

LE LEMATEC AI303-R2, ZN312E-3

LE LEMATEC AI303-R2 Air Compressor Filter Regulator and ZN312E-3 Desiccant Filter Bundle Instruction Manual

INTRODUCTION

This instruction manual provides comprehensive guidance for the safe and effective use of your LE LEMATEC Air Compressor Filter Regulator (AI303-R2) and Desiccant Filter (ZN312E-3) bundle. This system is designed to deliver clean, dry, and regulated compressed air, enhancing the performance and longevity of your pneumatic tools. The AI303-R2 combines an air filter, a pressure regulator, and a digital pressure gauge to remove contaminants and precisely control air pressure. The ZN312E-3 desiccant filter further removes moisture, indicated by color-changing beads.

IMPORTANT SAFETY INFORMATION

- Always wear appropriate personal protective equipment, including safety glasses and gloves, when operating or maintaining compressed air systems.
- Read and understand all instructions in this manual before installing, operating, or performing maintenance on the filter regulator and desiccant filter.
- Ensure all connections are secure and leak-free before applying air pressure.
- Do not exceed the maximum operating pressure specified for the devices.
- Keep the devices and associated tools in a safe, dry place when not in use.
- Depressurize the air system before performing any maintenance or component replacement.

For additional visual guidance, you may refer to the product video: [Watch Product Video](#)

PRODUCT OVERVIEW AND COMPONENTS



Figure 1: LE LEMATEC Air Compressor Filter Regulator and Desiccant Filter Bundle. This image shows the complete product bundle, including both the AI303-R2 filter regulator and the ZN312E-3 desiccant filter.

AI303-R2 Digital Air Compressor Filter Regulator

The AI303-R2 unit integrates an air filter, a pressure regulator, and a digital pressure gauge to provide clean, regulated air. Key components are identified below:



Figure 2: AI303-R2 Digital Air Filter Regulator Components. This image shows the main parts of the AI303-R2 unit, including the air outlet, air filter regulator body, digital pressure gauge, button drain valve, adjustment knob, and air inlet.

- **Air Filter Regulator Body:** Filters debris, dust, and oil vapor from the compressed air.
- **Digital Pressure Gauge:** Provides precise digital readings of air pressure in PSI, BAR, and KPA. Features auto ON/OFF to conserve battery.
- **Adjustment Knob:** Used to set the desired output air pressure.
- **Button Drain Valve:** Allows for manual draining of accumulated moisture and contaminants from the filter bowl.
- **Air Inlet/Outlet:** Standard connections for compressed air lines.

ZN312E-3 3/8-Inch Desiccant Air Filter

The ZN312E-3 desiccant filter provides a second stage of air purification, specifically targeting moisture removal using color-changing desiccant beads.



Figure 3: ZN312E-3 Desiccant Air Filter. This image displays the desiccant filter unit, highlighting its transparent housing and the blue desiccant beads inside.

- **Transparent Housing:** Allows for visual inspection of desiccant bead condition.
- **Desiccant Beads:** Absorb moisture from the compressed air. They change color from blue to pink when saturated, indicating the need for replacement.
- **Inlet/Outlet:** 3/8-inch NPT connections for integration into the air line.

SETUP AND INSTALLATION

Proper installation is crucial for optimal performance and safety. Follow these steps to set up your filter regulator and desiccant filter:

1. **Depressurize Air System:** Ensure your air compressor and air lines are completely depressurized before beginning installation.
2. **Identify Flow Direction:** The AI303-R2 and ZN312E-3 units typically have an arrow indicating the direction of

air flow. Install them so that air flows from the compressor towards your tools.

3. **Connect AI303-R2:** Install the AI303-R2 Digital Air Filter Regulator as the first line of defense, directly after your air compressor or main air line. Use appropriate thread sealant (e.g., PTFE tape) on all threaded connections to prevent leaks.
4. **Connect ZN312E-3:** Install the ZN312E-3 Desiccant Air Filter as the second line of defense, downstream from the AI303-R2 and before your air tools. This ensures that air is filtered and regulated before moisture is removed.
5. **Secure Connections:** Hand-tighten connections, then use a wrench to tighten them securely. Do not over-tighten.
6. **Check for Leaks:** Once installed, slowly pressurize the air system and check all connections for leaks using a soapy water solution. Bubbles indicate a leak.

