Cromemco
System
Three

Instruction
Manual

re: Cromemco System
Three Computer

Congratulations!

You have just purchased the finest microcomputer system available today.

If you will take just a few minutes to read through this brochure you will be certain of getting off to a good start with your new System Three Computer.

Your System Three Computer is fully supported by the wide range of Cromemco's software which includes high level languages such as 32K STRUCTURED BASIC, MULTI-USER BASIC, RATFOR with FORTRAN IV, and COBOL, a Data Base Management System, a powerful Screen Editor and a text Formatter, as well as a Macro Assembler. Please be sure to fill out and mail your registration form as soon as possible so that we may keep you informed of new products and product enhancements as they are released.

If you require assistance in operating your System Three, or if you are interested in expanding your System Three, please contact your local Cromemco dealer.

Again, thank you for choosing Cromemco. I am sure you will be glad you did.

Sincerely,

CROMEMCO

CROMEMCO SYSTEM THREE
Operating Instructions

BEFORE APPLYING POWER TO YOUR SYSTEM THREE COMPUTER
PLEASE READ THIS!!

1. The white cardboard insert in one slot of the disk
    drive protects the disk head from damage during
    shipment. THIS CARD CAN ONLY BE EJECTED BY PUSHING
    THE LETTERED BUTTON BELOW THE DISK DRIVE WHEN POWER
    IS APPLIED TO THE COMPUTER AND THE KEY IS IN THE
    "ON" POSITION. Do not try to forcibly remove this
    card. Please see the following paragraphs for
    instructions on applying power to your machine.

2. The front of your computer is hinged on the left.
    It can be opened by pushing up on the button which
    is located under the lower right hand corner of the
    front panel.

3. During shipment the line cord for your computer is
    stored in the documentation compartment. It can be
    accessed by opening the front panel of your
    computer as described above.

4. Connector number 1 on the rear panel (just below
    the legend "I/O CONNECTIONS") is for the CRT
    terminal. The proper interface cable is shipped
    with your CROMEMCO terminal. See the Disk
    Controller manual for instructions on interfacing
    other terminals with your System Three.

5. Connector number 1Ø on the rear panel is for the
    line printer. The proper interface cable is
    shipped with your CROMEMCO printer. See the PRI or
    TU-ART manual for instructions on interfacing other
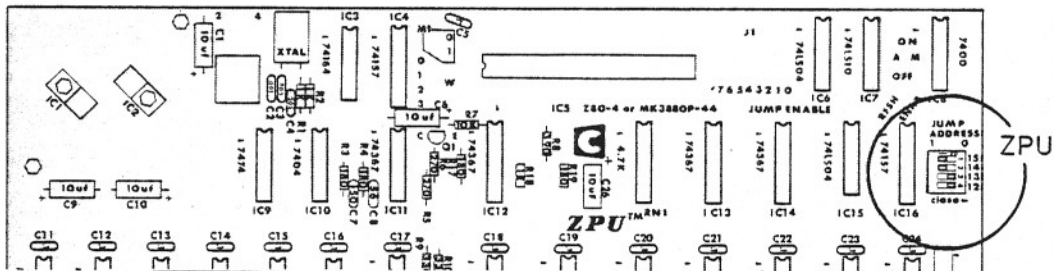   printers with your System Three.

6.	After connecting the line cord to the rear of the computer and plugging it into a power source, turn the key to the "ON" position. (The computer can be run with the key in this position or the "LOCK" position. With the key in the "ON" position, disks can be removed from the computer by pressing the eject button below each disk; with the key in the "LOCK" position, disks cannot be removed manually.)

7.	Turn the key momentarily to the "RESET" position. Allow the key to return to the "ON" position. Depress the Carriage Return key on your CRT terminal (up to four times) until the RDOS prompt (;) appears (note that this is not necessary with the CROMEMCO 3102 terminal.) If you are using your System Three with CROMEMCO disk software, see paragraph 8, otherwise, refer to the CROMEMCO RDOS manual supplied with your computer.

8.	To use your computer with CROMEMCO disk software, load the CROMEMCO diskette into drive A (disks should be positioned so that the elongated hole in the disk cover is horizontal and enters drive first while the label faces left). Type a "B" (for BOOT) followed by a carriage return in response to the RDOS prompt. At this point refer to the documentation provided with your particular CROMEMCO disk software package.

