AUTOOL LM 120

AUTOOL LM 120 Digital Manifold Gauge Meter User Manual

Model: LM 120

1. Introduction

The AUTOOL LM120+ Refrigeration Digital Manifold Gauge Meter is an intelligent electronic instrument designed for the installation, testing, and maintenance of refrigeration equipment such as air conditioners, refrigerators, and cold storage units. It offers multiple test modes, intelligent digital display, and a built-in refrigerant database for efficient operation, making it a versatile tool for professionals.

Figure 1: AUTOOL LM 120 Digital Manifold Gauge Meter and accessories.

2. Setup Guide

Follow these steps to properly set up your AUTOOL LM 120 Digital Manifold Gauge Meter:

1. **Initial State:** Before operation, ensure both the low pressure (blue) and high pressure (red) valves on the manifold gauge are in the closed position.
2. **Connect Temperature Clamps:** Connect the two temperature-test clamps to their respective sockets on the manifold gauge. These clamps are essential for accurate temperature readings during testing.

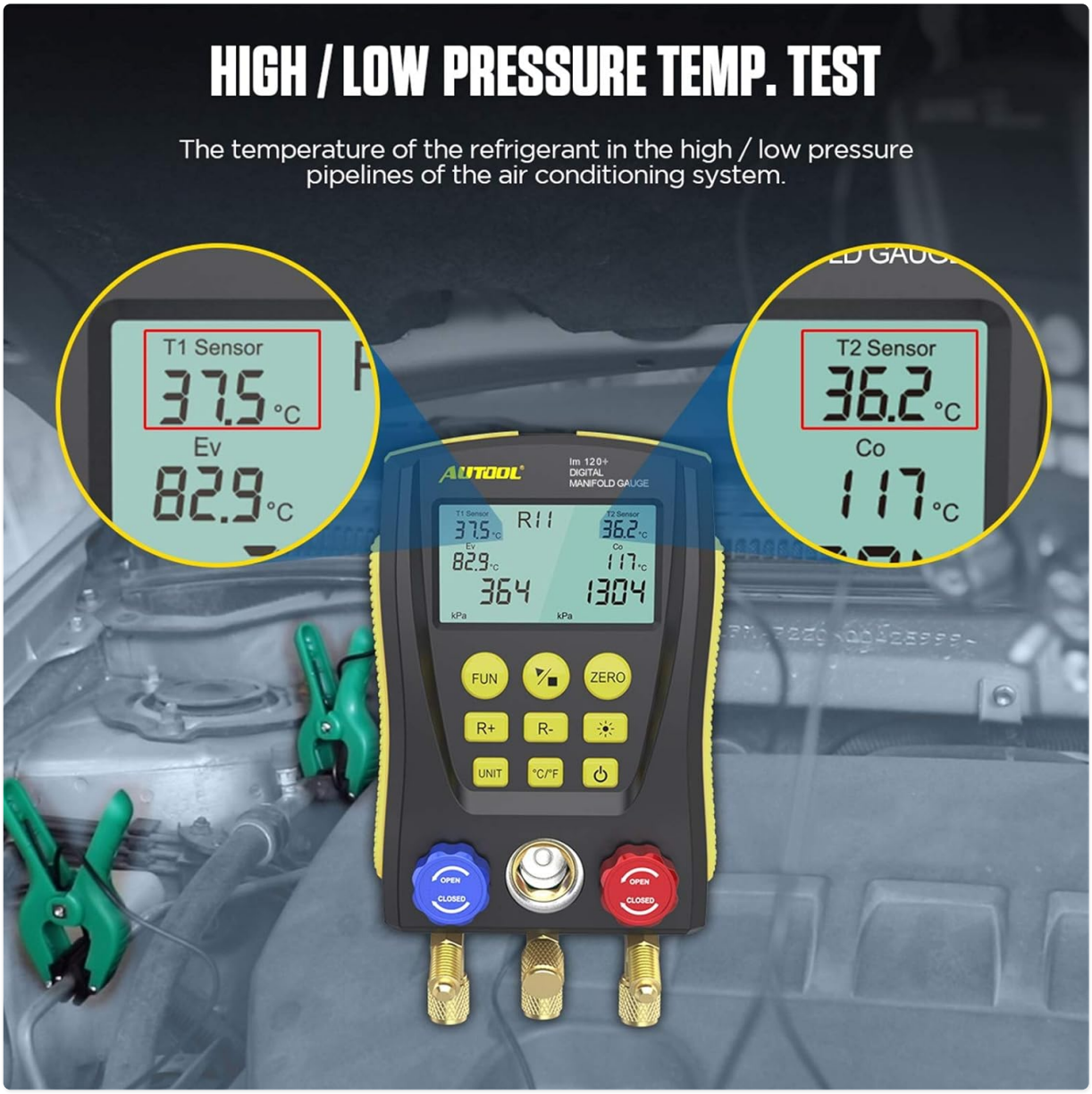

Figure 2: Connecting the temperature clamps for high and low pressure temperature testing.

3. **Power On:** Press the power switch on the manifold gauge to turn on the device. The LCD display will illuminate, showing current readings and settings.
4. **Connect Tubes:** Connect the blue, yellow, and red tubes to the corresponding ports on the manifold gauge. Ensure connections are secure to prevent leaks.
5. **Connect Refrigerant Quick Connectors:** Attach the refrigerant quick connectors to the appropriate service ports on the refrigeration system (e.g., vehicle AC system). The red connector typically goes to the high-pressure port, and the blue to the low-pressure port.

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Video 1: Demonstrates the setup and connection process for the AUTOOL LM 120 Digital Manifold Gauge Meter, including connecting temperature clamps and refrigerant tubes to a vehicle's AC system.

