BASIC INSTALLATION AND SETUP

This section provides instructions on setting up and checking out the basic Synclavier II system. It also contains a list of all basic and optional equipment, software, and documentation.

Contents of this section   page

MAJOR COMPONENTS

The basic Synclavier· II system consists of the keyboard unit, the Digital Synthesizer (which contains the computer and the digital synthesizers), and one or two disk drives.

There are three available enclosures for the Digital Synthesizer: the portable ATS case, and the small and large nonportable white enclosures.

There are also three possible kinds of floppy diskette drives. The first two use 5¼ inch minidiskettes. One uses single track density diskettes and the other uses double track density diskettes. Either of these drives is detached from the enclosure and is connected externally to the Digital Synthesizer. The basic system requires one of these drives. Your system may include one or two.

The third kind of disk drive uses 8-inch single track density maxi-diskettes. These drives are always installed in pairs within the Digital Synthesizer enclosure.

If you have purchased a Winchester disk, it is considered an option. Winchester setup is covered in the next section.

The same keyboard unit is included with all systems.

CABLES

You will also receive various cables.

Keyboard Cable—This heavy black cable has a three inch 50-pin connector at each end. It is used to connect the keyboard unit to the Digital Synthesizer. Standard in all systems.

Disk Drive Cable-A heavy-jacketed flat cable with 1½ inch multi-pin connectors at each end, included in all systems with a 5¼ inch disk drive to connect the drive to the Digital Synthesizer. (Additional cables are included if you have purchased the optional second drive—see "The Options".)

AC Power Cable—This heavy power cable is standard in all systems. It plugs into a male outlet on the Digital Synthesizer.

DISKETTES

You should have received at least one of each of the following diskettes with the basic Synclavier® II system:

Synclavier· II system diskette, latest release
Timbre diskette #1
Timbre diskette #2
Timbre diskette #3
Timbre diskette #4
Diagnostic test diskette

MANUALS

Synclavier· II Instruction Manual
Synclavier· II Setup and Installation Manual

THE OPTIONS

OPTIONAL HARDWARE

The following equipment adds to the performance capabilities of Synclavier* II:

1. Morley pedal with attached power cord and two foot switches —for real-time volume control, timbre modification, vibrato control: and for ''hands-free'' punch-in on the recorder.

   Three cables are provided with each pedal; each cable has phone plugs on both ends.

2. Ribbon controller on the Synclavier* II keyboard—for pitch bend.

3. Alphanumeric computer terminal (ADM-5)—required for use of SCRIPT ™ MAX, and Alphanumeric Timbre Display systems.

4. Graphical computer terminal (VT100/640)—required for graphical and Alphanumeric Timbre Display, SCRIPT ™ MAX, and Music Printing systems.

   With the addition of a terminal, a terminal cable with ''RS-232'' connectors is provided.

5. Additional disk drive—required in the mini system for SCRIPT and MAX and useful in the maxisystem for transferring sequences and compositions from maxidiskette to minidiskette.

   An additional flat cable is included with each drive.

The most advanced and comprehensive systems will include:

1. One or more Winchester disk drives with 5, 10, or 20 megabyte storage capacity—for faster compilation and greater storage.

2. PRISM 80 printer—for printing permanent copies of SCRIPT compositions, timbre displays, and music notation.

3. Modem—for connecting the Synclavier* II computer to a remote computer by telephone lines.

4. D40 board—interface for connecting a printer or a modem to the Synclavier* II computer.

5. Expansion synthesizer—for adding up to 128 voices to your system.

6. ''Z80'' Board—for CP/M operation in a Synclavier* II system and access to a wide variety of commercial software.

7. ADX/DAX Conversion Module—data converters for the Sample-to-Disk System.

8. SS6 Stereo board—for programmable stereo output from Digital Synthesizer.

Choose a suitable place to unpack the system. You will need a table or counter top large enough to hold the keyboard unit and the Digital Synthesizer.

Your Synclavier " II system has been shipped in three or four road cases or cardboard boxes, depending on your order. Open each of the cases or boxes and carefully remove the contents. Be sure to save the shipping cartons and cushioning material in case it ever becomes necessary to ship the equipment again.

Locate each item on the packing slip and notify New England Digital Corporation immediately if anything is missing or appears to have been damaged.

The keyboard unit, Digital Synthesizer, and terminal, if any, have been shipped individually. The accessory box contains the mini disk drive or drives, the cables, the pedals, diskettes, and manuals.

If your inventory of equipment and diskettes reveals that all is well and accounted for, you are now ready to assemble your Synclavier " II.

The next two chapters explain how to connect the basic components of the Synclavier® II system and the audio output, and how to check that the system is working properly.

For instructions on connecting the pedals and using the special output jacks, see the following chapter.

For instructions on setting up the terminal, see the Options Setup section.

Assemble your basic system and check it out first.

BASIC SYNCLAVIER® II CONNECTIONS

Connecting the Keyboard

1. Connect one end of the keyboard cable to the connector labeled TO KEYBOARD on the back of the Synclavier® II computer. Observe the orientation of the metal housing of the connector on the computer; the wide side is on the top.
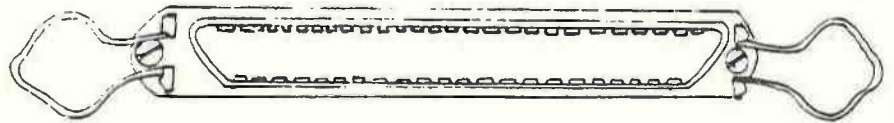
The cable connector must be oriented the same way. Secure with the wire bales.

2. Connect the other end of the keyboard cable to the connector labeled TO CONTROL UNIT on the back of the keyboard. Observe the correct housing orientation and secure with the wire bales.

C FUTURE OPTIONS

B 5¼" DISKETTE DRIVE
Heavy jacketed flat cable

D REMOTE 5¼" OR 8" WINCHESTER DISK
3-foot flat gray cable

E DIGITAL GUITA

A TERMINAL
Cable with "RS232 Connectors"

New England Digital   White River Jct., VT U.S.A.   OUTPUT EQUALIZATION   MID—HI   HIGH   SYNCLAVIER® II   DIGITAL SYNTHESIZER

TERMINAL   MAIN DISK DRIVE   DIGITAL GUITAR

VELOCITY INPUT

PRINTER/MODEM   AUXILIARY DISK DRIVE   TO KEYBOARD   OUTPUTS

EXT CLOCK INPUT   EXT CLOCK   CLICK TRACK   -20 dBm   +0 dBm 600 ohms

F PRINTER OR MODEM
Printer cable

I CLOCK INPUT
Connect to external device
to trigger memory recorder.
Use ¼" phone plug.

J CLOCK OUTPUT
Connect to tape console
to record sync pulses.
Use ¼" phone plug.

G AUX. 5¼" DISKETTE DRIVE
Heavy jacketed flat cable

K CLICK TRACK OUTPUT
Connect to audio system.
Use ¼" phone plug.

H KEYBOARD UNIT
Heavy black cable with 3-inch
connectors

L -20 dBm OUTPUT
Connect to amplifier.
Use ¼" monaural or stereo phone
plug.

M +0 dBm OUTPUT
Connect to tape console.
Use 5-pin audio stereo conne
supplied with system. In
monaural systems, connect l
connector to audio system.

Connecting the Disk Drive ("mini" systems)

1. Check to see if there is a white shipping cardboard inside the disk drive. Remove it.

2. Connect one end of the disk drive cable to the connector labeled MAIN DISK DRIVE on the back of the computer. Observe the correct housing orientation and secure with the wire bales.

3. Connect the other end of the disk drive cable to the connector on the right side of the disk drive in the same fashion.

4. Plug the disk drive power cord into an outlet providing 110–120 VAC. The outlets between the fans on the back of the computer can be conveniently used for this purpose.

(NOTE: If you have purchased a second drive, you should connect both drives at this time. Arbitrarily select one drive to be the left-hand drive and connect it to the back of the computer labeled MAIN DISK DRIVE with a five-foot cable. (Do not use the ten-foot cable for this purpose.) In the same way, connect the other drive, which will hereafter be called the right-hand drive, to the socket labeled AUXILIARY DISK DRIVE.)

Plugging in the Computer

1. Plug the computer power cord into the male AC connector on the computer. In minisystems, this connector is located on the front panel. In maxisystems, this connector is located on the back panel.

2. Plug the power cord into an outlet providing 115 VAC, 50/60 Hz, 5 A, 500 W, 500 kVA.

WARNING: Damage caused by failure to plug into an outlet providing this electrical service is not covered by your warranty. If your electrical service is different from these specifications, please consult New England Digital Corporation for assistance in conditioning your power line.

AUDIO CONNECTION

Connecting Headphones

NOTE: Headphones are not included with the system.

