P4200WPM Air Dryer

User's Guide

1. Welcome & Congratulations

Congratulations on your purchase of a new ALTEC AIR P4200WPM Air Dryer! We here at ALTEC AIR are very proud of our products and we are committed to providing you with the best value and service possible.

We are sure that you will be satisfied with your new air dryer and would like to thank you for choosing ALTEC AIR for your air dryer requirements. We also hope that you will continue to choose us for your future air pressure and related product purchases.

For information about this and other ALTEC AIR products, please visit us on the web at:

www.altecair.com

2. Introduction

PLEASE READ THIS USER'S GUIDE THOROUGHLY AND SAVE FOR FUTURE REFERENCE.

This User's Guide is provided for the benefit of our customers and contains information and direction specific to the ALTEC AIR P4200WPM Air Dryer. It will cover topics including: safety, specifications, installation, registration, operation, testing, maintenance, replacement parts, service, and troubleshooting issues. Observation and compliance with this User's Guide will ensure the maximum life and efficiency of your air dryer.

This User's Guide should be read thoroughly prior to installing, operating, or servicing the air dryer in order to become familiar with the recommended procedures. This will minimize the possibility of personal injury or damage to the unit due to improper operation or handling.

3. Table of Contents

4. Safety & Warning Information

This section contains general information about safety and warning points to consider and adhere to during installation, operation, and maintenance of your air dryer. PLEASE READ THIS SECTION BEFORE PERFORMING ANY OPERATION OR PROCEDURE ON YOUR AIR DRYER.

Additional warnings specific to an operation or procedure will also be presented throughout the following sections. These will include the ⚠ symbol as well as a label of "**WARNING!**", "**CAUTION!**", or "**IMPORTANT!**". Please be sure to pay close attention for these warnings and read them as you encounter them.

⚠ **WARNING!**

For your safety, all the information in this User's Guide must be followed to minimize the risk of electrical shock, and prevent property damage or personal injury.

⚠ **WARNING!**

Extreme care should be exercised to avoid contact with live electrical circuits. Many procedures performed during installation, operation, testing, and maintenance of this air dryer require the equipment to be running, creating a situation for potential electrical shock. It is highly recommended that you remove all jewelry before performing any procedures.

⚠ **WARNING!**

Internal surfaces may be hot. Use care when coming into contact with internal components as there is a potential for some of these components to become hot when in operation or standby.

CAUTION!

Proper Installation & Maintenance as outlined in this User's Guide is extremely important to ensure the reliability and longevity of the equipment as well as prevent damage or personal injury.

CAUTION!

Depressurizing the air dryer may be necessary before performing certain procedures. **NEVER** remove pressure sensing tubes from the Control Board without depressurizing the air dryer first, or **damage to the Control Board will occur.**

CAUTION!

Incoming power to dryer must be 110 - 125 VAC, 1 Phase, 50 / 60 Hz with minimum 20 amp service with a 15 amp slow blow fuse. If hard-wiring directly, minimum of 14 AWG wire must be used.

CAUTION!

This Air Dryer does not contain an internal Surge Protection Device (SPD). If an SPD is required it must be supplied by the user.

CAUTION!

Observe precautions for handling **Electrostatic Sensitive Devices.**

IMPORTANT!

Performing routine maintenance as outlined in the *Maintaining Your Dryer* section will ensure optimal performance over the lifecycle of your air dryer.

⚠	**IMPORTANT!**
	Performing procedures not described in this User's Guide or installing components not supplied by ALTEC AIR is NOT RECOMMENDED AND MAY VOID THE WARRANTY.

5. Overview & Specifications

5.1 Product Description

The P4200WPM Air Dryer from ALTEC AIR is designed to intake wet ambient air and remove the moisture for delivery to applications requiring a constant, on-demand source of dry, pressurized air. This process is fully automatic and will remain consistent with minimal required periodic maintenance. This dryer is designed specifically for outdoor use.

The P4200WPM Air Dryer employs a fully digital operating platform offering the most accurate readings of dryer variables, removable access panels allowing easier access for adjustment and maintenance, and ultra quiet compressors with an industry leading maintenance interval of 8,000 hours.

5.2 Key Features

- LCD display of all operating parameters

- Solid state microprocessor-based circuitry eliminates costly maintenance

- Accurate humidity sensing within ±0.1% RH

- Quietest dryer on the market - less than 50 dBA

- Removable compressor tray for easy maintenance

- Oil-less compressors with 8,000 hour maintenance interval

5.3 Technical Specifications

Output Capacity	Normal: 2,600 SCFD Maximum: 4,200 SCFD
Power Requirements	110 - 125 VAC, 50 / 60 Hz
Electrical Characteristics	Running Amps: 12 (20 Amp service recommended)
Outlet Pressure Range	0 – 15 PSI (adjustable)
Outlet Air Humidity	Less than 2% RH
Compressor Type	2-cylinder, 3/4 HP, oil-less type compressor
Drying Method	Heatless Desiccant
Operating Temperature Range	40° to 85° F (5° to 30° C) Optimal
Noise Level:	48 dBA at 3'
Heat Dissipation	4,600 BTU/hr
Alarms	Standard alarms – complete readings of all critical measurement points, individual alarm indication display
Outlet Connections	1/2" NPT Female
Dimensions	20.25" D x 17.5" W x 47.75" H (51.4 cm x 44.5 cm x 121.3 cm)
Net / Shipping Weight	212 lbs (96 kgs) / 233 lbs (105.9 kgs)

5.4 Dryer Function Overview
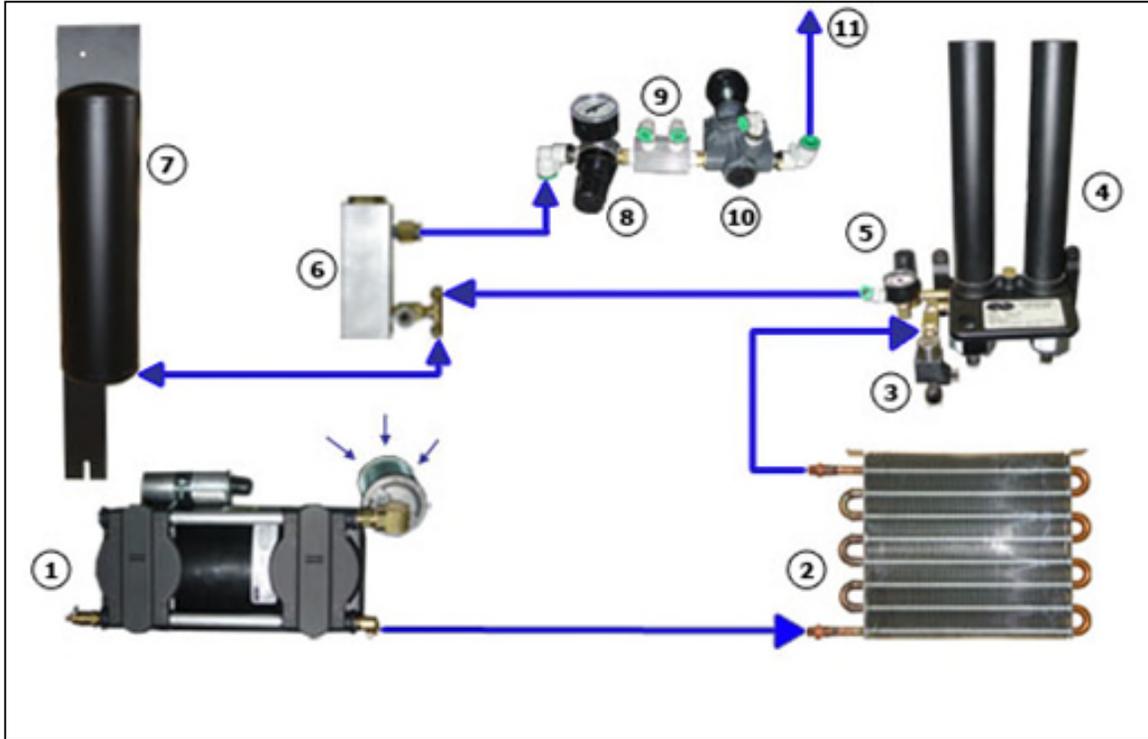
#	Component	Description
1	Compressor	Compresses drawn in ambient air.
2	Precooler	Cools compressed air prior to drying function.
3	Unloader Valve	Relieves excess compressor head pressure.
4	Heatless Dryer	Removes moisture from compressed air.
5	Capacity Control Valve	Regulates system pressure and prevents air from bleeding back through the heatless dryer.
6	Humidity Sensor	Measures the humidity of the compressed air.
7	Air Tank	Stores dry compressed air.
8	Static Pressure Regulator	Regulates the static pressure (17 PSI). Maintains constant pressure on the flow block for accurate flow measuring.
9	Flow Block	Measures the flow of compressed air.
10	Outlet Pressure Regulator	Regulates the outlet pressure.
11	Pressure Outlet	Outputs the pressure set by the Outlet Pressure Regulator.

6. Installing Your Dryer

6.1 Safety & Warning Information

WARNING!

Internal surfaces may be hot. Use care when coming into contact with internal components as there is a potential for some of these components to become hot when in operation or standby.

WARNING!

Extreme care should be exercised to avoid contact with live electrical circuits. Many procedures performed during installation, operation, testing, and maintenance of this air dryer require the equipment to be running, creating a situation for potential electrical shock. It is highly recommended that you remove all jewelry before performing any procedures.

CAUTION!

Proper Installation & Maintenance as outlined in this User's Guide is extremely important to ensure the reliability and longevity of the equipment as well as prevent damage or personal injury.

CAUTION!

Incoming power to dryer must be 110 - 125 VAC, 50 / 60 Hz with minimum 20 amp service with a 15 amp slow blow fuse. If hard-wiring directly, minimum of 14 AWG wire must be used.

> ### CAUTION!
>
> This Air Dryer does not contain an internal Surge Protection Device (SPD). If an SPD is required it must be supplied by the user.

> ### IMPORTANT!
>
> Performing procedures not described in this User's Guide or installing components not supplied by ALTEC AIR is NOT RECOMMENDED AND MAY VOID THE WARRANTY.

6.3 Before You Begin

6.3.1   Carefully inspect the unit, including the shipping box as well as the air dryer, for ANY DAMAGE CAUSED BY SHIPPING. If any shipping damage is detected, it is important to file a claim with the shipping company prior to continuing the installation procedures.

6.3.2   Read the entire *Installing Your Dryer* section to familiarize yourself with the components and procedures before performing the air dryer installation.

6.3.3   Verify the installation location of the air dryer:

6.3.3.1   Well secured location

6.3.3.2   ALTEC AIR recommends the air dryer be mounted a minimum of one (1) foot from the ground.

6.3.3.3   Ambient temperature lower than 120°F (85° F optimal).
NOTE: Higher temperatures will decrease component lifespan.

6.3.3.4 Meets the following power requirements:

- 110 - 125 VAC, 50 / 60 Hz

- Minimum 20 amp service with a 15 amp slow blow fuse

- If hard-wiring directly, minimum of 14 AWG wire must be used

6.3.4 Notify the alarm center of the installation and potential for alarms during the process (as necessary).

6.4 Included Contents

(1) P4200WPM Air Dryer

(1) Installation Guide (not shown)

Package located inside the dryer:

    (1) Muffler

    (1) Elbow

    (1) Nipple Fitting

    (1) User's Guide -

Paper copy or digital file on CD (not shown)
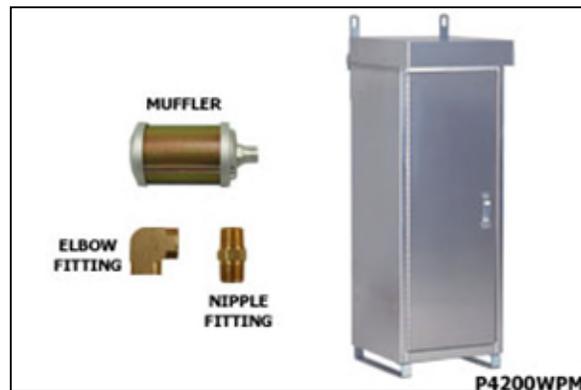
6.5 Required Tools and Materials

- Large adjustable wrench
- Medium adjustable wrench
- 7/16" wrench
- Band cutters or snips
- 5/16" nut driver

- Large flathead screwdriver
- Pipe dope or pipe thread tape
- Cup of soapy water
- 1-inch paint brush (recommended)

6.6 Installation Steps

6.6.1 Remove all shipping materials and hardware.

> **NOTE:** If ANY SHIPPING DAMAGE is detected, file a claim with the shipping company prior to continuing the installation procedures.

6.6.2 Open the front door.

6.6.3 Check for loose parts, hoses, or wiring.

> **NOTE:** If ANY SHIPPING DAMAGE is detected, file a claim with the shipping company prior to continuing the installation procedures.

6.6.4 Remove the ship-loose
contents package.

6.6.5 Remove the shipping block
from under the compressor
plate.

Discard blocks and bolts.
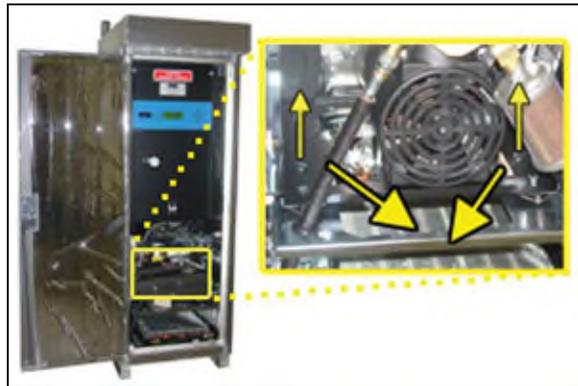
6.6.6 Place the dryer at the
operating location.

> **NOTE:** Close the front door if necessary.

6.6.7 Verify that the dryer is powered **OFF**.

6.6.8 Unsecure the two latch
screws and lower the front
panel.
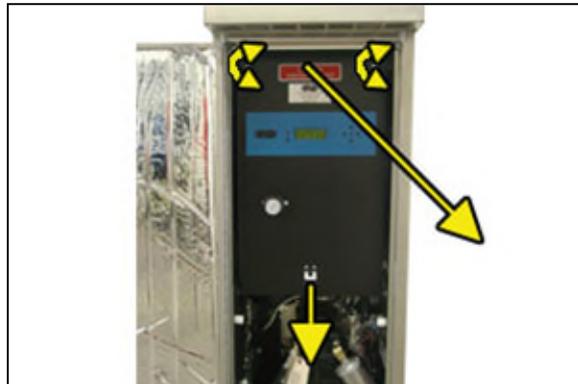
6.6.9 Route incoming power through strain relief fitting on the back where shown.
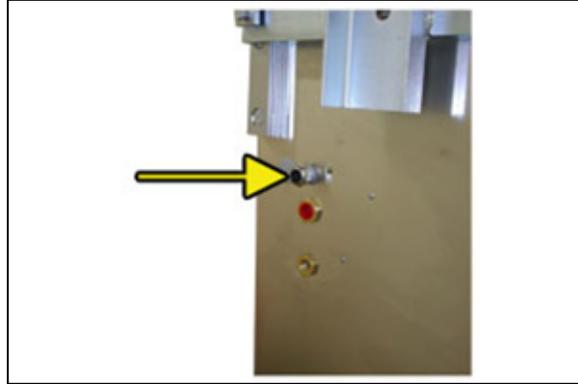
6.6.10 With a 5/16" nut driver remove the cover from the terminal block.
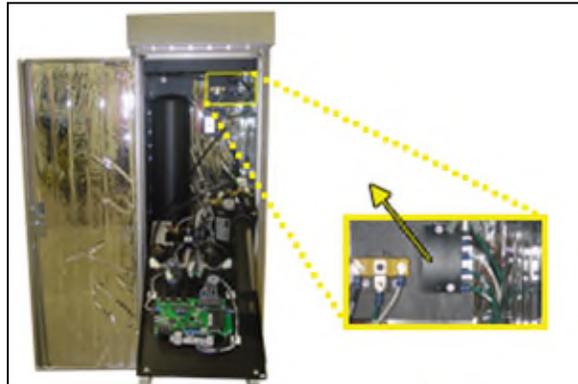
6.6.11 With a screwdriver wire power to the terminal block of the dryer.
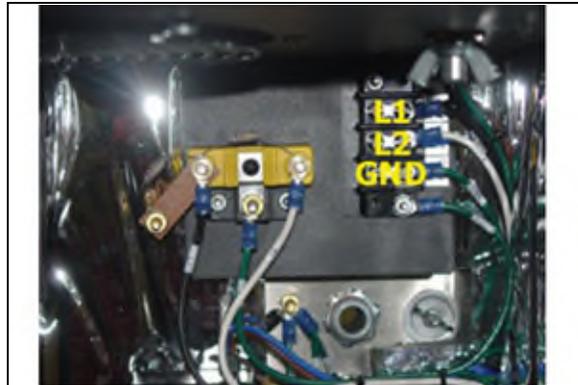
6.6.12 Reinstall the terminal block cover.

