Forward
TECHNOLOGY INCORPORATED

SYSTEM
INSTALLATION AND
SET-UP GUIDE
- 500 -

FORWARD TECHNOLOGY
GATEWAY WORKSTATION 500

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August 15, 1983

I. INSPECTION INSTRUCTIONS

The   following   procedure   should   be   followed
PRIOR to applying power to the unit.

Check to see that ALL CIRCUIT BOARDS are seated securely and that
ALL CABLES are secure.
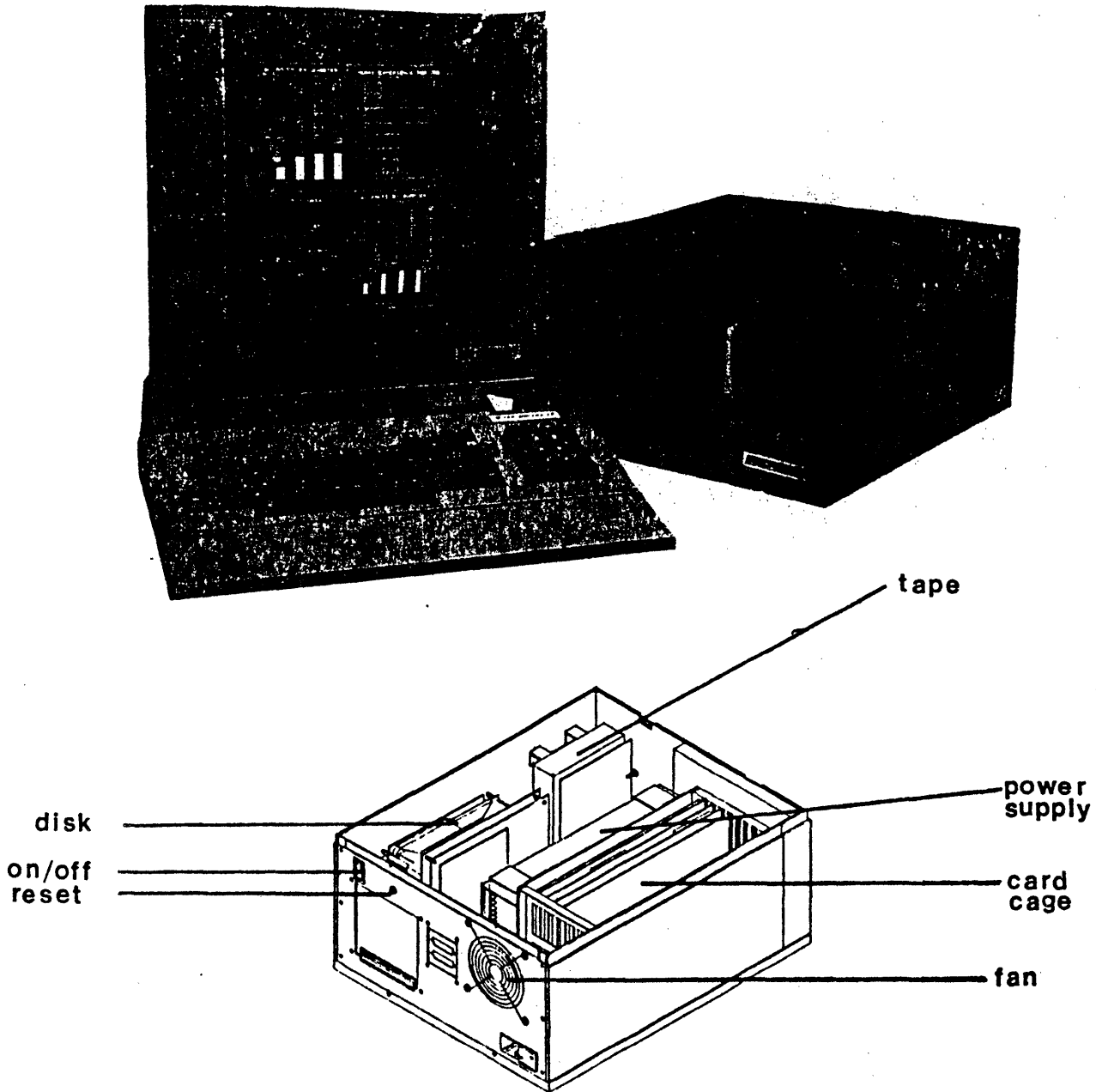
Forward Technology Gateway Workstation 500
Figure 1

II. PROCEDURE FOR BOOTING UP SYSTEM

NOTE: Do NOT power up the system until an
EIA RS-232 cable has been connected
between the system console port and
an ASCII terminal.