1. Insert the headphone plug into the jack labeled HEAD-PHONE OUTPUT on the rear of the keyboard unit.

2. Note the HEADPHONE VOLUME control knob above the jack.

Connecting to Amplifier or Receiver

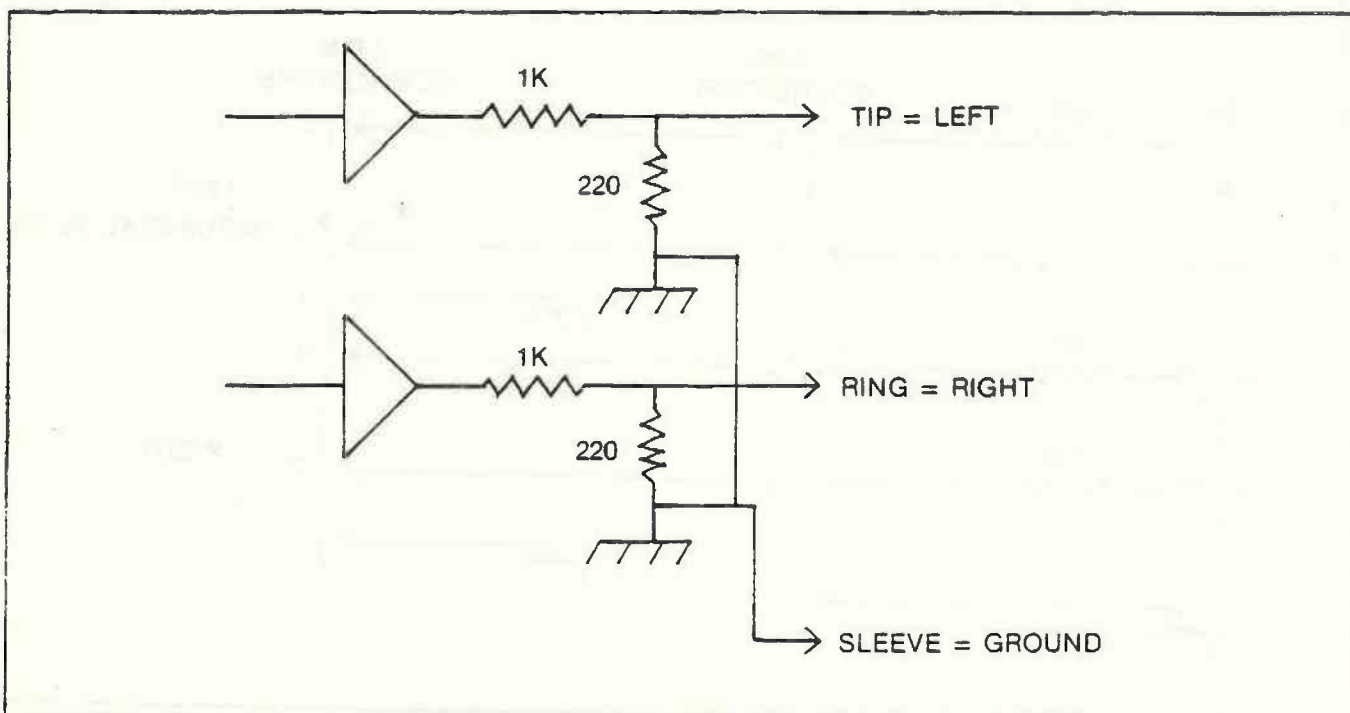1. Connect a cable with a phone plug to the jack labeled -20 dBm on the back of the computer. Use a stereo plug for stereo and a monaural plug for monaural.

2. Connect to the "AUX" or "TAPE PLAY" input of your amplifier.

Technical notes on -20 dBm output

1. 1/4 inch tip-ring-sleeve jack

   Tip   Left
   Ring   Right
   Sleeve Case Ground

2. Circuit drawing

3. Output voltage range: 1 volt peak to peak

Connecting to a Recording Console

1. Use the stereo audio connector supplied with your system. Insert the 5-pin connector into the connector labeled O dBm 600 OHM on the back of the computer.

2. You can connect to the tape console in two ways:

   a. You can connect through the microphone input on the console. You may need an external pad in this case.

   b. Alternatively, you can connect through a multitrack tape return line or any other line input.

Technical notes on the O dBm output

1. Male 5-pin audio connector
   Pin 1 Ground
   Pin 2 Right Lo
   Pin 3 Right Hi
   Pin 4 Left Lo
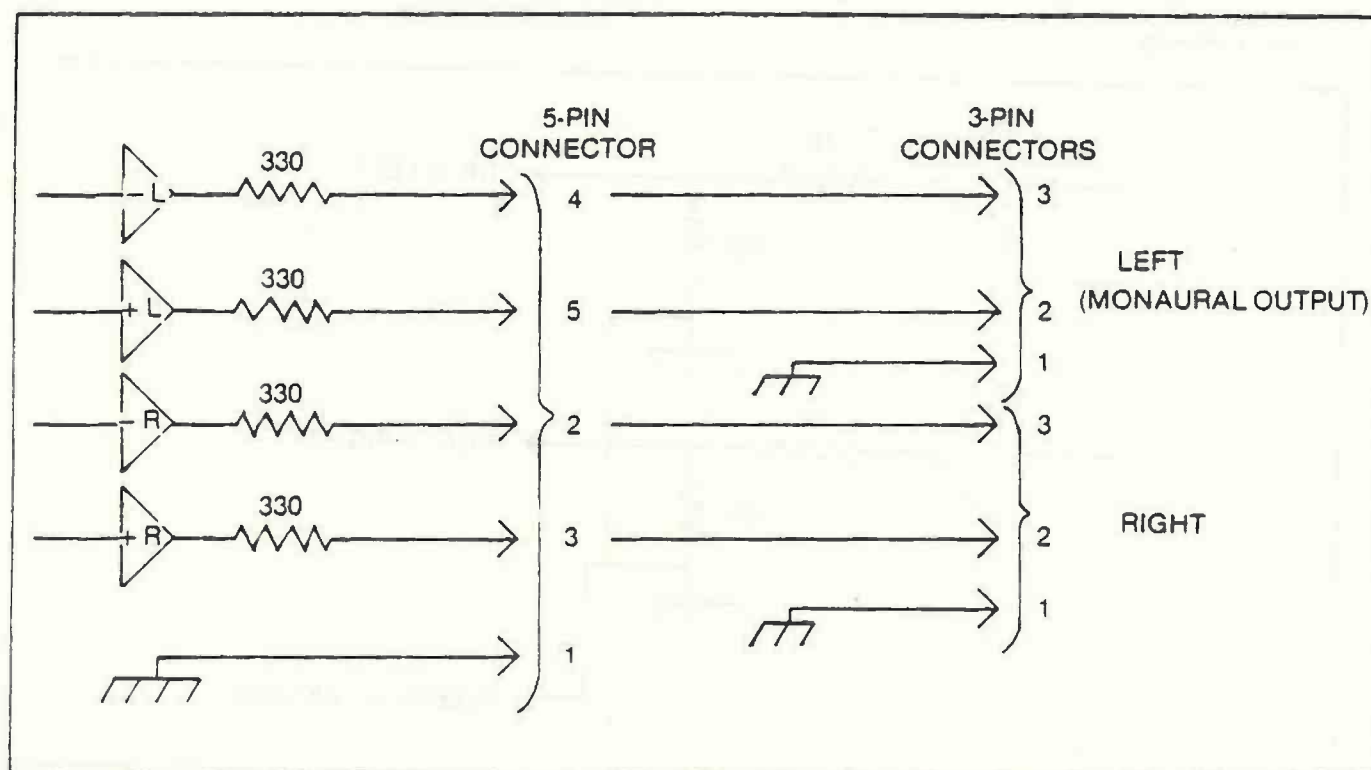   Pin 5 Left Hi

Female 3-Pin Right Connector	Female 3-Pin Left Connector
Pin 1 Ground	Pin 1 Ground
Pin 2 Hi	Pin 2 Hi
Pin 3 Lo	Pin 3 Lo

2. Circuit Drawing

3. Output voltage range: 20 volts peak to peak

TURNING IT ON

IMPORTANT: DO NOT INSERT A DISKETTE INTO THE DISK DRIVE YET

1. In a minisystem, first turn on the disk drive with the small toggle switch at the rear of the drive to the left.

2. Press the power button on the front of the computer. (In a maxisystem, this action will also turn on the dual disk drives.)

   The following things should now happen:

   a. Both fans on the computer should turn.

   b. A random pattern of buttons on the keyboard should light up.

   c. Random sounds may or may not be heard from the audio.

   d. The disk drive motor should start to spin.

   e. The disk drive indicator light should light up. If not, check that the disk drive power cord is plugged in properly, that its cable connections are firm, and that the toggle switch is turned on.

CARE AND HANDLING OF DISKETTES

1. Always store your diskettes inside the protective jackets.

2. Keep diskettes at a temperature between 50° F and 125° F, preferably at room temperature.

3. Never expose diskettes to stray magnetic fields.

4. Never *bend* or otherwise physically abuse a diskette.

5. Never touch the exposed magnetic surface visible in the slot.

6. When inserting a diskette into the drive, hold it with the label up and the slot away from you. Be careful to insert it straight into the slot.

7. Always remove diskettes from the disk drive before you turn the power to the computer on or off.

8. When writing on diskette labels, always use a *felt tip pen*, never a ballpoint.

LOADING

1. Locate a Synclavier'' II system diskette.

2. Grasp the diskette with the label up and the slot away from you.

3. Insert the diskette into the disk drive. If you have two drives, insert the diskette into the left-hand, or MAIN, drive. The diskette openings on mini and maxi drives are constructed somewhat differently.

   Mini Disk Drive

   a. Lift up the lock tab on the front of the drive.

   b. Slide the diskette into the slot.

   c. Push the lock tab down.

   Maxi Disk Drive

   a. Press the bar under the slot. The flap will pop open.

   b. Slide the diskette into the drive.

   c. Push down the flap until it clicks and stays shut.

   In either case, the diskette should slide almost effortlessly into the drive and the tab or flap should shut easily. Any other condition indicates improper insertion.

4. Push the load button once and let go. The following things should now happen:

   a. You'll hear the disk drive motor start up and run for about ten seconds in a minisystem or about three seconds in a maxisystem.

   b. The digital display window on the control panel should indicate the number of voices in your system: 8, 16, 24, or 32.

   c. The following buttons on the Synclavier'' II control panel should light up: PARTIAL TIMBRE SELECT 1, HARMONIC GROUP SELECT 1-12, TIMBRE BANK 1, and TIMBRE ENTRY 1. (Some other buttons may also be lit.)

   d. The synthesizers should be silent.

   If the system doesn't load, the random pattern of lights will not change and the synthesizers will not be silent. In this case, see the Problem Section in this manual.

5. Play a key on the keyboard. You should hear a sine wave.

The basic Synclavier'' II operating system is now ready for performance.