6.6.13 Remove red dust plug and connect the air supply line to the dryer Outlet Pressure port.

6.6.14 Install muffler.
NOTE: This is optional.
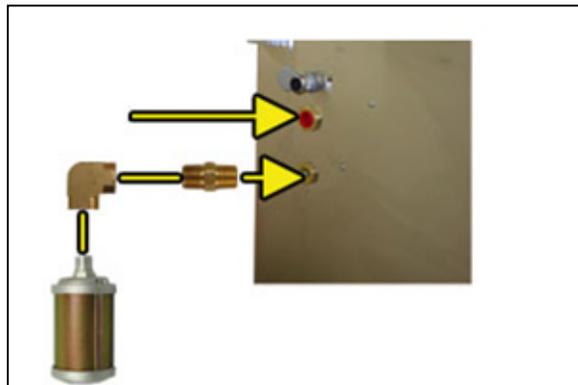
6.6.15 Power the dryer **ON**.
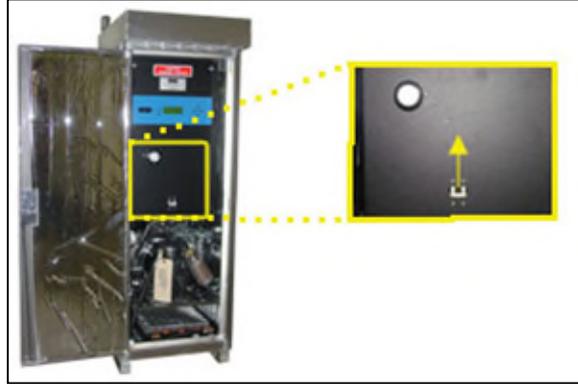
⚠ **IMPORTANT:** Press **RESET** if the dryer goes into **SHUTDOWN** due to Humidity.

6.6.16 Set the System Pressure:

With Compressor running:

6.6.16.1 Pull the Capacity Control Valve knob out.

6.6.16.2 Turn the knob until the reading on the pressure gauge is **50 PSI**.

6.6.16.3 Push the knob in to lock.
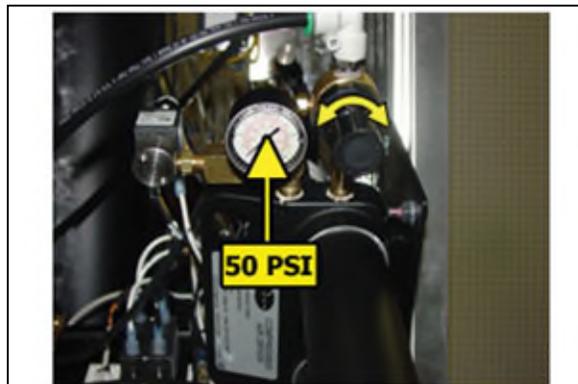
6.6.17   Set the Static Pressure:

6.6.17.1   Pull Static Pressure
Regulator knob out.
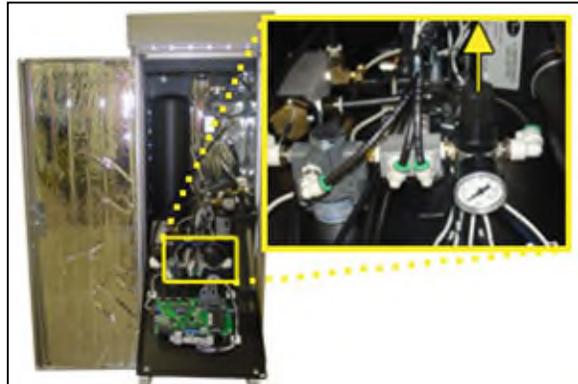
6.6.17.2   Turn knob until the
reading on the pressure
gauge is **17 PSI**.
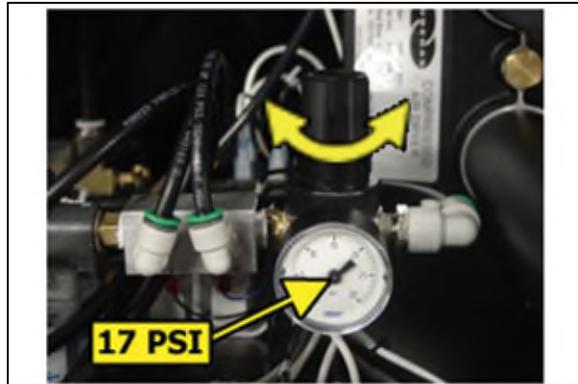
6.6.17.3   Push knob in to lock.

6.6.18   Set the Outlet Pressure:

6.6.18.1   Loosen the Outlet
Pressure Regulator
locknut.
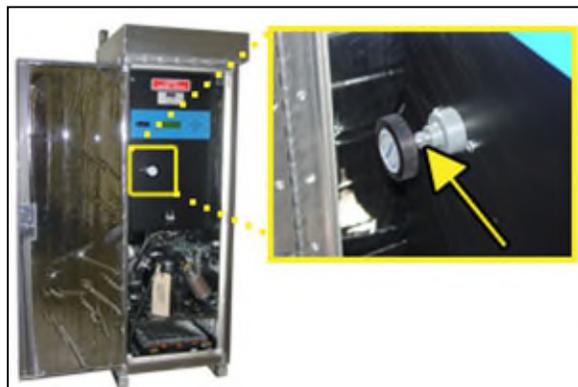
6.6.18.2 Turn knob until Outlet Pressure (**OUTP**) reading is at the desired setting.

6.6.18.3 Tighten nut to lock.
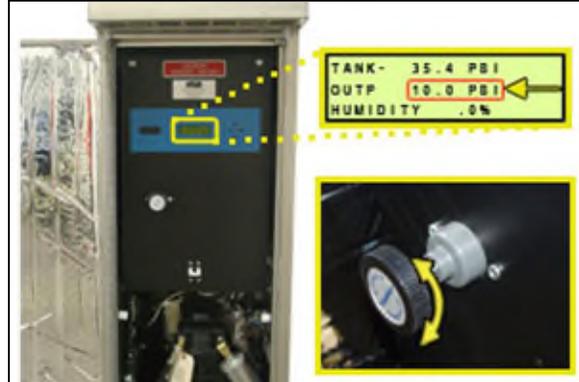
6.6.19 Check for air leaks:

NOTE: This is a general procedure that can be applied to any fitting or hose that has air pressure in it. **DO NOT SOAP TEST THE HUMIDITY SENSOR FITTING. DAMAGE TO THE SENSOR MAY OCCUR.**

With Compressor NOT running:

6.6.19.1 Listen for any 'hissing' sounds which may indicate a fitting or hose air leak.

With Compressor running:

6.6.19.2 Use a 1-inch paint brush to dab soapy water on the air fitting or hose connection to be tested. If air bubbles appear at the connection, this indicates that air is leaking from the connection.
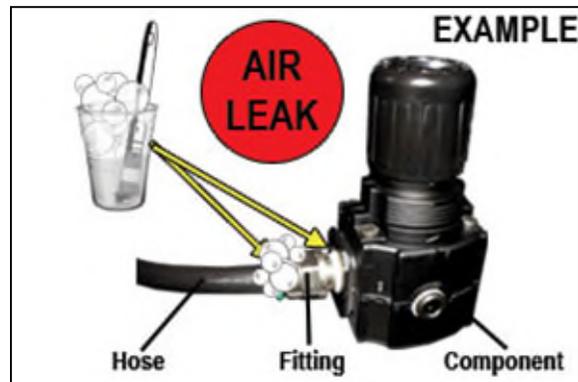
If any leaks are detected, take steps to seal them off (as necessary):

- *Tighten the fitting*
- *Re-connect the hose end*
- *Replace the fitting / hose / component*

6.6.20 Close the front panel.

6.6.21 Close the front door and latch.

6.6.22 REGISTER YOUR DRYER. *See section 7. for details.*

6.7 Installation Checklist

☐ No shipping damage was detected.

☐ Dryer location meets the following requirements:

- o Well secured location

- o Mounted a minimum of one (1) foot from the ground (Recommended)

- o Ambient temperature lower than 120°F (85° F optimal)

☐ Shipping blocks removed from compressor tray.

☐ System Pressure is set to 50 PSI.

☐ Static Pressure is set to 17 PSI.

☐ No air leaks are present in the system.

☐ No alarms are present on the Display Panel.

7. Registering Your Dryer

Please take a moment to register your ALTEC AIR P4200WPM Air Dryer. Registering is necessary to activate the Limited Warranty on your product. Once you register, you are eligible to receive free technical support, as well as updates concerning your ALTEC AIR products.

Register Online at   www.altecair.com/registration

Or by Phone   1-800-521-5351 **(option 2)**

Have the following information available:

Model #: **P4200WPM**   **Serial #**:_____

Company Name:_____   **Location Name**:_____

Shipping Address:_____

   City:_____   **State**:_____   **Zip Code**:_____

Contact Name:_____   **Phone #**: (____)____-_____ **ext**._____

   Email:_____

8. Operating Your Dryer

8.1 Safety & Warning Information

> ## WARNING!
>
> **Extreme care should be exercised to avoid contact with live electrical circuits.** Many procedures performed during installation, operation, testing, and maintenance of this air dryer require the equipment to be running, creating a situation for potential electrical shock. It is highly recommended that you remove all jewelry before performing any procedures.

> ## WARNING!
>
> **Internal surfaces may be hot**. Use care when coming into contact with internal components as there is a potential for some of these components to become hot when in operation or standby.

> ## CAUTION!
>
> Observe precautions for handling **Electrostatic Sensitive Devices.**

> ## IMPORTANT!
>
> Performing procedures not described in this User's Guide or installing components not supplied by ALTEC AIR is NOT RECOMMENDED AND MAY VOID THE WARRANTY.

8.2 Connecting Air Lines to the Dryer

8.2.1 Remove red dust plug from the back of the dryer and connect the air supply line to the dryer Outlet Pressure port.

8.2.2 Install muffler.

　　　　NOTE: This is optional.
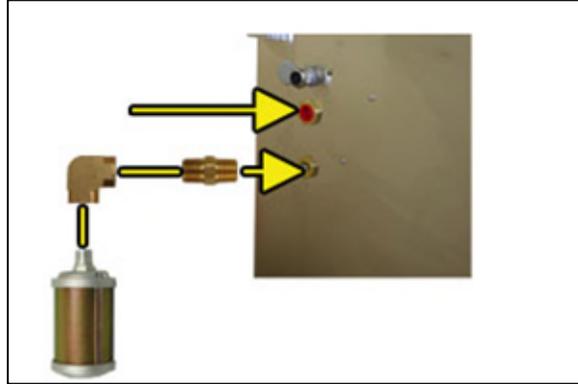
8.3 Powering the Dryer ON & OFF

CAUTION!

Incoming power to dryer must be 110 - 125 VAC, 1 Phase, 50 / 60 Hz with minimum 20 amp service with a 15 amp slow blow fuse. If hard-wiring directly, minimum of 14 AWG wire must be used.

8.3.1 POWER Circuit Breaker - Controls the main power to the dryer.

8.4 Using the Front Panel Display

⚠	**CAUTION!**
	The Display Screen is covered by a clear protective layer that guards against Electrostatic Discharge (ESD). DO NOT REMOVE THIS LAYER.

8.4.1 RESET Button – Clears an alarm and allows the system to continue operating.

8.4.2 ALARM LED – Indicates an alarm is present.

8.4.3 HOLD Button – Freezes the current information screen on the display. When pressed again, it will allow the information screens to begin cycling again.

8.4.4 Arrow Buttons – Used to access, navigate, and change values in the Set Point Adjust screens.

8.4.5 Display Screen - Shows the current dryer readings. Will cycle between the following information screens (unless the **HOLD** button has been pressed).

8.4.5.1 Tank Screen
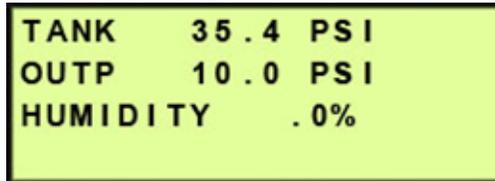
```
TANK      35.4 PSI
OUTP      10.0 PSI
HUMIDITY    .0%
```

TANK – Air Tank pressure - fluctuates between 20 – 50 PSI.

OUTP – Outlet Pressure regulated by the Outlet Pressure Regulator

HUMIDITY – Humidity level of the system.

8.4.5.2 System Stat Screen

```
SYSTEM STAT ON RUN
LAST RUN    1:37
TTL TIME   101HRS
```

SYSTEM STAT - Running Status of the system:

- **ON RUN** – System is Online.
- **SHUTDOWN** – System has been shutdown as a result of either a Humidity or High Temperature alarm.
- **BYPASS** – Compressor is being exercised as a result of a low temperature condition.

LAST RUN – How many minutes the compressor ran during the last Air Tank pressurization cycle.

TTL TIME – How many hours the compressor has run since the last Comp Run Reset.

8.4.5.3 Flow Screen

```
FLOW-4200 SCFD
CAB TEMP- 75º F
COMP TEMP- 75º F
```

FLOW – Air Flow Rate

CAB TEMP – Temperature of the dryer cabinet compartment.

COMP TEMP – Temperature of the dryer compressor compartment.

8.5 Identifying Dryer Alarms

8.5.1 High Outlet Pressure Alarm -

Occurs when the Outlet Pressure
(**OUTP**) rises above the alarm set
point for more than one (1) minute.
(Default setting is 12.0 PSI)
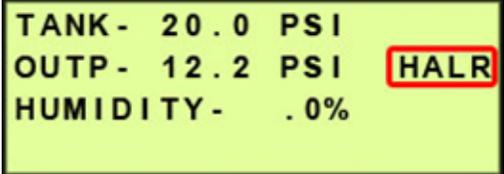
```
TANK-  20.0  PSI
OUTP-  12.2  PSI    HALR
HUMIDITY-    .0%
```

See section 13.5 for troubleshooting information.

8.5.2 Low Outlet Pressure Alarm –

Occurs when the Outlet Pressure
(**OUTP**) drops below the alarm set
point for more than one (1) minute.
(Default setting is 6.5 PSI)
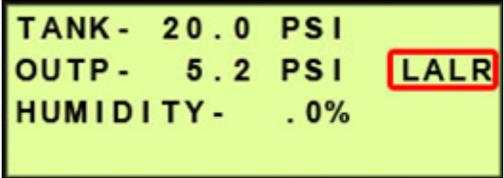
```
TANK-  20.0  PSI
OUTP-   5.2  PSI    LALR
HUMIDITY-    .0%
```

See section 13.7 for troubleshooting information.

