

# Owner's Manual & Safety Instructions

**Save This Manual** Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

221

## CENTRALPNEUMATIC®

### Compressed Air Dryer



Visit our website at: <http://www.harborfreight.com>  
Email our technical support at: [productsupport@harborfreight.com](mailto:productsupport@harborfreight.com)

**40211**

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

#### **⚠ WARNING**






**Read this material before using this product.  
Failure to do so can result in serious injury.  
SAVE THIS MANUAL.**

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# CENTRALPNEUMATIC®

### WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Addresses practices not related to personal injury.

# IMPORTANT SAFETY INFORMATION

## General Safety Warnings



**WARNING** Read all safety warnings and instructions.

*Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*

**Save all warnings and instructions for future reference.**

The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

### 1. Work area safety

- Keep work area clean and well lit.**  
Cluttered or dark areas invite accidents.
- Do not operate the Air Dryer in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.**  
Air Dryer motors produce sparks which may ignite the dust or fumes.
- Keep children and bystanders away from an operating Air Dryer.**

### 2. Electrical safety

- Air Dryer plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded Air Dryers.** Standard plugs and matching outlets will reduce risk of electric shock.
- Do not expose Air Dryer to rain or wet conditions.** Water entering a Air Dryer will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for unplugging the Air Dryer. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.

### 3. Personal safety

- Stay alert, watch what you are doing and use common sense when operating this Air Dryer. Do not use this Air Dryer while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating a Air Dryer may result in serious personal injury.
- Use personal protective equipment. Always wear ANSI-approved eye protection during setup and use.**
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source or moving the Air Dryer.**

### 4. Air Dryer use and care

- Do not use the Air Dryer if the switch does not turn it on and off.** Any Air Dryer that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the Air Dryer.** Such preventive safety measures reduce the risk of starting the Air Dryer accidentally.
- Store an idle Air Dryer out of the reach of children and do not allow persons unfamiliar with the Air Dryer or these instructions to operate it.** A Air Dryer is dangerous in the hands of untrained users.
- Maintain the Air Dryer. Keep the Air Dryer clean for better and safer performance. Follow instructions for lubricating and changing accessories. Keep dry, clean and free from oil and grease. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the Air Dryer's operation. If damaged, have the Air Dryer repaired before use.** Many accidents are caused by a poorly maintained Air Dryer.
- Use the Air Dryer in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the Air Dryer for operations different from those intended could result in a hazardous situation.

### 5. Service

- Have your Air Dryer serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the Air Dryer is maintained.
- Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.

# Air Dryer Safety Warnings

SAFETY

INSTALLATION

OPERATION

MAINTENANCE

1. **Risk of fire or explosion - do not spray flammable liquid in a confined area or towards a hot surface. Spray area must be well-ventilated. Do not smoke while spraying or spray where spark or flame is present. Arcing parts - keep Air Dryer at least 20 feet away from explosive vapors, such as when spraying with a spray gun.**
2. **Do not use to supply breathing air.**
3. **Do not leave Air Dryer unattended for an extended period while plugged in. Unplug Air Dryer after working.**
4. **Keep Air Dryer well-ventilated. Do not cover Air Dryer during use.**
5. Do not adjust internal components other than instructed in this manual.
6. Air Dryer head gets hot during operation. Do not touch it or allow children nearby during or immediately following operation.
7. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
8. All air line components, including hoses, pipe, connectors, filters, etc., must be rated for a minimum working pressure of 150 PSI, or 150% of the maximum system pressure, whichever is greater.

9. USE OF AN EXTENSION CORD IS NOT RECOMMENDED. If you choose to use an extension cord, use the following guidelines:

TABLE A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)				
NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH			
	25'	50'	100'	150'
0 – 6	18	16	16	14
6.1 – 10	18	16	Do not use.	
10.1 – 12	16	16	Do not use.	
12.1 – 16	14	12	Do not use.	

- a. Make sure your extension cord is in good condition.
- b. Be sure to use an extension cord which is heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

**Note:** Performance of the Air Dryer (if powered by line voltage) may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.