3. Operating Instructions

The AUTOOL LM 120 offers various functions for comprehensive refrigeration system analysis:

3.1. Vacuum Operation

To perform a vacuum operation, ensure all connections are secure. Open the necessary valves on the manifold gauge to initiate the vacuum process. The gauge will display the vacuum degree, allowing you to monitor the system's evacuation.

3.2. Refrigerant Filling

1. **Connect Refrigerant Container:** After vacuuming, connect a new refrigerant container to the yellow service hose of the manifold gauge.
2. **Prepare Vehicle (if applicable):** If working on a vehicle, start the engine and adjust the air conditioner to its lowest temperature setting to ensure the system is ready for refrigerant intake.
3. **Inlet Refrigerant:** Slowly open the appropriate valves on the manifold gauge to allow the new refrigerant to enter the system. Monitor the pressure readings on the digital display to ensure proper filling.

3.3. Multiple Test Modes

The LM 120 supports various test modes:

- **Dual Pressure Measurement:** Measures both high and low pressures simultaneously.
- **Dual Temperature Measurement:** Measures high and low pipeline temperatures using the connected test clamps.
- **Vacuum Degree Measurement:** Displays the percentage of vacuum achieved.
- **Pressure Leakage Measurement:** Calculates pressure difference over time to detect leaks.
- **Unit Conversion:** Easily switch between pressure units (Kpa, Mpa, bar, inHg, PSI) and temperature units (Celsius/Fahrenheit).

Figure 3: Display showing Evaporation Pressure & Temperature Test results.

Figure 4: Display showing Condensing Pressure & Temperature Test results.

Figure 5: Display showing Pressure Leakage Test results.

3.4. Built-in Database

The LM 120 features a built-in database of 89 kinds of refrigerant pressure and evaporation temperatures. This allows the device to automatically calculate supercooling and superheating temperatures, providing convenient and direct access to critical operational data.