8.5.3 High Humidity Alarm –

Occurs when the Humidity level
rises above the alarm set point for
more than one (1) minute.
(Default setting is 10.0%)
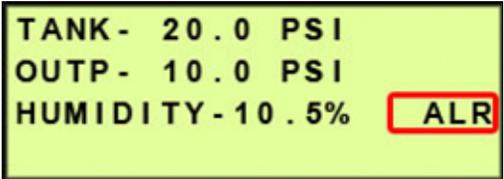
```
TANK-  20.0  PSI
OUTP-  10.0  PSI
HUMIDITY-10.5%    ALR
```

If this alarm is present for one (1) minute or more, the air dryer will go into
SHUTDOWN mode to prevent saturated air from being delivered to the
supply line.

See section 13.9 for troubleshooting information.

8.5.4 Compressor Excessive Run Time Alarm –

Occurs when the compressor takes longer to pressurize the air tank than the set point for the alarm. (Default setting is 3:00 minutes)

```
SYSTEM STAT-ON RUN
LAST RUN    3:47  ALR
TTL TIME  101HRS
```

See section 13.17 for troubleshooting information.

8.5.5 Compressor Total Hour Alarm –

Occurs when the compressor has reached an 8,000 hour maintenance interval. Perform the required maintenance.

```
SYSTEM STAT-ON RUN
LAST RUN     :47
TTL TIME 8101HRS ALR
```

See section 10.3 for maintenance information.

8.5.6 High Flow Rate Alarm –

Occurs when the Flow Rate (**FLOW**) rises above the alarm set point for more than one (1) minute. (Default setting is 3500 SCFD)

```
FLOW-3827 SCFD    ALR
CAB TEMP- 78º F
COMP TEMP- 75º F
```

See section 13.11 for troubleshooting information

8.5.7 High Cabinet Temperature Alarm -

Occurs when the temperature in the upper cabinet compartment rises above 117°F for more than ten (10) seconds.

```
FLOW-4200 SCFD
CAB TEMP-118º F   HALR
COMP TEMP- 75º F
```

If the temperature reaches 120°F for three (3) minute or more, the compressor will **SHUTDOWN** and the fan will continue to run. This is done to protect against damage due to overheating.

The compressor will **RE-START** when the temperature drops to 112°F.

See section 13.12 for troubleshooting information.

8.6 Adjusting & Resetting Dryer Set Points

Dryer Set Points are simply limits programmed for a specific reading. Once this limit is reached (or exceeded) this results in an alarm for that reading. Each of these set points is factory programmed with a default value based on typical usage of the air dryer. Many of the set points for dryer alarms can be modified to levels more closely based upon your specific application. Reference Appendix Section 14.2 for Limits and Defaults.

- Press the Up (↑) Arrow Button to access the Set Point Adjust screens.
- Press the Up (↑) & Down (↓) Arrow Buttons to navigate through the available Set Point Adjust screens.
- To change a specific Set Point:

8.6.1 High Flow Rate Alarm Set Point (default setting is 3500 SCFD) –

  8.6.1.1 Press the Right (➜) Arrow Button to access the Change Value Screen.
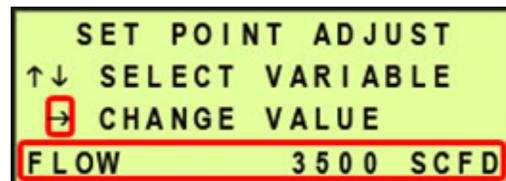
  8.6.1.2 Press the Right (➜) & Left (←) Arrow Buttons to move the underscore beneath the digit to change.
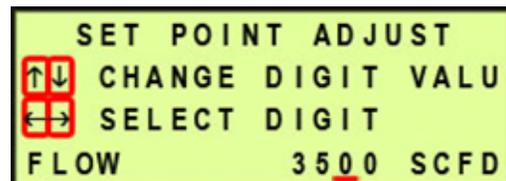
  8.6.1.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

  8.6.1.4 Press the Right (➜) Arrow Button until the confirmation screen appears.

  8.6.1.5 Press the Right (➜) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

  8.6.1.6 Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.2   High Outlet Pressure Alarm Set Point (default setting is 12.0 PSI) –

8.6.2.1   Press the Right (→) Arrow Button to access the Change Value Screen.

```
    SET POINT ADJUST
↑↓  SELECT VARIABLE
 →  CHANGE VALUE
OUTP HIGH    12.0 PSI
```

8.6.2.2   Press the Right (→) & Left (←) Arrow Buttons to move the underscore beneath the digit to change.

```
    SET POINT ADJUST
↑↓  CHANGE DIGIT VALU
←→  SELECT DIGIT
OUTP HIGH    12.0 PSI
```

8.6.2.3   Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

8.6.2.4   Press the Right (→) Arrow Button until the confirmation screen appears.

8.6.2.5   Press the Right (→) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

```
    SET POINT ADJUST
→SELECT     ↑CONFIRM
    SURE?   YES   NO
OUTP HIGH    12.0 PSI
```
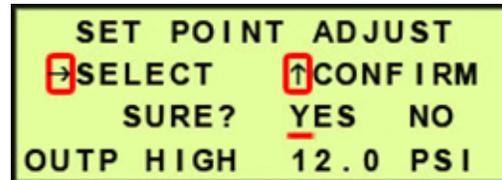
8.6.2.6   Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.3   Low Outlet Pressure Alarm Set Point (default setting is 6.5 PSI) –

8.6.3.1   Press the Right (→) Arrow Button to access the Change Value Screen.

```
    SET POINT ADJUST
↑↓  SELECT VARIABLE
 →  CHANGE VALUE
OUTP LOW      6.5 PSI
```

8.6.3.2   Press the Right (→) & Left (←) Arrow Buttons to move the underscore beneath the digit to change.

```
    SET POINT ADJUST
↑↓  CHANGE DIGIT VALU
←→  SELECT DIGIT
OUTP LOW      6.5 PSI
```

8.6.3.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

8.6.3.4 Press the Right (→) Arrow Button until the confirmation screen appears.

8.6.3.5 Press the Right (→) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

```
SET POINT ADJUST
→SELECT    ↑CONFIRM
    SURE?   YES   NO
OUTP LOW      6.5 PSI
```
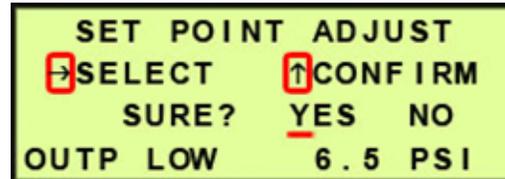
8.6.3.6 Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.4 High Humidity Alarm Set Point (default setting is 10.0%) –

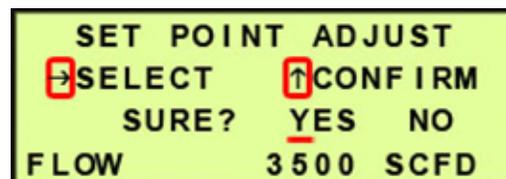**8.6.4.1** Press the Right (→) Arrow Button to access the Change Value Screen.

```
SET POINT ADJUST
↑↓ SELECT VARIABLE
 → CHANGE VALUE
HUMIDITY    10.0%
```

8.6.4.2 Press the Right (→) & Left (←) Arrow Buttons to move the underscore beneath the digit to change.

```
SET POINT ADJUST
↑↓ CHANGE DIGIT VALU
←→ SELECT DIGIT
HUMIDITY    10.0%
```
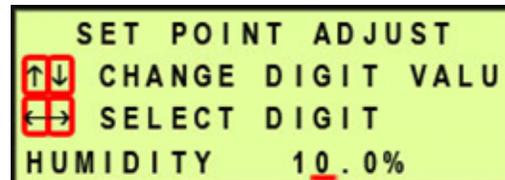
8.6.4.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

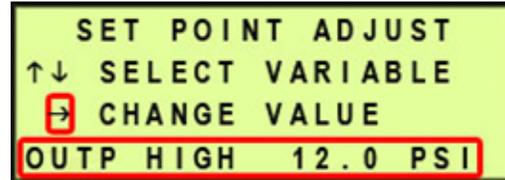**8.6.4.4** Press the Right (→) Arrow Button until the confirmation screen appears.

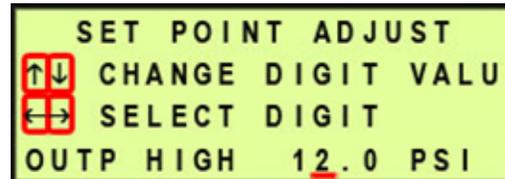**8.6.4.5** Press the Right (→) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

```
SET POINT ADJUST
→SELECT    ↑CONFIRM
    SURE?   YES   NO
HUMIDITY    10.0%
```
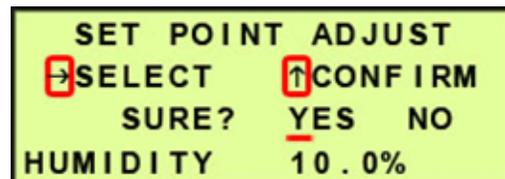
8.6.4.6 Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.5　Excessive Compressor Run Time Alarm Set Point (default setting is

3:00 minutes) –

8.6.5.1　Press the Right (→) Arrow

Button to access the Change

Value Screen.

```
SET POINT ADJUST
↑↓ SELECT VARIABLE
←→ CHANGE VALUE
COMP RUN TIME   3:00
```

8.6.5.2　Press the Right (→) &

Left (←) Arrow Buttons to

move the underscore beneath

the digit to change.

```
SET POINT ADJUST
↑↓ CHANGE DIGIT VALU
←→ SELECT DIGIT
COMP RUN TIME   3:00
```
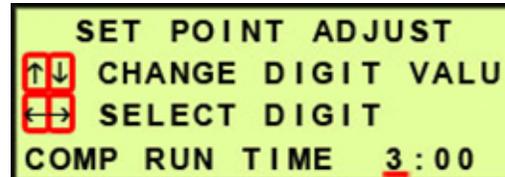
8.6.5.3　Press the Up (↑) & Down (↓) Arrow Buttons to change the value of

the selected digit.

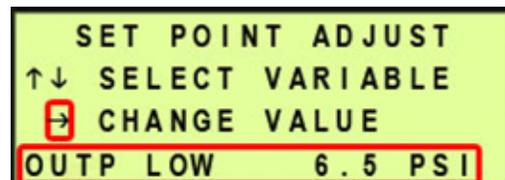**8.6.5.4**　Press the Right (→) Arrow Button until the confirmation screen

appears.

8.6.5.5　Press the Right (→) Arrow

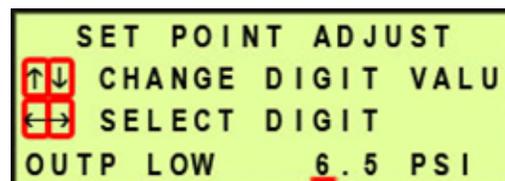Button until the underscore

appears under the correct

setting (**YES** or **NO**).

```
SET POINT ADJUST
→SELECT    ↑CONFIRM
    SURE?  YES   NO
COMP RUN TIME   3:00
```
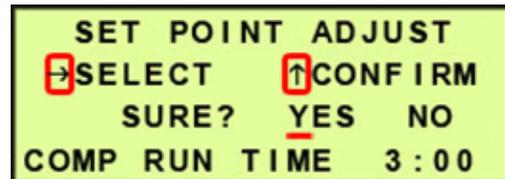
8.6.5.6　Press the Up (↑) Arrow to confirm. This will lock in the new setting

value.

8.6.6　Compressor Total Run Time Reset –

8.6.6.1　Press and Hold the Left (←)

& Right (→) Arrow Buttons

to access the Change Value

Screen.

```
SET TOTAL RUN TIME
↑↓ SELECT VARIABLE
→ CHANGE VALUE
TTL TIME     8002HRS
```
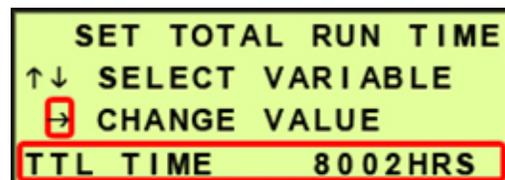
8.6.6.2　Press the Right (→) &

Left (←) Arrow Buttons to

move the underscore beneath

the digits to change to zero

```
SET TOTAL RUN TIME
↑↓ CHANGE DIGIT VALU
←→ SELECT DIGIT
TTL TIME     8002HRS
```

(0).

8.6.6.3   Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

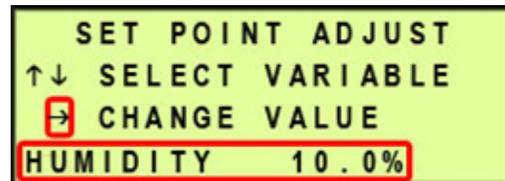**8.6.6.4**   Press the Right (→) Arrow Button until the confirmation screen appears.

8.6.6.5   Press the Right (→) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

```
SET  TOTAL  RUN  TIME
→SELECT      ↑COMFIRM
     SURE?   YES   NO
TTL  TIME          0HRS
```
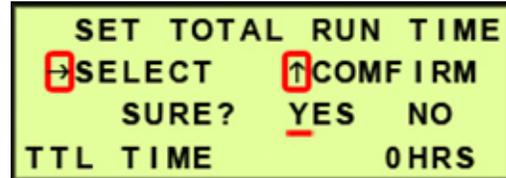
8.6.6.6   Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.7   Reset to Factory Values –

8.6.7.1   Press and Hold the Left (←) & Right (→) Arrow Buttons at the same time until screen flickers. This will signify the default values have reset.
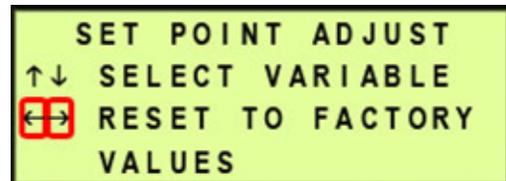
```
SET  POINT  ADJUST
↑↓  SELECT  VARIABLE
←→  RESET  TO  FACTORY
    VALUES
```

8.6.7.2   Press the Right (→) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

```
SET  POINT  ADJUST
→SELECT      ↑CONFIRM
RESET  TO  FACTORY  VAL
    SURE?    YES   NO
```
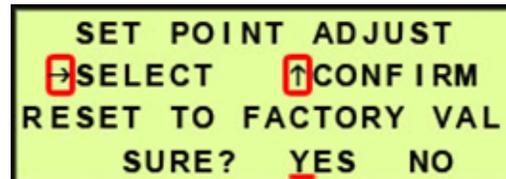
8.6.7.3   Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.8 Alarm Delays Set Point

The Alarm Delay allows an alarm condition to be present for up to one (1) minute before signaling the alarm. This allows the dryer to come out of the alarm condition on its own without signaling an alarm.

ON (default) – waits one (1) minute before signaling alarms

OFF – signals alarms immediately

```
SET POINT ADJUST
↑↓ SELECT VARIABLE
 → CHANGE VALUE
ALARM DELAYS ON
```
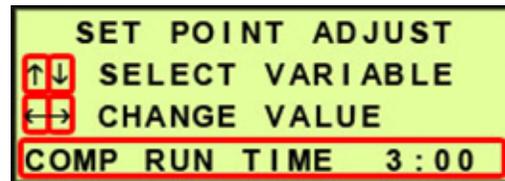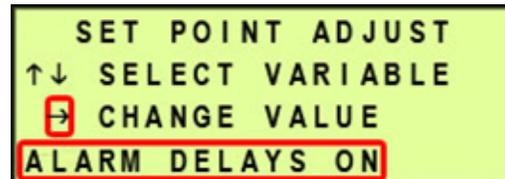
8.6.8.1 Press the Right (➜) Arrow Button to change the value.

