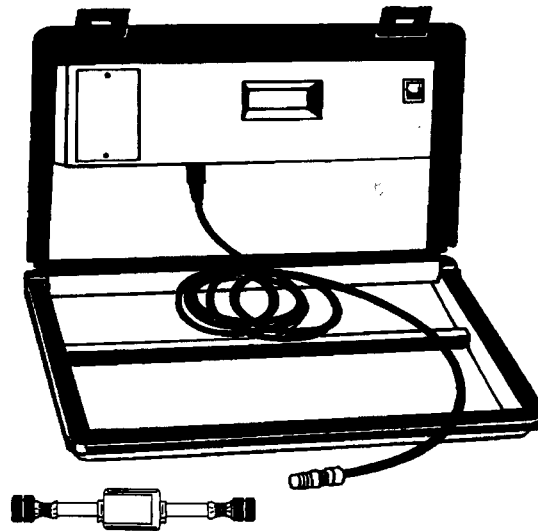




**9450D  
DIGITAL MICRON  
GAUGE**

OWNER'S MANUAL



**Test Equipment  
Depot**  
1-800-517-8431

99 Washington Street  
Melrose, MA 02176  
Fax 781-665-0780  
TestEquipmentDepot.com

## INTRODUCTION

Congratulations on the purchase of the new state of the art TIF9450D, Digital Micron Gauge. This product has been carefully designed and manufactured to meet the highest attainable quality standards.

The TIF9450D is based on a patented, **non-thermistor** technology which provides many features that are not currently available on other comparably priced units. The sophisticated sensor technology directly senses pressure, as opposed to thermistor based analyzers which are designed to sense changes in temperature. As a result of this technology the TIF9450D provides adjustment free use, a wide sensing range and instantaneous response.

In addition to the digital numeric display the TIF9450D also provides a unique status indicator to track the evacuation process and instantly indicate leaking systems.

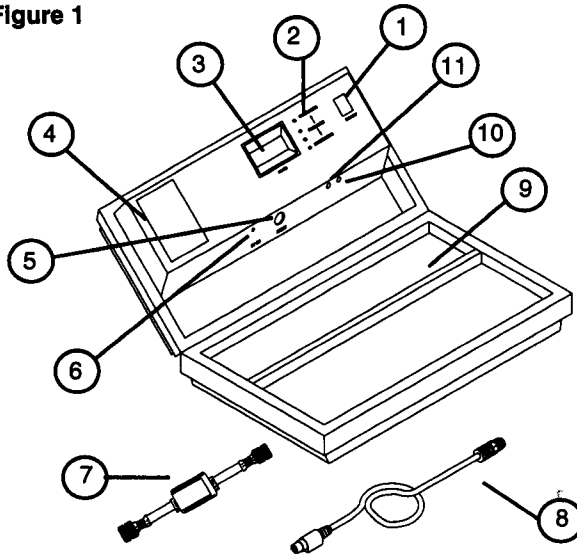
For best results please read this manual carefully before attempting to operate the unit. Should you experience any difficulty or require technical assistance please call our TIF Customer Service Hotline toll free at 1-800-327-5060.

## FEATURES

- **Easy to Read Digital Display**  
Half inch, 4 character digital liquid crystal display (LCD).
- **Status Indicator**  
Sequential LEDs instantly show whether pressure is decreasing or increasing.
- **Adjustment Free Use**  
There is no need for the operator to calibrate for fluctuating room and/or sensor housing temperatures.
- **Instantaneous Response**  
The unit will immediately respond to varying system pressure.
- **Versatile Sensing**  
Reads true vacuum and is not affected by the specific contents of the gas being evacuated.
- **Wide Sensing Range**  
Allows vacuum sensing from a few microns up to 500,000 microns (10inHg of vacuum) with good resolution throughout.
- **Auto-Ranging**  
The auto-ranging feature permits an optimal display over a wide range of vacuum levels.
- **Dual Power Supply**  
The unit will operate on either a single 9 volt battery or a 9V AC adapter (not included).
- **Low Battery Indicator**  
Indicates when the battery needs replacement.
- **Rapid Display Update**  
The display is updated once per second to provide instantaneous results.
- **Detachable Sensor**  
Includes a standard 1/4" Flare connector with five feet of cable.
- **Filter Hose Included**  
Permits direct hook-up to manifold or vacuum pump.
- **One Year Warranty**
- **Made In U.S.A.**