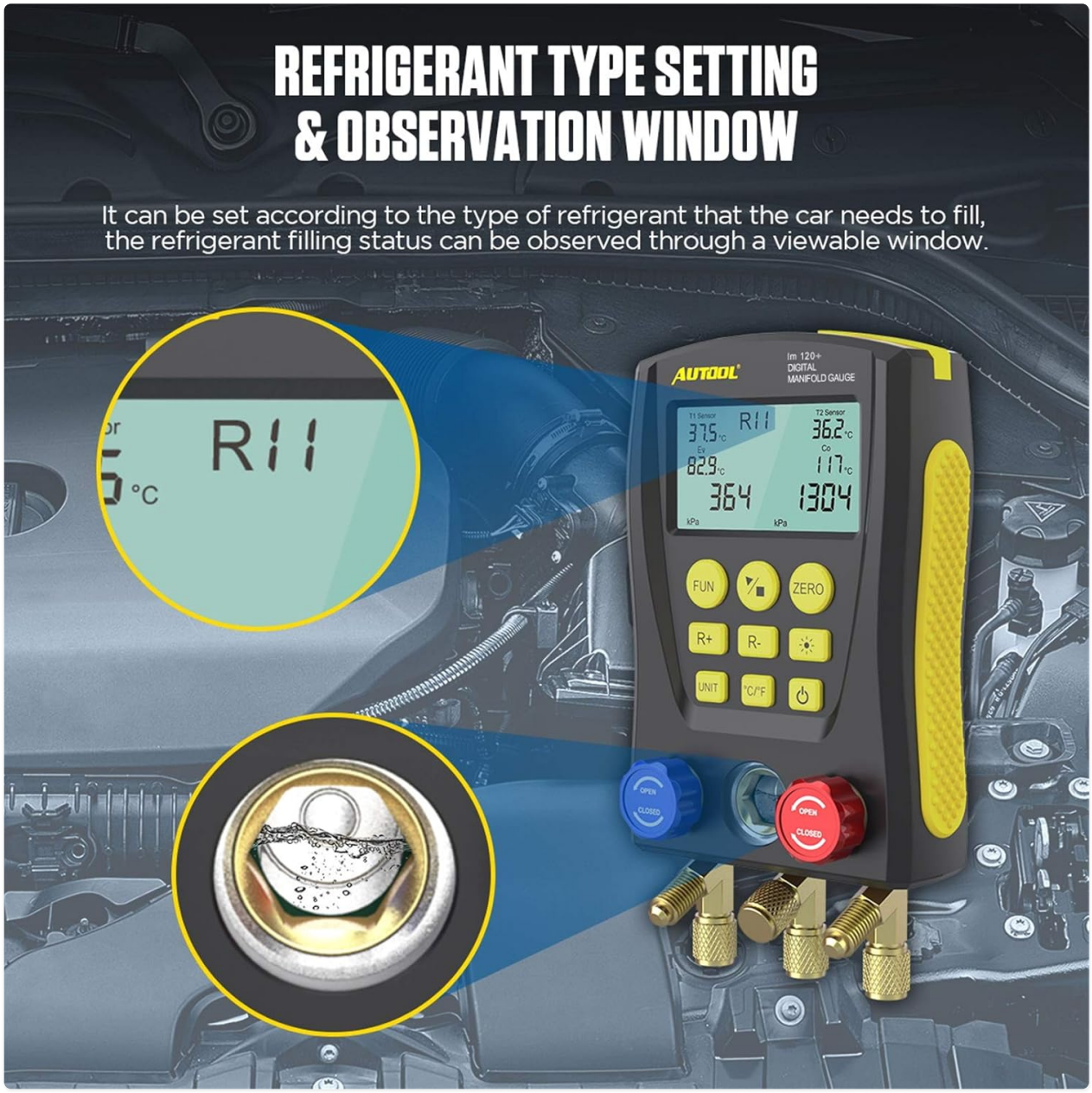


Figure 6: Setting refrigerant type and observing filling status through the viewable window.