8.6.8.2 Press the Right (➜) Arrow Button until the underscore appears under the correct setting (**YES** or **NO**).

```
SET POINT ADJUST
→SELECT    ↑CONFIRM
   ALARM DELAYS
     OFF    ON
```
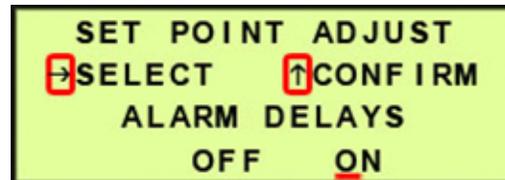
8.6.8.3 Press the Up (↑) Arrow to confirm. This will lock in the new setting value.

8.6.9 Pressure Gauge –

This is an information screen only and will not time-out, returning to the cycling information screens. It also masks air dryer alarms while

```
SET POINT ADJUST
↑↓ SELECT VARIABLE

PRES GAUGE  10.0 PSI
```

in use. This screen can be used during air dryer troubleshooting.
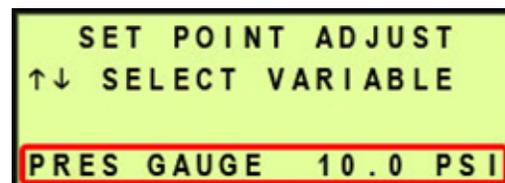
8.7 Opening Doors and Panels

8.7.1 Open the front door.

8.7.2 Unsecure the two latch screws and lower the front panel.
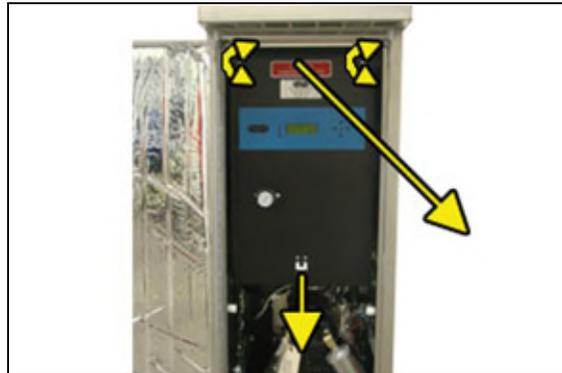
8.8 Slide Out Compressor Tray

8.8.1 Remove thumb screws from the slide-out compressor tray (2 places).
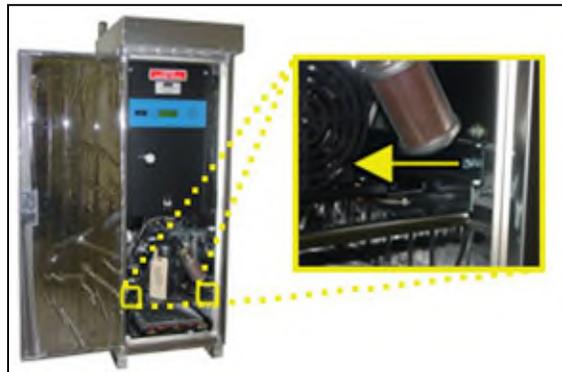
8.8.2 Slide out compressor tray.
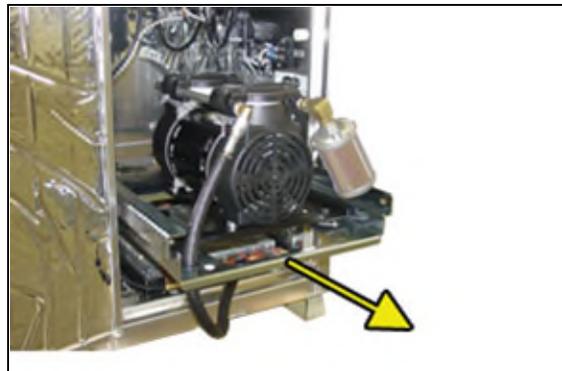
8.9 Depressurizing the Dryer

8.9.1 Open Front Door (section 8.7.1).

8.9.2 Open Front Panel (section 8.7.2).

8.9.3 Push the outlet tube in and hold the green ferrule. While holding the ferrule pull the tube out until all air pressure is released, then reinstall the tube.

8.9.4 To prevent pressure from building back up, power the dryer **OFF** *(See 8.3 section for detail).*

8.9.5 Reconnect Tube.

8.9.6 Close Front Panel.

8.9.7 Close Front Door.

8.10 Setting the System Pressure

8.10.1 Open Front Door (section 8.7.1).

8.10.2 Open Front Panel (section 8.7.2).

With Compressor running:

8.10.3 Pull the Capacity Control Valve knob out.

8.10.4 Turn the knob until the reading on the Pressure Gauge is **50 PSI**.

8.10.5 Push the knob in to lock.

8.10.6 Close the Front Panel.

8.10.7 Close the Front Door.
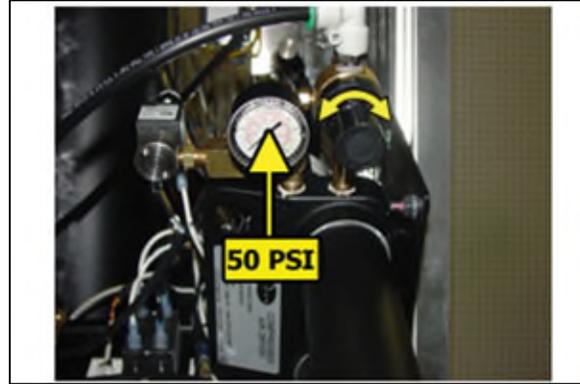
8.11 Setting the Static Pressure

8.11.1 Open Front Door (section 8.7.1).

8.11.2 Open Front Panel (section 8.7.2).

8.11.3 Pull the Static Pressure Regulator knob out.
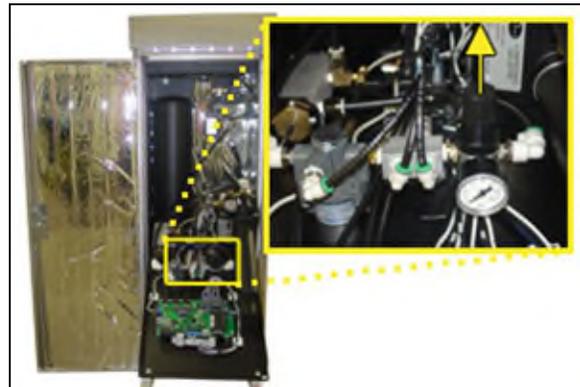
8.11.4 Turn knob until the reading on the Pressure Gauge is **17 PSI**.

8.11.5 Push knob in to lock.

8.11.6 Close the Front Panel.

8.11.7 Close the Front Door.
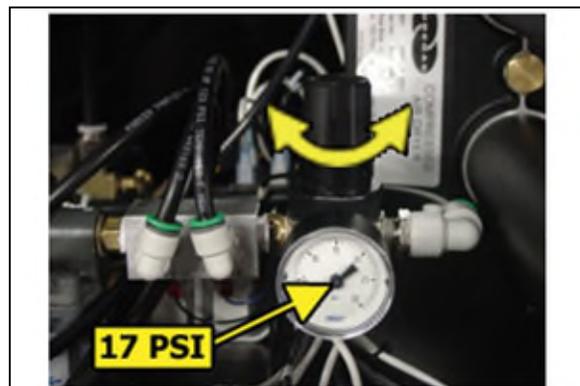
8.12 Setting the Outlet Pressure

8.12.1 Open Front Door (section 8.7.1).

8.12.2 Loosen the Outlet Pressure Regulator locknut.
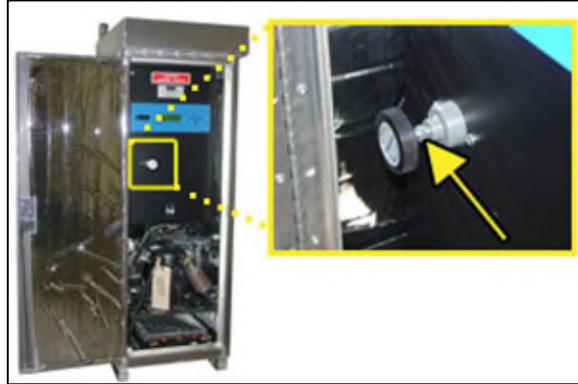
8.12.3 Turn knob until Outlet Pressure (**OUTP**) reading is at the desired setting.
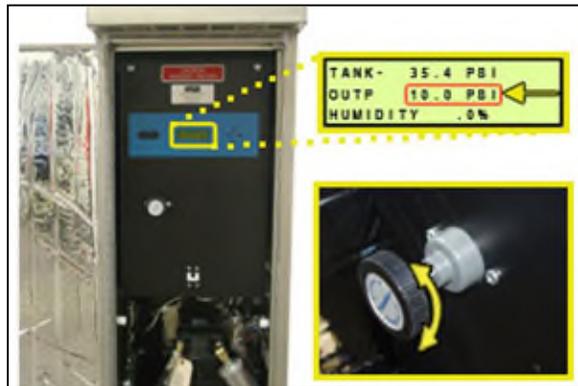
8.12.4 Tighten nut to lock.

8.12.5 Close the Front Door.

8.13 Connecting to Common Alarm Terminal Block

NOTE: The Common Alarm Socket is wired as a CLOSE ON ALARM.

8.13.1 Open Front Door (section 8.7.1).

8.13.2 Locate the Common Alarm Terminal Block.

8.13.3 Wire the Common Alarm wire pair on the Terminal Bock as required.

8.13.4 Close Front Door.

9. Testing Your Dryer

9.1 Safety & Warning Information

	WARNING!
⚠️	**Extreme care should be exercised to avoid contact with live electrical circuits.** Many procedures performed during installation, operation, testing, and maintenance of this air dryer require the equipment to be running, creating a situation for potential electrical shock. It is highly recommended that you remove all jewelry before performing any procedures.

	WARNING!
⚠️	**Internal surfaces may be hot**. Use care when coming into contact with internal components as there is a potential for some of these components to become hot when in operation or standby.

	CAUTION!
⚠️	Depressurizing the air dryer may be necessary before performing certain procedures. **NEVER** remove pressure sensing tubes from the control board without depressurizing the air dryer first, or **damage to the control board will occur.**

	CAUTION!
⚠️	This Air Dryer does not contain an internal Surge Protection Device (SPD). If an SPD is required it must be supplied by the user.

	CAUTION!
⚠️	Observe precautions for handling **Electrostatic Sensitive Devices.**

9.2 Measuring Compressor Amp Draw

⚠️	**WARNING!** **Internal surfaces may be hot**. Use care when coming into contact with internal components as there is a potential for some these components to become hot when in operation or standby.

9.2.1   Open Front Door (section 8.7.1).

9.2.2   Slide out Compressor Tray (section 8.8).

With the Compressor running:

9.2.3   Locate the BLACK wire
          (#3) coming directly from the
          compressor.

9.2.4   Use an Amp Meter to
          measure the running amps.

With the compressor running, the
running amps should measure
12.0 amps or below.

9.2.5   Slide in Compressor Tray and reinstall Thumb Screws.

9.2.6   Close Front Door.

If the compressor measures over 8.0 running amps, see section 13.16 for troubleshooting information.

9.3 Measuring Voltage to Compressor

⚠️	**WARNING!** **Extreme care should be exercised to avoid contact with live electrical circuits.** It is highly recommended that you remove all jewelry before performing any procedures.

9.3.1   Open Front Door (section 8.7.1).

9.3.2   Power the air dryer **OFF** (section 8.3).

9.3.3   Depressurize the air dryer (section 8.7).

9.3.4   Slide out Compressor Tray (section 8.8).

9.3.5   Locate the power lead wires to the compressor (wire #s 3 & 4).

9.3.6   Disconnect the **compressor-side** wires from the FASTON splice connectors.
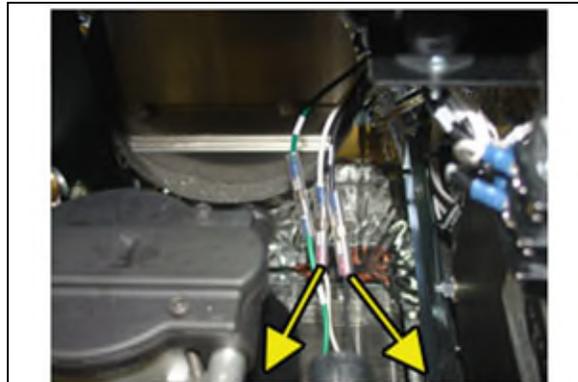
9.3.7 Power the air dryer **ON** (section 8.3).

Use a Voltmeter to measure the

voltage:

> **9.3.7.1** Place the probes
>
> inside the vacant end of
>
> the FASTON splice
>
> connectors.
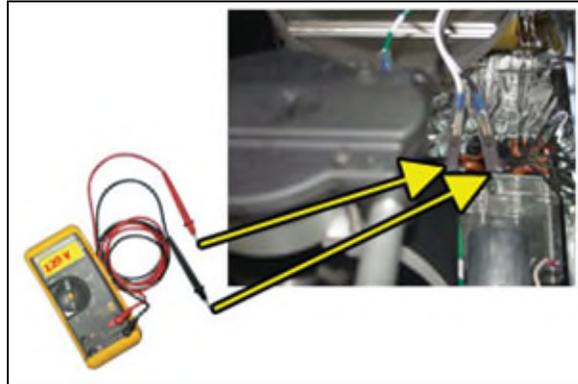
The voltage should measure **110 - 125 VAC**.

9.3.8 Power the air dryer **OFF** (section 8.3).

9.3.9 Reconnect the wires.

9.3.10 Slide in Compressor Tray and reinstall Thumb Screws.

9.3.11 Power the air dryer **ON** (section 8.3).

9.3.12 Close Front Door.

9.4 Measuring Incoming Voltage

WARNING!

Extreme care should be exercised to avoid contact with live electrical circuits. It is highly recommended that you remove all jewelry before performing any procedures.

9.4.1 Open Front Door (section 8.7.1).

9.4.2 Open Front Panel (section 8.7.2).

9.4.3 Locate the **POWER** Circuit
Breaker inside the front panel
of the air dryer.

9.4.4 Use a Voltmeter to measure the voltage:

    9.4.4.1 Place the probes between the Circuit Breaker and terminal insulation so that they touch the metal contacts.

The voltage should measure **110 - 125 VAC**.

9.4.5 Close Front Panel.

9.4.6 Close Front Door.

If the incoming voltage measures less than 110 VAC, it is recommended that steps be taken at your facility to increase the power to the recommended level of 110-125 VAC.

9.5 Measuring Voltages at Solid State Relay

9.5.1 Open Front Door (section 8.7.1).

9.5.2 Open Front Panel (section 8.7.2).

9.5.3 Locate the Solid State Relay inside the front panel of the air dryer.

With the Compressor running:

9.5.4 Use a Voltmeter to measure across the AC terminals. Should measure **0 VAC**.

9.5.5 Use a Voltmeter to measure across the DC terminals. Should measure **5 VDC**.
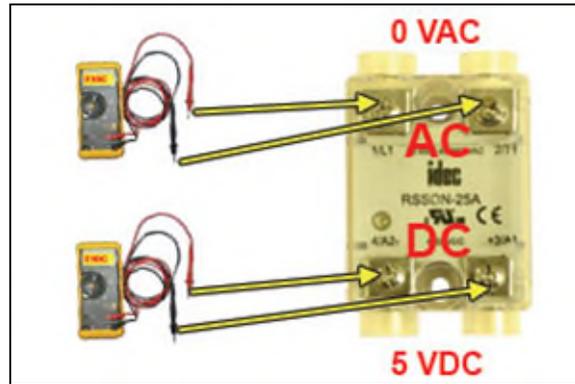
With the Compressor NOT running:

9.5.6 Use a Voltmeter to measure across the AC terminals. Should measure **110 - 125 VAC**.

9.5.7 Use a Voltmeter to measure across the DC terminals. Should measure **0 VDC**.
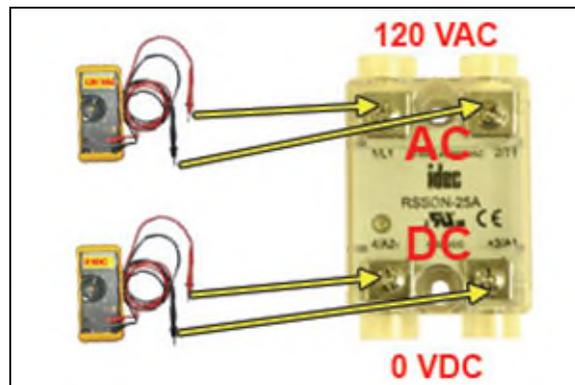
9.5.8 Close Front Panel.

