Heathkit® Manual

for the

48 TPI, 5-1/4″
FLOPPY DISK DRIVE
Model H-17-1

595-2716

HEATH COMPANY
BENTON HARBOR, MICHIGAN 49022

TABLE OF CONTENTS

INTRODUCTION

The H-17-1 Floppy Disk Drive is a mass storage device that stores programs and information for your computer.

Information is stored on one side of a 5.25-inch, oxide-coated diskette in 40 tracks. This drive is capable of double-density operation when it is used with a double-density controller.

The recording head is a single Read/Write gap-type head. The head carriage is positioned by a stepper motor. The disk controller circuit board, in your computer, is the interface between the computer bus and the Disk Drive.

A transducer in the Drive detects the presence or absence of a notch in the diskette to insure write protection. If the notch is not detected, a signal is transmitted to the controller to indicate a read-only operation. If the notch is detected, the signal indicates a read/write operation.

The diskettes load quickly and easily through the door in the front panel.

PROGRAMMING

If you intend to use this Drive with the H-88-1 hard-sectored controller (or with an H-17 controller in an H-8), perform the steps under "Hard-Sectored Controller."

If you intend to use this Drive with a double-density controller, perform the steps under "Soft-Sectored Controller."

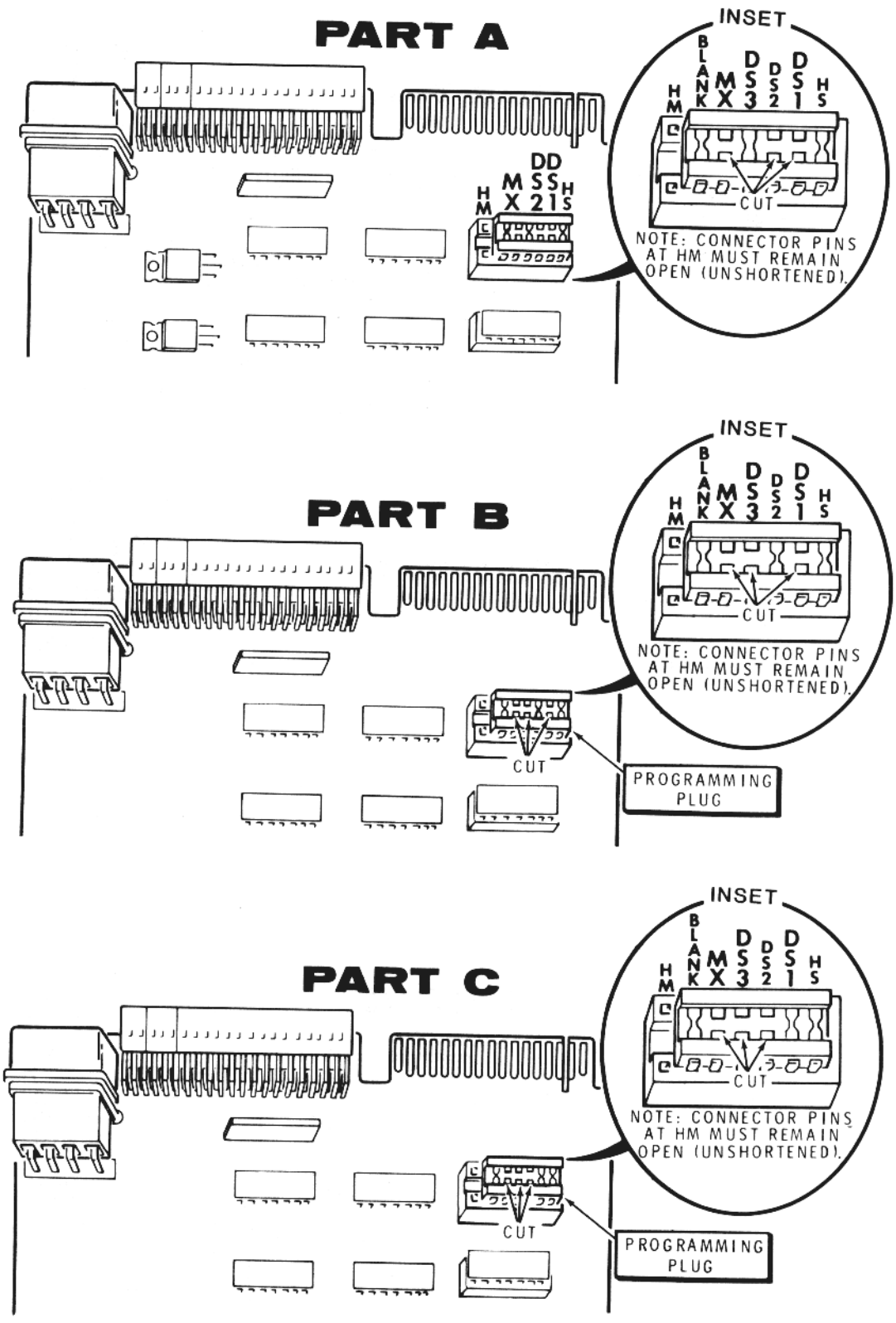
HARD-SECTORED CONTROLLER

Refer to Pictorial 1 for the following steps.