9.	NEVER REMOVE OR INSERT CARDS FROM THE SYSTEM THREE CARD CAGE WHILE POWER IS APPLIED TO THE SYSTEM.
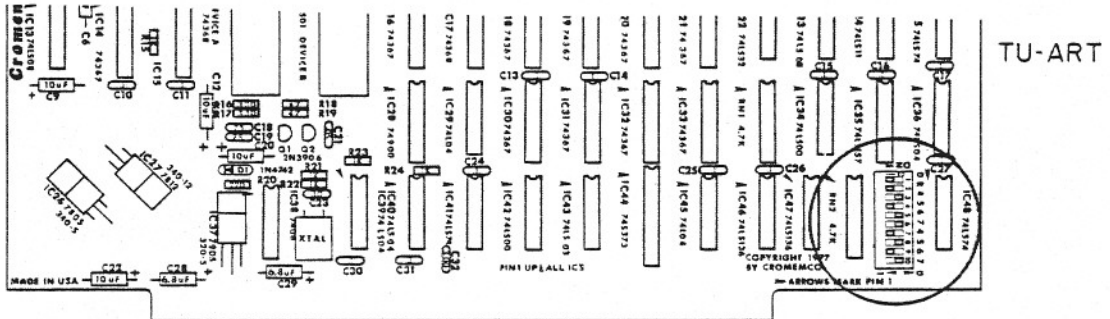
CROMEMCO SYSTEM THREE
Switch Settings

SWITCH SETTINGS

1. ZPU switch settings:

2. TU-ART switch settings:

3. Refer to the following example and diagrams for
    64KZ and Disk Controller Switch settings.

EXAMPLE

This example illustrates how one might configure the 64KZ card for use in a Cromemco Disc Operating System (CDOS). With a 64KZ card in the system, CDOS would typically be configured with program CDOSGEN to use all available 64 Kbytes of read/write memory. The CDOS program is transferred ("booted") from magnetic diskette to read/write memory for execution by RDOS, a program spanning addresses C000H - C3FFH and resident in ROM memory on the Cromemco 4FDC Floppy Disc Controller card.

The sequence of events for a CDOS boot are:

(1) RDOS reads a loader program from the first diskette sector into read/write memory area 0080H - 0100H.

(2) A jump to 0080H is then executed.

(3) The loader program at 0080H - 0100H first enables memory BANK 0 only, then completes the transfer of CDOS from diskette to roughly the uppermost 8 Kbytes of read/write memory.

Switch settings on the 4FDC card allow the user options of completely disabling or enabling RDOS; of removing or retaining RDOS in the memory map after a CDOS boot; and of "coming up" in RDOS after several console RETURN keystrokes and booting CDOS only when the direct command "B" (Boot) is issued, or automatically executing the RDOS boot routine in response to several console RETURN key strokes.

Assuming the 4FDC and 64KZ switch settings shown in Figure 1, CDOS automatically boots up after each system RESET or P.O.C. when the console RETURN key is depressed several times. The rationale behind the switch settings follows. First, BLOCK B, which is assigned to the upper 32K of memory, must disable after a RESET or P.O.C. to avoid a conflict with the shadowed RDOS ROM program located at C000H - C3FFH. This is accomplished by setting 64KZ switch RESET B = OUT. 4FDC switch number 2 must be positioned ON so as to disable RDOS after boot (RDOS is disabled at the same time memory BANK 0 is enabled). 4FDC switch number 3 is positioned ON to automatically start the RDOS boot routine after several RETURN key strokes, and finally 64KZ switch BLOCK B, BANK 0 = IN so as to activate the upper 32 Kbytes of read/write memory as RDOS is disabled. The resulting memory map after CDOS has been loaded into 64KZ memory is shown.