Notes on the OUTPUT EQUALIZATION Switches

The OUTPUT EQUALIZATION switches on the computer can be set in four different positions: both IN, both OUT, and one IN and the other OUT and vice versa. When one switch is in the IN position, the filter is operative, and high frequencies are reduced. Both switches in the IN position results in maximum filtering. Many of the preset timbres and instruction sequences on the diskettes were designed with the filters operative. These will not sound right unless both switches are in the IN position.
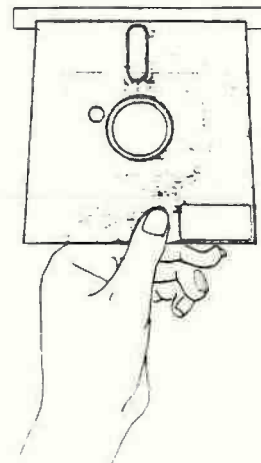
PEDALS

Each Morley pedal has three output jacks which can be simultaneously connected to the keyboard unit with the connector cables provided. One jack, labeled VOLUME, is for the output of the pedal itself; the other two jacks, labeled 1 and 2, are for the output of the two foot switches.

Examine the drawing below:
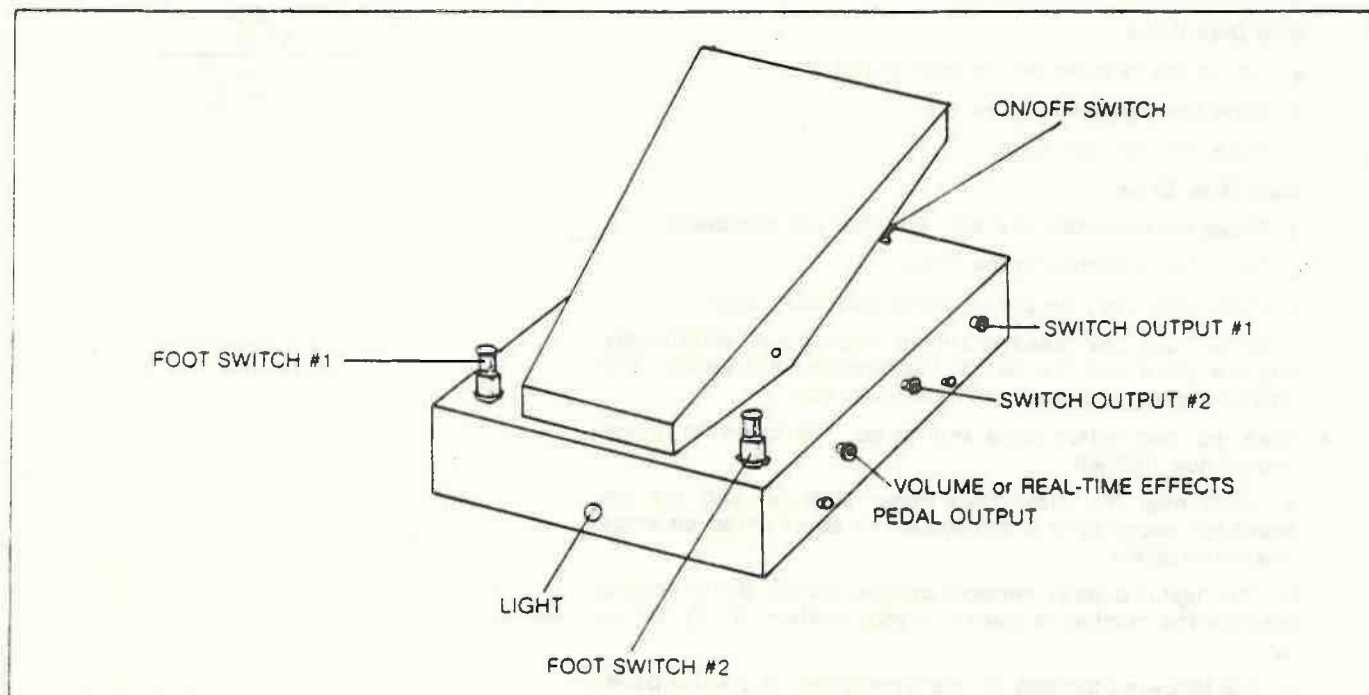
Because the pedal output can be connected to different input jacks on the keyboard unit, the same pedal can be used for a variety of functions.

The pedal output can be connected to either of the two jacks under FOOT PEDALS on the back of the keyboard unit: OVERALL VOLUME or REAL TIME EFFECTS. When you have two pedals, one can be connected to OVERALL VOLUME and one to REAL TIME EFFECTS.

The two switch outputs can be connected to any of the input jacks under FOOT SWITCHES on the back of the keyboard unit: HOLD, REPEAT, PORTAMENTO, SUSTAIN, and ARPEGGIATE, or to the jacks labeled PUNCH IN/OUT FOOT SWITCH or PITCH BEND.

The power cord of the pedal must be plugged into 110 VAC, 60 hertz, and the power switch located at the rear of the pedal must be turned on. If you have the pedal output connected to the VOLUME jack on the keyboard unit and the pedal is not turned on (or, if the pedal is turned on, but is in the "up" position), no volume will be heard.

Use and operation of the pedal and switches are covered in the Synclavier™ II Instruction Manual.

SPECIAL OUTPUTS and INPUTS

For all of the following jacks, use cables with standard 1/4-inch phone plugs.

ON BACK OF KEYBOARD UNIT

Switch Jacks

When a phone plug is inserted into any of the FOOT SWITCH jacks or the PUNCH IN/OUT jack, a short across the tip and sleeve of the plug causes the particular function to happen. Therefore, you can connect other switches besides those in the Morley pedal to these jacks. For example, you can connect a toggle switch or a separate foot switch to the HOLD switch.

Control Voltage Jacks

The four output jacks under CONTROL VOLTAGE OUTPUTS and the five output jacks under CONTROL VOLTAGE can be used to connect keyboard and ribbon controller output with analog filters, oscillators, envelope generators, etc.

ON BACK OF DIGITAL SYNTHESIZER

The EXT. CLOCK INPUT and EXT. CLOCK jacks are used to trigger the Synclavier II memory recorder from an external pulse.

The CLICK TRACK output jack is connected to the audio monitor system. Use one of the following methods.

1. Connect the click track output to one of the stereo inputs of your amplifier and the Synclavier II audio output to the other stereo input. The balance control can then be used to adjust the relative levels of the click track and audio outputs. Or push the Mono button on your amplifier to "Y" the two inputs.

   The only problem with Y's is that you will not be able separately adjust the volume of the audio signal and the click track.

2. Connect the click track output to one channel of a mixer and the audio output to another. This enables you to adjust the volumes of the click track output and the audio output separately.

3. You can also connect your headphone plug to the CLICK TRACK output jack and connect the audio to your amplifier.

NOTE: The click track output may in some cases be noisy compared to the audio outputs. Therefore, when using a tape recorder with Synclavier II, be sure that the feed to the tape recorder does not have the click track output mixed in.

OPTIONS SETUP

This section contains instructions for adding a computer terminal or printer to the Synclavier® II system. Information on using the terminal, adding computer memory and disk drives, connecting or installing a Winchester, reconfiguring diskettes, and setting transmission rates is also included.

Contents of this Section · page

FIRST TIME SETUP OF TERMINAL

We'll assume your Synclavier II system has been installed and is operating properly when loaded from a standard Synclavier II operating system diskette.

To set up your terminal for TDS, SCRIPT and MAX/XPL operation, follow these steps:

> WARNING: Always use the grounded connectors supplied by New England Digital. To prevent shock hazard, make sure that all equipment is plugged into grounded outlets.

1. Unpack the terminal and plug it in. In foreign countries, the line voltage must be set correctly.

2. Connect one end of the "RS-232" cable to the back of the terminal. (On the VT100 and VT640, the socket is labeled COMM.; on the ADM-3A, the socket is labeled MODEM.) Connect the other end to the socket labeled TERMINAL on the back of the Synclavier II computer. Secure with the screws provided.

3. If you are adding a VT100 or VT640, plug the terminal keyboard cable into the socket labeled KEYBOARD on the back of the terminal.

If your Synclavier II system has been shipped by New England Digital together with the terminal support package, no additional setup should be required.

If you are adding a terminal to a previously purchased system, a few more adjustments may be necessary. You may have to change switches on the terminal, change transmission speeds (baud) on the computer, and/or reconfigure the SCRIPT or XPL operating system diskettes. You may also have to add memory or a disk drive. Each adjustment is covered in the next chapters.

ADDING DISK DRIVES

The SCRIPT and MAX/XPL systems require two disk drives. Although the drives are identical, they are each assigned different functions. The operating system is always loaded from the left-hand drive; the SCRIPT and XPL user diskettes are placed in the right-hand drive.

If your disk drives are enclosed together with the computer in a case, they have been connected internally.

If your drives are the separate drives which use 5 1/4 inch diskettes, select one to be the left-hand drive and connect it to the socket on the back of the computer labeled MAIN DISK DRIVE with a five-foot cable. (Do not use the ten-foot cable supplied with single-drive systems for this purpose.) In the same way, connect the other drive, which will hereafter be called the right-hand drive, to the socket labeled AUXILIARY DISK DRIVE.

(NOTE: If you are updating a Synclavier II system with one disk drive, do not use the ten-foot cable.)

Remote drives are added to a maxisystem (one which uses 8 inch diskettes) in a similar way. The mini-drive connected to the MAIN DISK DRIVE socket becomes remote drive 0 and the mini-drive connected to the AUXILIARY DISK DRIVE becomes remote drive 1.

In the Timbre Display System, only a few of the computer terminal keys are active. The TDS manual fully explains their use.

In the SCRIPT and MAX/XPL systems, in which you enter lines of information into the computer, you will use almost every key. If you have not used a computer terminal before, you should read this introduction before proceeding further.

