AUTOMATIC PROGRAMMABLE CHARGING/RECOVERY METERS

Owner's Manual
Manual del Propietario
Guide de l'utilisateur
Bedienungsanleitung

Covers models
TIF9050
TIF9050A
TIF9075
TIF9075ACR

CE

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LISTED UL 7418

ELECTRONIC CHARGING METERS

INTRODUCTION

Thank you for purchasing a TIF Automatic Programmable Charging/ Recovery Meter. Your new unit has been designed to provide many years of dependable service. This manual covers four models, both single and dual valve versions; refer to the packaging to identify your model. Please read this manual completely before using your meter in order to gain the full benefit of its features.

The TIF9050 and the TIF9050A will allow you to quickly, efficiently and automatically charge refrigerant into, or recover refrigerant from, any air conditioning system. It is the most accurate and cost effective method of dispensing refrigerant.

The TIF9075 and TIF9075ACR have been designed with two solenoid valves, providing completely independent circuits for charging non-compatible refrigerants (e.g. for automotive service the SAE has mandated unique fittings for R12 and R134a.)

The high weight capacity and large charging platform will allow use of many size cylinders, including recovery/recharge tanks. High resolution enables precise charging for optimum economy and system performance. A durable "load-cell" mechanism is built into the unit to withstand rugged field use and ensure performance longevity.

Mobile Air Conditioning Society Worldwide

— Advisory —

Sale of Refrigerant by Weight or by Volume

The Mobile Air Conditioning Society Worldwide would like to advise its membership and other members of the air conditioning community that most governmental agencies have weights and measurement requirements that certified equipment must be used when selling products to the consumer by weight or by volume.

To be in compliance where required, shops may not sell refrigerant by weight or by volume as indicated on charging equipment, unless that equipment has been certified by the appropriate government agencies.

Though service technicians may find it useful to utilize weight or volume indicators in the course of servicing air conditioning systems, some government agencies have advised service facilities which perform air conditioning service not to charge the customer for refrigerant by weight or volume unless their equipment has been certified by their state's bureau of weight and measures.

California Dept. of Food and Agriculture, Bureau of Weights and Measures has stated in a letter to air conditioning service facilities:

> This requirement [for certification of devices associated with equipment used for servicing air conditioning equipment] does not preclude businesses from charging a flat fee for service based on vehicle type, etc., in lieu of charging by quantity of refrigerant/Freon® measured by a scale or other measuring device; and does not affect the practice of using and charging for individual pre-packaged cans of refrigerant/freon.

If refrigerant is added, it should be identified with an all-inclusive price, or a flat fee based on typical product line system requirements rather than amount of refrigerant installed.

This advisory is provided by MACS Worldwide to its membership to help member shops in making individual business decisions with regards to the air conditioning service practices.

FEATURES

Features of the Automatic Programmable Charging/Recovery Meter:

- Programmable, allows user to pre-set amount for automatic charge
- Electronic keypad controls
- 150 pound (68kg) maximum weight capacity
- Hold function, stores value in memory to change cylinders or pause operation.
- Large, easy to read, digital display
- Pounds/kilograms selection capability
- 1/2 ounce resolution/accuracy
- Large, 9" square platform
- Accessory outlet
- Built into rugged carrying case
- One year warranty
- Made in the U.S.A.