9.5.9 Close Front Door.

If any of the voltage measurements are different than indicated above, the Solid State Relay is defective and should be replaced. See sections 11.2 for part detail and 11.7 for ordering information

.

9.6 Testing Consistent Heatless Dryer Cycling

With the Compressor running:

9.6.1 Open Front Door (section 8.7.1).

9.6.2 Open Front Panel (section 8.7.2).

9.6.3 Disconnect the purge tubes from the Heatless Dryer.

9.6.4 Place your hand beneath the purge fittings to feel for purging air. Air should:

- Purge from Tower 1 side
- Purge from Tower 2 side **30 Seconds** later
- Purge from Tower 1 side **30 Seconds** later
- …and so on.
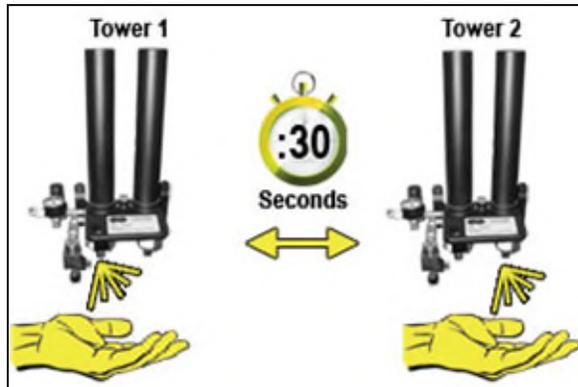
9.6.5 Re-connect the purge tubes
to the Heatless Dryer.

9.6.6 Close Front Panel.

9.6.7 Close Front Door.

If the Heatless Dryer is not cycling consistently as described, see section 13.13
for troubleshooting information.

9.7 Testing Unloader Valve

With the Compressor running:

9.7.1 Open Front Door (section 8.7.1).

9.7.2 Open Front Panel (section 8.7.2).

9.7.3 Disconnect the unloader
tube from the Unloader
Valve.

9.7.4 Place your hand beneath the Unloader Valve fitting to feel for air flow.

Air should **NOT** flow from this fitting continuously. Air should only be released in a short burst when the compressor shuts off.
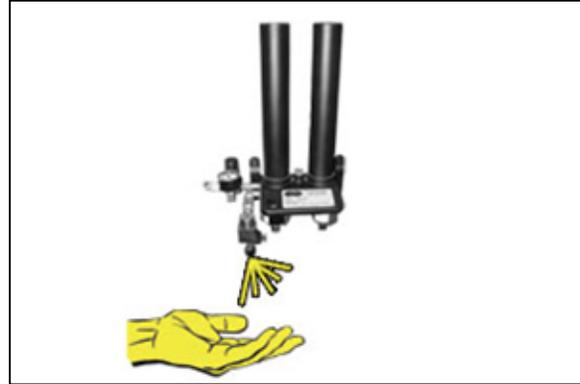
9.7.5 Re-connect the unloader tube to the Unloader Valve.

9.7.6 Close Front Panel.

9.7.7 Close Front Door.

If air flows from this valve continuously the Unloader Valve is defective and should be replaced. See sections 11.3 for part detail and 11.7 for ordering information.

9.8 Measuring Heatless Dryer Solenoid Voltage

With the Compressor running:

9.8.1 Open Front Door (section 8.7.1).

9.8.2 Open Front Panel (section 8.7.2).

9.8.3 Locate the Heatless Dryer Cycle Timer.

The timer has three (3) sets of terminals (from left-to-right):
"**53VDC**" – Left solenoid
"**IN**" – Incoming power
"**53VDC**" – Right solenoid

9.8.4 Use a Voltmeter to measure the DC voltage across each set of "**53VDC**" terminals.

Continue to measure for up to 45 seconds if no voltage is initially measured.
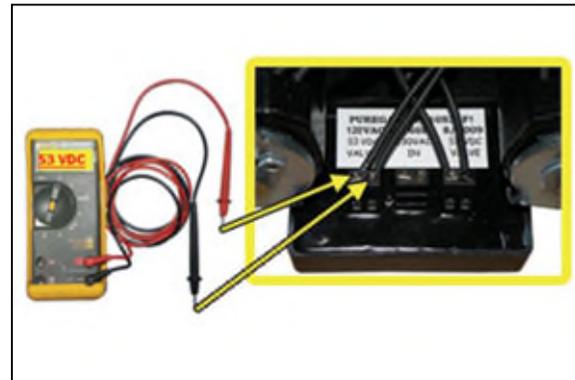
The voltage should measure **53 Volts DC**.

9.8.5 Close Front Panel.

9.8.6 Close Front Door.

If the voltage does not measure 53 Volts DC, this is an indication that the Cycle Timer is defective and should be replaced. See sections 11.3 for part detail and 11.7 for ordering information.

9.9 Testing Fan

NOTE: To test the fan, the cabinet temperature must be above 80^OF.

9.9.1 Open Front Door (section 8.7.1).

9.9.2 Open Front Panel (section 8.7.2).

9.9.3 Place your hand below the Fan to feel for air being blown downwards into the cabinet.
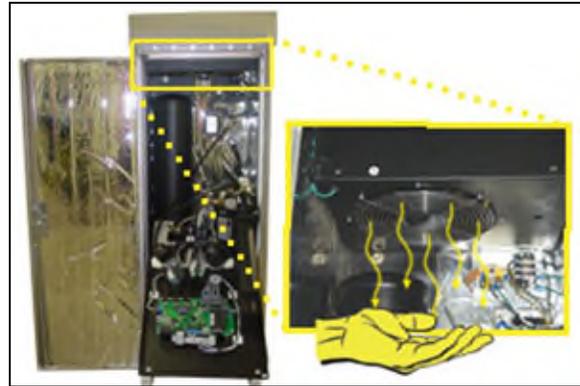
9.9.4 Close Front Panel.

9.9.5 Close Front Door.

If the fan is not blowing air downwards as described:

- *Check for loose wiring. Refer to the Wiring Diagram (section 14.1)*
- *Replace defective fan (see sections 11.1 for part detail and 11.7 for ordering information).*

9.10 Testing Cabinet Heater

NOTE: To test the heater, the cabinet temperature must be below 40°F.

9.10.1   Open Front Door (section 8.7.1).

9.10.2   Power the air dryer **OFF.** (section 8.3).

9.10.3   Open Front Panel (section 8.7.2).

9.10.4   Depressurize the air dryer. (section 8.7).

9.10.5   Close the Front Panel.

9.10.6   Slide out Compressor Tray (section 8.8).

9.10.7   Locate the power lead wires to the heater. Wire #s 7 & 8.

9.10.8   Disconnect the **heater-side** wires from the FASTON splice connectors.
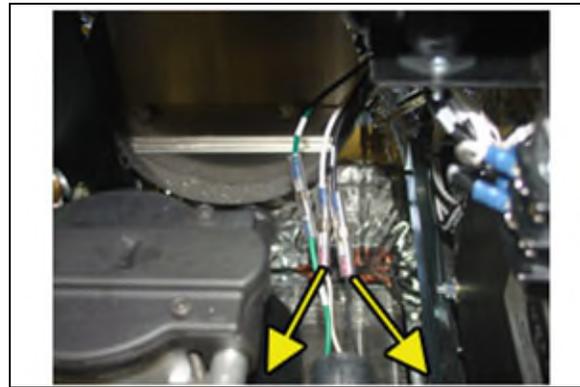
9.10.9   Power the air dryer **ON** (section 8.3).

9.10.10   Use a Voltmeter to measure the voltage:

9.10.10.1   Place the probes inside the vacant end of the FASTON splice connectors.
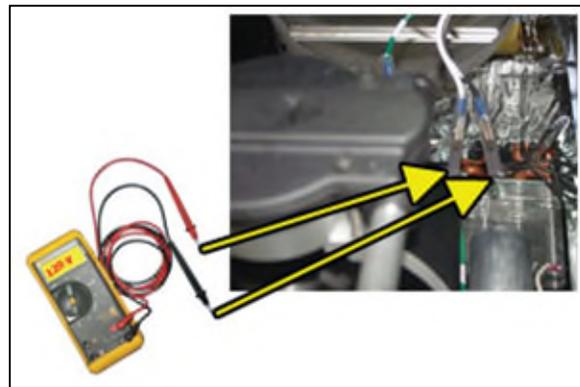
The voltage should measure **110 - 125 VAC**.

.

9.10.11   Power the air dryer **OFF** (section 8.3).

9.10.12   Reconnect the wires.

9.10.13   Power the air dryer **ON**. (section 8.3).

9.10.14   Slide in Compressor Tray and reinstall Thumb Screws.

9.10.15   Close Front Door.

9.11 Testing Compressor ON/OFF Cycling

9.11.1   Open Front Door (section 8.7.1).

9.11.2   When the Tank Screen (8.4.5.1) appears on the display, press the **HOLD Button** on the Front Panel to freeze that screen.

With Compressor running:

9.11.3   Open Front Panel (section 8.7.2).

9.11.4   Verify the compressor shuts down when the tank pressure (**TANK**) reaches **50.0 PSI**.

*If the tank pressure (**TANK**) fails to reach 50 PSI, see section 13.15 for troubleshooting information.*

With Compressor NOT running:

9.11.5 Push the outlet tube in and hold the green ferrule. While holding the ferrule pull the tube out until air pressure is released.

9.11.6 Verify the compressor turns on when the tank pressure (**TANK**) falls to **20.0 PSI**.

9.11.7 Reconnect Outlet Tube.

9.11.8 Close Front Panel.

9.11.9 Close Front Door.

If the Compressor Cycling fails either test described, it indicates a problem with the Control Board which may need to be replaced. See sections 11.2 for part detail and 11.7 for ordering information.

9.12 Testing Compressor Excessive Run Time Alarm

NOTE: For this test, allow the Display Screen to cycle through the information screens.

9.12.1 Open Front Door (section 8.7.1).

9.12.2 Open Front Panel (section 8.7.2).

9.12.3 Start timing when the compressor turns on.

9.12.4 Push the outlet tube in and hold the green ferrule. While holding the ferrule pull the tube out until air pressure is released to keep the Tank Pressure (**TANK**) from reaching **50 PSI**.

This prevents the compressor from shutting down.

When the compressor runs for 3:00 minutes (unless adjusted to a different Set Point by the user), a Compressor Excessive Run Time (**LAST RUN**) alarm should appear on the System Screen.
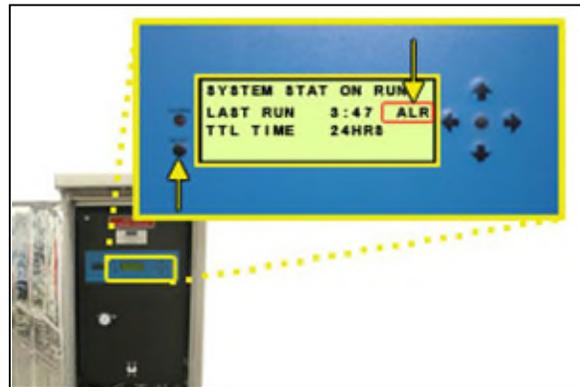
9.12.5 Press the **RESET Button**.

9.12.6 Reconnect Outlet Tube.

9.12.7 Close Front Panel.

9.12.8 Close Front Door.

*If you are unable to create a Compressor Excessive Run Time (**LAST RUN**) alarm as described, see section 13.17 for troubleshooting information.*

9.13 Testing Humidity Alarm and System Shutdown

9.13.1 Open Front Door (section 8.7.1).

9.13.2 Power the air dryer **OFF** (Reference 8.7)

9.13.3 Open Front Panel (section 8.7.2).
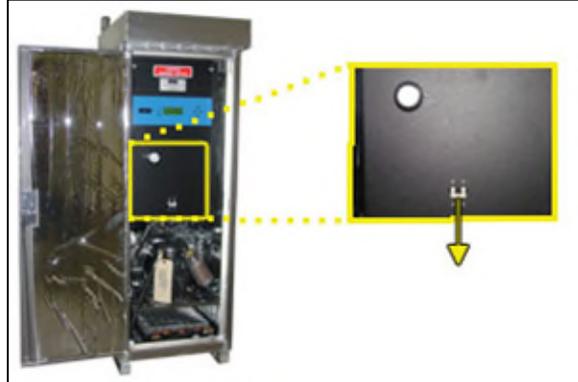
9.13.4 Depressurize the air dryer.

9.13.5 Unscrew and remove the Humidity Sensor from the Humidity Block.

9.13.6 Close Front Panel.
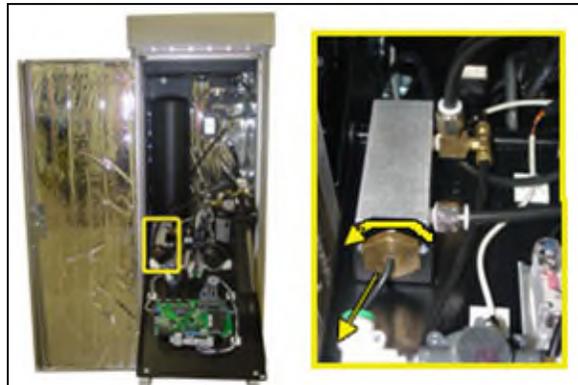
9.13.7 Power the air dryer **ON**.

Allow the Humidity reading to rise over 10.0%.

9.13.8 After three (3) minutes, verify that a Humidity Alarm appears and the dryer goes into **SHUTDOWN** mode.
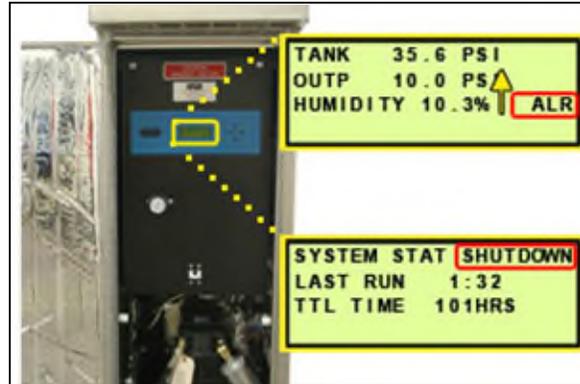
9.13.9 Open Front Panel (section 8.7.2).

9.13.10 Replace the Humidity Sensor in the Humidity Block.

9.13.11 Close Front Panel.

9.13.12 Press the **RESET Button** to clear the Humidity alarm.

9.13.13 Close Front Door.
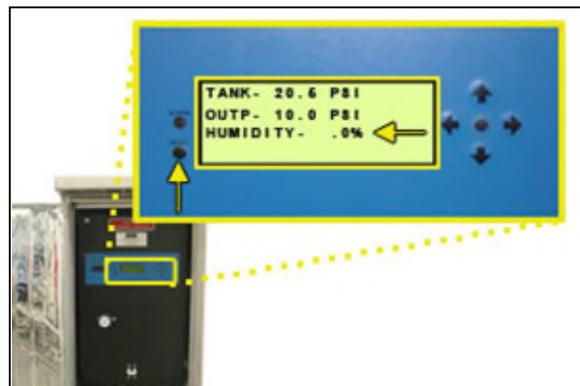
If you are unable to create a Humidity / Shutdown alarm as described, see section 13.10 for troubleshooting information.