FULL DUPLEX TRANSMISSION

In Synclavier II systems, the terminal is used in the full duplex mode. This means that whenever you press a key, a code is transmitted to the computer. Then, before the information is displayed on the screen, the computer must send the appropriate code back to the terminal.

Some computer programs, such as the SCRIPT and MAX/XPL monitor programs, automatically (and instantaneously) "echo" most characters typed on the keyboard back to the terminal. These programs, therefore, give the illusion that you are typing directly on the screen.

In other programs, such as the Synclavier II real-time performance system, the computer pays no attention to input typed on the terminal. Therefore, when the Synclavier II system is in operation, the terminal appears to be "dead".

Of course, if the computer is turned off, it will not be able to return codes to the terminal. In that case as well, nothing will be displayed.

Whenever you're typing input on a CRT terminal, you'll see a small white square called a *cursor* on the screen. The cursor indicates where the next printing character you type will appear.

SPECIAL KEYS

The terminal keyboard resembles a regular typewriter keyboard. You type on it just as you would on a typewriter. But you will notice several special keys. These special keys enable you to enter upper and lower case letters, to signal the end of an instruction, to erase mistakes, and to transmit special control information to the computer.

The SHIFT and CAPSLOCK Keys

The SHIFT key and the CAPSLOCK key don't transmit any information by themselves, but are used to modify the action of other keys. For example, by holding the SHIFT key down while you press the M key, you transmit an upper case M. To describe this dual action, we use the convention SHIFT-M.

You can type on most terminals in either upper or lower case. On some low-priced terminals, the lower case option is an extra-cost item. All New England Digital supplied terminals have the lower case option.

To type mostly lower case letters with occasional upper case, use the SHIFT key just as you would on a typewriter. If you press a letter key while holding down the SHIFT key, the letter will appear on the screen as an upper case letter. If you press a key with two symbols on it, or with a number and a symbol, while holding down the SHIFT key, the upper symbol on the key will appear on your screen.

To type only upper case letters, you can use the CAPSLOCK key found on many terminal keyboards (e.g., the VT100). Other terminals (e.g., the ADM-3A) have a switch which can be set to transmit only upper case. On either kind of terminal, number or symbol keys will not be affected. To type the upper symbol on a key with two symbols, use the SHIFT key as described above.

To return to lower case, press CAPSLOCK again or reset the upper-lower case switch.

The CTRL Key

The CTRL, or control, key is another key which does not transmit information by itself. If you hold down the CTRL key while pressing another key, a "non-printing" character is transmitted to the computer. No corresponding text symbol is displayed on the screen. Some computer programs will make use of the "control characters"; other programs will ignore them.

Other Non-printing Keys

There are other non-printing keys (for example, the ESC key or the BREAK key) that transmit information but do not "echo" back anything onto the terminal. All the non-printing keys used in the SCRIPT and MAX/XPL monitor programs are described below. Any special keys on your keyboard that are not mentioned below should be inactive. But no harm will be done if you press them.

KEYS USED IN THE SCRIPT OR MAX/XPL MONITOR PROGRAMS

RETURN

When using the monitor, you must complete every command and line of text by pressing the RETURN key. Doing so will return the cursor back to the beginning of the next line, somewhat like the carriage return on a typewriter. But, more importantly, when you press RETURN you send a signal to the computer that your instruction or line of text is complete. You will get no response from the computer to anything you type until you press RETURN.

DELETE or RUBOUT

You must use total typing accuracy when communicating with a computer through a terminal. But it's not difficult to correct the inevitable typos. If you notice a mistake in something you have typed before you press RETURN, you can press the DELETE or RUBOUT keys (on an ADM-3A, you must press SHIFT-RUB) to erase one letter at a time backwards from right to left.

CTRL-X

You can also delete an entire line of input by pressing CTRL-X (before you press RETURN).

BREAK and LINEFEED

You will learn to list text in the SCRIPT User Guide. When you do so, you will probably wish to use the BREAK, LINEFEED, or RETURN keys.

You will use the BREAK key to stop, or break into, the listing. You use the LINEFEED key to scroll one line of text at a time onto the screen, and the RETURN key to display the next page of text.

All these keys are explained in the step-by-step instructions included in the User Guide.

KEYS USED IN THE SCRIPT SYSTEM

Many modern terminals have a second set of keys located to the right of the keyboard. The four top keys in this keypad are used in the SCRIPT system to activate the conversion program as described in the SCRIPT User Guide. The ESC (escape) key, found on all terminals, is another key used in the conversion program.

KEYS USED IN THE SCREEN EDITOR PROGRAM

You will find on many terminals (e.g., the VT100) four keys marked by arrows near the top of the keyboard. These are called cursor control keys; their use is described in the Screen Editor Manual.

KEYS USED IN MUSIC NOTATION

The Music Notation Option makes use of several keypad keys and the cursor arrow keys.

KEYS TO AVOID

Avoid pressing CTRL and the S key at the same time. Doing so will "freeze" your screen. You can easily "unfreeze" it, however, by pressing CTRL-Q.

The NOSCROLL key on the VT100 and the VT640 is another key to avoid. Like CTRL-S, it will freeze the display on your screen; the computer will stop printing characters on the screen and receiving characters from the keyboard until you press NOSCROLL again. Avoid this key; its operation can be confusing. If you press NOSCROLL in the wrong sequence with other keys, you can cause the system to refuse to respond to all keyboard commands.

Information about memory size and type of terminal and/or printer connected to the system is stored on the operating system diskette. When the program runs, it will make certain logical decisions based on this *configuration* data.

If you add memory or change the device or devices connected to the system, you can "reconfigure" your operating system diskette by loading the configuration system stored on Timbre Diskette #2 (Revision D) or by running the CONFIGUR program from either the SCRIPT or MAX/XPL monitor.

1. Place Timbre Diskette #2 in the left-hand disk drive and press LOAD. (Ignore, in this case, the statement on the diskette: "Do not load from this diskette.")

   (SCRIPT or MAX/XPL alternative method: In the maxidiskette system, type OLD CONFIGUR/F0 and RUN. In the minidiskette system, insert the utility diskette in the right-hand drive, and type OLD CONFIGUR and RUN.)

   Instructions will appear on the terminal.

2. Place the diskette which you wish to configure in the left-hand drive.

3. Press the RETURN key. The current configuration (memory, terminal type, printer type) will be listed.

   a. Examine the configuration for memory size. The amount of memory you actually have depends on the number of M8K boards installed in slots 1 through 7 in your computer, as below:

32K	40K	48K	56K	words of memory
4	5	6	7	M8K boards

   If your diskette is configured for more memory than you have, the system will not load. If your diskette is configured for less memory than you have, you will not have full use of your memory. (Memory configuration is not used in Revision D of the Synclavier™ II operating system.)

   b. Next examine the configuration to make sure the terminal type listed is the same as the actual device attached to the TERMINAL port and the printer type listed is the same as the actual device you have attached to the PRINTER/MODEM port.

4. Once you have determined what needs reconfiguring, proceed with the instructions on the terminal.

   a. If you want to change memory size, type 1 and press RETURN. You will then be queried as to memory size. Simply type in 32, 40, 48, or 56 and press RETURN.

   b. If you want to change the terminal type, type 2; if you want to change the printer type, type 3. Then press RETURN. In either case, a menu of device choices will appear. Type the number corresponding to the actual device connected and press RETURN.

   If you type 1 (for hard-copy terminal), the terminal will ask you "How many nulls are required.....?" Some types of printers require null characters; this information is found in your printer manual. DECwriters do not require nulls. Type zero, and then RETURN, in answer to the question if you have a DECwriter.

5. When you have made all necessary changes, press RETURN again. The new configuration will be printed out on screen or printer and stored permanently on the diskette.

6. When finished, type STOP to load the operating system.

Computer and terminal, printer, or modem transmission rates must match.

If the terminal is a CRT terminal, the transmission rate should be set at 9600 baud on both the computer "MFC board" and the terminal.*

Most hard-copy terminals must operate at lower baud; for these terminals, use the highest rate at which the terminal can operate.

To change transmission rates on the terminal, see the section on Terminal Care and Setup.

To change transmission rates on the computer TERMINAL Port:

1. Disconnect the power from the computer.

> WARNING: To prevent shock hazard and to protect internal circuitry, always unplug the computer before removing back panel.

2. Remove the back connector panel of the computer (this panel is the one to which the cables for the clavier unit, audio, drives and terminal are connected). Be careful not to disturb the cables behind the panel.

3. Remove the plastic rods which have been screwed in to keep the boards from moving during shipping.

4. Disconnect the two cables connected to the MFC board in slot 12.

5. Pull out the MFC board.

6. Change jumper wire as in the following diagram:

300

IC POS. 31
(40161)

IC POS. 32
(40161)

4800   2400   1200   600

IC POS. 33
(40161)

9600

Range: 300 - 9600 Baud
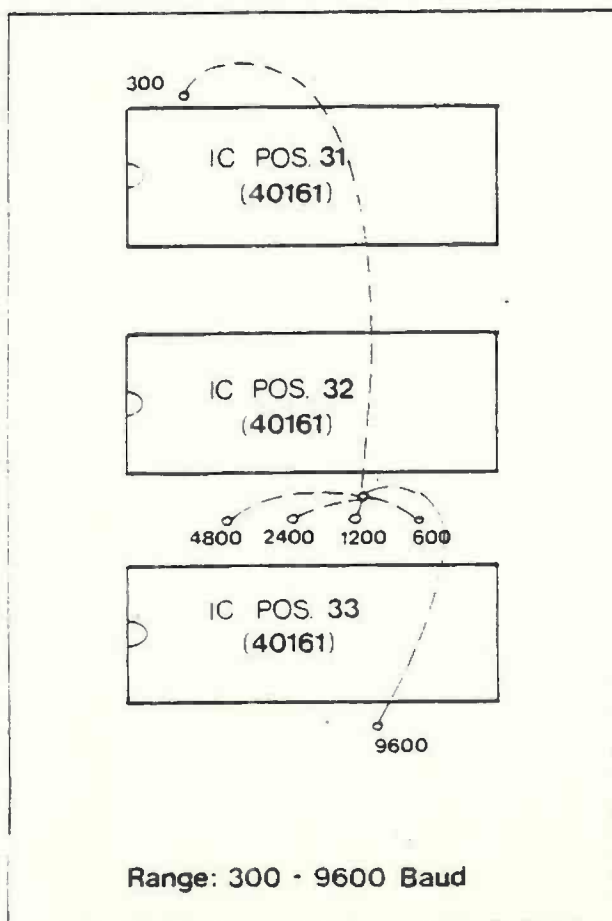
*Rates in older mini systems should be set at 4800 baud.