10. Industrial applications must follow OSHA guidelines.
11. Maintain labels and nameplates on the Air Dryer. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
12. This product is not a toy. Keep it out of reach of children.
13. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.



**SAVE THESE INSTRUCTIONS.**

## ⚠ WARNING



**TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:**

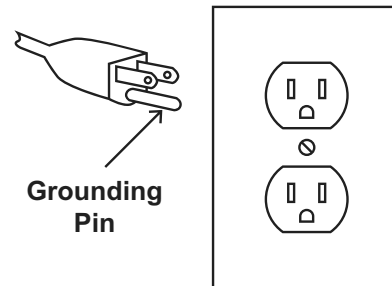
Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the Air Dryer.

Never remove the grounding prong from the plug. Do not use the Air Dryer if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

## 110-120 VAC Grounded Air Dryers: Air Dryers with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This Air Dryer is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the Air Dryer is properly grounded.

5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the Air Dryer's plug.
6. Repair or replace damaged or worn cord immediately.



**125 VAC 3-Prong Plug and Outlet  
(for up to 125 VAC and up to 15 A)**

7. This Air Dryer is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 VAC 3-Prong Plug and Outlet**. The Air Dryer has a grounding plug that looks like the plug illustrated above in **125 VAC 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this Air Dryer to a different outlet.

## Symbology

<b>PSI</b>	Pounds per square inch of pressure
<b>CFM</b>	Cubic Feet per Minute flow
<b>SCFM</b>	Cubic Feet per Minute flow at standard conditions
<b>NPT</b>	National pipe thread, tapered

<b>NPS</b>	National pipe thread, straight
<b>V</b>	Volts
<b>~</b>	Alternating Current
<b>A</b>	Amperes

## Specifications

Electrical Rating	110-120VAC / 60Hz /
Horsepower	1/4 HP
Air Inlet / Outlet Size	1/2" Steel Pipe -14 NPT
Recommended Operating Pressure	100 PSI
Max. Operating Pressure	140 PSI
Flow Capacity	21.6 CFM
R-134A Refrigerant Pressure / Temp Range	32-39 PSI (2-8° C)