9.14 Testing High Outlet Pressure Alarm

9.14.1 Open Front Door (section 8.7.1).

9.14.2 Make a note of the current Outlet Pressure (**OUTP**) reading.

9.14.3 Loosen the locknut on the regulator.

9.14.4 Turn knob clockwise until Outlet Pressure (**OUTP**) reading climbs **over 12.0 PSI**.

After one (1) minute, the High Pressure Alarm should appear on the display.

9.14.5 Turn Outlet Pressure Regulator knob counter-clockwise until Outlet Pressure (**OUTP**) reading lowers to the reading recorded in step 9.14.1

9.14.6   Tighten the locknut.

9.14.7   Press the **RESET**.

9.14.8   Close Front Door.
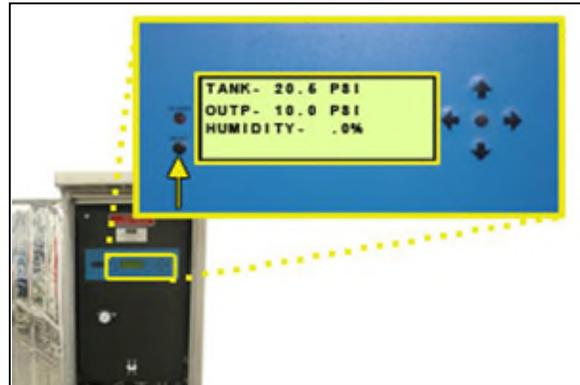
If you are unable to create a High Outlet Pressure Alarm as described, see section 13.6 for troubleshooting information.

9.15 Testing Low Outlet Pressure Alarm

9.15.1   Open Front Door (section 8.7.1).

9.15.2   Make a note of the current Outlet Pressure (**OUTP**) reading.

9.15.3 Loosen the locknut on the regulator.

9.15.4 Turn knob counter-clockwise until Outlet Pressure (**OUTP**) reading drops **below 6.5 PSI**.

After one (1) minute, the Low Pressure Alarm should appear on the display.

9.15.5 Turn Outlet Pressure Regulator knob clockwise until Outlet Pressure (**OUTP**) reading raises to the reading recorded in step 9.15.1

9.15.6 Tighten the locknut.

9.15.7 Press the **RESET**.

9.15.8 Close Front Door.

If you are unable to create a Low Outlet Pressure Alarm as described, see section 13.8 for troubleshooting information.

9.16 Testing Air Fittings & Hoses for Leaks

NOTE: This is a general procedure that can be applied to any fitting or hose that has air pressure in it. **DO NOT SOAP TEST THE HUMIDITY SENSOR FITTING. DAMAGE TO THE SENSOR MAY OCCUR.**

With Compressor NOT running:

9.16.1 Listen for any 'hissing' sounds which may indicate a fitting or hose air leak.

With Compressor running:

9.16.2 Use a 1-inch paint brush to dab soapy water on the air fitting or hose connection to be tested.

If air bubbles appear at the connection, this indicates that air is leaking from the connection.
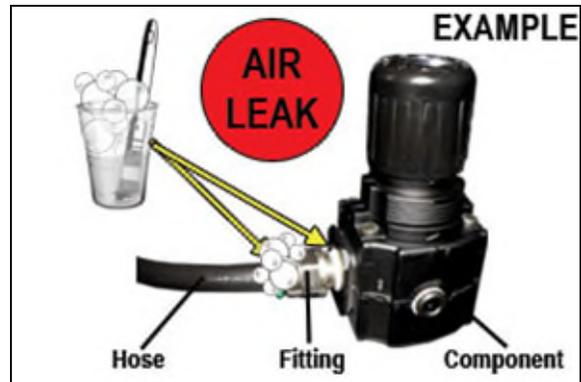
If any leaks are detected, take steps to seal them off (as necessary):

- *Tighten the fitting*
- *Re-connect the hose end*
- *Replace the fitting / hose / component*

10. Maintaining Your Dryer

In order to ensure that your P4200WPM Air Dryer continues to operate efficiently and reliably, ALTEC AIR recommends performing the following maintenance procedures at the specified Six Month / 8,000 Hour / and 16,000 Hour intervals.

It is also recommended that you print out the included *Six Month Maintenance (section 10.2)* and *8,000 & 16,000 Hour Maintenance (section 10.3)* log sheets and record all completed maintenance for historical tracking and reference purposes.

The log sheets include a Section reference column which indicates the User's Guide section containing the information about the specific procedure. Please refer to these sections for detailed procedural information.

> **NOTE:** When operating at higher ambient temperatures, it is recommended that maintenance be performed more frequently.

> **NOTE:** After 16,000 hours of run time, ALTEC AIR recommends sending in your compressors and heatless dryers for a complete and comprehensive rebuild by our Service Department technicians. *See sections 12.1 and 12.2 for information on services and contacting ALTEC AIR.*

10.1 Safety & Warning Information

WARNING!

Extreme care should be exercised to avoid contact with live electrical circuits. Many procedures performed during installation, operation, testing, and maintenance of this air dryer require the equipment to be running, creating a situation for potential electrical shock. It is highly recommended that you remove all jewelry before performing any procedures.

WARNING!

Internal surfaces may be hot. Use care when coming into contact with internal components as there is a potential for some of these components to become hot when in operation or standby.

CAUTION!

SHUT DOWN IMMEDIATELY FOR REPAIRS if the air compressor shows any evidence of overheating or presents excessive noise.

CAUTION!

Depressurizing the air dryer may be necessary before performing certain procedures. **NEVER** remove pressure sensing tubes from the Control Board without depressurizing the air dryer first, or **damage to the Control Board will occur.**

IMPORTANT!

Performing routine maintenance as outlined in the *Maintaining Your Dryer* section will ensure optimal performance over the lifecycle of your air dryer.

IMPORTANT!

Performing procedures not described in this User's Guide or installing components not supplied by ALTEC AIR is NOT RECOMMENDED AND MAY VOID THE WARRANTY.

IMPORTANT!

After performing any maintenance, always soap test pressure fittings to check for air leaks. Also, check for any loose or disconnected wiring.

10.2 Six Month Maintenance

MODEL: **P4200WPM**   LOCATION NAME:

SERIAL NUMBER: ADDRESS:

DATE INSTALLED:

Procedure	Section	Maintenance Interval (Months)				
		6	12	18	24	30
Install Six Month Maintenance Kit **P011643**	11.5	☐	☐	☐	☐	☐
Read & Record Flow Rate (**FLOW**)	8.4.5.2					
Measure & Record Compressor Amp Draw	9.2					
Measure & Record Incoming Voltage (must be 110 - 125 VAC	9.4					
Test High & Low Outlet Pressure Alarms	9.14 & 9.15	☐	☐	☐	☐	☐
Set System Pressure (50 PSI)	8.10	☐	☐	☐	☐	☐
Set Static Pressure (17 PSI)	8.11	☐	☐	☐	☐	☐
Set Outlet Pressure	8.12	☐	☐	☐	☐	☐
Test Consistent Heatless Dryer Cycling	9.6	☐	☐	☐	☐	☐
Test Fan	9.9	☐	☐	☐	☐	☐
Test Cabinet Heater	9.10	☐	☐	☐	☐	☐
Test Compressor ON/OFF Cycling	9.11	☐	☐	☐	☐	☐
Test Compressor Excessive Run Time Alarm	9.12	☐	☐	☐	☐	☐
Test Humidity Alarm & System Shutdown	9.13	☐	☐	☐	☐	☐
Test Air Fittings for Leaks	9.16	☐	☐	☐	☐	☐
Clean Precooler Coils		☐	☐	☐	☐	☐
Visually Inspect Inside & Outside of Unit for Loose Wiring or Hardware		☐	☐	☐	☐	☐
Maintenance Performed by:						
Date of Maintenance:						

NOTE: COPY OR PRINT THIS PAGE AND KEEP IT WITH THE AIR DRYER

10.3 8,000 & 16,000 Hour Maintenance

Under typical operating conditions:

8,000 hours of run time will occur between one (1) and two (2) years of use.

16,000 hours of run time will occur between two (2) and three (3) years of use.

This will be identified by a **TTL TIME** Alarm on the display.

MODEL: **P4200WPM**   LOCATION NAME:

SERIAL NUMBER: ADDRESS:

DATE INSTALLED:

Procedure	Section	Maintenance Interval (Hours)				
		8,000	**16,000**	**24,000**	**32,000**	**40,000**
Install 8,000 Hour Maintenance Kit **P011763**	11.5	☐	■	☐	■	☐
Install 16,000 Hour Maintenance Kit **P011797**	11.5	■	☐	■	☐	■
Read & Record Flow Rate (**FLOW**)	8.4.5.2					
Measure & Record Compressor Amp Draw	9.2					
Set System Pressure (50 PSI)	8.10	☐	☐	☐	☐	☐
Set Static Pressure (17 PSI)	8.11	☐	☐	☐	☐	☐
Set Outlet Pressure	8.12	☐	☐	☐	☐	☐
Test Consistent Heatless Dryer Cycling	9.6	☐	☐	☐	☐	☐
Test Compressor ON/OFF Cycling	9.11	☐	☐	☐	☐	☐
Test Air Fittings for Leaks	9.16	☐	☐	☐	☐	☐
Reset COMP RUN Reading to Zero	8.6.6	☐	☐	☐	☐	☐
Visually Inspect Inside & Outside of Unit for Loose Wiring or Hardware		☐	☐	☐	☐	☐
Maintenance Performed by:						
Date of Maintenance:						

NOTE: COPY OR PRINT THIS PAGE AND KEEP IT WITH THE AIR DRYER

11. Replacement Parts & Accessories

11.1 Upper Section Parts
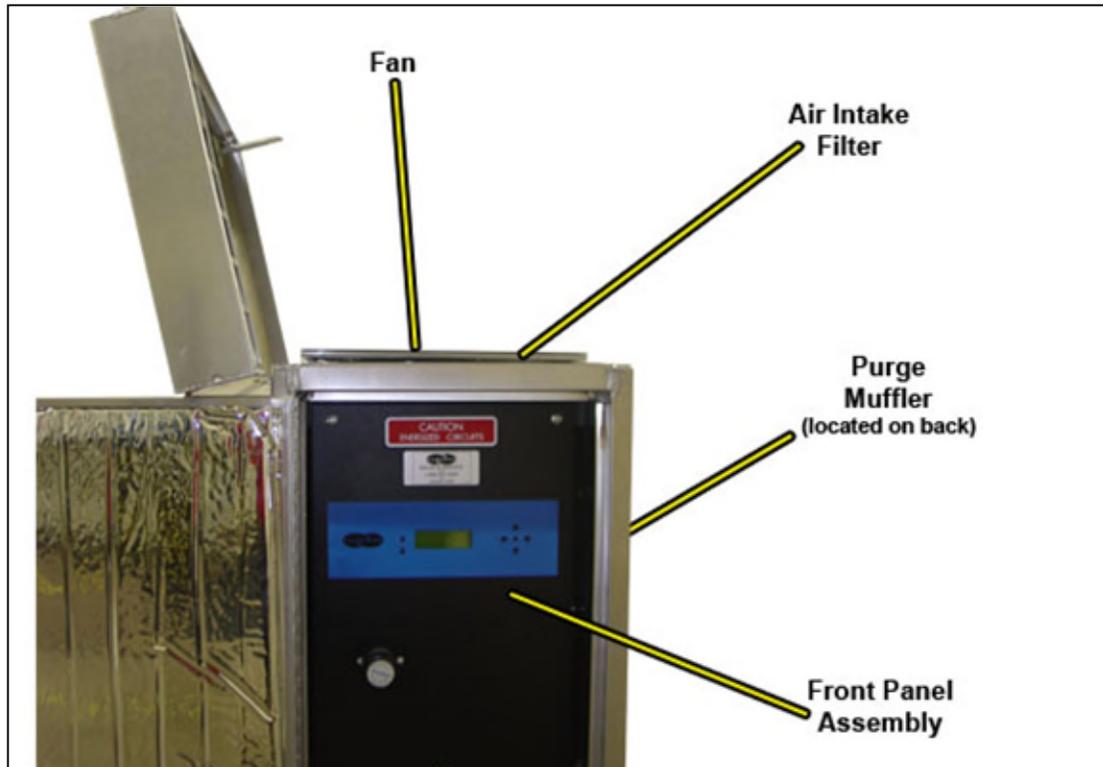
Description	Part Number	Quantity	Recommend Spare
Fan	P012666	1	
*Air Intake Filter	P011761	1	✓ (1)
*Purge Muffler	P010192	1	✓ (1)
Front Panel Assembly	See section 11.2 for detail.		

*In Kit P011643. See Section 11.6 for detail

11.2 Front Panel Assembly Parts
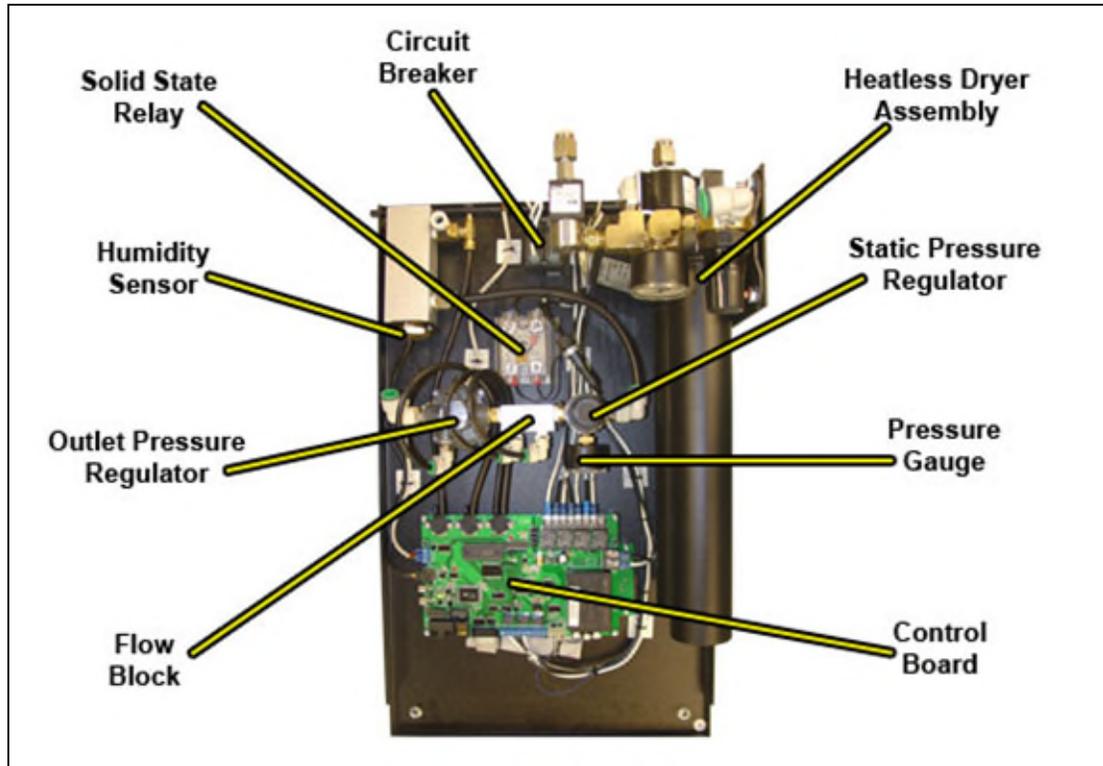
Description	Part Number	Quantity	Recommend Spare
Front Panel Assembly	P011617	1	
Flow Block		1	
Outlet Pressure Regulator	P03348	1	
*Humidity Sensor	P011380	1	
Solid State Relay	P05992	1	✓ (1)
Circuit Breaker	P06136	1	✓ (1)
Heatless Dryer Assembly	*See section 11.3 for detail*		
Static Pressure Regulator	P010279	1	
Pressure Gauge (0-30 PSI)	P011339	1	
Control Board *	P012039	1	✓ (1)