7. Press the MFC card firmly back into slot 12. Observe the correct orientation: As with all boards in the computer, the components should be located on the right side, the printed circuits on the left.

8. Reconnect the two cables to the MFC board.

9. Install the plastic rods. If the holes in the plastic do not line up with the holes in the case, you may have to lift the MFC board slightly to slide the the rods further in.

10. Replace the back connector panel.

Setting Baud for the PRINTER/MODEM Port

When using a printer or a modem, rates on both the computer "D40 board" and the printer should be set at the maximum allowed by the printer or modem.

To change the transmission rates on the printer or modem, see the appropriate manual.

To change transmission rates on the computer:

1. Disconnect the power from the computer.

> WARNING: To prevent shock hazard and to protect internal circuitry, always unplug the computer before removing back panel.

2. Remove the back connector panel of the computer. Be careful not to disturb the cables behind the panel.

3. Set the baud switch at the back of the D40 board. (This is the one with a socket that matches the plug on your printer connector cable; it will be in one of the slots to the right of the MFC board.) The different switch positions are labeled with their respective baud. Only one switch may be on at a time. All others must be off. You may be able to reach the switch without removing the board from the slot.

4. Replace the back connector panel.

THE VT100 AND THE VT640

Care

The screen of your VT100 terminal is treated with an anti-reflective coating. To keep it clean, treat it carefully and avoid fingerprints. Do not use solvents or alcohol to clean the screen. You can use Windex.

Setup

If the terminal was purchased from New England Digital, the following procedure should have been done at the factory; if you have any problems with the terminal, however, you may wish to check that these internal settings are correct.

1. Connect the terminal as described in "First Time Setup".

2. Turn terminal on (on = "1").

3. Press the SET-UP key. "SET-UP A" should appear on the screen.

   a. At this time adjust the brightness of the screen by the cursor arrows. The UP arrow makes the screen brighter; the DOWN arrow makes it dimmer.

   b. Check that the ONLINE light just above the keys is lit. If it is not, press number 4.

4. Press number 5. "SET-UP B" should appear on the screen.

   a. Examine the numbers on the bottom of the screen.

   For 60 Hertz, 9600 baud operation, these numbers should appear:

1 0101 2 0111 3 0001 4 0010 T SPEED 9600 R SPEED 9600

   For 50 Hertz, 9600 baud operation, these numbers should appear:

1 0101 2 0111 3 0001 4 0011 T SPEED 9600 R SPEED 9600

   Use the cursor control buttons (arrows) to position the cursor above any number that must be changed. To change a number in the first four fields, press number 6; this will toggle the number. The transmit and receive baud rates are set by pressing either 7 (labeled TRANS-MISSION SPEED) or 8 (RECEIVING SPEED) to increment those two fields.

   b. While holding down the SHIFT key, press the S key to save all of the above information in the VT100's permanent memory.

5. Press SET-UP again. The screen should now be blank.

GRAPHICS SETUP

The following instructions are for setting up the graphics processor for the timbre display system; they apply only to the VT640.

6. Press keys in this sequence: SET-UP, zero, PF1, and PF3. "LOCAL MODE" will appear on the screen. The numbers on the left of the screen must be set to read as follows:

1	ENTRY
1	XON/XOFF
1	ESC-SUB
0	BS
0	PARITY SENSE
0	PARITY ENABLE
1	NBIT
0	PF ENABLE
04	TRAILER
FF	TRAILER
18	TMODE
0001	PRNT OPT
6000	USM 1
6000	USM 2
6000	USM 3

To make changes use the cursor arrows to move up and down the columns; then type in the correct number.

7. While holding down the CTRL key, press the W key to save this information in the VT640's permanent memory.

8. Press the PF3 key again.

THE ADM-3a

The internal switches for the ADM-3a are located under a cover to the left of the keyboard. The switches should be set as below. Use a pencil point to change them.

	on	off	
BIT 8-0	X		
PARITY-	X		
STOP- 1	X		
DATA -7	X		
PAR-ODD		X	
LC EN	X		
AUTO NL	X		
RS 232	X		
HDX		X	
19200		X	
9600	X		(FOR MAXIDISKETTES)
4800		X	
2400		X	
1800		X	
1200		X	
600		X	
300	X		
150		X	
110		X	
75		X	

NOTE: For minidiskette systems, 4800 should be "on"; 9600 should be "off".

If you are updating a Synclavier® II system, you may need to add memory to your computer.

Assigning Addresses to Memory Boards

A Synclavier® II system can contain M32K memory boards and/or M8K memory boards. Each M32K memory board contains 32678 16-bit words of memory. Each M8K memory board contains 8192 words of memory. Any slot location from 1 through 7 can be used for any memory board. However, all boards must be properly addressed so that there is a single block of consecutive memory addresses. As you add memory, you should check the addresses on the new boards to make sure there are no intermediary addresses missing in your system.

The 32K memory locations on each M32K board are divided into two 16K segments. The addresses for the two segments' are established by the two sets of switches — A and B. Push up one switch under B to select the lower 16K memory addresses for the board. Push up one switch under A to select the upper 16K addresses. Push all other switches down.

Do not set A and B for the same set of memory addresses and make sure that there is no memory address conflict with another board in the system. The memory addresses selected by A and B need not be contiguous, however, so long as M8K boards are addressed to fill the gap.

The following M32K switch settings are typical:

ADDRESSES 0-32K   ADDRESSES 16-48K   ADDRESSES 0-16K, 32-48K

ASSIGNING ADDRESSES TO M32K BOARDS

The 8K memory locations on each M8K board are established by a jumper wire running from an address pin to a number pin. The figure below shows how the various addresses are wired on each memory board. Note that the pins are numbered from 0 to 7 from left to right.
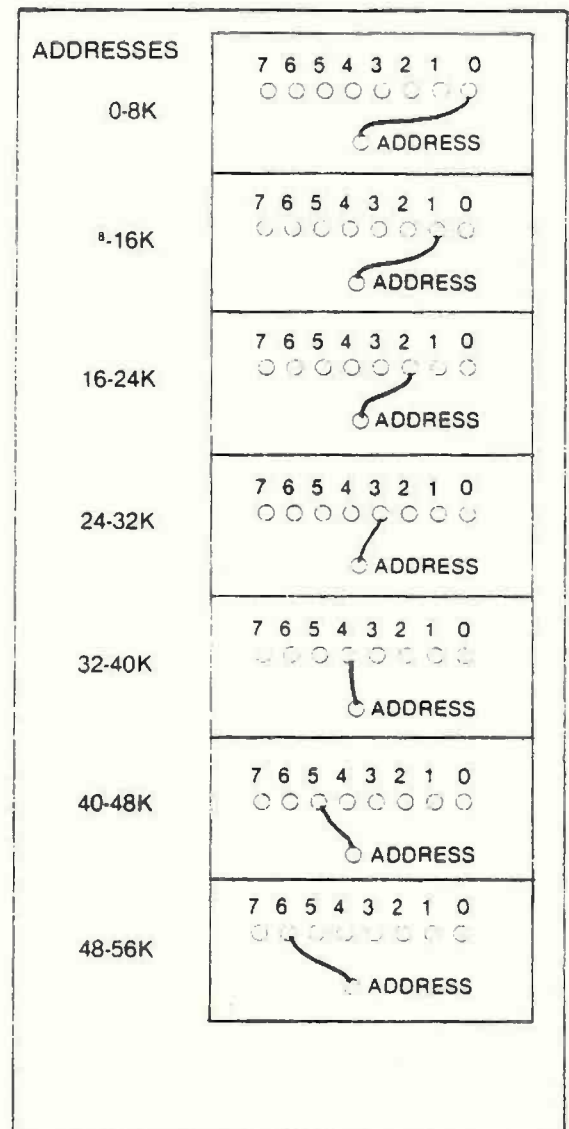
Installing the Boards

1. Disconnect the power from the computer.

> **WARNING: To prevent shock hazard and to protect internal circuitry, always unplug the computer before removing the back panel.**

2. Remove the back connector panel from the computer. Be sure not to disturb the cables behind the panel.
3. Remove the plastic rods which have been screwed in to keep the boards from moving during shipping.
4. Push the new memory board into one of the slots from 1 through 7 in the lower bin. Observe the correct orientation: As with all boards in the computer, the components should be located on the right side, the printed circuits on the left.
5. Install the plastic rods.
6. Replace the back connector panel.

ASSIGNING ADDRESSES TO M8K BOARDS

**CAUTION: HANDLE YOUR WINCHESTER DRIVE CAREFULLY!
IT IS EXTREMELY SENSITIVE TO SHOCK.**

The 5¼-inch Winchester disk is enclosed in a blue ATS case and is connected to the Synthesizer via a three-foot 34-conductor flat cable and to AC power via a black power cord.