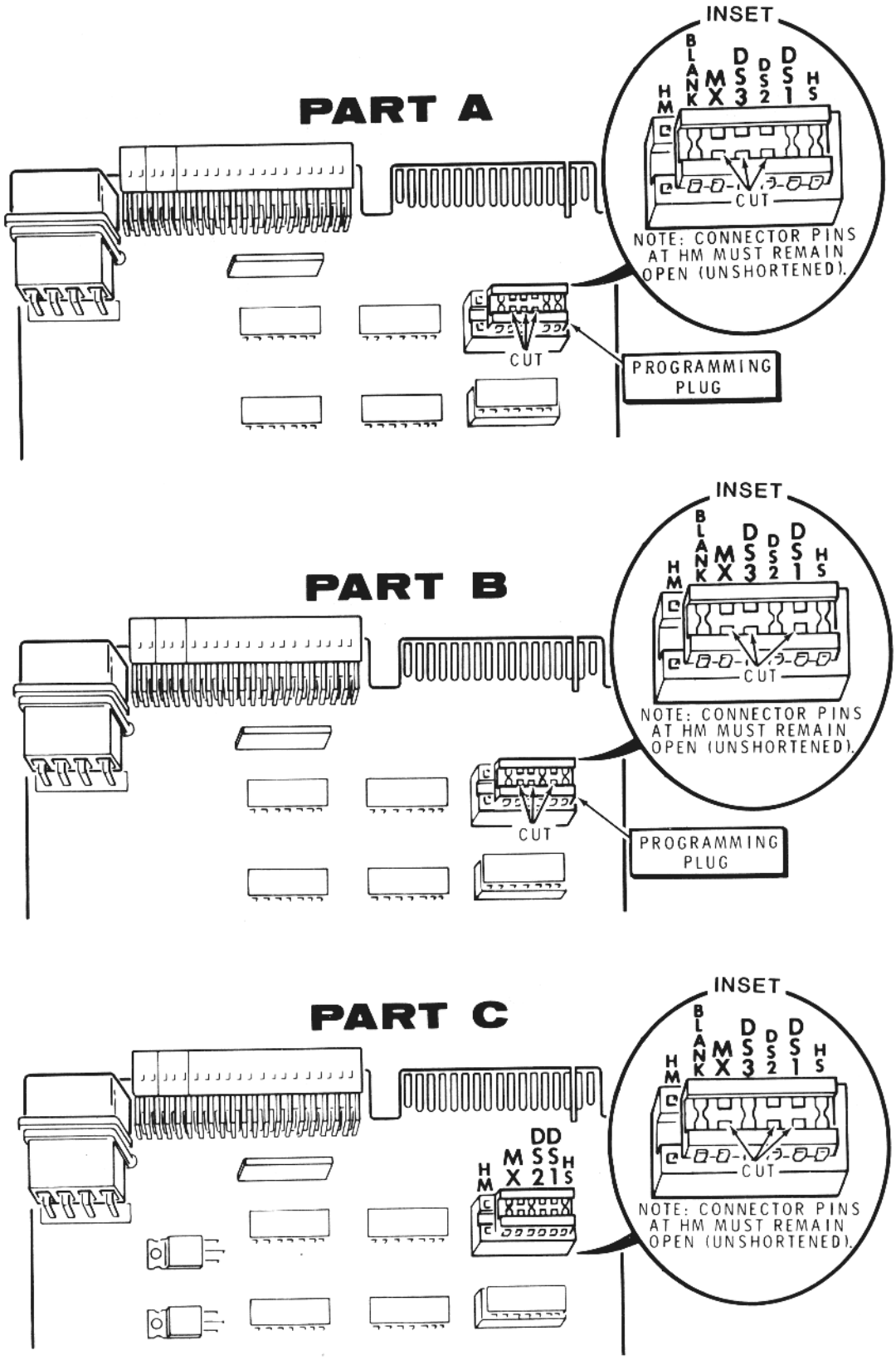
— If this Drive is to be hardware unit 0, cut the programming plug as shown in Part A of the Pictorial.

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

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


PART A
INSET
BLANK
HM
MX
DS3
DS2
DS1
HS
CUT
NOTE: CONNECTOR PINS AT HM MUST REMAIN OPEN (UNSHORTENED).
PART B
INSET
CUT
NOTE: CONNECTOR PINS AT HM MUST REMAIN OPEN (UNSHORTENED).
CUT
PROGRAMMING PLUG
PART C
INSET
CUT
NOTE: CONNECTOR PINS AT HM MUST REMAIN OPEN (UNSHORTENED).
CUT
PROGRAMMING PLUG

PICTORIAL 1


PART A
INSET
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HM
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NOTE: CONNECTOR PINS AT HM MUST REMAIN OPEN (UNSHORTENED).
CUT
PROGRAMMING PLUG
PART B
INSET
BLANK
HM
MX
DS3
DS2
DS1
HS
CUT
NOTE: CONNECTOR PINS AT HM MUST REMAIN OPEN (UNSHORTENED).
CUT
PROGRAMMING PLUG
PART C
INSET
BLANK
HM
MX
DS3
DS2
DS1
HS
CUT
NOTE: CONNECTOR PINS AT HM MUST REMAIN OPEN (UNSHORTENED).
DD
HM
MX
SS
21
HS

PICTORIAL 2

SOFT-SECTORED CONTROLLER (Double-Density)

Refer to Pictorial 2 for the following steps.