**Note:** This Compressed Air Dryer uses R-134A Refrigerant.

**Note:** Not for medical use. Do not use for hyperbaric chambers.

## Installation



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

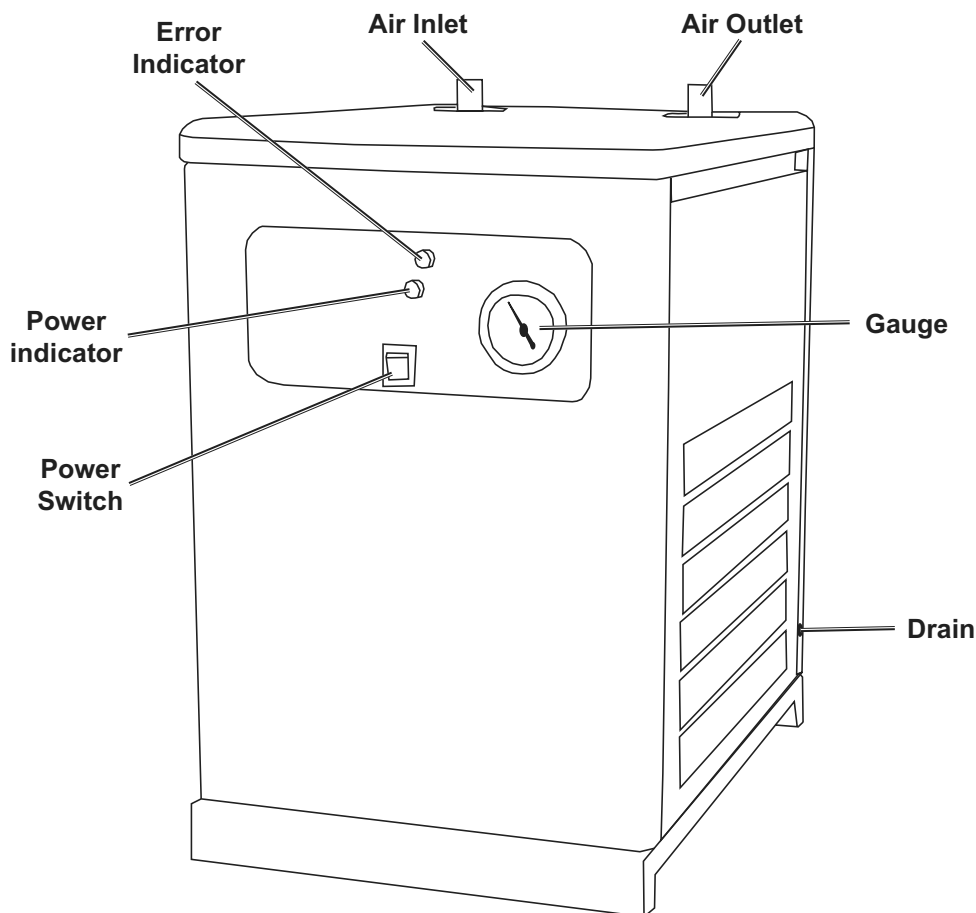
### **WARNING**

**TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**

Turn the Power Switch “OFF” and unplug the Air Dryer from its electrical outlet before assembling or making any adjustments to the dryer.

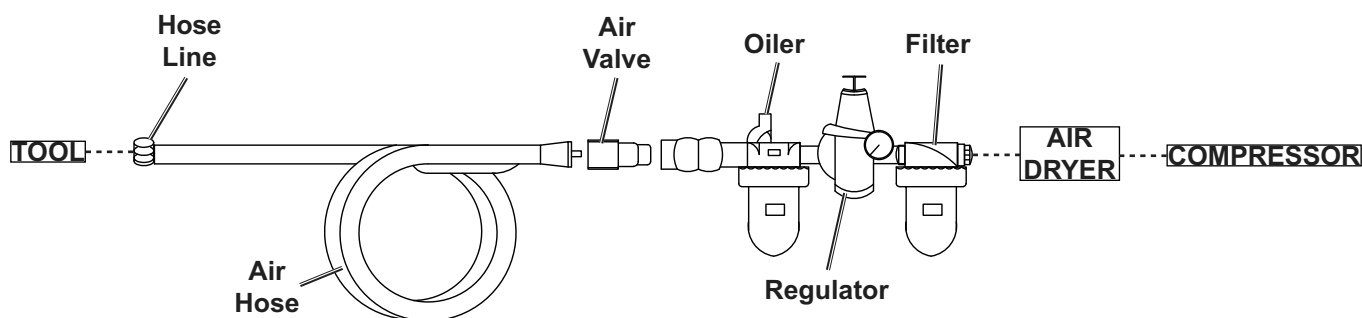
**Note:** For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

## Functions



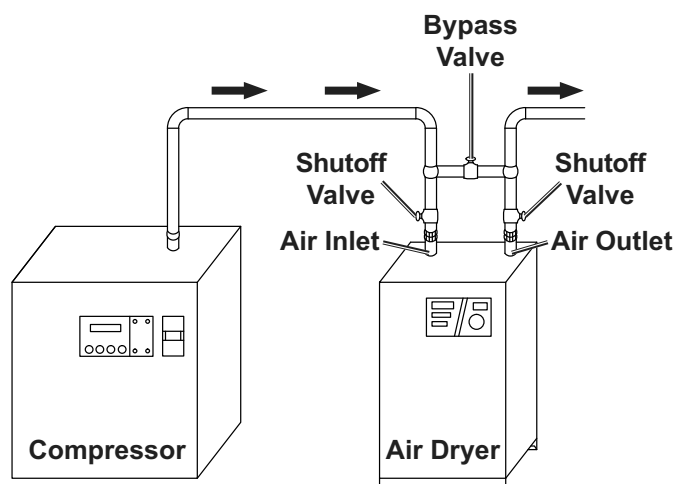
# Installation

For best performance, an oiler, regulator, and inline filter should be incorporated as shown in the diagram below. Hoses, couplers, oilers, regulators, and filters are all available at Harbor Freight Tools.