Before connecting the Winchester, be sure the Digital Synthesizer is **off.**

1. Remove the two end caps from the ATS case. This will reveal a fan on the one end and a connector panel on the other.

2. Place the case so that the connector panel on the case is within reach of the connector panel on the Digital Synthesizer.

3. Connect one end of the flat cable into the 34-pin connector on the Winchester case and the other end into the 34-pin connector on the connector panel on the Digital Synthesizer. Note that these connectors are keyed and should only connect in one way. Do not force. At both connections, the colored conductor in the cable should be next to the arrow on the connector on the panel.

4. Plug the Winchester power cord into the connector on the Winchester and into an outlet providing 115 VAC, 50/60 Hz. There is no power switch on the remote Winchester. If you plug the power cord into an unswitched outlet, the drive will turn on immediately. You may plug the Winchester power cord into one of the outlets on the Synthesizer fan panel. The Winchester will then turn on when you turn the Synthesizer on.

**CAUTION: HANDLE YOUR WINCHESTER DRIVE CAREFULLY!
IT IS EXTREMELY SENSITIVE TO SHOCK.**

You will receive two boxes. The smaller box contains the Winchester disk in a special protective carrying case. The larger box contains the remote case in which the Winchester is placed during use.

Before use, you must remove the Winchester disk from its carrying case, install it in the remote case, and then connect this case to the Synclavier® II Digital Synthesizer and to AC power. In the process, you will be making three connections with 34-pin connectors. Note that these connectors are keyed and connect in only one direction. Do not force. At all such connections, the colored conductor on the cable should go next to the arrow on the connector on the panel.

Installing the Winchester disk in the remote case:

1. Open the smaller box and remove the carrying case.

2. Open the case, remove the Winchester disk and place it on a table.

3. Remove the four thumb screws from the side of the Winchester.

4. Open the larger box and remove the remote case.

5. Take off the end cap.

6. Raise the lid.

7. Remove the plastic bag with cables and move the attached cables out of the way of the space with two angle supports. This is where you will install the Winchester disk.

8. Carefully place the Winchester between the two angle supports. Face the rear, or connector end, of the Winchester **away** from the fan and connector end of the case. Then align the screw holes in the sides of the Winchester with those in the angle supports.

9. Insert the thumb screws in the front and rear holes, and turn them clockwise until they are tight. (The center holes are not used.)

10. Connect the gray power cable from the black power supply to the rear of the Winchester. Slip the orange 10-pin connector over the 9 vertical pins directly behind the yellow caution sticker.

11. Connect the gray 34-conductor signal cable that is attached to the remote case between the fans to the flat connector on the rear of the Winchester. Make sure the colored conductor on the cable is next to the arrow on the connector on the panel.

12. Close the case.

Connecting to the Digital Synthesizer:

**Caution: Turn off the Digital Synthesizer
before connecting the Winchester disk.**

1. Remove the three-foot, 34-conductor flat gray cable from the plastic bag.

2. Connect one end into the 34-pin connector on the Winchester remote case and the other end into the 34-pin connector on the connector panel on the Digital Synthesizer. Make sure the colored conductor on the cable is next to the arrows on the connectors on the panels.

3. Remove the Winchester power cord from the plastic bag.

4. Plug into the connector on the Winchester remote case and into an outlet providing 115 VAC, 50/60 Hz. Do not use the outlet on the fan panel of the Digital Synthesizer for this purpose.

5. To turn on, lift the lid of the remote case and turn on the switch on the power supply.

**CAUTION: HANDLE YOUR WINCHESTER DRIVE CAREFULLY!
IT IS EXTREMELY SENSITIVE TO SHOCK.**

To prevent damage, your Winchester drive has been shipped separately from the computer enclosure. You will need to dismantle this enclosure partially so that you can install the Winchester.

Place the enclosure on the floor. Before beginning, note that the **front** of the enclosure has the on/off switch. The **rear** of the enclosure has the black connector panels. Turn off computer before beginning.

You will need standard and Phillips head screwdrivers.

1. Remove the white side panels from the enclosure. Each side panel is held on by two screws at the bottom. Remove all four screws. Pull the side panels up and away from the enclosure frame.

2. Move to the front of the enclosure and remove the bottom white panel. Simply unscrew the two screws on both sides. Set aside.

   You will see a tray on which the Winchester power supply sits. The Winchester will be installed on this tray to the right of the power supply.

3. Unscrew the two screws that lock the tray into place.

4. Pull out the tray until it is fully extended and clicks into place. Make sure that the inner cables do not catch on anything as the tray moves.

5. Now remove the Winchester drive carefully from its box. **Please read the CAUTION statement packed with it.**

   The rear of the Winchester is the end with the yellow caution sticker and the connectors.

6. Remove the four thumb screws located in the sides of the Winchester.

7. Grasp the Winchester by its sides with the rear-end facing away from you and towards the computer.

8. Carefully place the Winchester on the extended tray between the two right angle supports. Keep the gray flat cable out from under the Winchester. You will find that you cannot simply slide the Winchester in from the front because the very rear-end of the Winchester will not slide between the two supports.

9. Line up the Winchester in the tray so that the screw holes in the Winchester line up with those in the angle supports.

10. Insert the thumb screws in the front and rear holes, and turn them clockwise until they are tight. (The center holes are not used.)

11. Push the tray back in partially so that you can connect the Winchester to the power and to the computer. First push in the locking buttons in the tray slides.

12. Connect the gray power cable from the black power supply to the Winchester. Slip the orange 10-pin connector over the 9 vertical pins directly behind the yellow caution sticker.

13. Make sure the power switch on the Winchester power supply is in the **ON** position.

14. Connect the gray flat cable coming from the computer bin above to the short flat gray cable coming from the Winchester.

15. Push the tray back all the way in, being careful not to disturb any of the cables.

16. Replace the two tray locking screws.

17. Replace the front white panel.

18. Replace side panels. After positioning the panel so that the screw holes are aligned, push in each screw and turn clockwise ¼ turn.

You should now be ready to make the various external connections and begin operation.

The PRISM 80 PRINTER prints high quality copies of VT640 graphic displays, both musical scores from the Music Printing Option and sound file displays from the Sample-to-Disk system. In addition, the PRISM 80 can be used to print hard copies of SCRIPT compositions, MAX or XPL programs, or letters, etc.

The instructions below explain how to connect the printer to the computer, adjust the paper, and start printing. Also included are instructions on changing the ribbon. This information is particularly directed to those who have not used a computer printer before.

Complete information on all aspects of the printer can be found in the PRISM PRINTER Owner's Manual. If you have a problem, or if you want to use the programmable control codes, refer to that manual.

## CONNECTING THE PRINTER

1. Unpack the PRISM 80 and place it in a convenient location.

   The PRISM 80 is a table-top printer which will print on single sheets or pinfeed fanfold paper. Single sheets are loaded through a chute in the front of the printer. Pinfeed paper is loaded through slots in either the bottom or the back. Therefore, if you are using pinfeed paper, be sure to place the printer in such a way that the paper path is unobstructed.
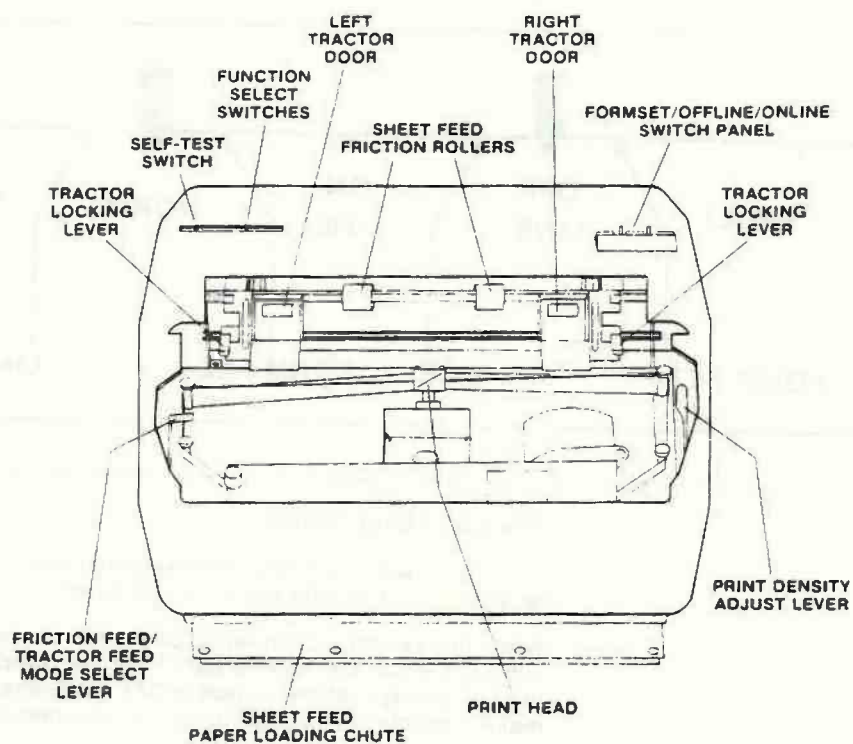
   Note that printing quality is superior in the pinfeed method because the paper is held very firmly between the tractors.

2. Remove printer window.

3. Remove the restraining cardboard tubes and plastic tie-downs from the printer. (Be sure to save all packing material in case shipment is ever necessary.)

4. Make sure the printer is OFF. The **power on/off switch** is at the back.

5. Plug the printer into a three-wire grounded 115 VAC (60 Hz) power outlet. If your power source is 230 VAC, 50 Hz, see page 2-4 and 2-5 of the PRISM PRINTER Owner's Manual for instructions on reconfiguring the printer for this voltage.

6. Connect one end of the printer cable to the **interface cable connector** on the back of the printer and the other end to the PRINTER/MODEM connector on the computer.