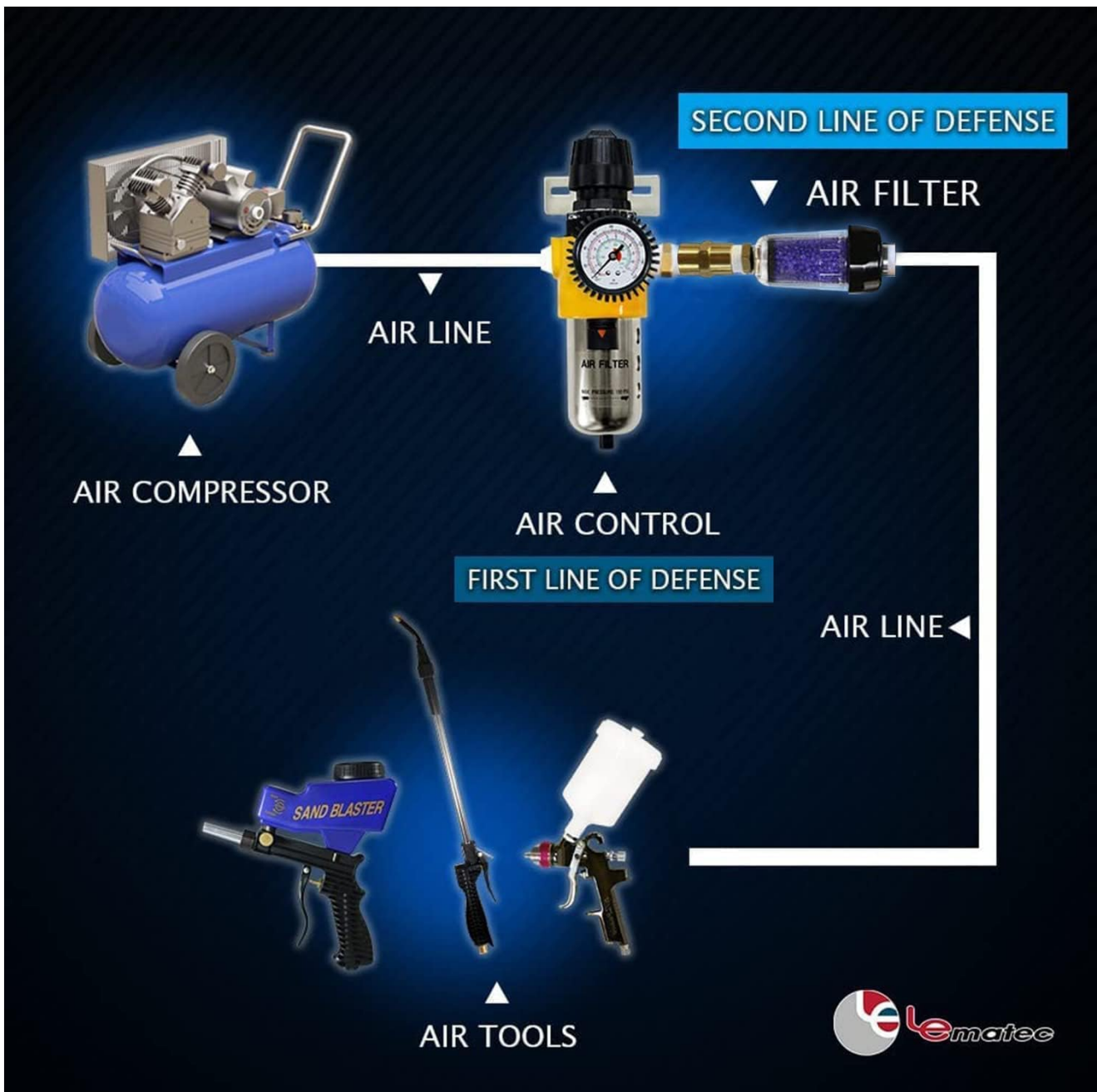


Figure 4: Recommended Air System Setup. This diagram illustrates the proper sequence for installing the filter regulator and desiccant filter within an air compressor system.