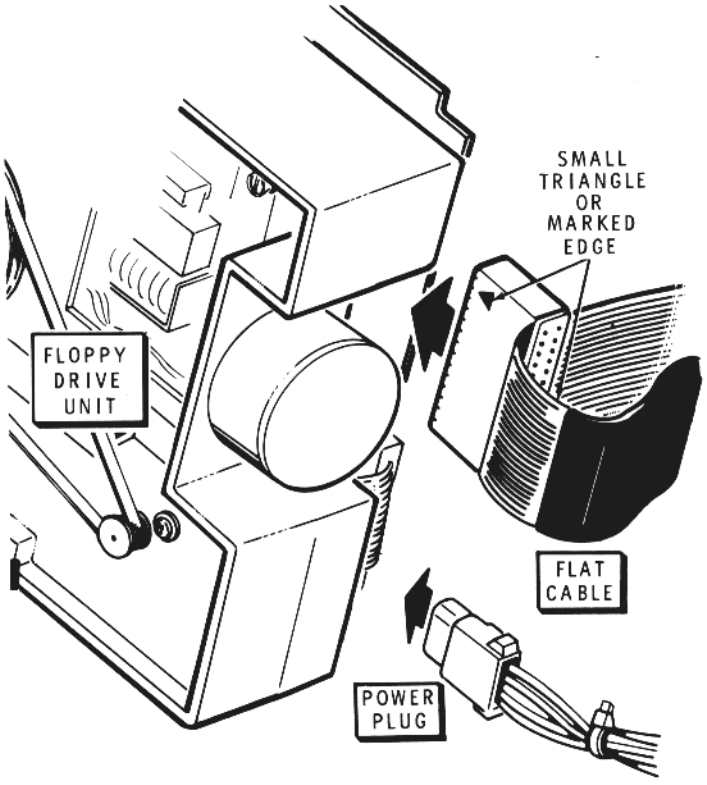
— If this Drive is to be hardware unit 0, cut the programming plug as shown in Part A of the Pictorial.

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

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

CABLE CONNECTIONS

Refer to Pictorial 3 for a view of cable connections.



PICTORIAL 3

ROTATIONAL SPEED TEST

If you intend to use this drive with the hard-sectored, single-density controller (H-88-1 or H-17), perform the following "Speed Test."

If you intend to use this drive with a soft-sectored, double-density controller, perform the rotational speed tests as described in your system software documentation.

SPEED TEST

This test will check the rotational speed of the floppy disk drive. 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

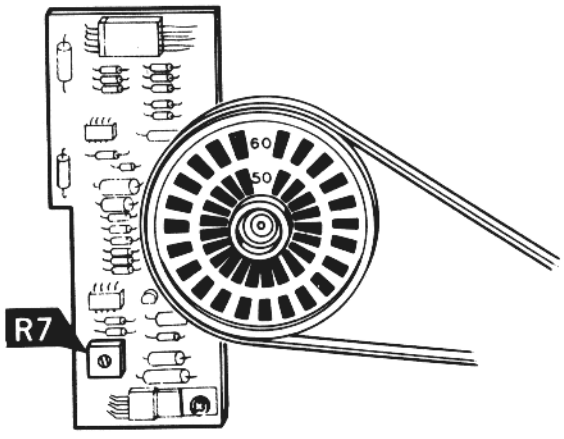
Drive speed =

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 Pictorial 4, or on the other side of the drive if your drive is like the one shown in Detail 4A. 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.

You may have to perform this test again at some future time, depending upon how heavily your floppy is used. 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.

( ) Plug in the line cord and turn on the Computer.

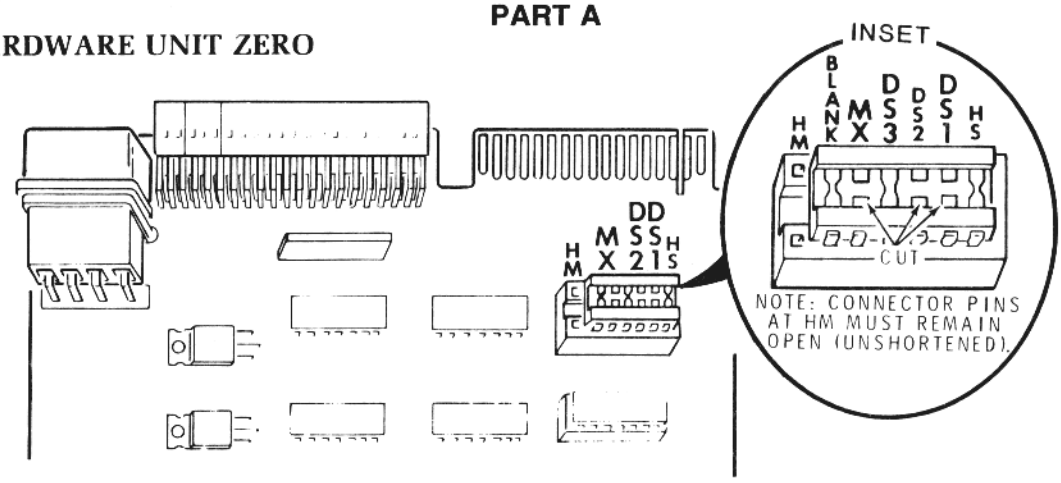


Detail 4A

H-17-1 Programming
With Hard-Sector Controller
(H-88-1)