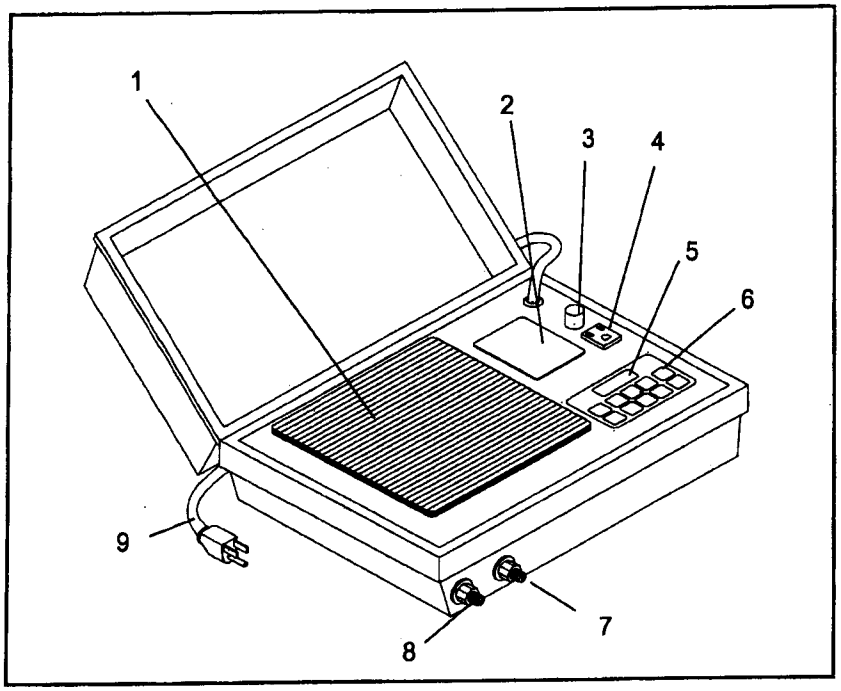
Additional TIF9050 Features:
- 1/4" Male SAE Fittings

Additional TIF9050A Features:
- 1/2"- 16 ACME fittings for Automotive R134a applications

Additional TIF9075 Features:
- Separate ports (one 1/4" SAE pair and one 1/2" ACME pair)

Additional TIF9075ACR Features:
- Two pairs of 1/4" SAE ports, for non-compatible refrigerants.

PARTS & CONTROLS-9050/A



1) Charging Platform
2) Battery Compartment
3) Fuse Holder
4) AC Outlet
5) LCD Readout
6) Programming Keypad
7) Outlet Port (to manifold set)
8) Inlet Port (from tank)
9) Power Cord

PIEZAS Y CONTROLES

1) Plataforma de carga
2) Compartimiento de la batería
3) Portafusible
4) Tomacorriente de CA
5) Pantalla digital
6) Teclado de programación
7) Terminal de salida (al múltiple)
8) Terminal de entrada (del tanque)
9) Cordón de energía

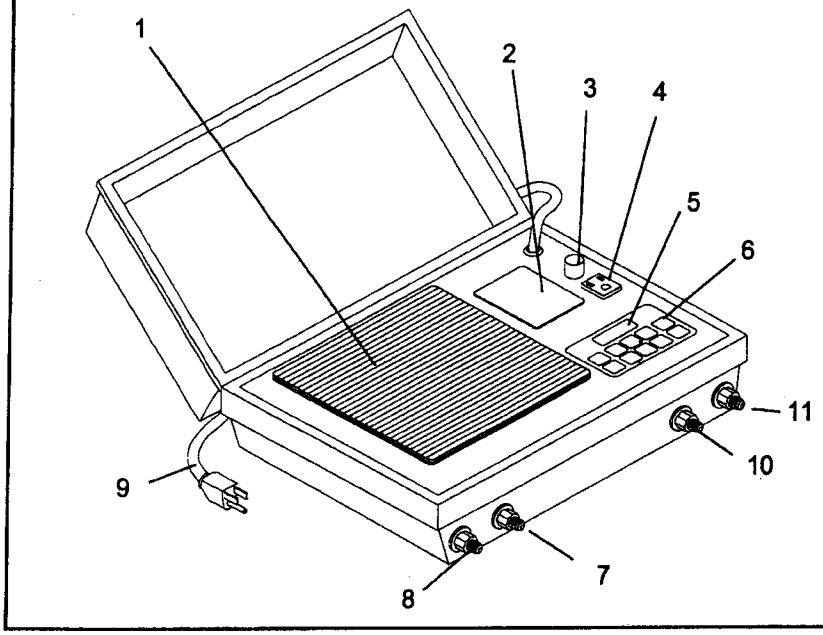
PIECES ET CONTROLES

1) Plate-forme de chargement
2) Logement de la pile
3) Logement du fusible
4) Prise d'alimentation CA
5) Affichage à cristaux liquides
6) Clavier de programmation
7) Orifice de sortie (vers jeu de manomètres)
8) Orifice d'entrée (Venant de la bouteille)
9) Cordon d'alimentation

