

3. ACQUAINT YOURSELF WITH THE PARTS

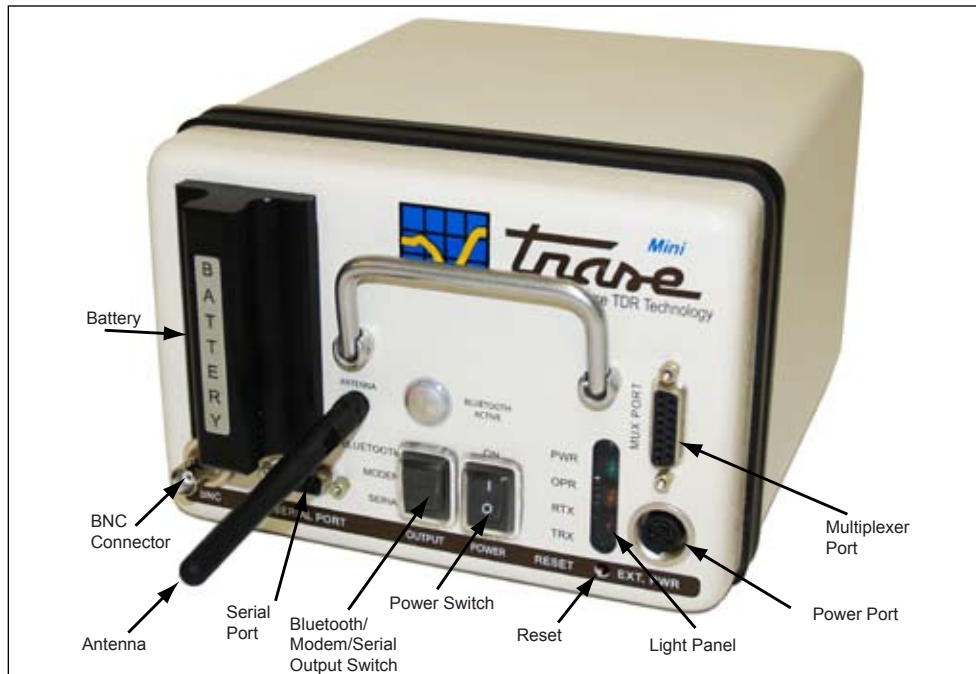


Fig. 3-1

Battery and Battery Charger

The MiniTrase utilizes a rechargeable NiCad battery. To replace an old battery, grasp the black plastic holder firmly and pull straight out. Use set screw wrench (MSL083) to slide handle off and replace new battery. The battery can be recharged easily in the unit.

The MiniTrase has internal power charging capability. With the battery installed simply connect the power supply (6051V100-120) to the MiniTrase and then to an active 100 to 240 VAC power source. (It is recommended that power sources, such as the charger, are disconnected from the MiniTrase when it is not connected to an active power source).

Depending on the battery's condition, the unit will charge a good but drained battery in 12 hours. The MiniTrase will continue to supply a charging current to the battery whether the MiniTrase is switched on or off. The MiniTrase can be used with or without the power supply but a battery should be inserted.

When the battery is especially low and in need of recharging a low volume beeping sound will alert the user.

Power Switch

With the battery securely in place, turn on the MiniTrase using the black rocker switch located on the face of the unit (Fig. 3-1). When the unit is powered on, the Power LED will blink green (PWR). If the unit is activated in the operational mode, the operating LED will blink green (OPR).

When operating, transmitting and receiving of data will cause both the red and amber LEDs to blink.

Serial Port

The Serial Port, located just below the Battery Handle, is used for connecting the MiniTrase to the PC or a modem. Use the PC Cable (MEZ011) for connecting the MiniTrase to the PC. (See PALM and Bluetooth instructions for Bluetooth communication use.)

Multiplexer Port

The Multiplexer, or Mux Port (DB-15) provides for optional connection to external multiplexing instrumentation. The internal Multiplexer communication board is supplied as a standard part with the MiniTrase and is already installed.