7. Check the small **function select switches** on the top left of the printer. They should be set as indicated in the figure below. If they are not, you can position them correctly using a ball-point pen. (Do not use a pencil - the carbon is conductive.)
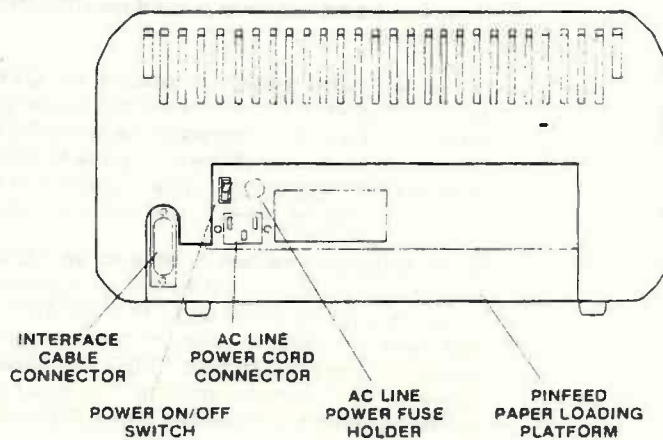
   If it is necessary to change the switches at this or any other time, the printer must be turned off.

DIP S4	1	2	3	4	5	6	7		DIP S5	1	2	3	4	5	6	7
off		●	●	●	●	●			off		●			●		●
on	●						●		on	●		●	●		●	
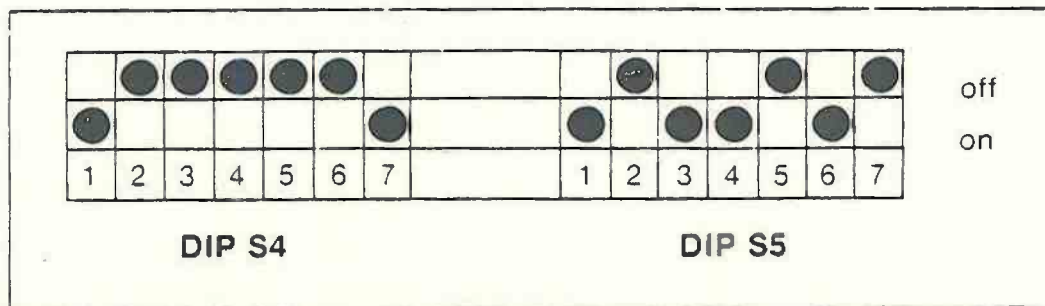
Next to these switches is located the **self-test switch** which is used to run test printouts. This switch should be pushed to the left, where it will be inactive.
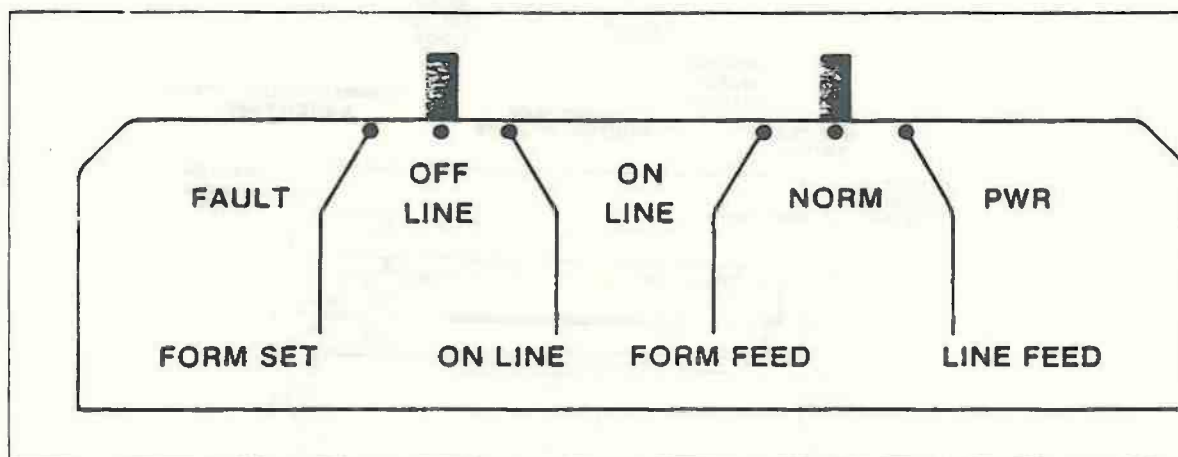
LEFT
TRACTOR
DOOR

RIGHT
TRACTOR
DOOR

FUNCTION
SELECT
SWITCHES

FORMSET/OFFLINE/ONLINE
SWITCH PANEL

SELF-TEST
SWITCH

SHEET FEED
FRICTION ROLLERS

TRACTOR
LOCKING
LEVER

TRACTOR
LOCKING
LEVER

PRINT DENSITY
ADJUST LEVER

FRICTION FEED/
TRACTOR FEED
MODE SELECT
LEVER

PRINT HEAD

SHEET FEED
PAPER LOADING CHUTE

**FRONT VIEW
WINDOW OFF**

INTERFACE
CABLE
CONNECTOR

AC LINE
POWER CORD
CONNECTOR

POWER ON/OFF
SWITCH

AC LINE
POWER FUSE
HOLDER

PINFEED
PAPER LOADING
PLATFORM

BACK VIEW

SWITCHES AND LIGHTS

Before proceeding further, examine the **switch panel** on the top right of the printer. There are two switches and three lights.

```
        FAULT      OFF        ON       NORM      PWR
                   LINE       LINE

        FORM SET        ON LINE    FORM FEED    LINE FEED
```

The Left-Hand Switch

When this switch is pushed to the right to ON LINE, the printer can receive and print data from the computer.

When this switch is centered at OFF LINE, the printer cannot print, although it can still receive data from the computer if its buffer is not full. **Always set this switch at OFF LINE when loading paper**, to make sure that the printer does not unexpectedly start printing.

When this switch is pushed to the left to FORM SET, the right-hand switch can be used for positioning the top-of-page in pinfeed paper printing.

The Right-Hand Switch

This spring-loaded switch is normally at center (NORM). It performs differently depending on the position of the left-hand switch.

If the left-hand switch is placed on ON LINE, the right-hand switch is inactive.

If the left-hand switch is placed on OFF LINE, the right-hand switch is used to move or eject the paper and performs as follows: When this switch is pushed to the left to FORMFEED, the paper will be moved to the top of the next page in pinfeed printing or ejected in single sheet printing. When pushed to the right to LINEFEED, the paper will be moved forward one line at a time.

If the left-hand switch is placed on FORM SET, the right-hand switch is used to select the correct top-of-page position. When this switch is pushed to the left to FORMFEED, the paper will be moved downward slowly in 1/48 inch increments. When the switch is pushed to the right to LINEFEED, the paper will be moved upward slowly in 1/48 inch increments. The position of the paper when the left-hand switch is moved to OFF LINE or ON LINE will be the new top-of-page position.

The Lights

The POWER light is lit whenever the printer is turned on. The ON LINE light is lit whenever the left-hand switch is placed on ON LINE. The FAULT light is lit when the paper is out of paper. When both the ON LINE and FAULT lights are **blinking,** a random access memory error is indicated. Refer to PRISM PRINTER Owner's Manual.

ALIGNING PAPER AND PRINTING

The instructions for loading and adjusting paper are slightly different depending on whether you use single sheets of paper or pinfeed paper.

Pinfeed Paper

1. Turn on the PRISM 80.

2. Place the left-hand switch on OFF LINE.

3. Momentarily place the right-hand switch on FORMFEED to clear the printer buffers.

4. Remove the plastic window on the printer if it is not already off.

5. Push the **feed mode select** lever toward the **front** of the printer. This black lever is located on the left front inside the printer compartment.

6. Slide the **sheet feed friction rollers** to the center of the rail.

7. Insert the top edge of the pinfeed paper into one of the **paper loading slots** located on the back or on the bottom of the printer; slide the paper on up through the printer until it reaches the **tractor feed mechanism.**

8. Open the **tractor doors,** place the pinfeed holes in the paper over the pins on the pin belt. Close the tractor doors.

   It may be necessary to adjust the tractors to the width of the paper being loaded. To adjust, pull down the **locking lever** on each tractor, slide the tractors horizontally to the required paper width, insert the paper, and lock the tractors in place.

9. Set the top-of-page:

   a. Hold right-hand switch on LINEFEED until the perforated line appears above the **print head.**

   b. Place the left-hand switch on FORM SET.

   c. Hold the right-hand switch on LINEFEED until the perforated line in the paper just clears the ledge beneath the tractors.

   d. Place the left-hand switch on OFF LINE again.

10. Check margins and print quality by performing a self-test:

    a. Push the self-test switch to the right for a few seconds and then return it to the left. Several lines of characters will be printed.

    b. If the test lines are not horizontally centered on the page, release the locking levers on the tractors, move the tractors to the right or left as required, and relock.

    c. If the print quality is too light or too dark, use the **print density adjust lever** located on the far right of the printer compartment to correct the situation. If too light, push this lever toward the back of the printer. If too dark, pull the lever toward the front of the printer.

    d. Perform additional self-tests as required until margin placement and print quality are as desired.

11. Briefly place the right-hand switch on FORMFEED to move to the top of the next sheet of paper.

12. Now place the left-hand switch on ON LINE. The printer and paper are now ready for hardcopy printing of music notation, displays from the Sample-to-Disk system, or listings of text files.

For Music Printing, press H from the Main Menu to print the score that is in computer memory. For signal and spectral displays of sound files, use the SFM PRINT command. For listings of text files, use the PRINT monitor command or the LISTING Utility Program.

If the print is garbled, it most likely means that the baud on the D40 board in your computer is set incorrectly for the PRISM printer. It should be set at 9600 baud. You can check this rate and change it if necessary by following the instructions on page 25 in this manual. If this does not solve the problem, check the troubleshooting section in the PRISM Owner's Manual.