* In Kit P011797. See section 11.6 for detail

11.3 Heatless Dryer Assembly Parts
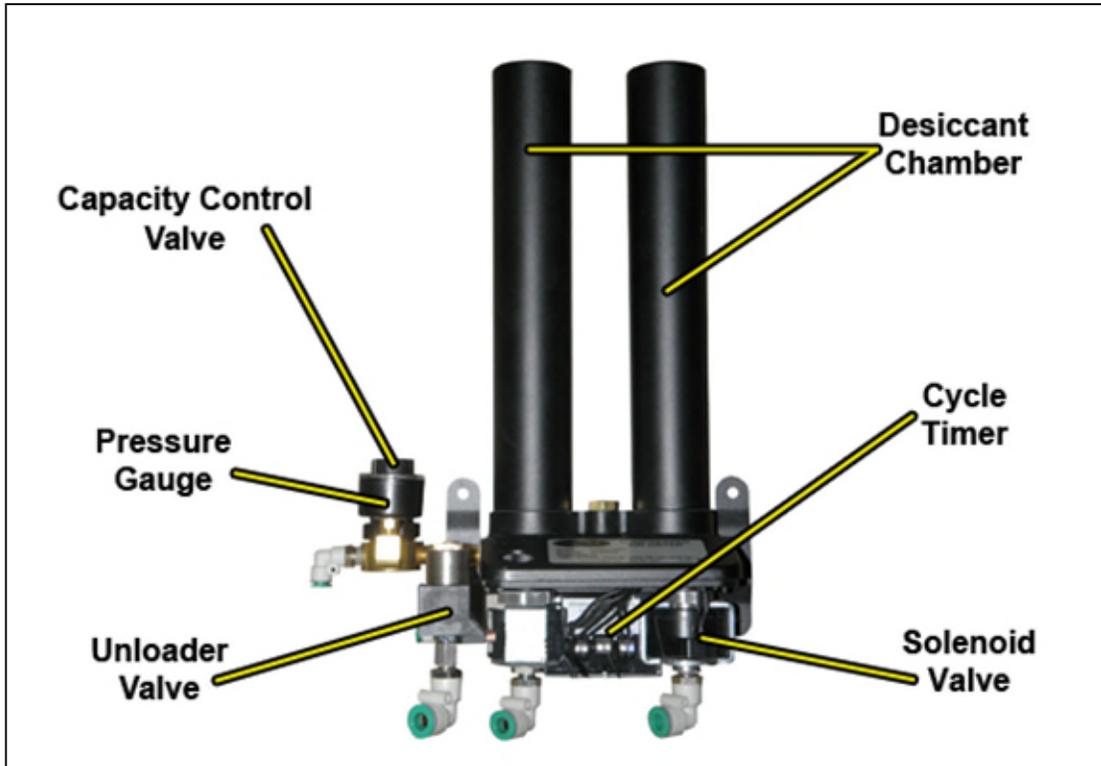
Description	Part Number	Quantity	Recommend Spare
Heatless Dryer	PHF2C112041	1	
Unloader Valve	P011022	1	
Pressure Gauge (0-100 PSI)	P010695	1	
Capacity Control Valve	P4634	1	✓ (1)
Desiccant Chamber	P20040312	2	
Cycle Timer	P010530F1	1	
Solenoid Valve	*In Kit P011763. See section 11.6 for detail.*		

11.4 Lower Section Parts
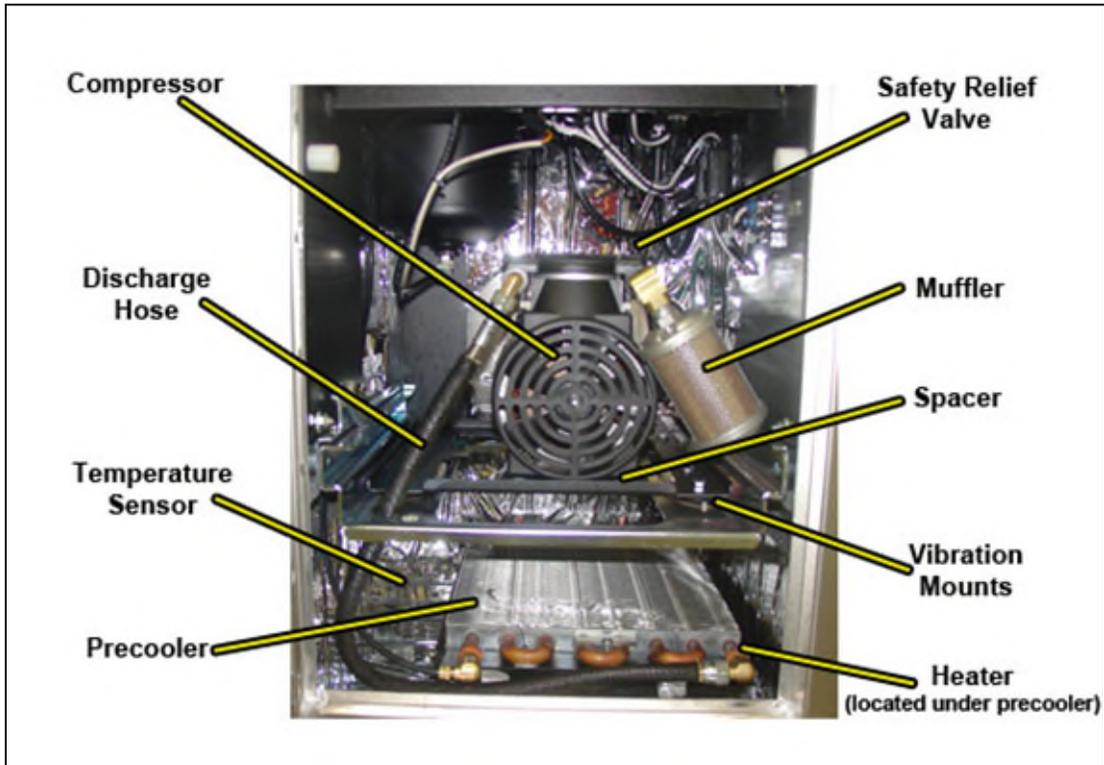
Description	Part Number	Quantity	Recommend Spare
Precooler	P4642	1	
Temperature Sensor	P011914	1	
Discharge Hose	P05069	1	
Compressor (3/4 HP)	P010982	1	✓ (1)
Safety Relief Valve	P3996	1	✓ (1)
*Muffler (3/8 mpt)	P010192	1	✓ (1)
Spacer		4	
Vibration Mount	P02626S	4	✓ (4)
Heater	P3175	1	

*In Kit P011643. See section 11.6 for detail

11.5 Internal Cabinet Parts
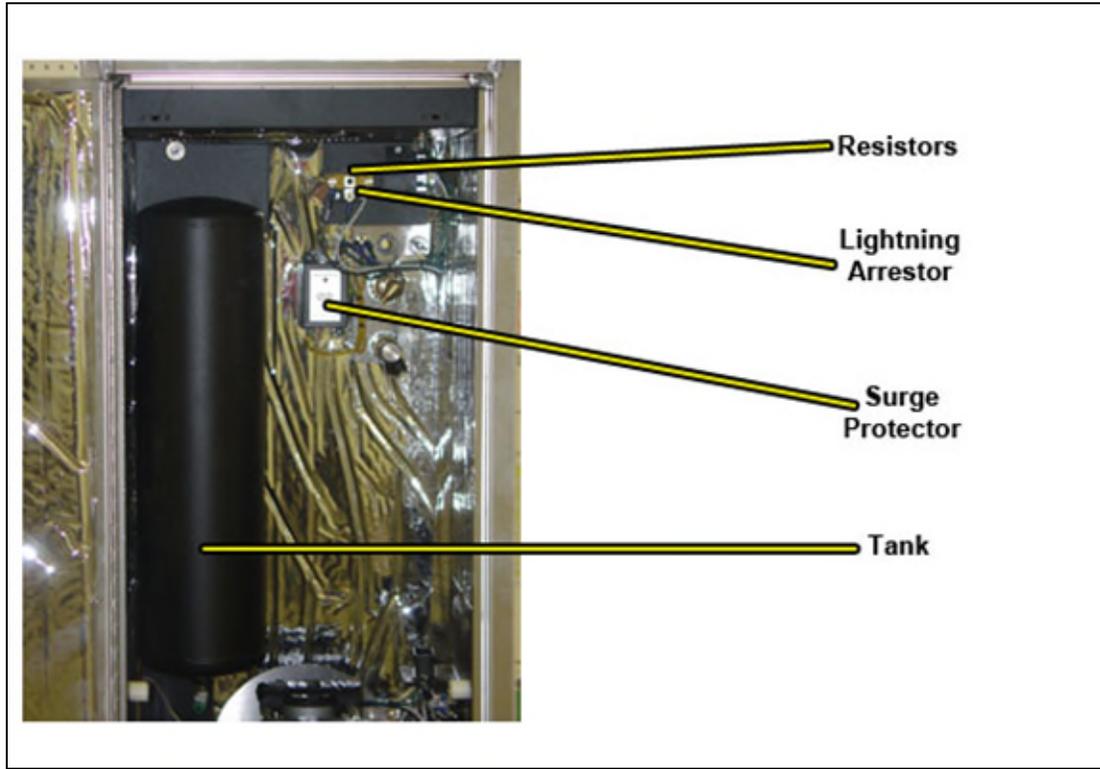
Description	Part Number	Quantity	Recommend Spare
Resistors (270K)	PB142	2	
Lightning Arrestor	P011788	1	
Surge Protector	P011835	1	
Tank		1	

11.6 Accessories for Your Dryer

	Description	Part Number	Recommend Spare
	Six Month Maintenance Kit Includes air intake filter, compressor muffler, and purge muffler.	P011643	✓ (2)
	8,000 Hour Maintenance Kit Includes heatless dryer maintenance kit and compressor maintenance kit.	P011763	✓ (1)
	16,000 Hour Maintenance Kit Includes heatless dryer maintenance kit, compressor maintenance kit.	P011797	✓ (1)
	Monitoring Interface Allows the dryer to be fully monitored by ALTEC AIR monitoring systems.	PVDW40	

11.7 Ordering Parts from ALTEC AIR

IMPORTANT!

Instruction for the replacement of individual listed components goes beyond the scope of this User's Guide and will not be covered. Please refer to the information included with the specific replacement part for this instruction.

Once you have identified your required parts and accessories, contact the ALTEC AIR Inside Sales / Service department to order:

(800) 521-5351 **(option 2)**

Fax – (303) 657-2205

sales@AltecAIR.com

12. Service & Repair

Only ALTEC AIR can offer factory direct rebuilds backed by a 6 month factory warranty.

- 2 week turnaround time
- Estimates available upon request
- Minimum service charge fee applies

12.1 Services Offered

- **Piston Compressor Rebuild**
    - Replace motor bearings, piston rod assemblies, and install a complete compressor maintenance kit.
    - Test air flow, air pressure, and electrical performance
- **Heatless Dryer Rebuild**
    - Replace desiccant, o-rings, check valves, springs, and complete solenoid assembly
    - Test proper component operation
- **Desiccant Tower Repack**
    - Clean out tower and replace desiccant, filter, and o-ring
- **Circuit Board Repair** (Limited to current model boards only)
- **Complete Dryer Repair**

12.2 Initiating a Service Transaction

- Contact our Parts & Service Department at **1-800-521-5351 (option 3)** to obtain a Return Authorization (RA) number.
- Carefully package the item(s) to be returned.
- Mark the Return Authorization (RA) number on the outside of the shipping container.
- Include the main address and phone number of the individual to contact for related inquiry and follow-up information.
- Include the purchase order number.

13. Troubleshooting Your Dryer

13.1 Before You Call ALTEC AIR

PLEASE READ THIS SECTION FIRST. It is important that you use the following sections in order to diagnose and attempt to fix the problem with your air dryer before placing a call to ALTEC AIR Technical Support.

This troubleshooting guide is intended to simplify the isolation of problems, present possible causes, provide test procedures for verification, and suggest corrective actions to restore the air dryer back to normal operation. Each section begins with the most likely cause(s) of the issue. Otherwise, they start from the simplest possibilities and progress to more complicated ones.

This troubleshooting guide is designed to be easy to follow and very effective when used properly. It is suggested to always start at the beginning of the specific problem section and continue in sequence, following the procedures indicated.

13.2 Safety & Warning Information

WARNING!

For your safety, all the information in this User's Guide must be followed to minimize the risk of electrical shock, and prevent property damage or personal injury.

WARNING!

Internal surfaces may be hot. Use care when coming into contact with internal components as there is a potential for some of these components to become hot when in operation or standby.

WARNING!

Extreme care should be exercised to avoid contact with live electrical circuits. Many procedures performed during installation, operation, testing, and maintenance of this air dryer require the equipment to be running, creating a situation for potential electrical shock. It is highly recommended that you remove all jewelry before performing any procedures.

CAUTION!

Depressurizing the air dryer may be necessary before performing certain procedures. **NEVER** remove pressure sensing tubes from the Control Board without depressurizing the air dryer first, or **damage to the Control Board will occur.**

CAUTION!

Do not test the Humitter with an ohm meter or apply any DC voltage. This will render the Humitter defective.

IMPORTANT!

Performing procedures not described in this User's Guide or installing components not supplied by ALTEC AIR is NOT RECOMMENDED AND MAY VOID THE WARRANTY.

CAUTION!

Observe precautions for handling **Electrostatic Sensitive Devices.**

13.3 Air Dryer Won't Power ON

Possible Cause	Check	Corrective Action
POWER Circuit Breaker in **OFF** position	Verify **POWER** Circuit Breaker is in **ON** position (section 8.3)	Move **POWER** Circuit Breaker to **ON** position (section 8.3)
No incoming voltage to air dryer	Measure incoming voltage (section 9.4)	Troubleshoot facility power supply to air dryer

13.4 Display Screen Not Functioning

Possible Cause	Check	Corrective Action
Dryer experienced a power spike		Power the air dryer **OFF** for 15+ seconds. Power the air dryer **ON**.
Ribbon cable disconnected	Verify ribbon cable from the decal is connected at the display board	Reconnect the ribbon cable properly.

13.5 High Outlet Pressure Alarm

Possible Cause	Check	Corrective Action
Outlet Pressure set too high	Verify Outlet Pressure (**OUTP**) reading (section 8.4.5.1)	Adjust Outlet Pressure Regulator (section 8.12)
High Outlet Pressure Alarm set point too low	Verify High Outlet Pressure Alarm set point (section 8.6.2)	Raise High Outlet Pressure Alarm set point (section 8.6.2)

13.6 Can't Create a High Pressure Alarm

Possible Cause	Check	Corrective Action
Defective Outlet Pressure Regulator	Verify that the Outlet Pressure Regulator can be adjusted (section 8.12)	Replace Outlet Pressure Regulator if unable to adjust pressure (section 11.2)
High Outlet Pressure Alarm set point higher than default setting of 12.0 PSI	Verify High Outlet Pressure Alarm set point (section 8.6.2)	Adjust Outlet Pressure Regulator so that Outlet Pressure (**OUTP**) reading climbs over verified set point (section 9.14)
Defective Control Board	Verify that the Outlet Pressure (**OUTP**) reading is higher than the High Outlet Pressure Alarm set point (above)	Replace Control Board (section 11.2) if Outlet Pressure (**OUTP**) reading is over verified High Outlet Pressure Alarm set point for more than 1 minute and fails to create an alarm.