Power Port for External Power Charger

The 8-Pin DIN Power Port allows for the use of auxiliary power and accepts the plug on the MiniTrase Power Supply supplied with the instrument. The External Power Charger (6051V100-240) accepts any input, 100-240 Volts AC. U.S. (MEZ021) and Foreign (Euro - MEZ022) Plugs are available. SEC will supply the plug appropriate for your location.

The Power Charger is plugged into a wall outlet and the charger cable is plugged into the Power Port on the front of the MiniTrase.

Bluetooth/Modem/Serial Output Switch (3-Positions)

The Bluetooth/Modem/Serial Output Switch is used when connecting the MiniTrase to a PC to download data or using the palm modem (optional).. The Rocker Switch should remain in the Serial Position when not using Bluetooth or Modem.

Output switch positions and port (Bluetooth, modem, and serial port)*

- The Output Switch up position on the MiniTrase is Bluetooth (if MiniTrase on) (See section 5 for handheld terminal operation, Palm and Bluetooth)
- the Output Switch middle position is for connection to a modem (cable with null adapter)
- the Output Switch down position is for RS-232 serial connection (WinTrase: ports 1-4)

WinTrase may utilize some computers' Bluetooth ports 1-4, consult your computer technician

**It is recommended that when Bluetooth power is switched on that you attach the provided cover to the serial port (and not use the port).*

Light Panel

There are four lights on the Light Panel Display:

- PWR Green light to indicate power is fully functional.
- OPR Operational light to indicate that the MiniTrase is operating or performing a function. When the MiniTrase Battery is low, the user will be alerted by a beeping sound, indicating the battery is low and needs recharging.
- RTX Indicates that the MiniTrase is receiving data.
- TRX Indicates that the MiniTrase is transmitting data.

When operating, the Red and Amber LED's will blink when the unit is either transmitting or sending data.

BNC Port

Fig. 3-2

The BNC port located just under the Battery handle of the MiniTrase (Fig. 3-2) accepts the standard BNC connector on the coaxial cable of all Soilmoisture waveguides (Waveguide Connector, Buriable Probes, Slammer, Extension Cables) when making a reading.

Reset Button

Should the MiniTrase lock up for any reason, the internal Reset button below panel is utilized to "cold boot" the unit. This function is used as a last resort to restart the unit, as all data will be erased from memory if the Reset button is pushed.

Waveguide Connector and Waveguides

The Waveguide Connector is specifically engineered to minimize soil disturbance and simplify the procedure for making numerous and repeated measurements. The rugged, polycarbonate housing is hermetically sealed to prevent moisture damage to internal electronic components as well as providing protection for the circuitry during field use. A convenient electrical fitting allows for easy replacement of the Coaxial Cable Assembly when necessary.

To insert the Waveguides, turn the Clamping Knob counterclockwise (Fig. 3-3) until it stops. The end of the Waveguide that has the groove (Fig. 3-4) is then inserted into the Waveguide Sockets. You must always insert both Waveguides into the Connector for proper clamping operation. After the waveguides are inserted, turn the Clamping Knob clockwise to tighten the Waveguides into the Waveguide Sockets. Hand tightening is sufficient. Do not overtighten. When the Clamping Knob is turned clockwise, an internal mechanism forces two stainless steel balls into the Waveguide grooves to lock them securely in place and to make excellent electrical connection.