BAUTEILE UND BEDIENUNGSELEMENTE

1) Ladeplattform
2) Batteriefach
3) Sicherungshalter
4) Wechselstromanschluß
5) LCD-Anzeige
6) Programmiertasten
7) Auslaß (zum Verteilersatz)
8) Einlaß (vom Tank)
9) Netzkabel

PARTS & CONTROLS-9075/ACR



1) Charging Platform
2) Battery Compartment
3) Fuse Holder
4) AC Outlet
5) LCD Readout
6) Programming Keypad
7) Inlet Port "A"
8) Outlet Port "A"
9) Power Cord
10) Inlet Port "B"
11) Outlet Port "B"

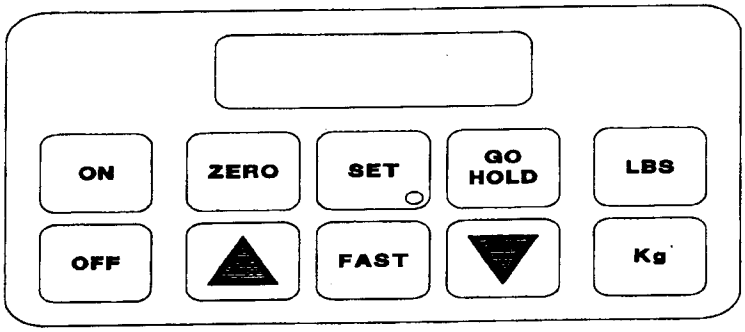
PIEZAS Y CONTROLES
1) Plataforma de carga
2) Compartimiento de la batería
3) Portafusible
4) Tomacorriente de CA
5) Pantalla digital
6) Teclado de programación
7) Terminal de entrada «A»
8) Terminal de salida «A»
9) Cordón de energía
10) Terminal de entrada «B»
11) Terminal de salida «B»

PIECES ET CONTROLES
1) Plate-forme de chargement
2) Logement de la pile
3) Logement du fusible
4) Prise d'alimentation CA
5) Affichage à cristaux liquides
6) Clavier de programmation
7) Orifice d'entrée «A»
8) Orifice de sortie «A»
9) Cordon d'alimentation
10) Orifice d'entrée «B»
11) Orifice de sortie «B»

BAUTEILE UND BEDIENUNGSELEMENTE
1) Ladeplattform
2) Batteriefach
3) Sicherungshalter
4) Wechselstromanschluß
5) LCD-Anzeige
6) Programmiertasten
7) Einlaß "A"
8) Auslaß "A"
9) Netzkabel
10) Einlaß "B"
11) Auslaß "B"

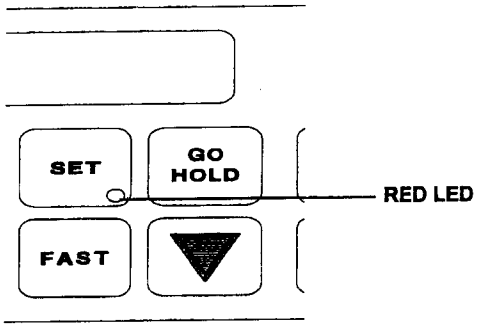
KEYPAD FUNCTIONS

Programming Keypad



Key Functions

ON: Turn unit on
OFF: Turn unit off
ZERO: Zero display
SET: Enter program weight
▲: Increase program weight
▼: Decrease program weight
FAST: Increase weight programming speed
GO: Start system charging
HOLD: Pause and change refrigerant cylinder
LBS: Weigh in pounds
Kg: Weigh in kilograms



The Red LED within the SET Key will light when the unit is in the programming mode. Weight will not be read while the LED is lit. The LED will go out when the SET key is depressed to exit programming.