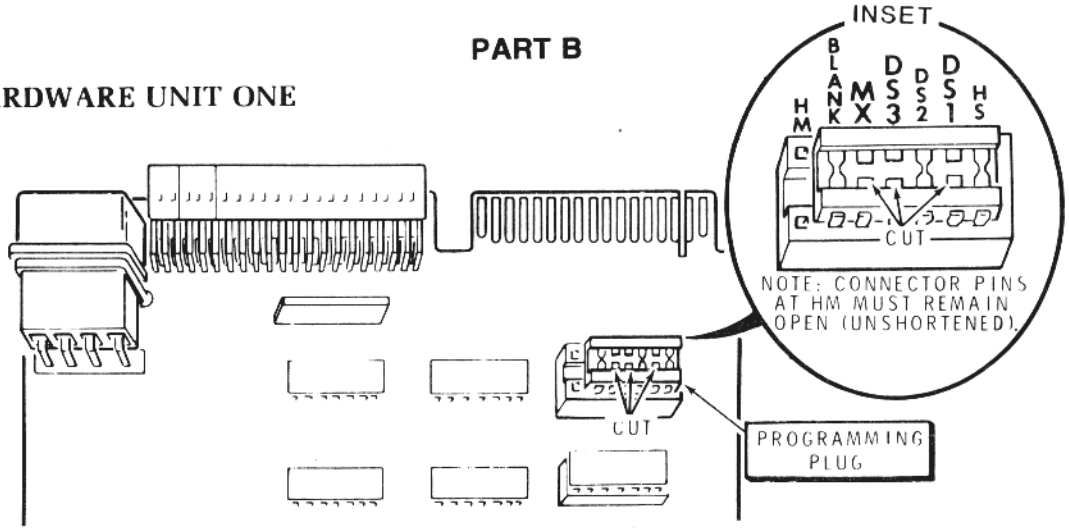
PART A

HARDWARE UNIT ZERO



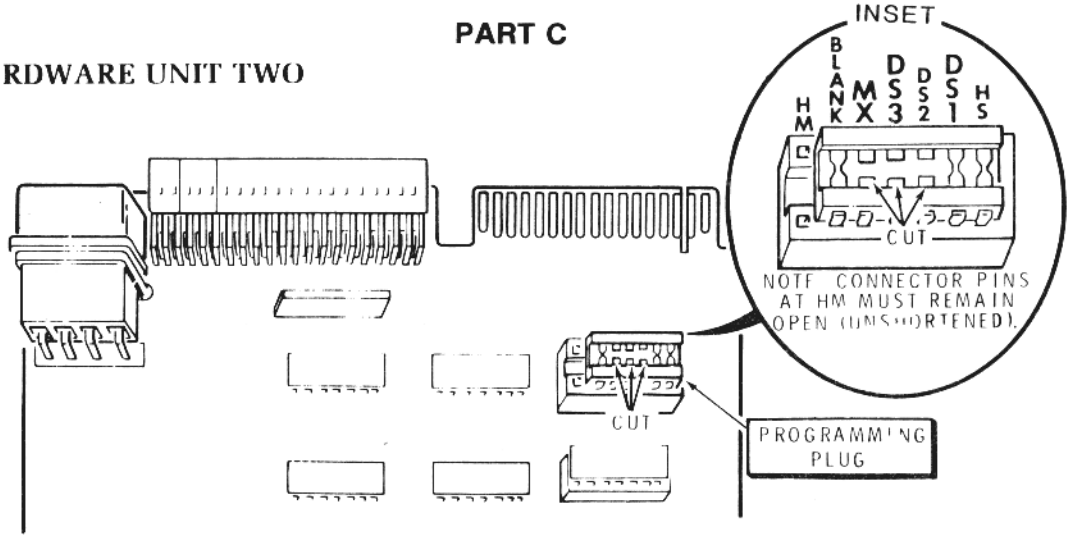
PART B

HARDWARE UNIT ONE



PART C

HARDWARE UNIT TWO

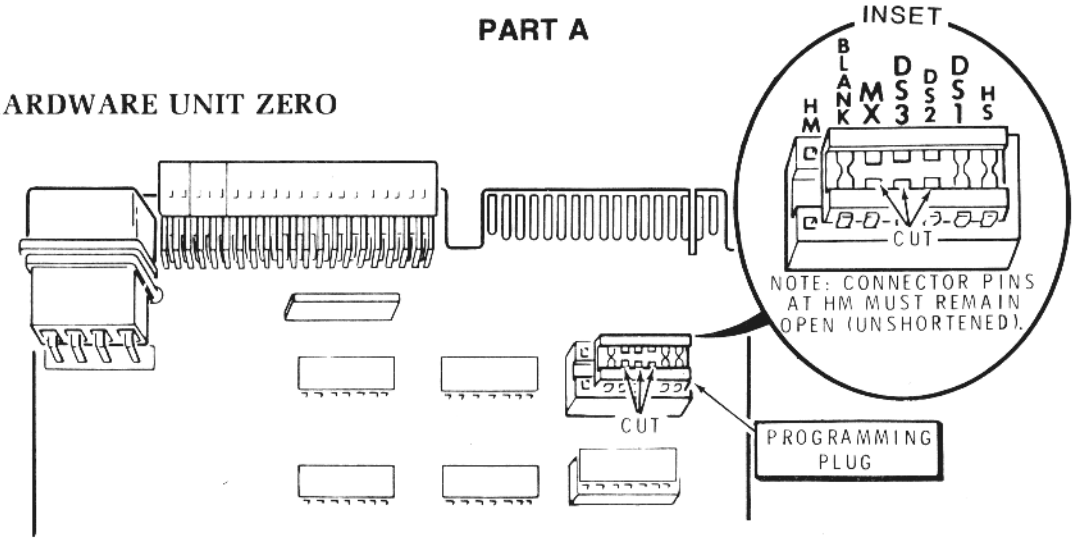


PICTORIAL 1

H-17-1 Programming
With Soft-Sector Controller
(Z-89-37)