4. Maintenance

Proper maintenance ensures the longevity and accuracy of your AUTOOL LM 120 Digital Manifold Gauge Meter:

- **Cleaning:** Regularly wipe the device with a soft, dry cloth. Avoid using abrasive cleaners or solvents that could damage the display or casing.
- **Storage:** After each use, carefully uninstall all quick connectors and tubes. Turn off the manifold gauge. Pack the equipment securely in its carrying case to protect it from dust, moisture, and physical damage.
- **Component Inspection:** Periodically inspect the hoses, connectors, and temperature clamps for any signs of wear, cracks, or damage. Replace any worn components to maintain optimal performance and prevent refrigerant leaks.
- **Durability:** The LM 120 is constructed with high-strength engineering plastic, flexible non-slip silicone, and copper interfaces, designed for industrial-grade durability. Proper handling and storage will further extend its service life.

5. Troubleshooting

If you encounter issues with your AUTOOL LM 120, consider the following:

- **Inaccurate Readings:** Ensure all connections are tight and free of leaks. Verify that the correct refrigerant type is selected in the device settings. If persistent, contact customer support for potential calibration needs.
- **Temperature Sensor Issues:** Check the connection of the temperature clamps. Ensure they are securely attached to the pipes for accurate readings. If clamps are damaged, they may need replacement.
- **No Display/Power:** Check battery levels. Ensure the power button is pressed firmly.
- **Hose Leaks:** Inspect hoses and their connections for any visible damage or loose fittings. Tighten connections or replace hoses if necessary.
- **Vacuum Function:** Note that the LM 120 measures relative vacuum degree and does not display micron readings. If micron-level vacuum measurement is required, a different model may be necessary.

For issues not covered here, please refer to the detailed product manual or contact AUTOOL customer support.

6. Specifications

Parameter	Value
Item Model Number	LM 120
Manufacturer	AUTOOL
Material	Crystal, Silicone
Item Dimensions L x W x H	0.01 inches
Item Weight	950 Grams
Screen Size	12 Inches
Pressure Test Type	Surface pressure
Pressure Test Units	Kpa; Mpa; bar; inHg; PSI
Pressure Test Range	0 Kpa - 6000 Kpa
Pressure Test Resolution	1 Kpa
Pressure Test Accuracy	+/- 0.5%(FS)+ 5dgt
Pressure Overload Limit	10000 Kpa (10 Mpa; 100 bar;)

Parameter	Value
Vacuum Test Type	Relative vacuum
Vacuum Test Units	Kpa; Mpa; bar; inHg; PSI
Vacuum Test Range	-101 Kpa ~ 0 Kpa
Vacuum Test Resolution	1 Kpa
Temperature Test Units	°C (Celsius), °F (Fahrenheit)
Temperature Test Range	-40°C ~ 150°C (-40°F ~ 302°F)
Temperature Test Resolution	0.1°C (-40°C ~ 99.9°C), 1°C (100°C ~ 150°C), 0.1°F (-40°F ~ 99.9°F), 1°F (100°F ~ 302°F)
Temperature Test Accuracy	+/- 0.5°C + 2dgt, +/- 0.9°F + 2dgt

Figure 7: Detailed technical parameters of the AUTOOL LM 120.

7. Warranty and Support

AUTOOL stands behind the quality of its products:

- **Three Years Warranty:** For damage caused by non-human factors, AUTOOL promises to resend parts for free within 3 years.
- **Lifelong Maintenance:** The product is supported with lifelong maintenance.
- **Customer Support:** For any inquiries or support needs, AUTOOL offers 24/7 customer support. You can contact them for assistance with product operation, troubleshooting, or warranty claims.

