# METTLER TOLEDO®

## Installation Instructions

**0977-0085**

Description: STEM **(Smart*Touch*®** Ethernet Master) Kit
Kit Number: 0977-0085
Model: 8360/8361

This kit and a Master Memory Kit will add the STEM (**Smart*Touch*®** Ethernet Master) to the Model 8360 or 8361. This kit is for units manufactured prior to March 1, 1999 (Date Code BA or earlier). The STEM kit includes the components shown in Figure 1.

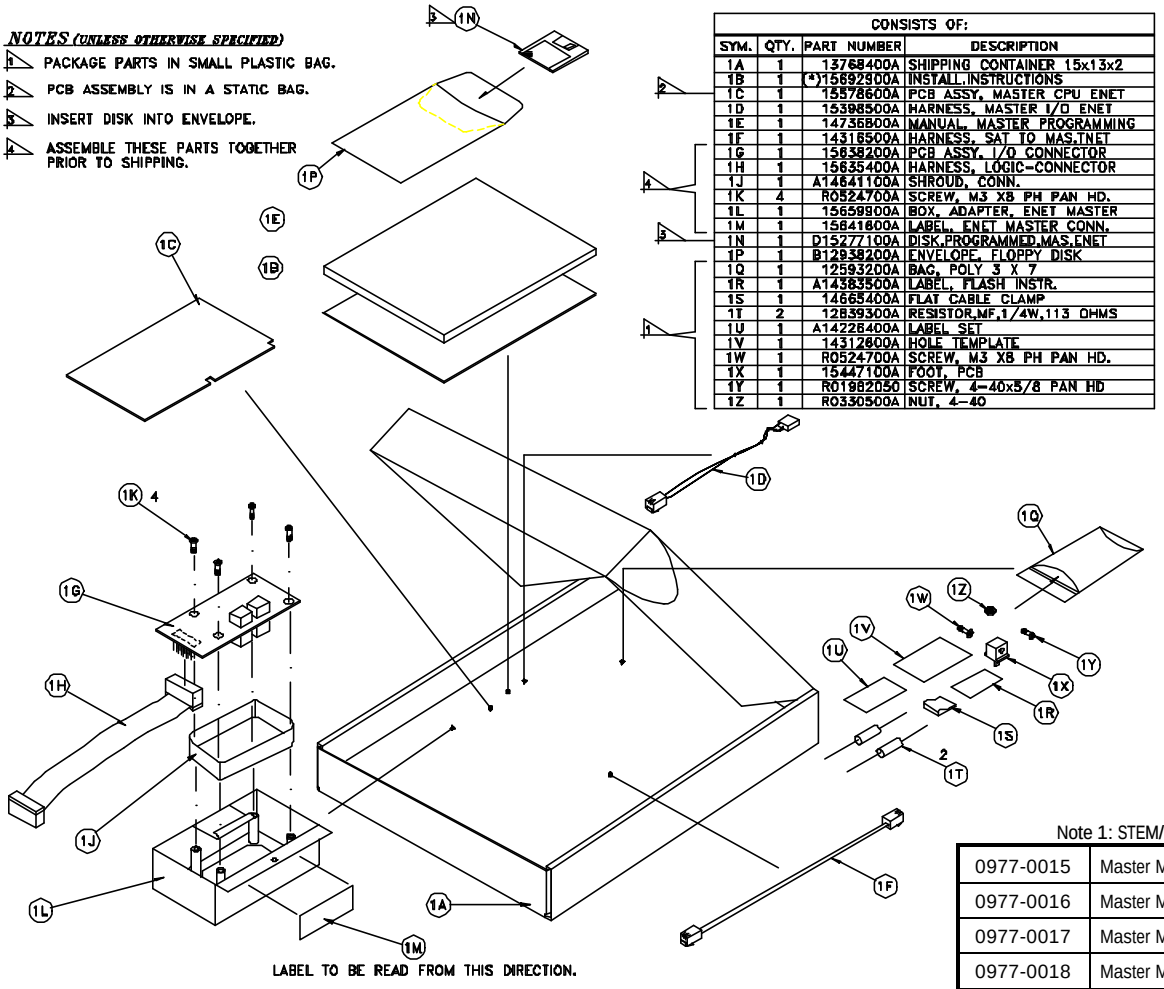


**Figure 1: 0977-0085 STEM (Smart*Touch*® Ethernet Master Kit for Model 8361)**

Note 1: STEM/Master Memory Kits

| | |
|---|---|
| 0977-0015 | Master Memory PCB Kit 512k |
| 0977-0016 | Master Memory PCB Kit 1 Meg |
| 0977-0017 | Master Memory PCB Kit 2 Meg |
| 0977-0018 | Master Memory PCB Kit 4 Meg |
| 0977-0040 | Master Memory PCB Kit 8 Meg |
| 0977-0041 | Master Memory PCB Kit 16 Meg |

One of the above listed Memory Kits is required with the 0977-0086 kit.