4FDC
SWITCH SETTINGS

RDOS ACCESSIBLE —————— RDOS INACCESSIBLE

RDOS IN AFTER CDOS ————— RDOS OUT AFTER CDOS
BOOT   BOOT

COME UP IN RDOS; BOOT ——— AUTOMATICALLY BOOT
CDOS WITH "B" COMMAND   UP CDOS THRU RDOS

64KZ
SWITCH SETTINGS

SW1

3 RESET A=IN

6 RESET B=OUT
7 A15 B = 1
8 A15 A = 0

SW2   SW3

BANK   BANK
0-7   0-7
IN   IN

A   B

AFTER RESET, BEFORE BOOT

| C3FFH | RDOS | } 4FDC |
| C000H | | ROM |

7FFFH		
		64KZ
		BLOCK
		A
0000H		

AFTER BOOT

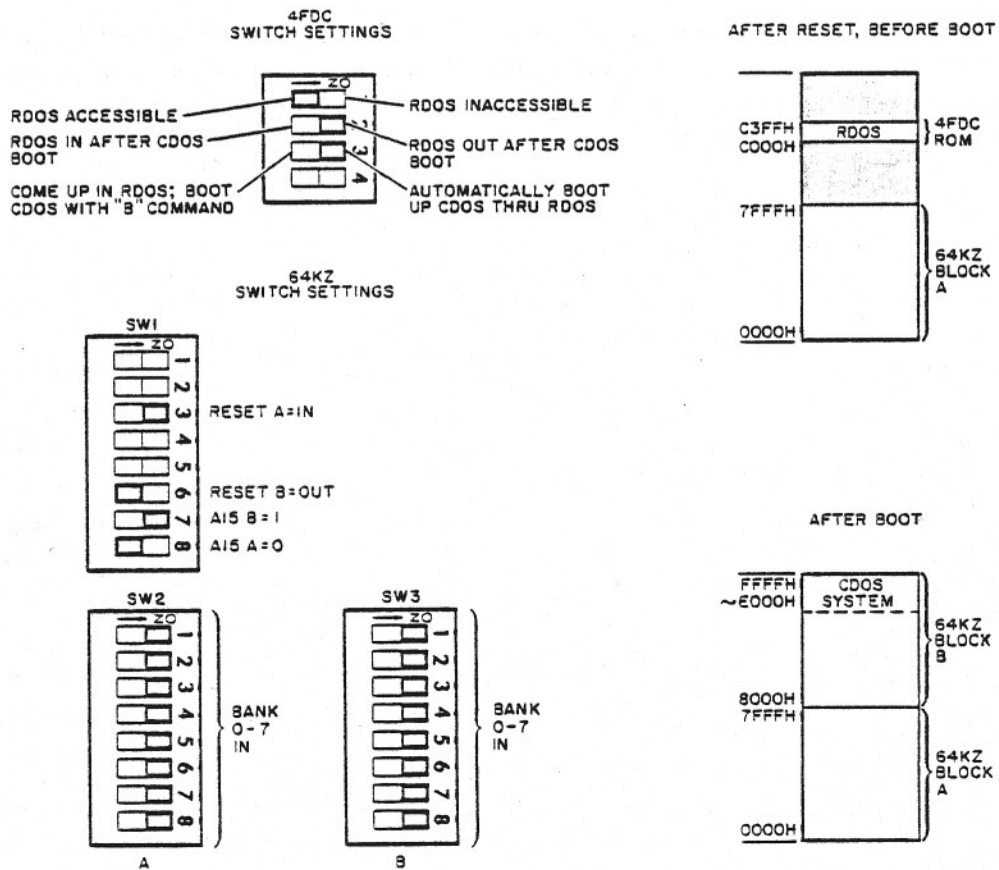| FFFFH | CDOS | |
~E000H	SYSTEM	
		64KZ
		BLOCK
		B
8000H		
7FFFH		
		64KZ
		BLOCK
		A
0000H		