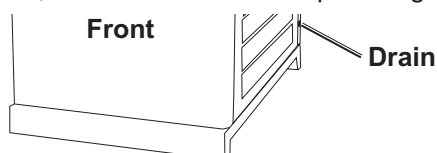


**Note:** It will be necessary to install valves and couplers (not included) from the compressor to the Air Dryer (1/2" steel pipe-14 NPT) and from the Air Dryer (1/2" steel pipe-14 NPT) to the tool. Use pipe thread seal tape or pipe dope for all connections. If you are not using an automatic oiler system, before operation, add a few drops of pneumatic tool oil to the airline connection. Add a few drops more after each four hours of continual use. Check the air connections for leaks before use.

**Note:** It is recommended that a bypass valve (not included) be added between the Air Inlet and Air Outlet of the Air Dryer for applications when the Air Dryer is not needed as shown in the diagram below. The shutoff valves (not included) must be plumbed below the horizontal piping containing the bypass valve. The bypass and shutoff valves must be installed by a plumber or an authorized service technician.



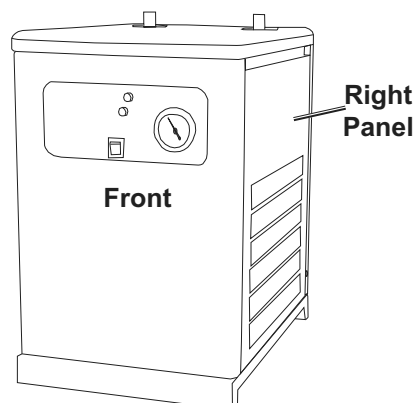
1. Install the Air Dryer at least 2 feet from the wall on all four sides. This will give the unit proper ventilation and allow space for maintenance and repair.
2. Make sure the floor is level.
3. Do not expose the unit to rain or any moisture.
4. Install the unit out of direct sunlight and away from any heat sources. Otherwise, the cooling function of the unit will continually run, eventually overheating the Air Dryer.
5. Position a small bucket to capture foul water from the drain hose at the bottom of the unit. Condensation water can be piped to a floor drain, if available; be sure to follow local plumbing codes.



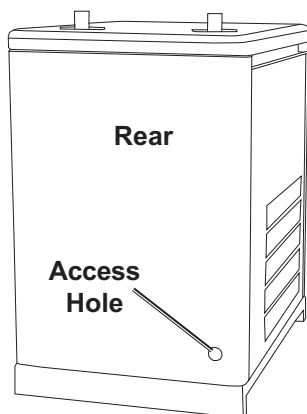
6. Complete all plumbing as required.