PRECAUTIONS

Please read carefully before operating:

- Never attempt to use adapters on the ports to change fitting size.
- Carefully follow manufacturer's recommendations and procedures for system charging and/or recovering.
- Never place more than 150lbs or 68kg on platform.
- Center cylinder on platform for maximum accuracy.
- For best results always operate charging meter on a firm and level surface.
- If operating in windy conditions it is best to shield the cylinder to avoid shifting of weight.
- Always use a manifold gauge set in conjunction with this meter to properly monitor system pressures.
- Do not operate the **LBS** or **Kg** selection keys while charging or memory will be erased.
- Keep dirt and moisture away from switches, displays and internal components.
- Avoid mechanical shock and temperature extremes.
- Do not expose LCD to direct sunlight for extended periods.
- Connect power cord only to 110-130 VAC (or 220-240 VAC on international versions).
- Do not connect more than 300W or 3A load to the accessory outlet.
- Do not disconnect hoses while unit is in operating mode.
- Do not leave an open cylinder connected to the **INLET PORT** when not in use.
- Unplug unit when not in use to avoid damage from voltage spikes.

OPERATING INSTRUCTIONS

Getting Started

Before operating your new meter please remove the styrofoam packing blocks located beneath the platform. It will also be necessary to install the batteries as instructed in the maintenance section on page 11.

Set-Up

1. Place the meter on a firm, level surface and open lid.
2. Plug the power cord into a 115VAC outlet (220-240VAC for international versions). The solenoid valve will not function without AC power.
3. Carefully place refrigerant cylinder onto the center of the platform.
4. Connect the appropriate yellow adapter hose (included) between the cylinder valve and the appropriate **Inlet Port**, located on the outside of the case; depending on which refrigerant you are working with. Open the cylinder and purge air from the hose if necessary.
5. Switch on the unit by pressing the **On** key. The unit should "beep" once, and after a brief segment display (all eights) the meter will read zero.
6. Choose the unit of measure by pressing either the **LBS** key, for pounds and ounces, or the **Kg** key for kilograms and grams. The unit will "beep" and reset whenever the unit of measure is changed.

OPERATING INSTRUCTIONS

CAUTION: The LBS/Kg keys should only be operated during the "Set-Up" procedure. Attempting to operate while charging, weighing or at any other time will reset the program and erase the memory and display.

7. Connect the appropriate **Outlet Port** of the meter to manifold gauge set, compatible with the refrigerant in use. Make certain that all manifold valves are closed.
8. Connect manifold gauge set to the system as indicated by the manufacturer.

Hook-Up

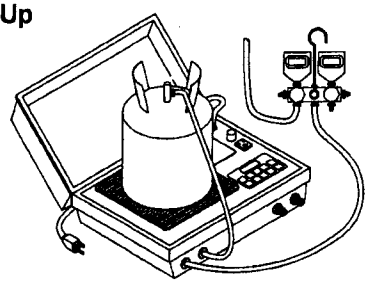


Diagram #1

Programming

1. Press the **SET** key until the LED lights and the unit beeps.
2. Enter the amount to be dispensed by pressing the ▲ key. To increase the speed, when dispensing larger amounts, press the **FAST** key simultaneously. Use the ▼ key for fine tuning if needed.
3 If the ▼ key is pressed while the display reads zero the unit will beep continuously, indicating an improper operation. The display will not change.
4. Press the **SET** key again until LED goes out and unit beeps. The display should return to zero.

Charging

1. Once the programming is complete, press the **GO/HOLD** key to begin dispensing: a "click" will be heard as the solenoid opens, and refrigerant begins to flow.
2. Slowly open manifold valve(s) to allow refrigerant into system.
3. The display will begin to count up, indicating the weight dispensed.
4. Follow manufacturer's procedure while charging; it may be necessary to use a heater blanket or to run the system in order to complete the charge.
5. If a heater blanket is used it can be plugged into the fused accessory outlet on the faceplate. This outlet is live only when the unit is plugged in. Maximum load is 300 Watts or 3Amps. If no power is available at the outlet when the unit is plugged in, the fuse is blown. Please refer to the maintenance section for instructions on fuse replacement.
6. When the programmed amount of refrigerant has been dispensed, the solenoid will close and the unit will "beep", indicating completion.