### Kit Installation

Before starting installation of the kit, turn the power switch off, then disconnect the power cord from the outlet.

Remove the Model 8360/8361 rear cover and RFI

**⚠ WARNING**

**DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING, OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.**

**⚠ CAUTION**

**OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.**

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Install the Master Memory PCB from kit 0977-0015, 0977-0016, 0977-0017, 0977-0018, 0777-0040, or 0977-0041 on the STEM CPU PCB by pressing the PCB onto connector J1 and seating the standoffs on the CPU PCB (Figure 2). Make sure the connector is completely seated between the Memory PCB and CPU PCB's. Install the PCB Foot, as shown below. Connect the battery harness at J3. Plug the Master CPU Assembly into J21 Main PCB.

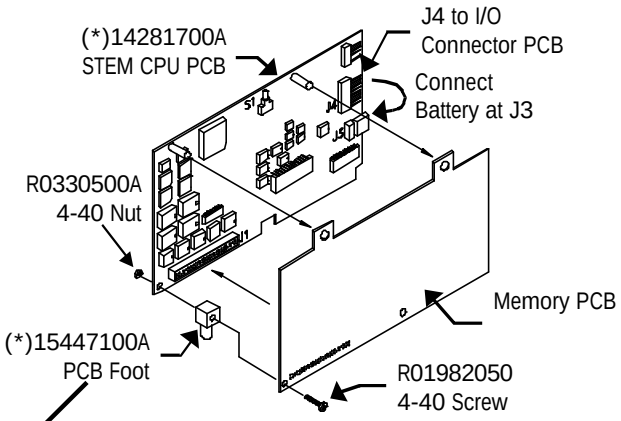
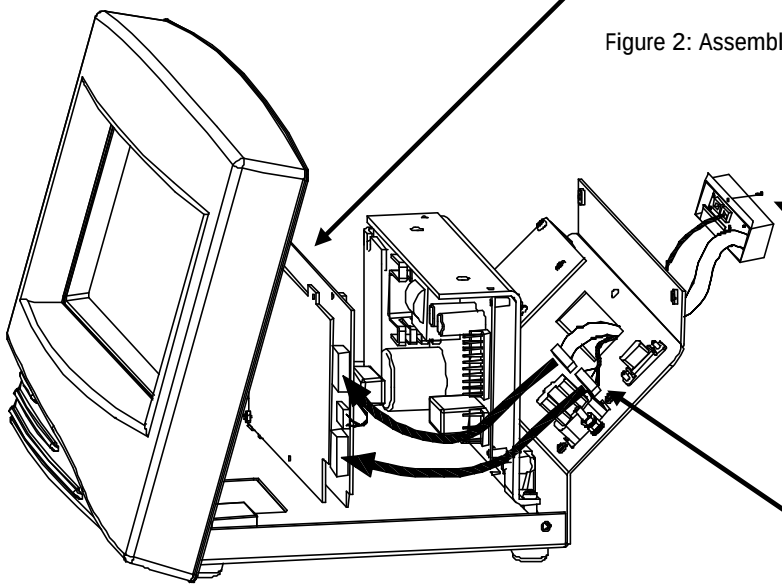


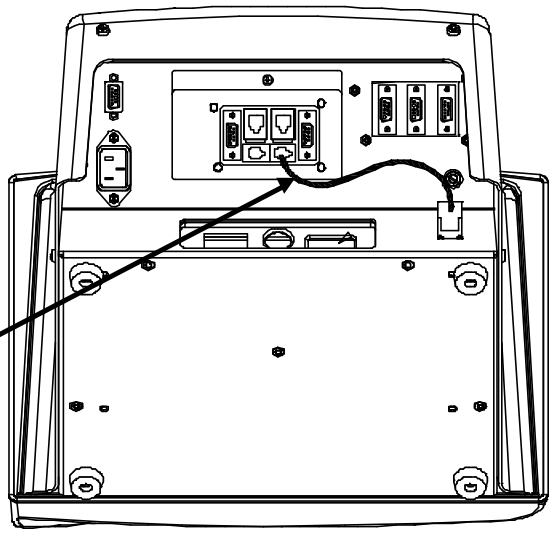

Figure 2: Assemble STEM CPU and Memory PCB



Remove the connector cover from the rear of the Model 8360/8361. Install the I/O Connector Assembly by hooking the flat on the box in the cutout in the rear frame and securing with the R0524700A screw.

Connect the flat ribbon I/O Harness to the STEM CPU PCB at J4. Connect the Ethernet Harness P/N (*)15398500A to J6 on the Connector PCB and t J6 on the STEM PCB.