Figure 1
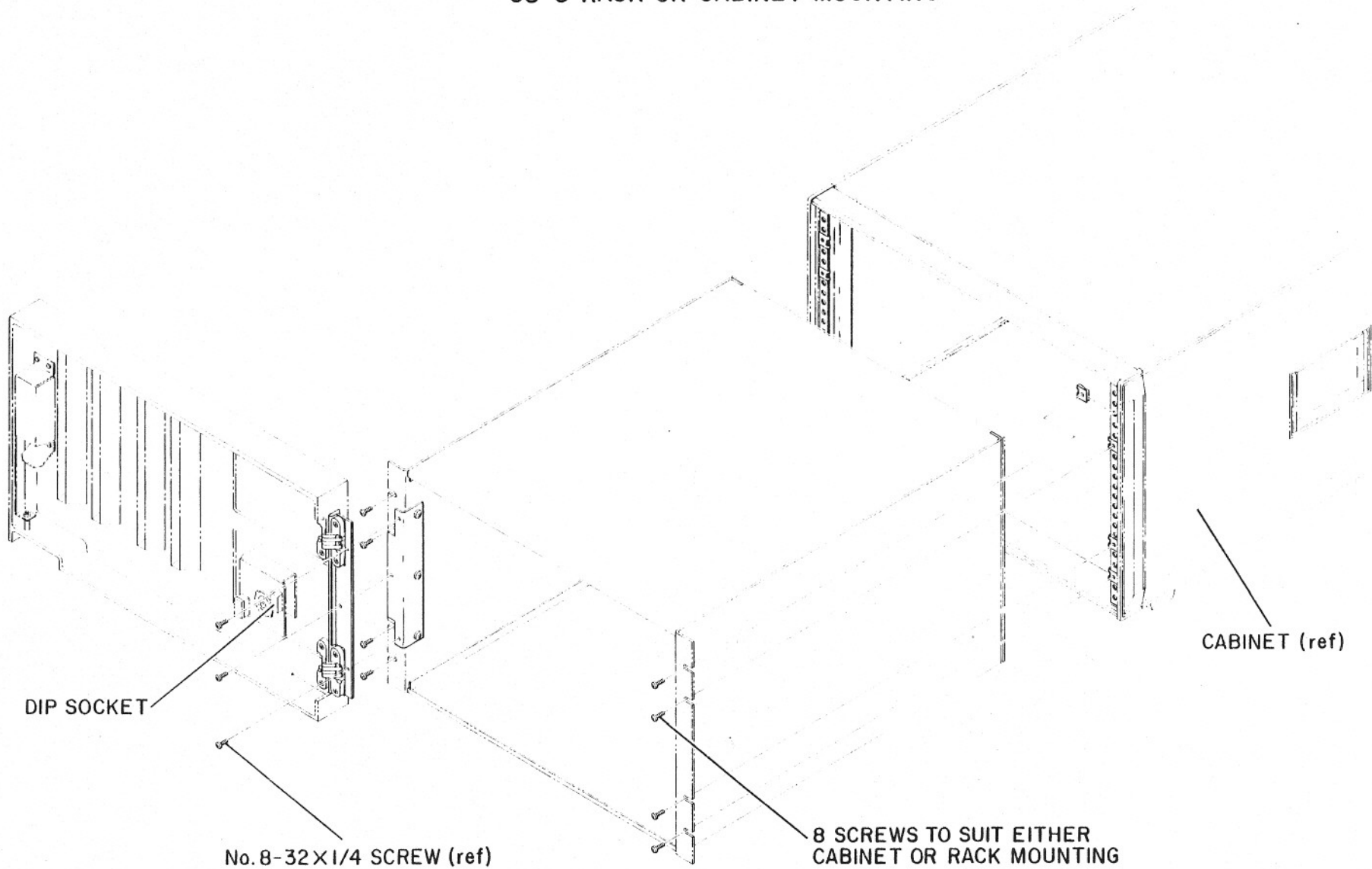
CROMEMCO SYSTEM THREE
Mounting Instructions