**Note:** Electrical wiring must be done by a professionally certified electrician.

7. Remove the Right Side Panel.

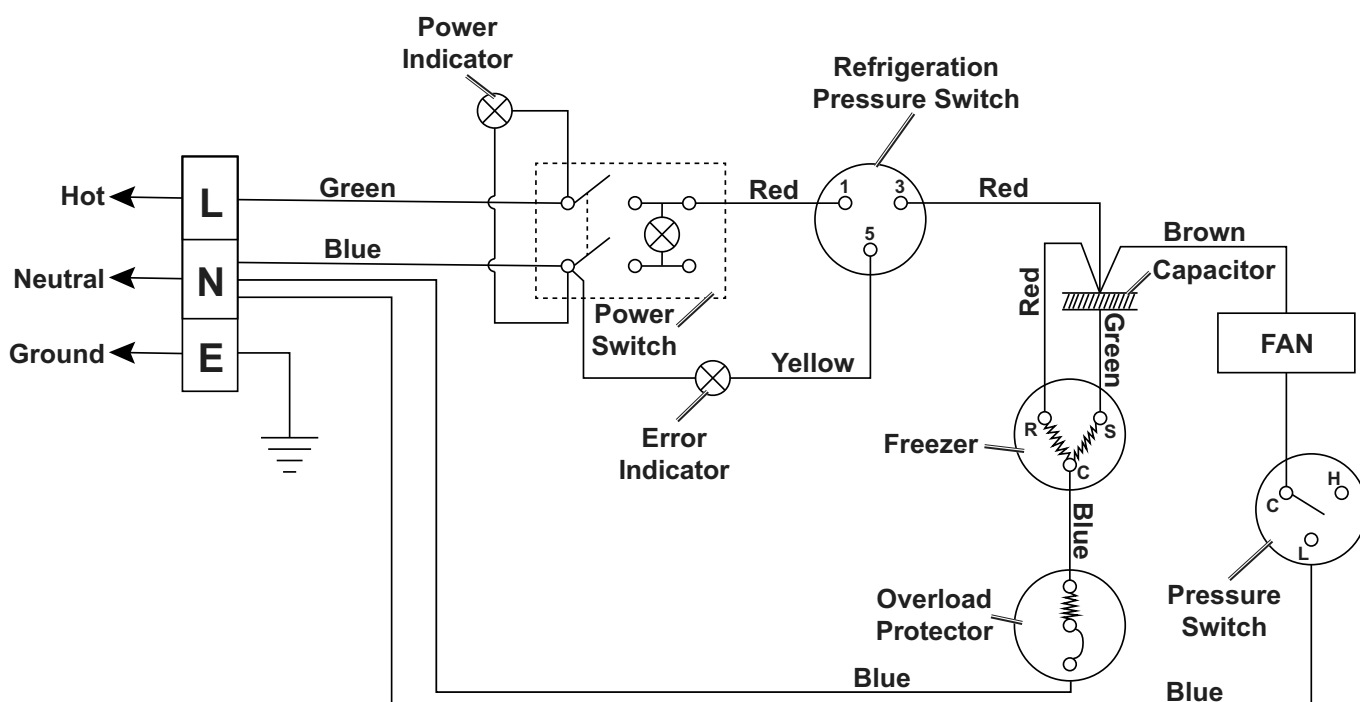


8. Route the three conductor electrical cord (not included) through a UL approved cable clamp (not included) and through the Access Hole on the rear of the unit.

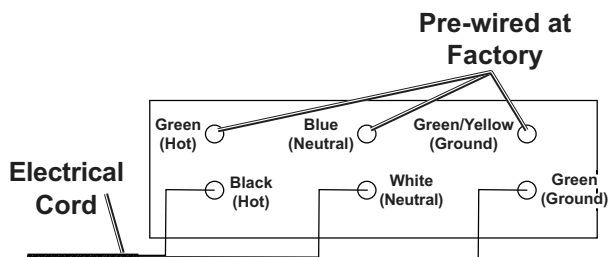


**Note:** The three conductor electrical cord (not included) must be rated for a minimum of 10-1/2 load rated amps, and the plug must be three pronged (recommended 12 gauge, three conductor electrical cord).

**Note:** The schematic diagram below is provided for additional information and clarification.



9. Locate the Terminal Strip inside the unit. Note the top three wires on the Terminal Strip are pre-wired from the factory. Connect the three conductors of the electrical cord (not included) to the Terminal Strip as illustrated below.



11. Secure the UL approved cable clamp (not included) to the Access Hole on the rear of the unit.
12. Secure the electrical cord (not included) within the UL approved cable clamp (not included) to prevent strain on the electrical connections.
13. Replace the Right Side Panel.

10. Make to route the electrical cord (not included) in the interior of the unit to prevent interference with the fan, hot components, etc.