1. Configure an ASCII RS-232 terminal for 9600 baud, 8 data bits, one stop bit, and no parity. The cable should have "straight through" signal lines for pins 2, 3, and 7 only. If the terminal requires additional signals for Clear To Send (CTS) or Carrier Detect (CD), use a null modem cable configuration.

2. Plug the unit power cord into a standard grounded three prong socket with 110 volts AC/60 Hz for domestic machines and 220 volts AC/50 Hz for foreign installations.

   Note: If connecting to a power source other than that specified on the SYSTEM SERIAL NUMBER TAG, power jumpers within the unit MUST be changed or damage will occur!!!

3. Apply power to the computer element by moving the power switch to the ON position. The power switch is located on the rear of the unit. If necessary, depress the RESET switch.

4. Press the RESET switch.

   NOTE: The reset switch is located in the same area as the Workstation ON/OFF switch.

5. Your system will perform a diagnostic check of the FT-68X (allow 15 seconds).

   Note: If you wish to change the physical boot device, consult the chart labeled J2 Connector Jumper Settings.

6. Your system has been configured at the factory to boot from the System Disk.

   To Boot from the Disk:

   a. The power on or reset switch will start the prom execution of the boot and will boot from the device which the J2 (CPU) connector is jumpered for. To boot from the disk, jumper pins 11 to 12 only.

   b. The boot program will announce the loading procedure and version # of the PROMS.

      The boot from the disk device requires you to wait until

the disk comes up to speed. After the disk is up to speed -or- if it already is:

enter [CR] at the console.

The prompt should appear seconds later.

The prompt is: "Load kernel or standalone program: "

c. At the prompt, enter a [CR] to load the "md(0,0)xenix" kernel from the root file system.

e. At message "Loaded, hit return", type a [CR].

f. This will start the kernel. If you have a 768KB, local extended memory, you may then enter a y to run the test.

g. When the test is complete and passed, the single user system is up and running.

7. Your system will display basic system information concerning the size of local and multibus memory and display the version number of the XENIX operating system. This banner will be followed by a "[fti]" prompt.

8. To mount the multiuser version of XENIX and display basic date and time information, enter a "CTRL D."

III. PROCEDURE TO GRACEFULLY SHUT DOWN THE SYSTEM

1. Login to root directory on the system console.

2. Enter the command.

    fti> /etc/haltsys

    Note: Your system will execute the haltsys command and display the following message:

    NORMAL SYSTEM SHUTDOWN

    Do you want to reboot the system (y/n)?

3. To halt the system, enter a y or any other character for yes.

Instructions for Version 2.2 Xenix- System 500
ROOT and USR File Systems

1. To Build the ROOT (/) file system from scratch:

    a. Load the BOOT tape into the tape drive.

    b. Set jumpers on the CPU J2 connector for boot from 1/4"
        Cartridge Tape.   (Jumpers Pins 5 & 19) See Figure 3 -
        FT-68X J2 Jumper Diagram.

    c. Power on the system and push reset button.   Make sure
        that port A of the CPU (System Console) is connected to
        an ASCII terminal.

    d. When the tape is loaded the system will prompt you with

            Load standalone program or kernel
            :

    e. If this is a virgin disk, or it needs to be reformatted,
        load the FORMATTER tape into the tape drive.

        To load the routine; at the prompt type in:

            rt(0,0)[CR]

        The tape will load the routine into memory and prompt
        with:

            Loaded, hit return

        To begin execution; type a carriage return, [CR] (see
        manual page for program usage).

    f. Replace the BOOT tape into the tape drive and reset the
        processor by pushing the system reset button. The next
        step is to layout the ROOT file system by loading the
        MKFS tape into the tape drive. The program will prompt
        you for the necessary parameters.