7. Upon completion, turn the unit off by pressing the **OFF** key. Close the cylinder and manifold valves and then disconnect the hoses.

Charging Hold Feature
If the refrigerant cylinder empties (or fills; if recovering) before the programmed value is reached it is possible to place the unit into a hold mode, switch cylinders, and resume.

1. Press the **GO/HOLD** key. The solenoid will "click" closed and the unit will begin to "beep" approximately once per second. The display will retain the current reading, indicating how much refrigerant has been dispensed.
2. Close the cylinder valve and disconnect adapter hose.
3. Remove the cylinder, replace with a new one and reconnect adapter hose as described in set-up section.
4. Press the **GO/HOLD** key again. The solenoid will "click" open, the unit will stop "beeping" and resume dispensing.

Recovery
The meter will accept either positive or negative inputs. That is, it will operate the same whether weight is being removed (charging) or added (recovering). Therefore the unit can be used to measure the amount of refrigerant being recovered into a tank.
Simply place an approved recovery cylinder on the platform and follow the instructions as stated for charging, EXCEPT that **the hose connections need to be reversed.** That is, since the flow is to the cylinder, the recovery machine should be connected to the INLET port and **the cylinder to the OUTLET port.**
All programming and other features (e.g. "Hold") will function in the same manner.

Weight Measurements
The meter may be used strictly as a weigh scale. For example, to determine the remaining refrigerant in a cylinder and/or the tare weight of a cylinder. Maximum weight is 150lbs or 68kg.

1. Switch on the unit by pressing the **ON** key.
2. Select the desired unit of measure; either **LBS** or **Kg** on the programming keypad.
3. Press the **ZERO** key until the display reads zero.
4. Carefully place the object to be weighed directly onto the center of the platform.
5. Weight will be displayed. If the unit is displaying pounds and ounces and an object in excess of 100lbs is placed onto the platform, the display will show an overrange ("o_ _ _"). If this occurs it will be necessary to switch the unit of measure to kilograms and then to convert back to pounds as described below;
   a. Remove object from platform.
   b. Press the **Kg** key.
   c. Zero the display again, as described in step 3, above.
   d. Replace object onto platform.
   e. Weight will be displayed in kilograms and grams.

OPERATING INSTRUCTIONS

To convert to pounds and ounces please refer to the conversion chart supplied with your meter.

6. When weighing is complete, switch the unit off by pressing the **OFF** key.

Power Alert Feature
The unit is equipped with an alarm circuit which will sound one beep approximately every three (3) minutes if the unit is left on but not in use. This will continue indefinitely until the unit is switched off or the batteries die.

MAINTENANCE

As with all electronic instruments, maintenance on your Meter is minimal. Keep the instrument clean and dry and avoid exposure to very hot and/or humid conditions.

Fuse Replacement
If the accessory outlet is not live when the unit is plugged in the most likely cause is a blown fuse.

1. Remove fuse by pushing down and rotating 1/4 turn.
2. If the fuse has blown, replace by pulling fuse from the holder cap and replace with a 250v 3A fast blow glass fuse, part #TIF9051.
3. Place fuse into fuse compartment by lining up notch, pushing down and rotating 1/4 turn. See diagram #2 below.

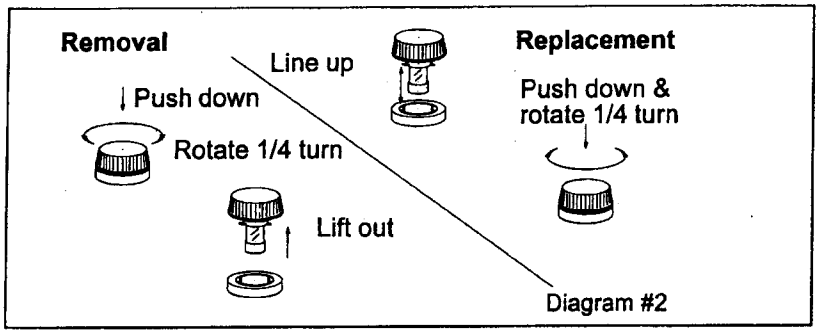


Diagram #2

MAINTENANCE

Battery Installation/Replacement
When battery voltage becomes insufficient the LCD characters will begin to flash on and off. When this occurs you have approximately 20 minutes before low voltage affects operation. Do not engage in any new operation before replacing the batteries.