## Operating Instructions



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

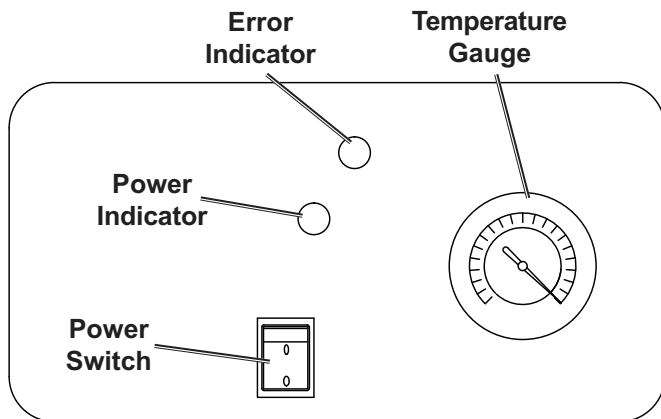
### Air Dryer Set Up

1. Route the power cord from the Air Dryer to the grounded wall outlet, along a safe path without creating a tripping hazard or exposing the power cord to possible damage.
2. **Using the Air Dryer without the bypass valve:**
  - a. Open both shutoff valves.
  - b. Close the bypass valve.
  - c. Turn on the air compressor and Air Dryer.
3. **Using the bypass valve without the Air Dryer:**
  - a. Turn off the Air dryer and air compressor.
  - b. Close both shutoff valves.
  - c. Open the bypass valve.
  - d. Turn on the air compressor.

### General Operation

**Note:** Determine whether the Air Dryer is to be used or to bypass the Air Dryer. Follow the instructions under "Air Dryer Set Up" on page 9.

**Follow the instructions below when using the Air Dryer:**



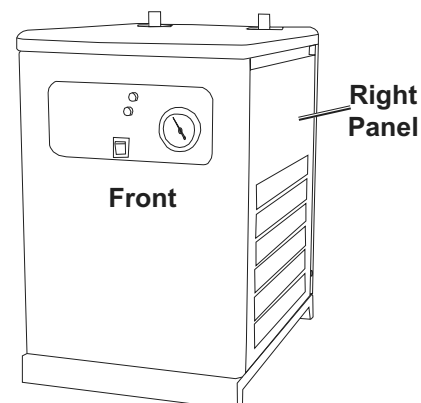
1. Power up the air compressor.
2. Press the Power Switch on the front control panel to power up the Air Dryer.

**Note:** If the Error Indicator is on, turn off the Air Dryer and let the unit cool. After the unit has cooled, turn on the Air Dryer. If the Error Indicator is still lit, take the unit to an authorized service technician. During normal operation, the Gauge should always be in a range between 32-39PSI (2-8°C).

3. After the Air Dryer has warmed up, if you do not hear the fan running, there is likely not enough air pressure to activate the pressure switch.
  - a. Turn off the Air Dryer and the air compressor.
  - b. Close the shutoff valve for the Air Inlet.

- c. Turn the Air Dryer back on and allow it to build up pressure for a few minutes.
  - d. Open the shutoff valve for the Air Inlet.
  - e. Turn on the air compressor and let the air in slowly at first.
4. During operation, dry air will pass from the Air Dryer to the tool or application.
  5. When finished, stop the air compressor first. Continue to run the Air Dryer until all compressed air runs through the system.
  6. Turn off the Air Dryer.

**Note:** If the Air Dryer stops and the Error Indicator is lit, the unit is running at too high of a temperature or pressure. Let the unit cool. Unplug the Air Dryer. Open the Right Side Panel and push the reset button on the Pressure Switch (See the "Parts List" on page 11, and the "Assembly Diagram" on page 12). Replace the Right Side Panel. Plug the unit in and restart. If the Error Indicator stays lit, or comes on continually, take the unit to an authorized service technician.





Procedures not specifically explained in this manual must be performed only by a qualified technician.