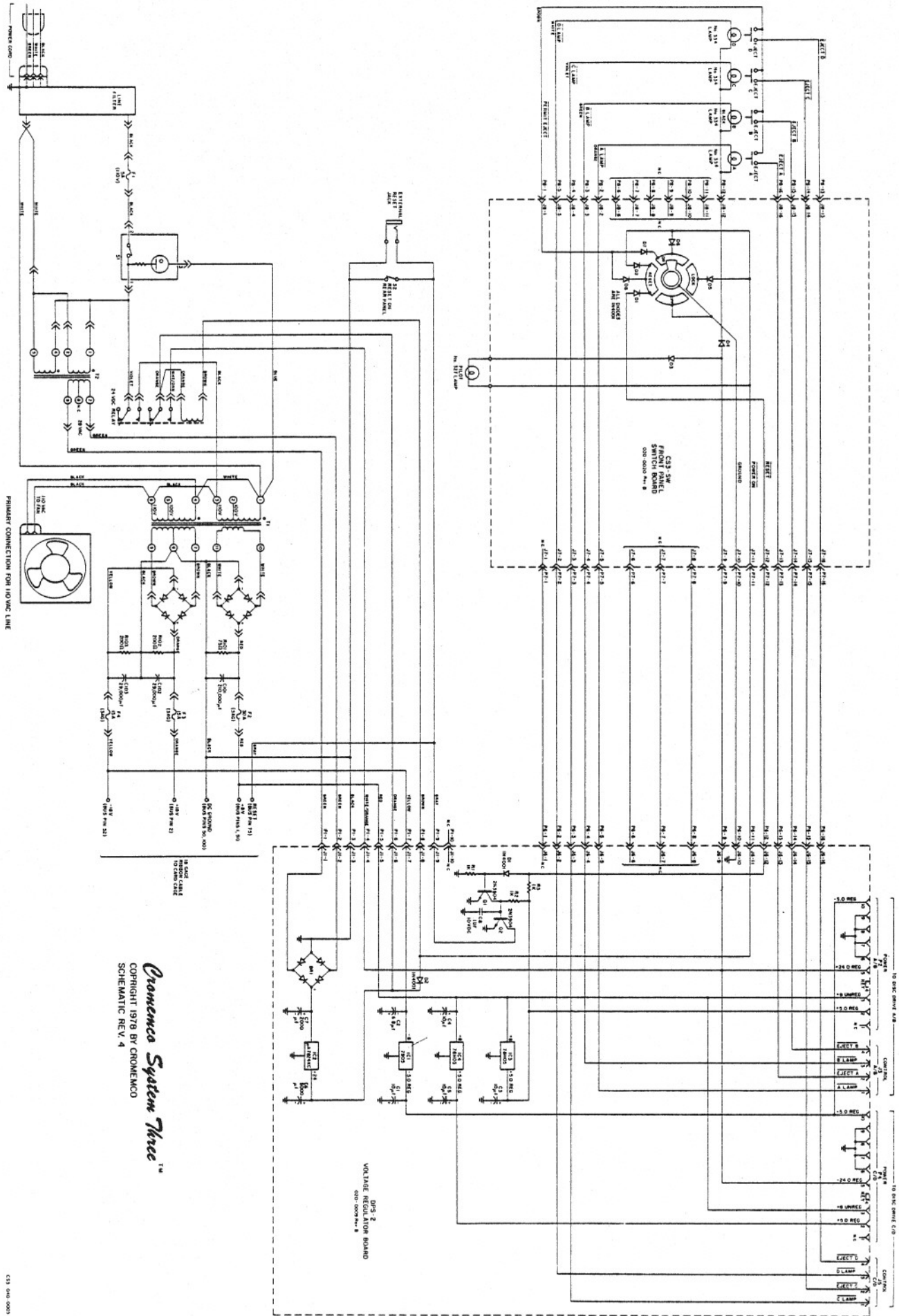   MOUNTING YOUR CS-3 IN
                     A RACK OR CABINET

                  refer to mounting diagram

1.   Unclip and remove ribbon cable from DIP socket on
     front panel.

2.   Remove three 8-32x1/4 screws which hold the front
     panel hinge to the CS-3 chassis, then remove the
     front panel.

3.   Slide the CS-3 chassis into the rack or cabinet and
     secure with eight screws (not supplied with the CS-
     3).

4.   Re-mount the front panel with the three screws
     removed in step 2.

5.   Plug in the ribbon cable and install locking clip
     in the DIP socket.

6.   Close front panel.

CS-3 RACK OR CABINET MOUNTING

DIP SOCKET

No. 8-32 X 1/4 SCREW (ref)

8 SCREWS TO SUIT EITHER
CABINET OR RACK MOUNTING

CABINET (ref)

Cromemco System Three™

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SCHEMATIC REV. 4

CS3-SW
FRONT PANEL
SWITCH BOARD

DPS-2
VOLTAGE REGULATOR BOARD

PRIMARY CONNECTION FOR 110 VAC LINE

POWER CORD

LINE FILTER