## PARTS AND CONTROLS

Location of Parts and Controls  
Figure 1



Description of Parts and Controls

- |                          |                          |                                 |
|--------------------------|--------------------------|---------------------------------|
| 1. On/Off Switch         | 2. Status Indicators     | 3. Liquid Crystal Display (LCD) |
| 4. Battery Compartment   | 5. Probe Input           | 6. AC Adapter Input             |
| 7. Filter Hose           | 8. Probe Assembly        | 9. Storage Area                 |
| 10. Calibration Hole "B" | 11. Calibration Hole "A" |                                 |

### ESPAÑOL

#### Descripción de las piezas y controles

1. Interruptor On/Off.
2. Indicadores de estado
3. Pantalla de cristal líquido (LCD)
4. Compartimiento de la batería
5. Conexión de la sonda
6. Conexión del adaptador de CA
7. Manguera filtrante
8. Conjunto de la sonda
9. Área de almacenaje
10. Orificio «B» de calibración
11. Orificio «A» de calibración

### FRANÇAIS

#### Description des pièces et des commandes

1. Interrupteur d'alimentation (On/Off) (marche-arrêt)
2. Témoins de statuts
3. Affichage à cristaux liquides (ACL)
4. Logement de la pile
5. Entrée de la sonde
6. Entrée de l'adaptateur C.A.
7. Tuyau filtrant
8. Assemblage de la sonde
9. Espace de rangement
10. Trou d'étalonnage «B»
11. Trou d'étalonnage «A»

### DEUTSCH

#### Beschreibung der Geräteteile und Bedienungselemente

1. Ein-/Aus-Schalter
2. Statusanzeige
3. Flüssigkristallanzeige (LCD)
4. Batteriefach
5. Sondeneingang
6. WS-Adaptereingang
7. Filterschlauch
8. Sonde
9. Ablage
10. Kalibrierloch „B“
11. Kalibrierloch „A“

## OPERATING INSTRUCTIONS

### Set-Up and Operation

1. Install the 9 volt battery provided as described in the Maintenance Section (pg. 7).
2. A 9V AC adapter, such as those available at electronic stores, may also be used. Make certain the adapter has a 3/32" plug with "positive" tip. Insert plug into the jack indicated in Fig. 1 (Item #6).
3. Connect the probe to the input jack on the unit as shown in Fig 2. Note that the probe fits in only one way.
4. Use a good pipe thread sealant such as tape dope (DO NOT use liquid type sealants as they may enter the sensor) to connect the short filter hose provided to the system being measured. In certain cases it may be necessary to use a tee fitting at either the manifold or pump inlet (see Fig 2). Ideally the probe should be connected so that it can be isolated from the pump after evacuation in order to monitor system vacuum.
5. Move the TIF9450D power switch to the ON position. When switched on, the unit will perform a brief self test. The display will first light all segments {888.8} for approximately 2.5 seconds then settle on 760.0 indicating atmospheric pressure. NOTE: This is strictly an indication, NOT a measure of actual barometric pressure.
6. The unit is now ready for operation. If the display shows "----" instead of 760.0 make certain the probe is properly connected. If the probe is connected and the display still shows "----", refer to page 8.
7. Begin evacuating the system and observe status indicators and the readings. NOTE: If positive pressure (above 0psig) is applied to the sensor the display will show "----", refer to page 8 if this occurs.
8. When desired vacuum level is reached, isolate the TIF9450D from the pump and monitor the indicator and/or display for a pressure rise; indicating either remaining moisture or a leak.
9. When measurements are complete switch OFF the TIF9450D and disconnect from system.

