

Congratulations on your purchase of the Nicolet NIC-80 Series Data System. As you know, it combines the best features of a wired signal averager with those of the stored program computer.

Since the NIC-80 is programmable, it has unusual flexibility for the solution of new data acquisition and data reduction problems. Nicolet Instrument Corporation stands ready to help you in the solution of these problems and is always willing to discuss new applications with you. Please feel free to contact us at any time.

As a purchaser of a NIC-80, you are entitled to free training in the use of the averager and programming of the computer. Please contact us to find out when the next software training session will be held.

Nicolet also maintains a library of contributed programs which may be of use to you in your work. We will be glad to send these to you upon request.

1080 INSTALLATION INSTRUCTIONS

When you receive your 1080 computer, you will find that it is extremely easy to unpack and install. After following the instructions below, you will have a complete working laboratory data system ready for use. After you have connected the machine up, you are entitled to a final installation checkout from your local Nicolet representative. He will be glad to explain any functions of the machine to you which were not clear at the outset. If any questions arise while you are setting the machine up, feel free to call Nicolet for assistance.

1. Unpacking

The 1080 is shipped in several cartons, containing the following units:

- (1) A 1080 Mainframe with two plug-ins,
- (2) A 290 Display Control unit,
- (3) A Teletype and stand,
- (4) A Memory Extension unit, if more than 12K of memory is purchased,
- (5) An optional cabinet with mounting hardware,
- (6) A Tektronix oscilloscope,
- (7) Interconnection cables, Teletype paper and paper tape,
- (8) Additional peripheral devices if ordered.

Check carefully to see that there is no concealed damage to any of these units. If there does appear to be any damage, contact the trucker and Nicolet Instrument Corporation at once. SAVE THE SHIPPING CARTONS IN CASE THE 1080 MUST BE RE-SHIPED FOR ANY REASON.

2. Setting Up the 1080 Mainframe and 290 Display Control

If the system is to be rack mounted, the rack supports should be arranged so that the 1080 mainframe is at a convenient level for operation when seated at the spectrometer. No other unit will be accessed as frequently by the operator. The 290 and scope should be mounted just above the 1080. If the system is to be mounted on a cart or table top, the 1080 should sit directly on the table, with the 290 and scope directly above.

The 290 Display Control contains the power supply for the entire 1080 system. Power is transmitted to the 1080 Mainframe via a 24-pin Amphenol connector cable. Connect this cable to the plugs marked DC Computer Power on the 1080 and 290. This cable is end-for-end interchangeable and will only fit into the connector in one position.

Information is transmitted to the "twinkle box" portion of the 290 using two belted connector cables. The single belted connector cable should be connected to the slot marked Display Control on the 290 and to slot R4, marked "Display Control to NIC-290" on the 1080. This cable is keyed with a round peg at one end and a square peg at the other end and will fit in only one direction. The connectors at the ends of the cable are marked with small decals as to where they are to be plugged in to prevent any confusion should some plug accidentally be disconnected. However, these connectors are, in reality, end-for-end interchangeable.

The triple belted connector should be connected to slot number R3 on the 1080, also marked "Input/Output to NIC-290" and to one of the two adjacent slots on the 290 marked "Input/Output. "

An AC power cord should be connected from the slot marked "105-125v AC" or (on 220 volt machines) "220v AC" on the 290.

3. Connecting the Teletype

The Teletype has two cables, one terminating in an AC power plug and one in a 5-pin connector. Connect the 5-pin connector to the plug on the 1080 marked "Input-Output Device 1. " Connect the other to AC power either at the rear of the 290 or externally. Connect Teletype reader power supply to connector inside Teletype stand.

4. Connecting the Memory Extension Control

If your 1080 contains more than 12K of memory, a separate box will be provided containing the additional memory. Connect an 80-pin, three-belt connector marked "Memory Control to NIC-1080E" to slot R1 at the rear of the 1080. This slot is also marked "Memory Control to 1080E. " Connect the other end to the one slot at the rear of the 1080E. The 1080E also contains a separate power supply and should be connected to AC power using a power cord.

5. Connecting the Oscilloscope

The oscilloscope is controlled using three cables, connected to its x, y and z axes. Three BNC-to-BNC cables are provided for this purpose. These should be connected to the BNC connectors marked CRT Horizontal and CRT Vertical and to BNC connector J2.

The x and y cables should then be connected to the two amplifier jacks on the front of the scope and the cable from J2 should be connected to the Intensify jack located just over the on-off switch.

The scope AC power can then be furnished from one of the AC outlets at the rear of the 290. To calibrate the scope, set the voltage ranges of the two amplifiers to 1 volt, turn on the power key of the 290 and turn on the scope power. Depress the

Calibrate button in the top row on the 1080 after making sure that both the Stored Program Stop and the Measure Stop buttons are lit. The scope is then calibrated by depressing the Left and Bottom buttons of the second row and adjusting the x and y position controls until the dot appears at the lower left corner. Then depress Middle and Middle and center the dot using the amplifier gain controls. Finally check for precise centering by testing Top-Right and other combinations.

6. Connecting Other Input/Output Devices

Additional input/output (I/O) devices are connected in "daisy chain" fashion to the second slot on the 290 marked Input/Output. Every device has two such slots and one additional triple-belted connector is provided to chain the devices together. The one exception to this chain is the high speed reader, which it is assumed is the last element in the chain. The high speed reader interface card contains terminating logic for the I/O system. If your system does not include a high speed reader, an 80-pin card without any cable is provided to use as a terminator. Place this card in the vacant Input/Output slot in the 290, or wherever it occurs in extended systems.

7. Familiarization with the 1080

Your 1080 is now ready to be connected to the spectrometer system. Cables for this connection are provided by Nicolet for most commercial spectrometers. Both ends of these cables are marked for easy identification. If you wish to try out the 1080 system before your spectrometer is operational, the Stored Programs (described under the Applications Software and Support Software sections of the manual) can be used at once. Data can be introduced into the signal averager Wire Processor by connecting a signal generator to the Digitizer plug-in input. Signal averaging commences upon receipt of a trigger, which can be provided at the input connector of the Sweep plug-in, or by setting the trigger mode to Auto-recur. Consult the Wired Program section of the manual for full details.

8. Software Familiarization

In order to make maximum use of the power of the 1080 in your laboratory, it is necessary to become reasonably familiar with the software of the system. It is recommended that you read the sections on Loading Programs and on the FT-Nmr program before calling for your final installation checkout. This will enable you to ask the most useful questions of your Nicolet representative at this time.

The 1080 is also a completely general purpose mini-computer. Information on programming it is found in the Programming Manual. Programming instruction is also available free to all 1080 users. Contact your local Nicolet office for information on the next scheduled Programming Course.