Figure 3: Installing STEM/Memory PCB's and Connector Box Assembly



Connect one end of the (*)14316500A TNET Jumper Harness to the Satellite TNET jack on the rear of the Model 8360/8361 (Figure 4). Connect the other end of the harness to one of the TNET jacks on the I/O Connector PCB. The other TNET jack is used to connect the Model 8360/8361 to the TNET satellite network.

Figure 4: TNET Jumper Harness

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Figure 5 shows the connector layout of the STEM Connector PCB. Figure 6 shows the location of the STEM setup Switch.

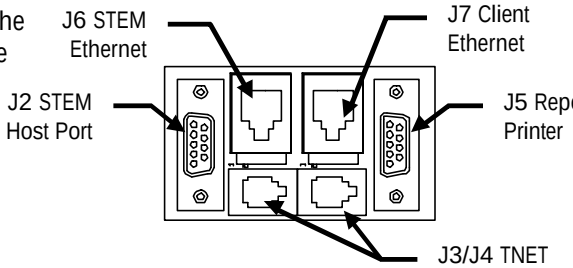



Figure 5: STEM I/O Connector PCB

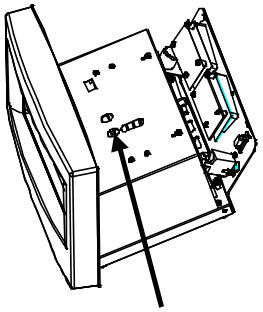
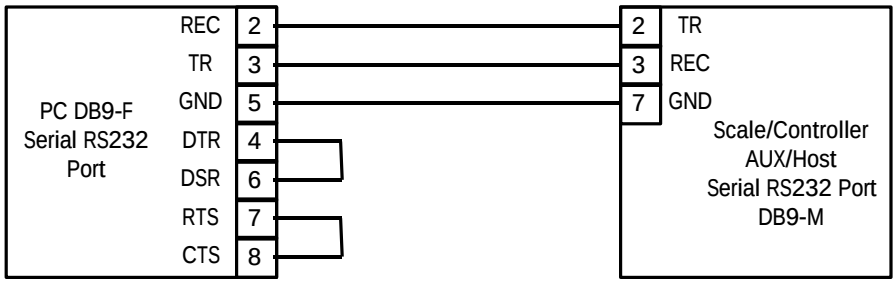


Figure 6: STEM Setup Switch

Figure 7 shows a typical RS232 connection to a PC serial port.

0900-0285 (*13816200A) Cable, PC DB9 to Scale 10 ft/3 m
0900-0297 (*14102600A) Cable, PC DB9 to Scale 25 ft/7.62 m




(*) = May have revision letter prefix.

0900-0286 (*13816300A) Cable, PC DB25 to Scale 10 ft/3 m
0900-0298 (*14102800A) Cable, PC DB25 to Scale 25 ft/7.62 m

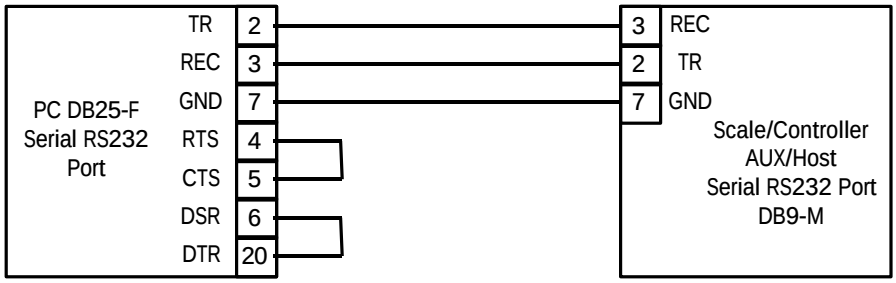



Figure 7: Host RS232 Cables

## Flashing New Software

The STEM software must be flashed into the STEM CPU PCB's EEPROM using a file from the supplied Software disk. The software is installed using a PC and a downloader program called FLASHPRO. Cables are the same as used with Databack and are shown in Figure 7. NOTE: SETUP DATA MAY BE ERASED WHEN THE SOFTWARE IS UPDATED! The Software file on the distribution disk (*)15690900A is compressed. Copy the file to a subdirectory on your hard disk drive. Make the directory your default, then type the file name to uncompress and create a new file. The new uncompressed file will be the software file that can be downloaded using Flashpro. (*) = May have revision letter prefix.

First, press the Model 8360/8361 power switch to OFF. Connect the cable end marked PC to the PC's serial port and the other end to the STEM Host Port (Figure 5) to flash the master software. Press and hold the STEM Setup switch (Figure 6), then turn the power switch to ON. Hold the button for five seconds and release it. There will be no status displayed on the Model 8360/8361 while the master software is flashed.