13.7 Low Outlet Pressure Alarm

Possible Cause	Check	Corrective Action
Outlet Pressure set too low	Verify Outlet Pressure (**OUTP**) reading (section 8.4.5.1)	Adjust Outlet Pressure Regulator (section 8.12)
High Flow condition	Verify Flow Rate (**FLOW**) reading is not higher than expected (section 8.4.5.3)	Troubleshoot High Flow condition (section 13.11)
Low Outlet Pressure Alarm set point too high	Verify Low Outlet Pressure Alarm set point (section 8.6.3)	Lower the Low Outlet Pressure Alarm set point (section 8.6.3)

13.8 Can't Create a Low Pressure Alarm

Possible Cause	Check	Corrective Action
Defective Outlet Pressure Regulator	Verify that the Outlet Pressure Regulator can be adjusted (section 8.12)	Replace Outlet Pressure Regulator if unable to adjust pressure (section 11.2)
Low Outlet Pressure Alarm set point lower than default setting of 6.5 PSI	Verify Low Outlet Pressure Alarm set point (section 8.6.3)	Adjust Outlet Pressure Regulator so that Outlet Pressure (**OUTP**) reading drops below verified set point (section 9.15)
Air Leak	Test fittings and hoses for leaks(section 9.16)	Reconnect or replace bad fitting / hose
Defective Control Board	Verify that the Outlet Pressure (**OUTP**) reading is lower than the Low Outlet Pressure Alarm set point (above)	Replace Control Board (section 11.2) if Outlet Pressure (**OUTP**) reading is under verified Low Outlet Pressure Alarm set point for more than 1 minute and fails to create an alarm.

13.9 High Humidity

> ⚠ **CAUTION!**
>
> **Do not test the Humitter with an ohm meter or apply any DC voltage.** This will render the Humitter defective.

Possible Cause	Check	Corrective Action
Low System Pressure	Verify System Pressure (section 8.10)	Adjust System Pressure to 50 PSI (section 8.10)
Low Flow Rate	Verify Flow Rate (**FLOW**) reading is low (section 8.4.5.3)	Increase flow by creating an artificial leak outside of the air dryer
High Humidity Alarm set point too low	Verify High Humidity Alarm set point (section 8.6.4) If Flow Rate is low, allowing a higher alarm set point (up to 10%) will allow dryer to run within acceptable levels.	Raise High Humidity Alarm set point (section 8.6.4) Over 10% not recommended
Defective Humidity Sensor	Perform the Testing Humidity Alarm and System Shutdown test	Troubleshoot *Can't Create a High Humidity Alarm / Shutdown* condition (section 13.10)
Heatless Dryer not cycling between towers	Verify consistent Heatless Dryer cycling (section 9.6)	Troubleshoot *Inconsistent Heatless Dryer Cycling* condition (section 13.13)
Defective Control Board	Unplug Humidity Sensor from Control Board (see section 11.2 for Control Board location) Humidity reading should drop to 0%	If Humidity did not drop to 0%, replace Control Board (section 11.2)

13.10 Can't Create a High Humidity Alarm / Shutdown

These troubleshooting steps assume that the Humidity Element is removed from the Humidity Block during the *Testing Humidity Alarm and System Shutdown* (section 9.13) procedures.

Possible Cause	Check	Corrective Action
Humidity Sensor Cable disconnected	Verify that Humidity Sensor cable is connected through to the Control Board	Connect Humidity Sensor cable
Defective Humidity Sensor	Verify that Humidity reading fails to climb higher than 15% or creates sporadic readings	Replace Humidity Sensor (section 11.2)
Defective Control Board	Verify that Humidity reading is over 15% for more than 1 minute	Replace Control Board if no alarm is created and system does not shut down (section 11.2)

13.11 High Flow Rate Alarm

Possible Cause	Check	Corrective Action
Air leak in downstream cable outside of dryer	Verify Flow Rate (**FLOW**) reading is not higher than expected (section 8.4.5.3)	Fix downstream problem
Air leak inside of dryer	Test fittings and hoses for leaks (section 9.16)	Reconnect or replace bad fitting / hose
High Flow Alarm set point too low	Verify High Flow Alarm set point (section 8.6.1)	Raise High Flow Alarm set point (section 8.6.1)

13.12 High Cabinet Temperature Alarm

Possible Cause	Check	Corrective Action
Fan Failure	Verify fan is running (section 9.9)	Check for loose fan wiring (section 14.1) Replace defective fan (section 11.1)

13.13 Inconsistent Heatless Dryer Cycling

Possible Cause	Check	Corrective Action
Defective Solenoid Valve	Measure voltage going to the Heatless Dryer Solenoid Valves (section 9.8)	If 53 VDC **IS** present, replace Solenoid Valves included in the 8,000 Hour Maintenance Kit (section 11.3)
Defective Cycle Timer	Measure voltage going to the Heatless Dryer Solenoid Valves (section 9.8)	If 53 VDC **IS NOT** present, replace the Cycle Timer (section 11.3)

13.14 Compressor Doesn't Operate

Possible Cause	Check	Corrective Action
Defective compressor	Measure voltage to compressor (section 9.3)	If voltage is good, replace compressor (section 11.4) or send it in for repair (section 12.)
No power to compressor	Measure voltage to compressor (section 9.3)	If voltage is not present or fluctuates, continue to next Possible Cause
Defective Solid State Relay	Measure voltages at Solid State Relay (section 9.5)	If measurements are bad, replace Solid State Relay (section 11.2)
System is in Shutdown state	On the Display Panel, verify that the system is in **SHUTDOWN** state	Press the **RESET** Button

13.15 Compressor Won't Build Pressure

Possible Cause	Check	Corrective Action
Low System Pressure	Verify System Pressure (section 8.10)	Adjust System Pressure to 50 PSI (section 8.10)
Defective Unloader Valve	Test Unloader Valve operation (section 9.7) If this is continuously flowing high amounts of air, the Unloader Valve is defective.	Replace Unloader Valve (section 11.2)
Leak in air system	Check all hoses and fittings between compressor and Air Tank for air leaks (section 9.16)	Connect, tighten, or replace leaking component

13.16 Compressor Excessive AMP Draw

Possible Cause	Check	Corrective Action
Restriction in air line	Remove Discharge Hose from compressor (see section 11.4 for location of hose) Re-measure Compressor AMP Draw (section 9.2)	If measurement is below 12.0 amps, trace hoses from compressor to Unloader Valve looking for restrictions or kinks
Compressor failing	Remove Discharge Hose from compressor (see section 11.4 for location of hose) Re-measure Compressor AMP Draw (section 9.2)	If measurement is still above 12.0 amps, replace compressor (section 11.3) or send it in for repair (section12.)

13.17 Compressor Excessive Run Time Alarm

Possible Cause	Check	Corrective Action
Low System Pressure	Verify System Pressure (section 8.10)	Adjust System Pressure to 50 PSI (section 8.10)
High Flow condition	Verify Flow Rate (**FLOW**) reading is not higher than expected (section 8.4.5.3)	Troubleshoot High Flow condition (section 13.11)
Defective Unloader Valve	Test Unloader Valve operation (section 9.7) If this is continuously flowing high amounts of air, the Unloader Valve is defective.	Replace Unloader Valve (section 11.2)
Defective Heatless Dryer Solenoid Valve	Verify consistent Heatless Dryer cycling (section 9.6) If either side is continuously flowing high amounts of air, the Solenoid Valve is defective.	Replace Solenoid Valves included in the 8,000 Hour Maintenance Kit (section 11.6)
Defective Solid State Relay	Measure voltages at Solid State Relay (section 9.5)	If measurements are bad, replace Solid State Relay (section 11.2)

13.18 Can't Create a Compressor Excessive Run Time Alarm

Possible Cause	Check	Corrective Action
Compressor Excessive Run Time Alarm set point higher that the default of 3:00 minutes	Verify Excessive Compressor Run Time Alarm set point (section 8.6.5)	Allow the compressor to run longer than the verified set point (section 9.12)
Defective Control Board	Verify that the compressor has run longer than the verified Excessive Compressor Run Time Alarm set point (above)	Replace Control Board (section 11.2) if the compressor runs longer than the verified Excessive Compressor Run Time Alarm set point by 1 minute or more and fails to create an alarm.

13.19 Compressor Rapid ON/OFF Cycling

Possible Cause	Check	Corrective Action
Defective Solid State Relay	Measure voltages at Solid State Relay (section 9.5)	If measurements are bad, replace Solid State Relay (section 11.2)
Defective Control Board	Measure voltages at Solid State Relay (section 9.5)	If measurements are good, replace Control Board (section 11.2)

13.20 Contacting ALTEC AIR Technical Support

Please read the *Before You Call ALTEC AIR* section (13.1)

Once you have exhausted all of the potential problems and solutions covered in the *Troubleshooting Your Dryer* section, and you still require further assistance to correct a problem, contact ALTEC AIR Technical Support:

(800) 521-5351 **(option 1)**

Have the following information available:

Trouble Ticket # (if following-up on a previous call):＿＿＿＿＿＿＿

Technician Name:＿＿＿＿＿＿＿＿＿＿＿＿   **Phone #**:＿＿＿＿＿＿＿＿

Model #:＿ **P4200WPM** ＿＿＿＿＿   **Serial #**:＿＿＿＿＿＿＿＿

Company Name:＿＿＿＿＿＿＿＿＿   **Location Name**:＿＿＿＿＿＿＿＿

City:＿＿＿＿＿＿＿＿   **State**:＿＿＿＿＿

14. Appendix

14.1 Wiring Diagram
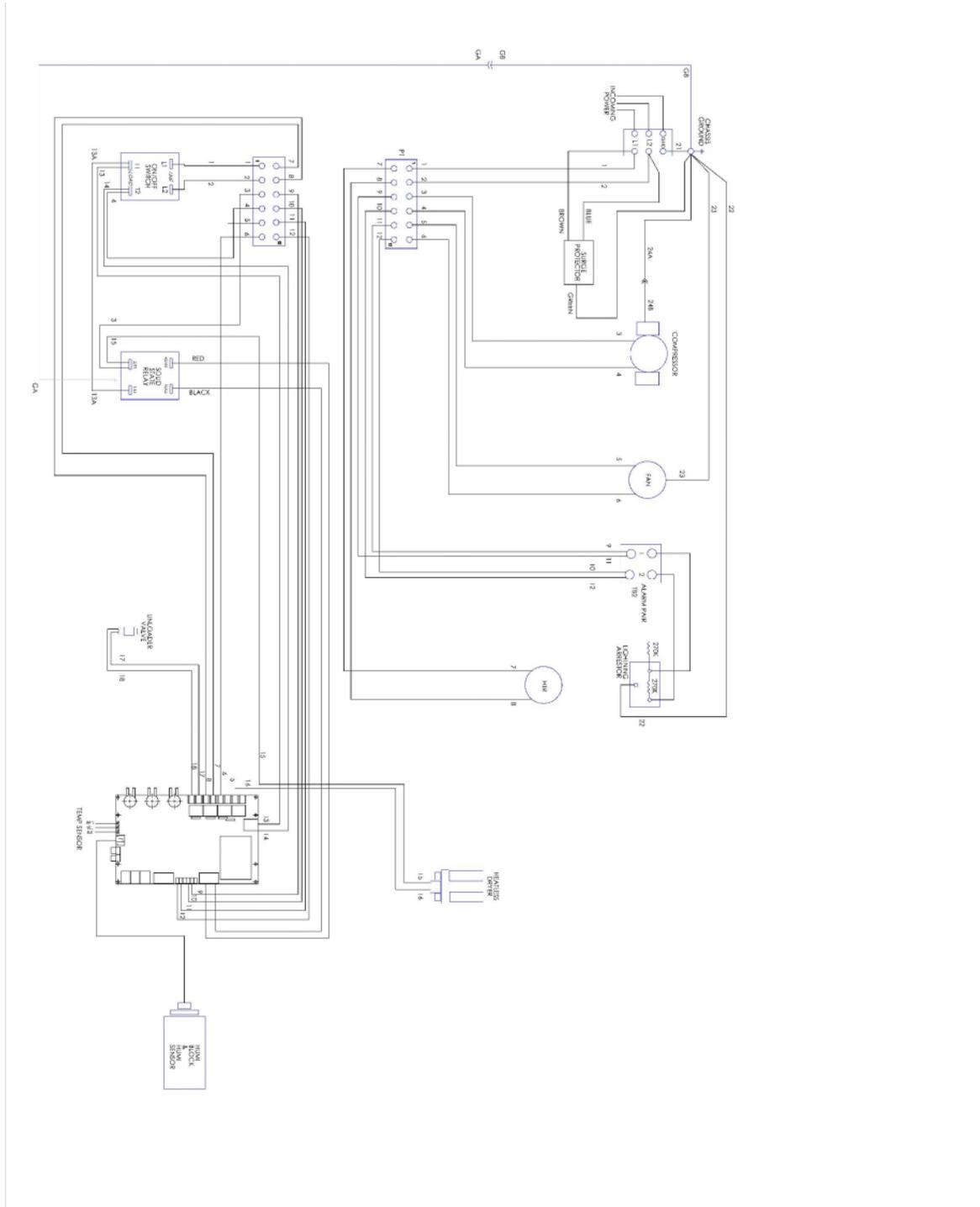
14.2 Set Point Limits and Defaults

14.2.1 System Adjustments

Description	Minimum Value	Maximum Value	Default Value	Unit of Measurement
System Pressure	48.0	52.0	50.0	PSI
Static Pressure	17.0	17.0	17.0	PSI
Outlet Pressure	1.0	15.0	10.0	PSI

14.2.2 Alarm Set Points

Description	Minimum Value	Maximum Value	Default Value	Unit of Measurement	Shutdown
High Flow Alarm	0	4,200	3,500	SCFD	
High Outlet Pressure Alarm	0.5	20.0	12.0	PSI	
Low Outlet Pressure Alarm	0.5	20.0	6.5	PSI	
High Humidity Alarm	3.0	15.0	10.0	%	YES
Excessive Compressor Run Time Alarm	1.0	5.0	3.0	Minutes	
Compressor Total Run Time Reset	0.0	9,999.0	0.0	Hours	
High Cabinet Temperature Alarm			117.0	Deg F	

14.2.3 System Operations

Description	ON Value	OFF Value	Default Value	Unit of Measurement
Compressor	20.0	50.0		PSI

15. Limited Warranty Agreement

ALTEC AIR products carry a one (1) year warranty against defective workmanship and material. This period starts at date of shipment. Not included are the components subject to normal replacement during a year's operating time.

No claims for labor in replacing defective parts or for consequential damages will be allowed. Replacement parts will be invoiced in the regular way, with invoices subject to adjustment after the parts claimed defective are examined at our factory. In addition, no material or parts will be accepted at our factory for in-warranty repairs or credit without previous authorization from ALTEC AIR.

Responsibility for damages incurred in transit will be borne by the user and the user in turn should file any damage claim against the carrier. All warranty items are F.O.B. Broomfield, Colorado. Freight charges are the responsibility of the user.

This warranty shall not apply to any ALTEC AIR product which shall have been repaired or altered in any way by anyone other than ALTEC AIR or authorized personnel so as to affect, in our judgment, its proper functioning or reliability, neither will it apply to any product which has been subject to misuse, negligence, or accident. The installation of unauthorized non ALTEC AIR parts will void the warranty on those ALTEC AIR products.

Registration Reminder

If you haven't already done so, please take a moment to register your ALTEC AIR P4200WPM Air Dryer. **Registering is necessary to activate this Limited Warranty on your product.** Once you register, you are eligible to receive free technical support, as well as updates concerning your ALTEC AIR products.

See Section 7. for details on Registering Your Dryer.

16. Contacting ALTEC AIR

16.1 General

ALTEC AIR, LLC

226A Commerce Street

Broomfield, Colorado 80020

(800) 521-5351

(303) 427-3700

Fax – (303) 657-2233

info@AltecAIR.com

www.AltecAIR.com

16.2 Sales

(800) 521-5351 **(option 2)**

Fax – (303) 657-2205

sales@AltecAIR.com

parts@AltecAIR.com

16.3 Service

(800) 521-5351 **(option 3)**

Fax – (303) 657-2205

16.4 Technical Support

(800) 521-5351 **(option 1)**

DON'T FORGET TO REGISTER YOUR DRYER!

See Section 7. for details on Registering Your Dryer.

17. Notes