AI303-R2 Digital Air Regulator

- **Power On/Off:** The digital gauge features an auto ON/OFF function to save battery life. It will automatically turn on when air pressure is detected and turn off after a period of inactivity.
- **Adjusting Pressure:** To adjust the output air pressure, pull up the adjustment knob. Rotate clockwise to increase pressure and counter-clockwise to decrease pressure. Push the knob down to lock the setting.
- **Reading the Gauge:** The digital display shows pressure readings in PSI, BAR, and KPA. The range is typically 2.5-160.0 PSI, 0.20-11.00 BAR, and 20-1100 KPA.
- **Draining Moisture:** Periodically press the button drain valve at the bottom of the AI303-R2 to release accumulated water and contaminants. Do this with the air system pressurized to effectively purge the bowl.



Figure 5: Draining the AI303-R2 Filter Regulator. This image demonstrates how to operate the push drain valve to remove accumulated moisture and debris.

ZN312E-3 Desiccant Air Filter

- **Moisture Removal:** As compressed air passes through the filter, the desiccant beads absorb moisture.
- **Color Change Indicator:** The desiccant beads are blue when dry and effective. As they absorb moisture, they will gradually change color to pink. This color change indicates that the beads are saturated and need to be

replaced.



Figure 6: Desiccant Bead Color Change Indicator. This image illustrates the visual cue for desiccant bead replacement, showing the transition from blue (effective) to pink (saturated).

MAINTENANCE

AI303-R2 Digital Air Regulator Battery Replacement

The digital pressure gauge is powered by a replaceable CR2032 3V DC battery. When the display becomes dim or unresponsive, replace the battery.

1. Depressurize the air system completely.
2. Locate the battery compartment on the digital gauge. It is designed for easy access without screws.
3. Carefully open the compartment and remove the old CR2032 battery.
4. Insert a new CR2032 3V DC battery, ensuring correct polarity.
5. Close the battery compartment securely.



Figure 7: Digital Gauge Battery Replacement. This image illustrates the location and type of battery (CR2032) used in the digital pressure gauge.

ZN312E-3 Desiccant Bead Replacement

Replace the desiccant beads when they have changed color from blue to pink, indicating saturation.

1. Depressurize the air system completely.
2. Unscrew the transparent housing of the ZN312E-3 desiccant filter.
3. Carefully remove the saturated desiccant beads and dispose of them according to local regulations.
4. Clean the inside of the housing if necessary.
5. Fill the housing with new, fresh blue desiccant beads.
6. Reassemble the filter, ensuring all seals are properly seated and the housing is securely tightened.
7. Slowly repressurize the system and check for leaks.



ADVANTAGES OF DESICCANT FILTER

- Moisture-free air tools
- Lower maintenance costs
- Cleaner air, longer tool life
- Boost tool performance

Figure 8: Desiccant Filter Components and Replacement. This image shows the desiccant filter disassembled, illustrating how to access and replace the desiccant beads.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Air Leakage	Loose connections, damaged O-rings/seals, insufficient thread sealant.	Depressurize system. Tighten connections. Inspect and replace O-rings/seals if damaged. Apply fresh thread sealant.
Digital Gauge Not Displaying	Dead battery, no air pressure.	Replace CR2032 battery. Ensure air system is pressurized.
Excessive Moisture in Air Tools	Saturated desiccant beads, AI303-R2 drain not regularly purged, high humidity environment.	Replace desiccant beads in ZN312E-3. Regularly drain AI303-R2. Consider additional air drying solutions if humidity is extreme.

Problem	Possible Cause	Solution
Inconsistent Air Pressure	Adjustment knob not locked, regulator malfunction.	Ensure adjustment knob is pushed down to lock the setting. If problem persists, contact support.

SPECIFICATIONS

Feature	Detail
Product Name	LE LEMATEC Air Compressor Filter Regulator and Desiccant Filter Bundle
Model Numbers	AI303-R2 (Filter Regulator), ZN312E-3 (Desiccant Filter)
Item Weight	2 pounds
Power Source (AI303-R2)	Battery Powered (1 x CR2032 3V DC)
Voltage (AI303-R2)	3 Volts
Maximum Power	0.2 Horsepower
Special Features	Digital air regulator filter with auto shut-off, desiccant oil water separator with replaceable beads
Included Components	Air regulator filter, desiccant filter
Desiccant Filter Operating Pressure	1-150 PSI at 22 CFM
Desiccant Filter Connection Size	3/8-Inch

WARRANTY AND SUPPORT

For warranty information, technical support, or replacement parts, please refer to the official LE LEMATEC website or contact their customer service directly. Keep your purchase receipt for warranty claims.

Visit the LE LEMATEC Store: [LE LEMATEC Store](#)