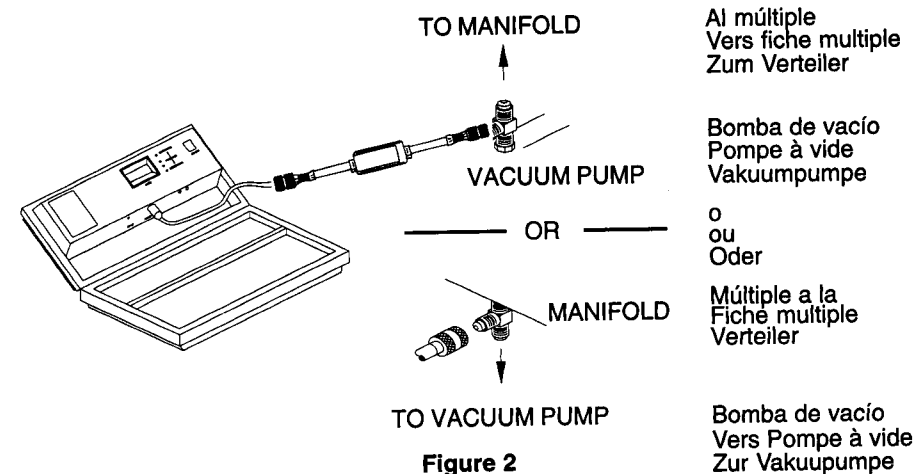


Figure 2

## OPERATING INSTRUCTIONS



### Status Indicator and Digital Display

The TIF9450D provides you with two unique readouts. The four digit liquid crystal display provides numerical readings of the vacuum level in millimeters of mercury (x 1000 = microns). The four LED indicators show whether the pressure is increasing or decreasing at a glance.

### Display Ranges

The TIF9450D has an autoranging feature which will automatically adjust the display for optimum resolution (see table below).

Display Ranges (mmHg)	Equivalent in Microns	Resolutions
100.0 to 760.0	100,000 to 760,000	.1mmHg or 100 microns
10.00 to 99.99	10,000 to 99,990	.01mmHg or 10 microns
.000 to 9.999	0 to 9,999	.001mmHg or 1 micron

NOTE: 1mmHg = 1000 microns

### Conversions

To convert from millimeters of mercury (mmHg) to microns simply multiply by 1000. For example: if reading is 7.250, vacuum level is 7,250 microns; if the reading is 0.230 then the vacuum level is 230 microns.

To convert to inches of mercury (inHg) divide the reading by 25.4 and subtract 29.92. For example: if the reading is 1.703 then the vacuum level is -29.853 inHg. ( $1.703 \div 25.4 = .067 - 29.92 = -29.853$ )

### Status Indicator

An exclusive feature of the TIF9450D, the four LEDs next to the display provide at a glance indications of evacuation progress (see Fig. 3).

When evacuation begins the LEDs will light from top to bottom showing a decrease in pressure (increase in vacuum). Initially the LEDs will light very quickly, but as the pressure becomes lower the pace will slow down. If the LEDs light from bottom to top this indicates an increase in pressure (decrease in vacuum) as would be the case with a vacuum leak to atmosphere.

## OPERATING INSTRUCTIONS

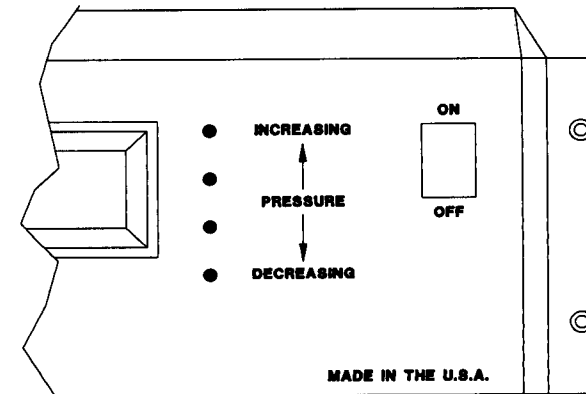


Figure 3

### Diagnosis

Once evacuation is complete, and the TIF9450D is isolated from the vacuum source (e.g. pump) the indicator will quickly show any remaining moisture or leaks. If the LEDs light from bottom to top, pressure is increasing. If they slow and the digital reading stabilizes, moisture remains. If they continue to increase and the reading continues to count up, there is a leak.

## MAINTENANCE



### Care and Handling

- Electronic test equipment must be treated with care and respect for it to provide accurate and reliable service.
- Dirt, grease and moisture can contaminate the controls and sensor making them perform erratically. For best results keep the unit clean and dry to avoid these problems.
- The unit should be cleaned with a damp cloth and mild detergent. **Do not** attempt to use any type of chemical or solvent to clean the unit.
- **Do not** expose the unit to extreme temperature or humidity conditions or store in corrosive atmospheres. Doing so may effect the reliability of some of the electronic components and result in operational failure.
- Replace the filter when it begins to change color (red).

### Low Battery Indication

As battery power begins to fade the display will begin to flash on and off. This permits readings to still be taken.

Replace battery as soon as possible when this occurs. NOTE: Cold temperatures will affect battery voltage.

### Battery Replacement/Installation

Your TIF9450D comes equipped with a 9V alkaline battery and is ready for use. To connect battery, simply use a Phillips screw driver to remove screws on each end of the battery compartment and remove the battery cover. When replacing batteries it is recommended that an alkaline battery be used for best results. Replace the battery compartment cover and screws. Your unit is now ready for use.