1. Remove the battery cover by gently pulling up on the two plastic pegs and lifting away as illustrated in diagram # 3, below.
2. Remove the battery pack by lifting up and out of case as shown in diagram # 4, below.
3. Remove the old batteries and replace with six (6) new and/or tested "AA" (1.5v) alkaline batteries. Please be carefull to note the polarity indications marked on the battery holder.
4. Reconnect the battery holder, place it back into the battery compartment and replace the cover by gently pushing down on the two plastic pegs.

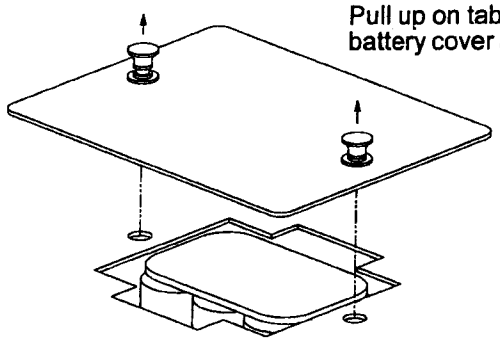


Diagram #3

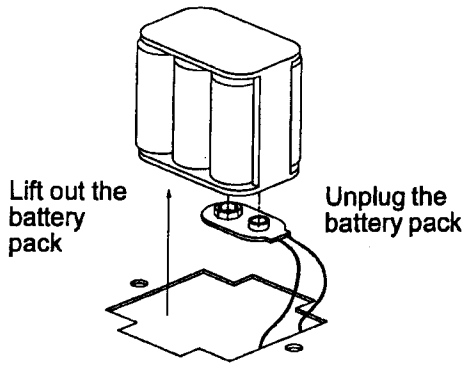


Diagram #4

SPECIFICATIONS

Maximum Weight:	150lbs or 68kgs
Maximum Display:	99lb 15.5oz or 99.99kg
Resolution:	1/2 ounce or .01 kilograms
Accuracy:	+/- 2% of reading or 1/2 oz, whichever is greater
Charge Program:	100lbs or 68kg (max) in 1/2oz or .01kg increments
Power Supply:	Six AA batteries, 115VAC 60HZ (230V 50Hz for international versions)
Battery Life:	70 hours (alkaline) approx.
Accessory Outlet Rating:	300W (3Amps for Int'l) max
Operating Temperature:	32° to 125° F (0° to 52° C)
Weight:	10.75 lbs (4.9 kg)
Dimensions:	16" x 13" x 5" (40.6 x 33 x 12.7 cm)

REPLACEMENT PARTS

Part Description	**Part #**
1/4" FFL Adapter Hose	TIF9536CH
1/2" ACME Adapter Hose	TIF4536CH
Replacement Fuses (pack of 6)	TIF9051

WARRANTY & REPAIR

Limited Warranty and Repair/Exchange Policy
This instrument has been designed and manufactured to provide unlimited service. Should the unit be inoperative, after performing the recommended maintenance, a no-charge repair or replacement will be made to the original purchaser if the claim is made within one year from the date of purchase. This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use.

This warranty does not cover batteries, fuses, or any other materials that wear out during normal operation of the instrument.

Returning Your Unit For Repair
Before returning your instrument for repair please make sure that you have carefully reviewed the **Unit Maintenance** section of this manual to determine if the problem can be easily repaired. Make sure that the **batteries** and/or fuse are working properly **BEFORE returning the unit.**

If the unit still fails to work properly send the unit to the repair facility address on the back cover of this manual. Repaired or replaced tools will carry an additional 90 day warranty. For more information please call (800) 327-5060.