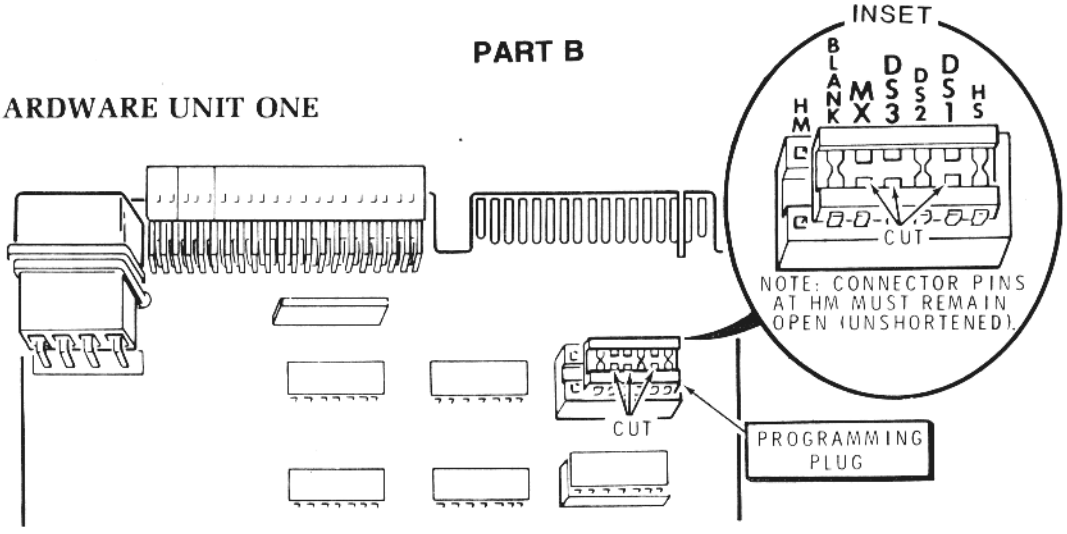
PART A

HARDWARE UNIT ZERO



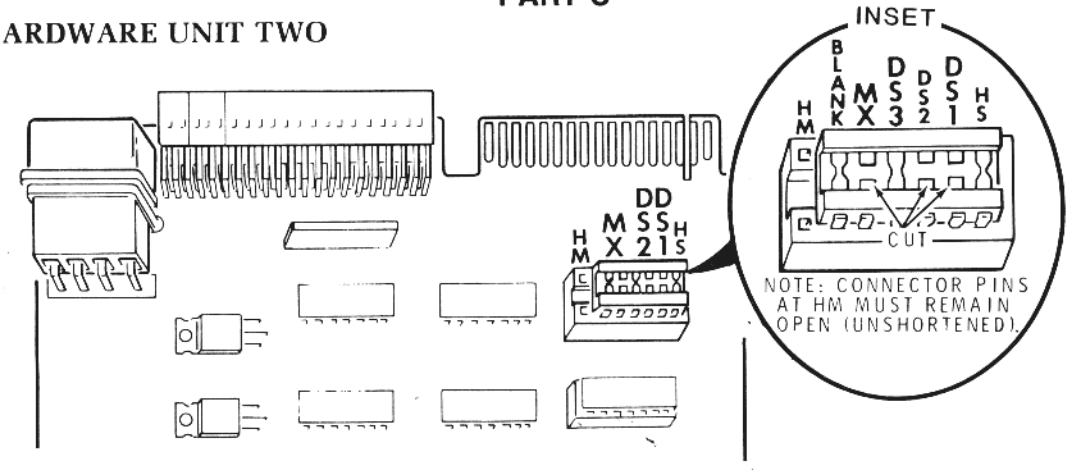
PART B

HARDWARE UNIT ONE



PART C

HARDWARE UNIT TWO

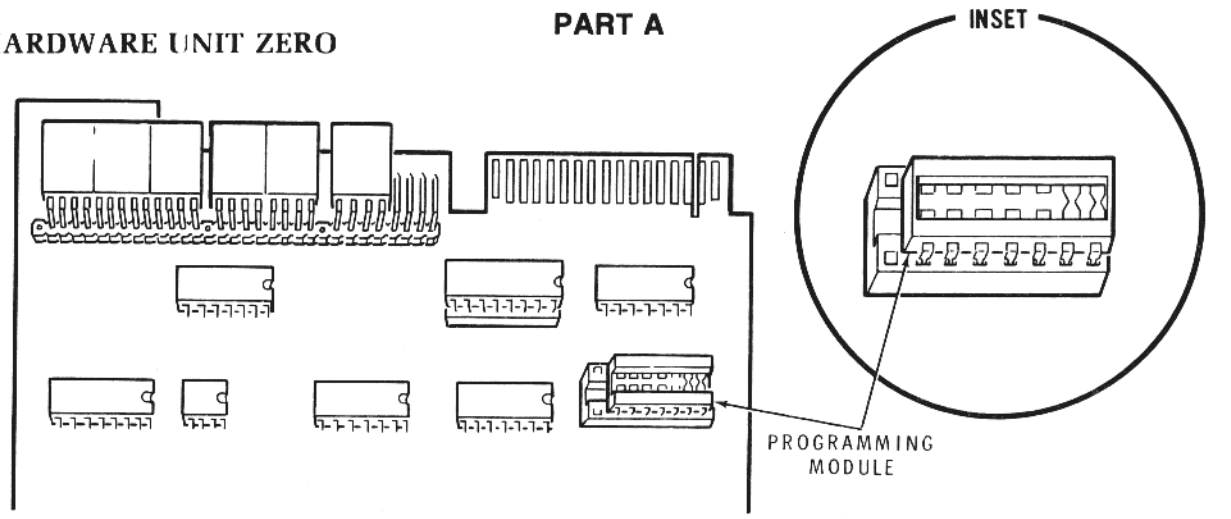


PICTORIAL 2

H-17-4 Programming With Soft-Sector Controller (Z-89-37)