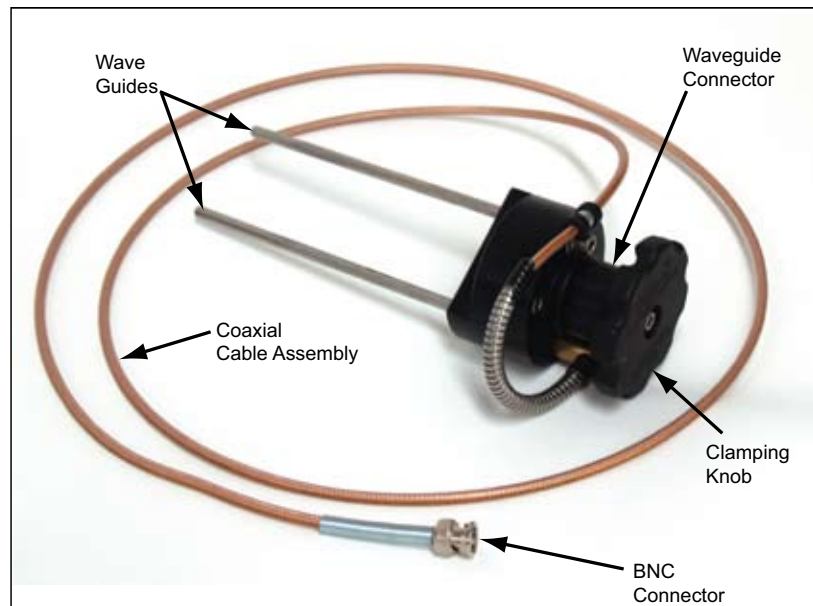


Fig. 3-3

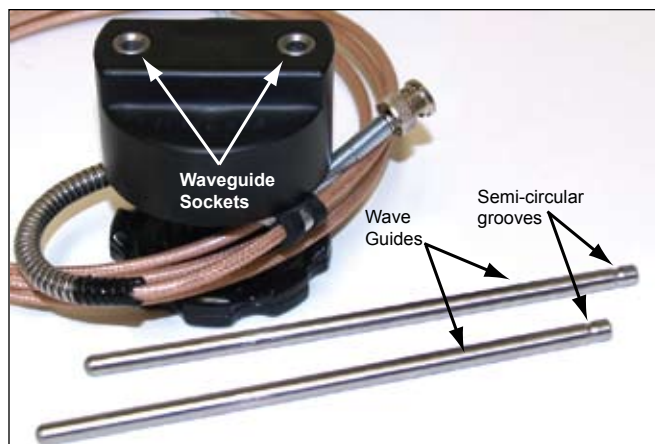


Fig. 3-4

To prevent measurement errors, ensure that the Waveguides are fully inserted into the sockets before tightening the Clamping Knob.

The Waveguides supplied with the unit are 15 cm long. Accessory waveguide sets are available in 30 cm, 40 cm, 45 cm, 60 cm, and 70 cm lengths. Waveguides are made entirely from stainless steel. For long wave guides, an alignment block is available (6012).

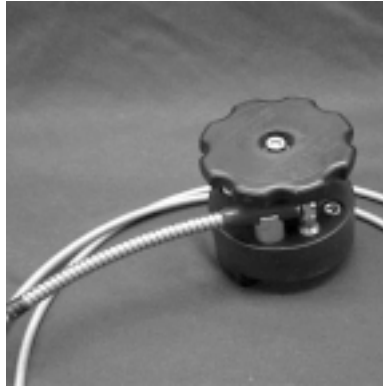
**Coaxial Cable
Assembly**

Fig 3-5

NOTE

The Coaxial Cable Assembly is a part of the Waveguide Connector. It can readily be replaced with a new cable when required. (Do not coil cable more than 3 loops)

If it becomes necessary to replace the Coaxial Cable Assembly, use a 5/16 inch open end wrench to loosen the hex nut on the coaxial fitting (Fig. 3-5). The hex nut can then be unscrewed.

For proper compatibility with Trase software, it is necessary to use Soilmoisture's Waveguide Connector Cable, 6003F1L78, as a replacement.

**The Palm
Handheld**

The Palm Handheld Terminal and its use are described in Chapter 5, "Acquaint Yourself with the Operation of the Handheld Terminal."

**MiniTrase
Backpack**

All MiniTrase items fit conveniently inside the MiniTrase Backpack, with sufficient room for other items such as notepads, pencils, etc. A special foam insert holds the MiniTrase securely in place. The foam insert provides a comfort-able cushion between the user and the unit while being transported in the field and helps to protect the unit from damage.