            Load standalone program or kernel
            : rt(0,0)[CR]
            Loaded, hit return [CR]
            file system size: 9600[CR]
            file system: md(0,0)[CR]

    g. Load the RESTOR tape into the tape drive.   The program
        will prompt you for the restor device and destination
        file system. NOTE: This program will take about 15
        minutes to complete.

```
Load standalone program or kernel
: rt(0,0)[CR]
Loaded, hit return [CR]
```

Load the ROOT file system dump tape in the tape drive.

```
tape?  rt(0,0)[CR]
disk?  md(0,0)[CR]
last chance before scribbling on disk.  [CR]
```

h. When you have completed the building of the ROOT file
    system. Put the BOOT tape back into the tape drive and
    reboot the processor.

i. You must now boot up the "/xenix" kernel and clean the
    ROOT file system.

```
Load standalone program or kernel
: [CR]
md(0,0)xenix
Loaded, hit return [CR]
```

j. If you have the extended 768KB local memory option, the
    kernel will ask you if you would like to run the memory
    test. If you select to run the test, it will take
    approximately 2 minutes.

k. The kernel will ask you if you wish to "clean" the file
    system. You should always respond affirmatively.

```
Do you wish to clean the file system? (y/n) y[CR]
```

l. When the clean process is completed, set the date on the
    system. Refer to Xenix Manual, Volume I, for
    instructions. The syntax of the date command is, "date
    [[YY]MMDD]HHmm[.ss]".

```
where  YY is year
       MM is month
       DD is day
       HH is hour
       mm is minute
       ss is second
```

For example:

```
fti> date 8308150930 [CR]
```

m. To load the boot blocks to the disk drive.

```
fti> cp /stand/boot /dev/boot[CR]
```

2. To install the /dev/usr file system:

a. In order to build the USR file system the free list must be constructed. This is done by:

        fti> mkfs /dev/usr 16944[CR]

b. To restor the USR files, mount the USR dump tape into the tape drive and execute:

        fti> restor rf /dev/rrt0 /dev/usr[CR]
        Last chance before scribbling on /dev/usr. [CR]

c. The USR file system must be cleaned before going to the multi-user state, type:

        fti> fsck -y -t /tmp/fsck /dev/usr[CR]

3. To boot system from disk.

    a. Stop system execution and turn off the system by typing:

            fti> /etc/haltsys[CR]

    c. Restore the J2 jumpers to boot from disk. (Jumper Pin 11 to 12)

IX. DUMPING XENIX - 1/4" TAPE DRIVE

1. To Create a DUMP of the ROOT File System.

    a. Mount 1/4" cartridge in tape drive, making sure that the cartridge is OFF SAFE.

    b. Make sure system is in single user mode by typing:

        fti> kill -1 1[CR]

    c. Type in:

        fti> dump 0fu /dev/rrt0 /dev/rroot[CR]

2. Create a DUMP of the /USR File System

    a. Mount 1/4" cartridge in 1/4" Tape Drive. Make sure that cartridge is OFF SAFE.

        NOTE: if /usr file system are too large for 1/4" cartridge tapes, refer to Xenix Manuals for instructions on multi-tape dumps.

    b. Type in:

        fti> dump 0fsu /dev/rrt0 1000 /dev/rusr[CR]

VI. FT-68X J2 JUMPER DIAGRAMS

```
        J1 CONNECTOR                          J2 CONNECTOR
  2                        50            2                        50
***!!!!!!!!!!!!!!!!!!!!!!!!!!!***    ***!!!!!!!!!!!!!!!!!!!!!!!!!!!***
  1                        49            1                        49
```

Figure 2 -- Top View of FT-68X Connectors

```
                          J2 PIN NUMBERS
BOOT DEVICE        !  1   3   5   7   9  11  13  15
-------------------!---------------------------------
SYSTEM DISC        !  O   O   O   O   O   X   O   O
-------------------!---------------------------------    where X = Jumper In
1/4" TAPE DRIVE    !  O   O   X   O   O   O   O   O              O = Jumper Out
-------------------!---------------------------------
B-PORT ON 68X      !  O   O   O   O   X   O   O   O
-------------------!---------------------------------
```

Additional Jumpers:

Pin Number	Description
17	X = Skip power-up diagnostics
19	X = Verbose boot-up
31	X = Stay in diagnostic monitor do not "boot"

J2 Conector Jumper Settings On the FT-68X
Figure 3