within the tolerance are normal and may be attributed to variations in temperature and humidity.

To begin the test, be sure the OFF LINE key is up (out). Then obtain the "H:" prompt. (Simultaneously push the right-hand SHIFT and RESET keys if necessary.)

Type G7372Ⓢ. The total entry will be:

H: Go 7372Ⓢ

and the test will start.

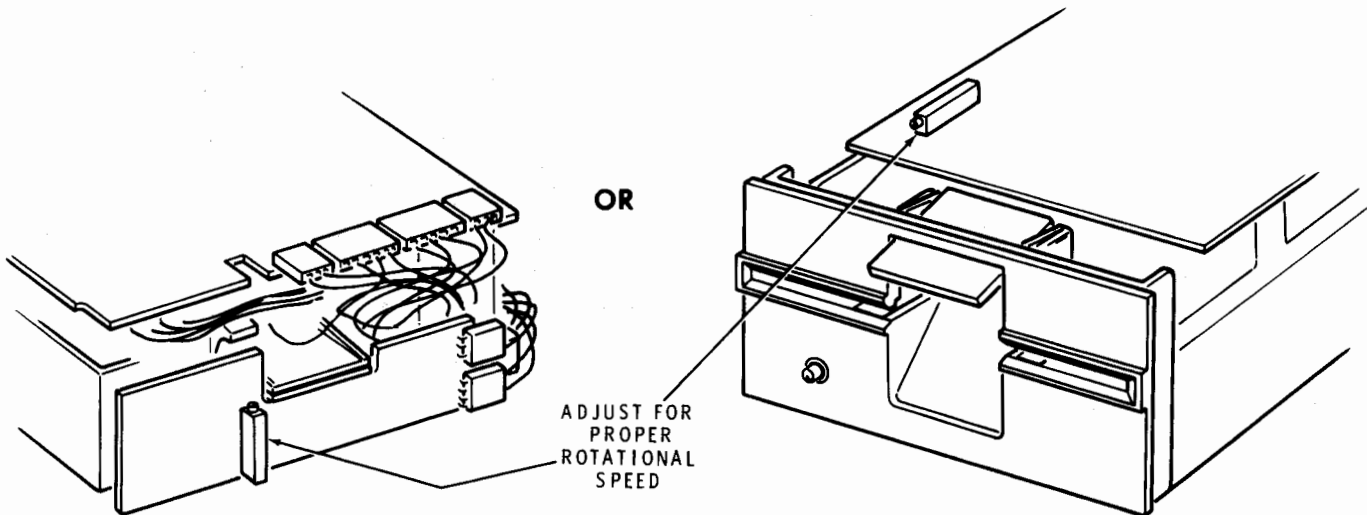


Figure 4-1

H-17-4 Floppy Disk Drive. Part number HE 150-113.

## REPLACEMENT PARTS LIST

<u>PART NUMBER</u>	<u>DESCRIPTION</u>
HE 150-113	Floppy disk drive
HE 134-1087	Cable — drive to computer
HE 448-417	Media — double-density, double-sided
HE 969-59	Programming module