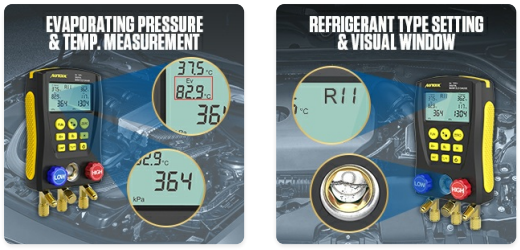
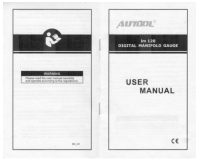
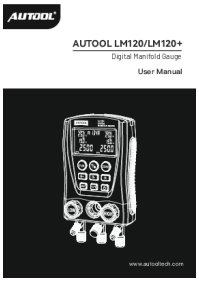
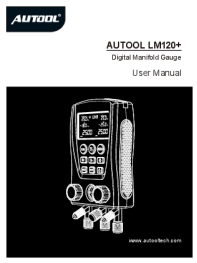
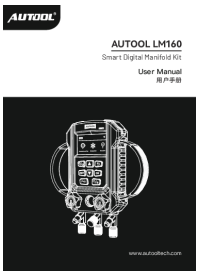
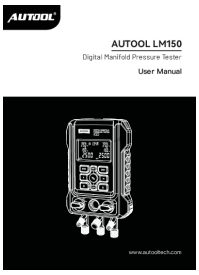


Figure 8: AUTOOL's commitment to customer support and warranty.

Related Documents - LM 120

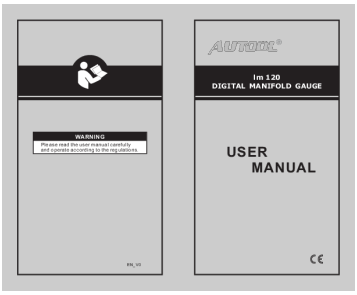
	AUTOOL Im 120 Digital Manifold Gauge User Manual Comprehensive user manual for the AUTOOL Im 120 Digital Manifold Gauge, detailing its features, specifications, operation instructions for refrigerant filling, vacuum testing, leak detection, safety precautions, common problems, and a glossary of terms relevant to refrigeration systems.
	AUTOOL LM120/LM120+ Digital Manifold Gauge User Manual This user manual provides comprehensive guidance for the AUTOOL LM120/LM120+ Digital Manifold Gauge. It details product specifications, structure, function instructions for refrigerant filling, vacuum operation, and pressure leak testing. The manual also includes common problems, a glossary of terms, maintenance advice, warranty information, and return/exchange procedures. Essential for HVAC technicians and refrigeration professionals.
	AUTOOL LM150 Digital Manifold Pressure Tester User Manual - HVAC Refrigerant Tool Comprehensive user manual for the AUTOOL LM150 Digital Manifold Pressure Tester. Covers product specifications, operating instructions for refrigerant filling, vacuum, and leak testing, common problems, glossary of terms, maintenance, warranty, and return policy for HVAC and refrigeration professionals.
	AUTOOL LM120+ Digital Manifold Gauge User Manual Comprehensive user manual for the AUTOOL LM120+ Digital Manifold Gauge, detailing its features, specifications, safety precautions, operating instructions, and troubleshooting tips for refrigeration and HVAC systems.
	AUTOOL LM160 Smart Digital Manifold Kit User Manual Comprehensive user manual for the AUTOOL LM160 Smart Digital Manifold Kit, covering operation, technical specifications, maintenance, and safety for HVAC applications.



[AUTOOL LM150 Digital Manifold Pressure Tester User Manual]

User manual for the AUTOOL LM150 Digital Manifold Pressure Tester, providing detailed instructions, specifications, safety guidelines, and troubleshooting for HVAC and refrigeration system testing.

Documents - AUTOOL – LM 120



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WARNING Please read the user manual carefully and operate according to the regulations. **lm 120** DIGITAL MANIFOLD GAUGE USER MANUAL EN_V0 CONTENT 1. Overview.....1 2. Safety rules and precautions.....1 3. Internati...

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