### **⚠ WARNING**

#### **TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**

Turn the Power Switch “OFF” and unplug the Air Dryer from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

#### **TO PREVENT SERIOUS INJURY FROM AIR DRYER FAILURE:**

Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

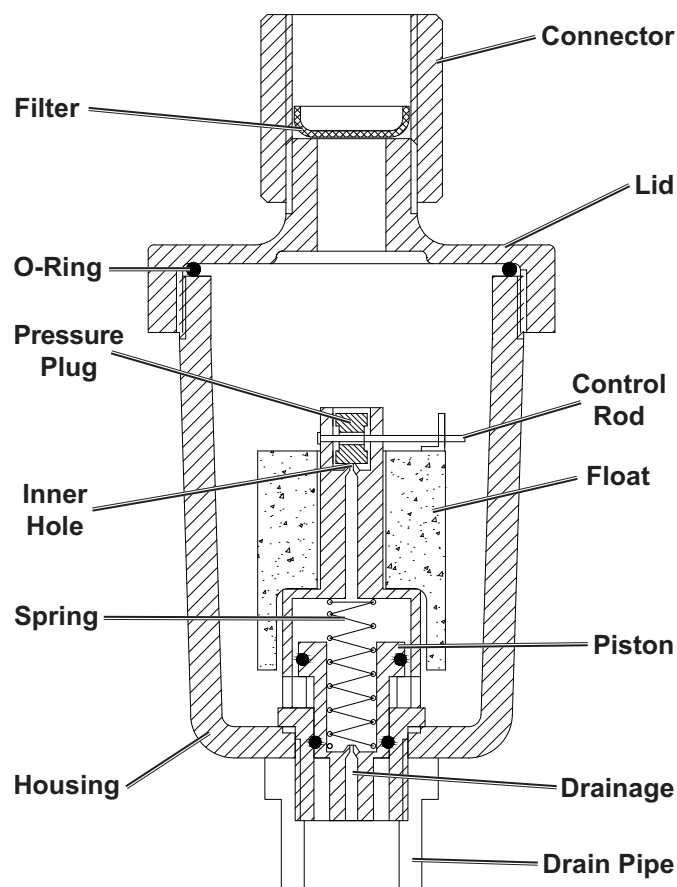
## Cleaning, Maintenance, and Lubrication

**Note:** This Air Dryer uses Refrigerant 134A. The refrigerant system does not need servicing unless the unit begins to leak. If the unit leaks refrigerant, take it to an authorized service technician.

1. **BEFORE EACH USE**, inspect the general condition of the air dryer. Check for:
  - loose hardware,
  - misalignment or binding of moving parts,
  - cracked or broken parts,
  - damaged electrical wiring, and
  - any other condition that may affect its safe operation.
2. **AFTER USE**, wipe external surfaces of the Air Dryer with a clean cloth.
3. **PERIODICALLY**, Use a dust collector and an air gun to clean dirt and debris off of the Condenser. Be careful not to get too close to the unit as high pressure will damage the unit. If grease or oil are built up and wont blow off, remove the Left Side Panel and wash off the Condenser with a mild detergent, then replace the Panel.
4. Never attempt to adjust the temperature; this adjustment should only be done by an authorized service technician.
5. **⚠ WARNING!** If the supply cord of this Air Dryer is damaged, it must be replaced only by a qualified service technician.
6. **WARNING!** Repairing this unit (other than resetting the pressure switch) should only be performed by an authorized service technician.

#### 7. **Authorized Service Technician ONLY; Washing the Water Separator:**

- a. Remove the Water Separator from the Connector; do not lose the internal Filter.
- b. Remove the Lid from the Housing and pour out any water.
- c. Disassemble the Water Separator and its internal components and clean each component inside and outside.
- d. Reassemble the Water Separator.