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Next, type in the FLASHPRO command line (or batch file name) and press ENTER. The FLASHPRO command line to is as follows:

flashpro -t123456.789 -B115.2 -COM1 -PE -D7 -S2

Replace 123456.789 with the software file name. Always check the file name. If the file has a letter prefix, type the letter before the file name. FLASHPRO uses the COM1 RS232 Serial Port as a default. If COM2 is required, you will need to change the -COM1 to -COM2 in the command line. Typing FLASHPRO alone displays a help screen.

If a UART Error displays, check that the cable is connected to the correct serial port, and the correct cable is used. You should see Acknowledgment on the PC screen, then A's (Acknowledgment) indicating a successful download has started. When the download is complete, FLASHPRO will display the message "File Successfully Transferred". After flashing in the software, you must configure the master.

### Completing the Installation

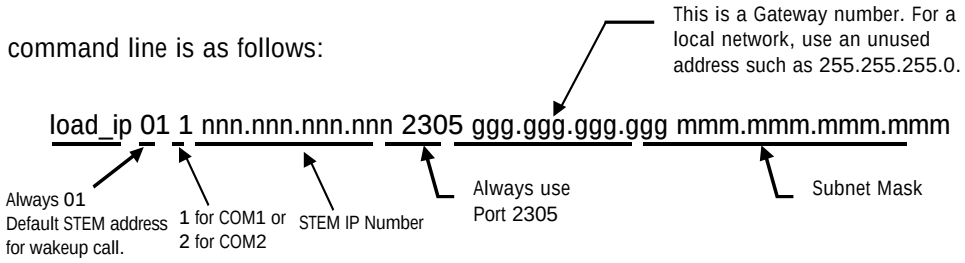
Remove the label with the same Factory Number as the kit from Label Set, A14226400A, and place the label near the data plate. Reinstall the RFI cover and the rear cover. Refer to the Model 8360/8361 Service manual for additional setup details.

### Set the STEM IP Address

After the STEM is flashed with new software, the IP address and TCP port number will be set to all zeroes. Ethernet communications will not be possible until the IP address and port number are setup. The IP address is set using a PC connected to the STEM RS232 Host Port with a PC program (supplied by METTLER TOLEDO® on the software disk called LOAD_IP.EXE). Once the IP address and TCP port number are entered via LOAD_IP, no further actions are required unless you desire to change either one of these parameters. To change the IP address or TCP port number (or both), simply run LOAD_IP as before. Existing Ethernet connections will not be affected. Once the changes are entered, cycle the power on the STEM for the new IP address and TCP port number to take effect.

To set the STEM IP, connect an RS232 Serial cable to COM1 or COM2 on the PC and to the STEM Host Port (Figure 5). The cables are the same as used for DataBack and flashing software.

The LOAD_IP command line is as follows:




To set the STEM IP number to 207.142.140.100, the command line is as follows:

load_ip 01 1 207.142.140.100 2305 255.255.255.0 255.255.255.0

A batch file can also be used to do this automatically. When the IP number is sent successfully, the PC screen should be similar to the following example.

```
C:\STEM\>load_ip 01 1 207.142.140.100 2305
Scale address [01]; Local port [COM1]; ip address [207.142.140.100]
port [2305]
Scale returned ACK to wake-up call
Scale returned ACK to IP command.

C:\STEM\>
```

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If LOAD_IP reports ACK, the IP was set successfully. If LOAD_IP reports NACK, an error occurred. In this case power down the unit, then retry LOAD_IP.

### Ethernet Wiring

METTLER TOLEDO® Client Scales and STEM require standard UTP (unshielded twisted pair) 10BASE-T cables, Category 5 (CAT 5) or higher, wired in a Star topology. Each node on the 10BASE-T network has its own cable that connects to a common hub. The cable from the node to the hub (segment) can be up to 100 meters (328 feet) in length. Use an Ethernet 10BASE-T Straight-Through Patch Cable from the STEM to the hub.

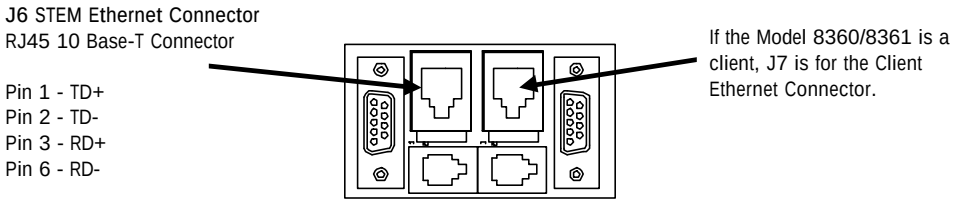


Figure 8: STEM Ethernet Connector

Refer to the METTLER TOLEDO® Connectivity Guide or the Model 8361 Service Manual for additional details.

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