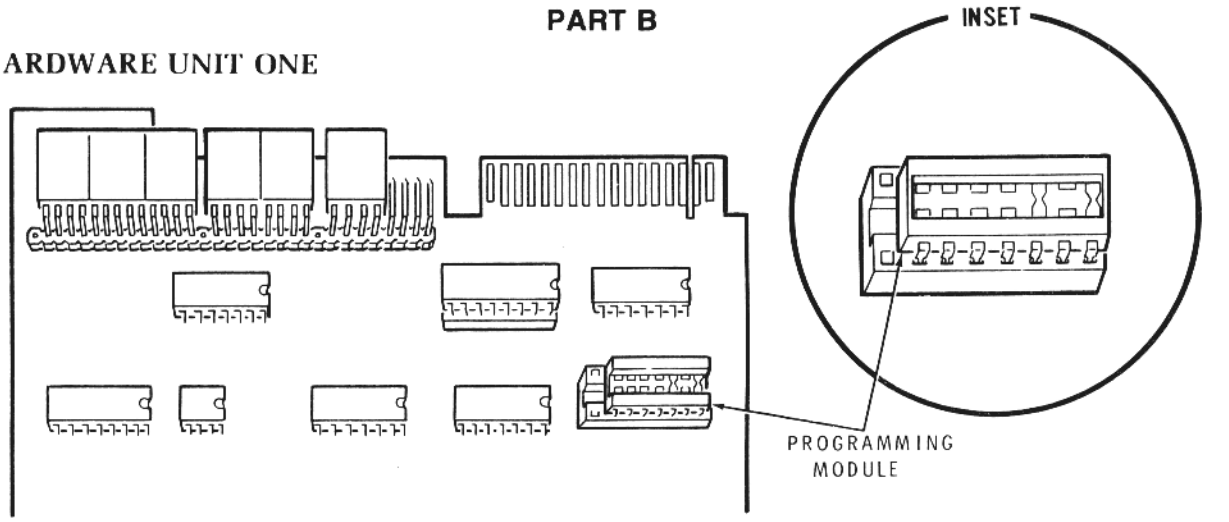
PART A

HARDWARE UNIT ZERO



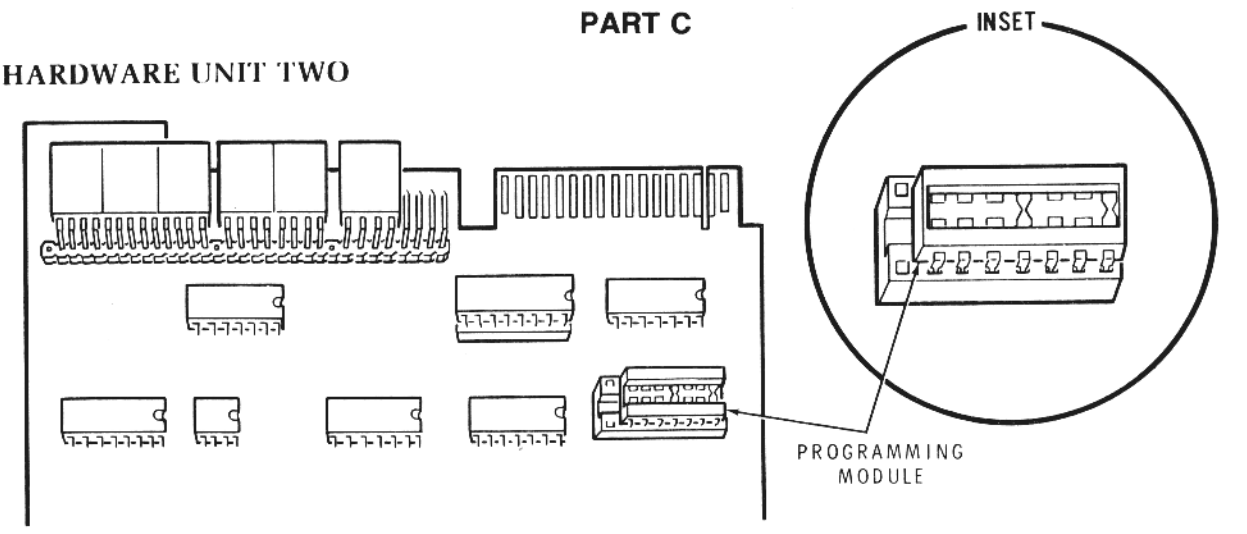
PART B

HARDWARE UNIT ONE



PART C

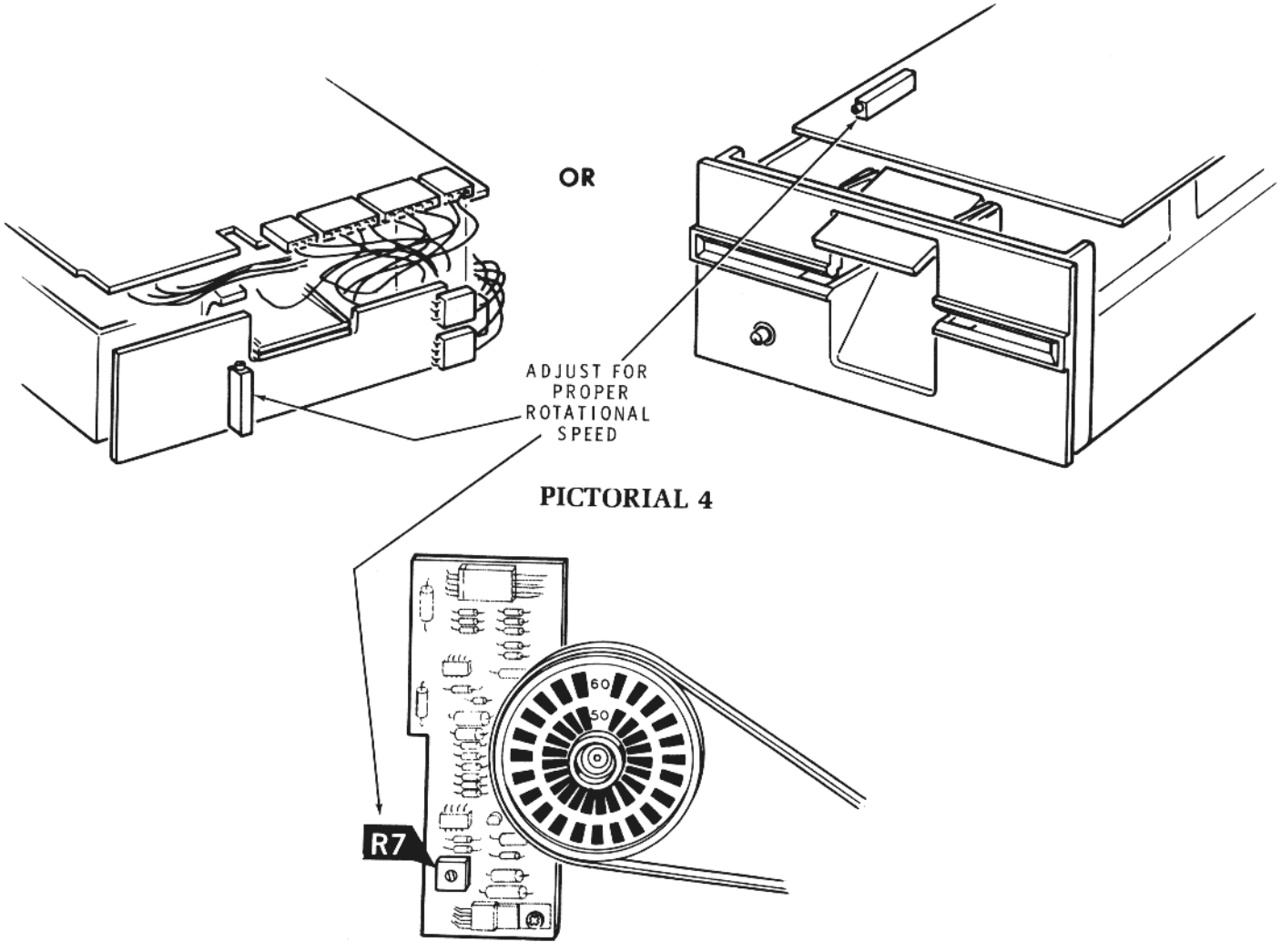
HARDWARE UNIT TWO



PICTORIAL 3

ROTATIONAL SPEED TEST

Perform the rotational speed tests as described in your system software documentation. See Pictorial 4 for the adjustment locations.



PICTORIAL 4

( ) Refer to Pictorial 4, install a diskette into the drive as shown, and close the door. The test will not start until this is done. Also, the test will not damage the data on the diskette.