# Troubleshooting

Problem	Possible Causes	Likely Solutions
Unit shuts off by itself	1. Temperature or pressure is too high. 2. Fan is overheated. 3. Condenser is dirty.	1. Reset the pressure switch. Clean the Condenser. 2. Reset the pressure switch. Clean the Condenser. 3. Clean the Condenser.
No power indicator when the unit is on	Loose electrical connections.	Check the connections and tighten as needed.
Unit will not cool or dry air	Water in the refrigeration unit because: water separator blocked, bad valve, bad connection to capacitor, bad fan unit, low air pressure.	Clean water separator and drain, replace valve, check capacitor connection, replace capacitor, replace fan unit, turn up air pressure on air compressor.
Unit buzzes and does not operate	Bad capacitor.	Replace the capacitor. <b>*Qualified electrician or service technician only.</b>
Fan does not work at the correct temperature and pressure	Bad fan bearing, bad fan capacitor, or bad temperature switch.	Replace bad fan bearing, bad fan capacitor, or bad temperature switch. <b>*Qualified electrician or service technician only.</b>
Pressure on the inlet or outlet valves increases for no reason	Bad internal pressure valve.	Replace internal pressure valve.
Ice accumulating in the dryer, and/or a pressure loss through the unit	Formation of ice inside the unit.	The hot gas bypass valve (not shown in the parts list or assembly diagram) needs to be adjusted. This adjustment should only be done after consultation with out technical support service at 1-888-866-5797.



**Follow all safety precautions whenever diagnosing or servicing the air dryer.**  
**Disconnect power supply before service.**

## Parts List and Diagram

## PLEASE READ THE FOLLOWING CAREFULLY

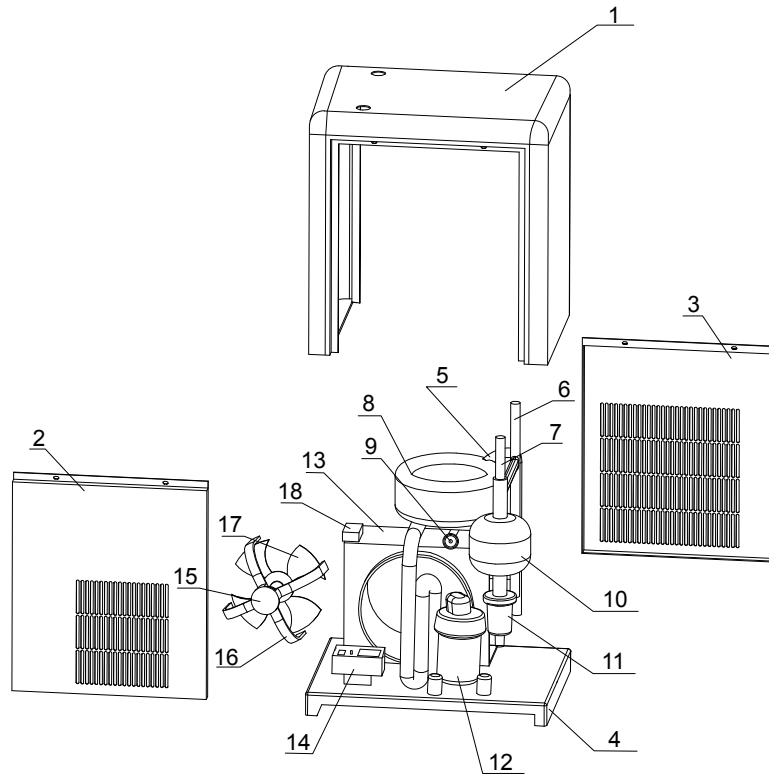
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

## Parts List

Part	Description	Qty
1	U-Housing	1
2	Left Plate	1
3	Right Plate	1
4	Base Plate	1
5	Pipe Connector	1
6	Air Inlet	1
7	Air Outlet	1
8	Evaporator	1
9	Filter Valve	1

Part	Description	Qty
10	Water Separator	1
11	Drain	1
12	Compressor	1
13	Condenser	1
14	Pressure Switch	1
15	Fan Motor	1
16	Fan Bracket	1
17	Fan	1
18	Terminal Strip	1

# Assembly Diagram



**Record Product's Serial Number Here:** \_\_\_\_\_

**Note:** If product has no serial number, record month and year of purchase instead.

**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Reference UPC 792363402118.

## Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

# CENTRALPNEUMATIC®

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