Single Sheets of Paper

In this method, single sheets of 8 ½ by 11 inch paper are fed through a loading chute at the bottom front of the printer.

1. Turn on the PRISM 80.

2. Place the left-hand switch on OFF LINE.

3. Momentarily place the right-hand switch on FORMFEED to clear the printer buffers.

4. Remove the plastic window on the printer if it is not already off.

5. Push the **feed mode select lever** toward the **back** of the printer. This black lever is located on the left front inside the printer compartment.

6. Unlock the **tractors,** push them to widest position possible, and open the tractor doors.

7. Align the **left paper guide** on the **sheet feed paper loading chute** with the "C" on the margin guide.

8. Using a sheet of paper as a guide, adjust the **right paper guide** so the space between guides is the width of the paper plus an extra 1/16th inch to avoid paper binding.

9. Carefully push the paper through the loading chute into the printer until it is picked up by the friction feed mechanism. In approximately ½ second, the printer will automatically feed the paper through and stop at the top of the page.

10. Push the right-hand switch to the right to LINEFEED until the paper moves to the top of the tractors.

11. Align the outside edges of the **friction rollers** with the left and right edges of the paper.

12. Slide the tractors up against the rollers, close the tractor doors and lock the tractors in place.

13. Eject the paper by briefly pushing the right-hand switch to FORMFEED.

14. Now send another piece of paper through to check the paper path, margins, and print quality:

    a. Push a sheet of paper through the loading chute into the printer until the printer engages it and feeds it through.

    b. Hold the right-hand switch on LINEFEED until the paper moves between the tractors. If the paper gets stuck on one or both of the tractors, carefully pull out the paper and briefly place the right-hand switch on FORMFEED. Then readjust the friction rollers and tractors and try again with another sheet of paper.

    c. When the paper moves smoothly, perform a self-test. Push the self-test switch to the right for a few seconds and then push it to the left. Several lines of characters will be printed.

d. If the test lines are not horizontally centered on the paper, eject the paper by briefly placing the right-hand switch on FORMFEED. Then reset the paper guides, rollers and tractors as described above and try again with another sheet of paper.

e. If the print quality is too light or too dark, use the **print density adjust lever** located on the far right of the printer compartment to correct the situation. If too light, push this lever toward the back of the printer. If too dark, pull the lever toward the front of the printer.

f. Perform additional self-tests as required until margin placement and print quality are as desired.

g. Eject the test paper by briefly placing the right-hand switch on FORMFEED.

15. Now place the left-hand switch on ON LINE, insert another sheet of paper until it is picked up by the feed mechanism. This sheet is ready for hardcopy printing of music notation, displays from the Sample-to-Disk system, or listings of text files.

For Music Printing, press H from the Main Menu to print the score that is in computer memory. For signal and spectral displays of sound files, use the SFM PRINT command. For listings of text files, use the PRINT monitor command or the LISTING Utility Program.

If the print is garbled, it most likely means that the baud on the D40 board in your computer is set incorrectly for the PRISM printer. You can check this rate and change it if necessary by following the instructions on page 25 in this manual. If this does not solve the problem, check the troubleshooting section in the PRISM Owner's Manual.
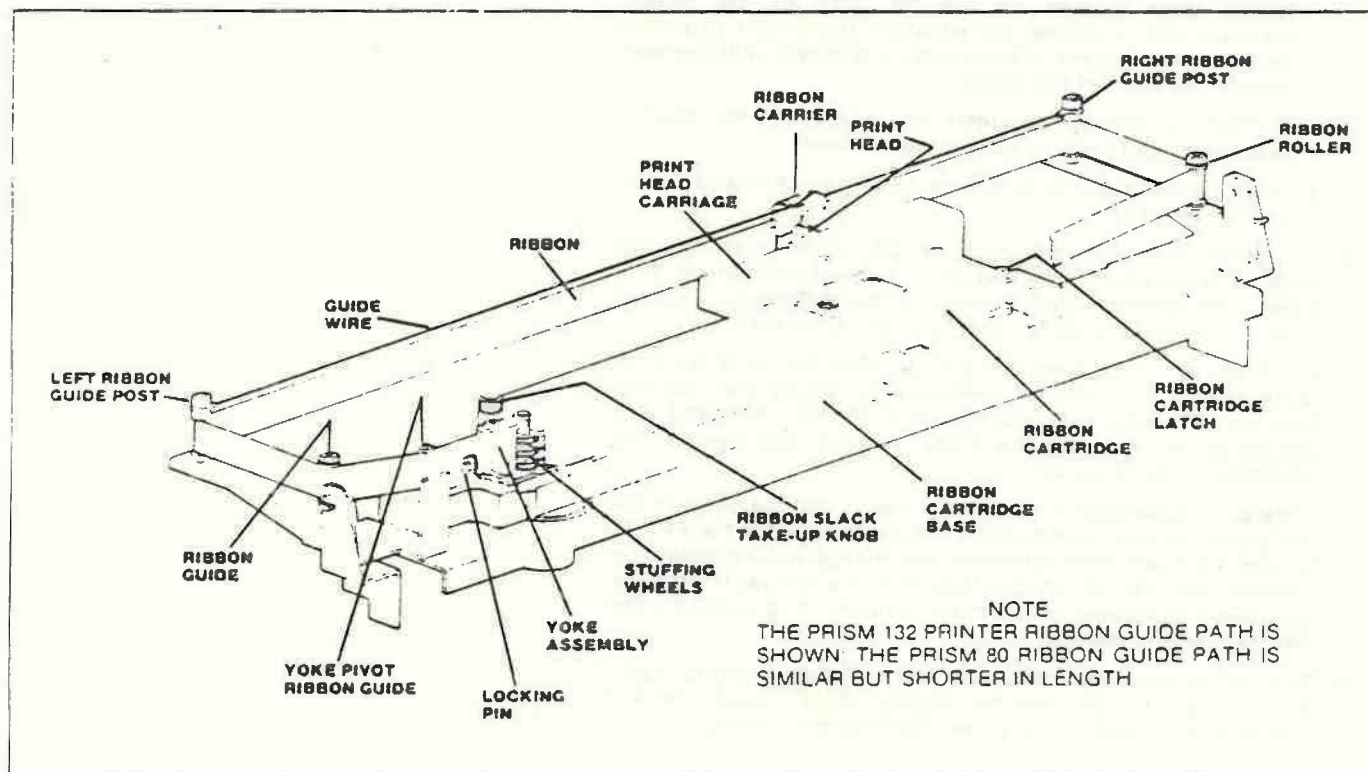
16. To print the next page in the same score in Music Printing, insert a new sheet of paper into the loading chute. The printer will automatically position the paper and resume printing.

Please note the following:

a. Do not feed a new sheet of paper into the printer until the previous sheet has been ejected.

b. You can eject a sheet of paper at any time by placing the left-hand switch on OFF LINE and momentarily placing the right-hand switch on FORMFEED. Insert a new sheet and switch back to ON LINE to resume printing.

c. If the paper jams, place the left-hand switch on OFF LINE, carefully remove the paper, and momentarily place the right-hand switch on FORMFEED. Then insert a new sheet of paper and switch back to ON LINE.

CHANGING THE RIBBON

The ribbon for the PRISM 80 is a snap-in ribbon cartridge which can be quickly and easily replaced. You should use only ribbon cartridges supplied by Integral Data Systems and available from New England Digital. To replace the cartridge, refer to the figure below and proceed as follows:

NOTE
THE PRISM 132 PRINTER RIBBON GUIDE PATH IS SHOWN; THE PRISM 80 RIBBON GUIDE PATH IS SIMILAR BUT SHORTER IN LENGTH

1. Turn the power off.

2. Remove the printer window.

3. Center the print head and carriage on the carriage shaft; locate the ribbon carrier on the print head.

4. At the ribbon carrier, push the ribbon down to clear the curved arms; then pull the ribbon slightly forward and up to clear the carrier.

5. Pivot open the yoke assembly until you hear a click. A spring-loaded locking pin will snap up to hold the yoke assembly open while changing the ribbon cartridge.

6. Depress the red ribbon cartridge latch to unlock the cartridge, then slide the cartridge to the right over the latch.

7. Lift the cartridge and ribbon from the printer and discard.

8. As necessary, clean the ribbon stuffing wheels, guide posts, ribbon rollers and ribbon carrier with lint free tissue or "Q" tips moistened with isopropal alcohol.

9. Unwrap a new cartridge and carefully pull the cardboard ribbon restrainer out of the stuffing (left) end of the cartridge.

10. Carefully pull approximately 10 inches of ribbon from the stuffing end of the cartridge.

11. Place the cartridge on the ribbon cartridge base so that the right end of the cartridge is over the red latch.

12. Position the ribbon between the two stuffing wheels and around the yoke pivot ribbon guide.

13. Press down on the cartridge and slide the cartridge to the left until you hear a click; the cartridge is now locked in place.

14. Carefully position the ribbon between the stuffing wheels so that there are no folds or twists in the ribbon.

15. Push down on the yoke assembly locking pin to release the yoke assembly; this locks the ribbon in place between the stuffing wheels.

16. Starting at the yoke pivot ribbon guide, loop the ribbon around the ribbon guides and across the ribbon carrier; if necessary, pull more ribbon from the right end of the cartridge.

17. At the ribbon carrier, slide the ribbon down between the nose of the carrier and the two ribbon carrier arms, then push the ribbon in and up between the curved arms.

18. Take up any slack in the ribbon by turning the slack takeup knob in the direction indicated by the arrow on the knob.

    Be sure that there are no twists in the ribbon at any point in the ribbon path.

19. Recheck the ribbon to ensure that it is around all rollers and posts and is positioned under the curved arms of the ribbon carrier.

20. Check that the guide wire is positioned within the slot in the top of the ribbon carrier. If it has slipped out, push it down into the slot.

21. Reinstall the printer window.

22. Turn the power on.