( ) 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.

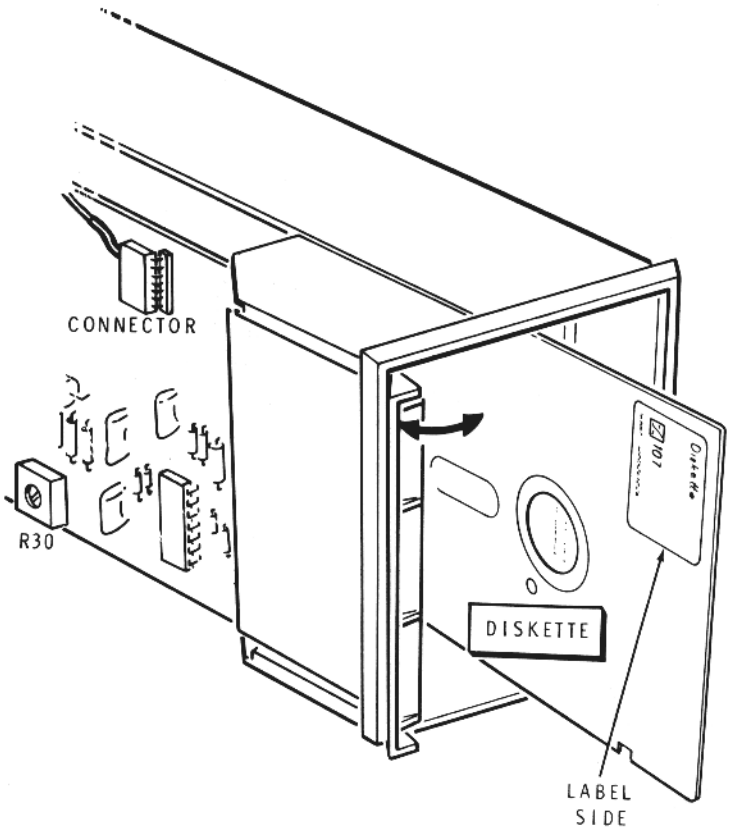
If you are using an H-8 with an H-17, refer to "Rotational Speed Adjustment" in the H-17 Operation Manual.

( ) If the drive speed is less than 166 or greater than 212, carefully adjust R30 or R7 with a small screwdriver until the speed is within tolerance and as close to 200 as possible.

( ) Simultaneously push the right-hand SHIFT and RESET keys to stop the test.

( ) Remove the diskette from the drive unit.

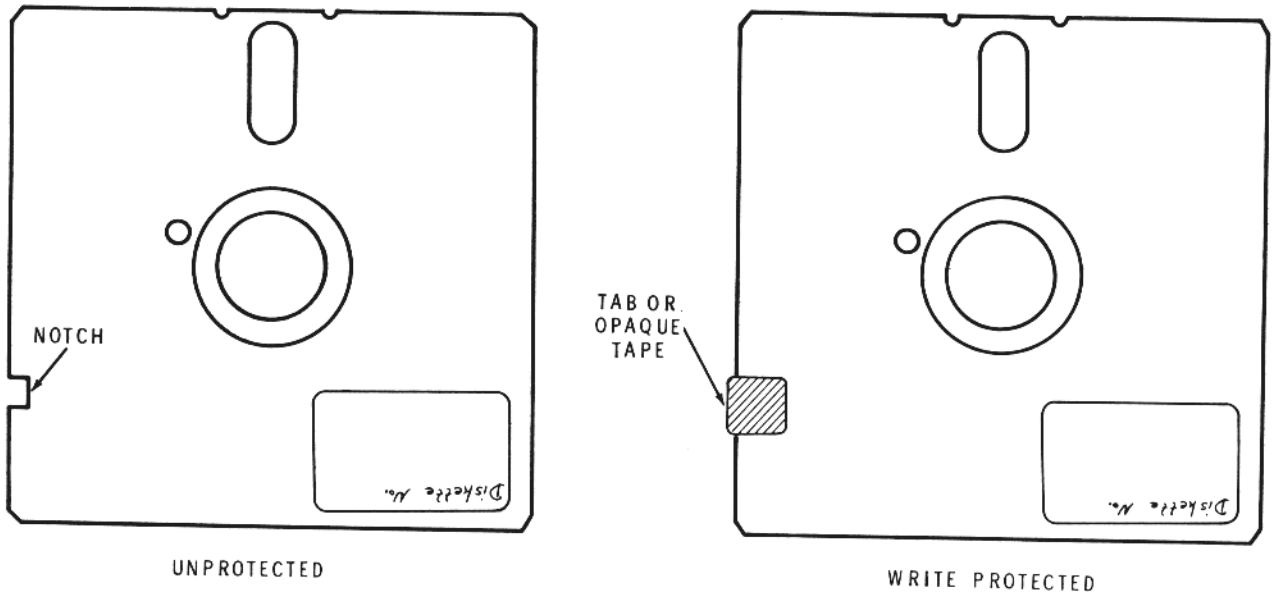
( ) Turn off the Computer and unplug the line cord.



PICTORIAL 4

WRITE-PROTECT

This diskette can be write protected so that it cannot be written on. To do this, cover the side notch with a tab or opaque tape. See Pictorial 6.



PICTORIAL 6