

P20KW / P30KW Air Dryer



User's Guide





WARNING:

This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer/birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

1. Welcome & Congratulations

Congratulations on your purchase of a new ALTEC AIR P20KW / P30KW 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 P20KW / P30KW 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

1. Welcome & Congratulations	3	8.11 Depressurizing the Dryer	45
2. Introduction	3	8.12 Setting the System Pressure	45
3. Table of Contents.....	4	8.13 Setting the Static Pressure.....	46
4. Safety & Warning Information	6	8.14 Setting the Outlet Pressure.....	47
5. Overview & Specifications.....	9	8.15 Setting the RRU Temperature.....	48
5.1 Product Description	9	9. Testing Your Dryer	50
5.2 Key Features	9	9.1 Safety & Warning Information	50
5.3 Dryer Function Overview	10	9.2 Measuring Compressor Amp Draw	52
5.4 Technical Specifications	12	9.3 Measuring Voltage to Compressor	53
6. Installing Your Dryer	13	9.4 Measuring Incoming Voltage	54
6.1 Safety & Warning Information	13	9.5 Testing High Outlet Pressure Alarm.....	55
6.2 Before You Begin.....	15	9.6 Testing Low Outlet Pressure Alarm.....	56
6.3 Included Contents	16	9.7 Testing Low System Pressure Alarm.....	57
6.4 Required Tools and Materials.....	16	9.8 Testing 4-Way Valve Cycling	59
6.5 Installation Steps.....	17	9.9 Measuring 4-Way Valve Solenoid	
6.6 Installation Checklist	27	Voltage.....	62
7. Registering Your Dryer.....	28	9.10 Measuring Tower Heater Voltage.....	65
8. Operating Your Dryer	29	9.11 Testing Precooler Fan	68
8.1 Safety & Warning Information	29	9.12 Testing Low Water Sensor Function &	
8.2 Connecting Air Lines to the Dryer	30	System Shutdown	69
8.3 Powering the Dryer ON & OFF.....	30	9.13 Testing Dump Sensor and Primary	
8.4 Using the Front Panel Display	31	Water Dump Functions.....	70
8.5 Identifying Dryer Alarms	34	9.14 Testing High Water and Secondary	
8.6 Adjusting & Resetting Dryer Set Points	38	Water Dump Functions.....	72
8.7 Opening Panels	42	9.15 Testing Humidity Alarm and System	
8.8 Connecting to Common Alarm Terminals		Shutdown.....	76
.....	43	9.16 Testing Power Contactor	77
8.9 Rewiring the Common Alarm Socket....	44	9.17 Testing Fittings & Hoses for Leaks	78
8.10 Connecting to Discrete Alarm Terminals		10. Maintaining Your Dryer	80
.....	44	10.1 Safety & Warning Information	80
		10.2 Six Month Maintenance.....	82
		11. Replacement Parts & Accessories	83
		11.1 Top Front Section Parts	83
		11.2 Bottom Front Section Parts.....	84

11.3 Top Front Panel Parts	85	13.14 High Outlet Temperature Alarm	100
11.4 Top Back Section Parts.....	86	13.15 High RRU Temperature Alarm.....	100
11.5 Bottom Back Section Parts	87	13.16 Low Water Alarm	101
11.6 Frame Section Parts	88	13.17 Can't Create a Low Water Alarm	101
11.7 Accessories for Your Dryer	89	13.18 High Water Alarm	102
11.8 Ordering Parts from ALTEC AIR	90	13.19 Can't Create a High Water Alarm ...	102
12. Service & Repair.....	91	13.20 High Water Temperature Alarm	103
12.1 Services Offered	91	13.21 Compressor Doesn't Operate	103
12.2 Initiating a Service Transaction	91	13.22 Unit Trips Breaker	104
13. Troubleshooting Your Dryer	92	13.23 Contacting ALTEC AIR Technical Support.....	104
13.1 Before You Call ALTEC AIR	92	14. Appendix	106
13.2 Safety & Warning Information	92	14.1 Wiring Diagram	106
13.3 Air Dryer Won't Power ON.....	94	14.2 Set Point Limits and Defaults	107
13.4 Display Screen Not Functioning.....	94	15. Limited Warranty Agreement.....	108
13.5 Low System Pressure Alarm	95	Registration Reminder	108
13.6 Can't Create a Low System Pressure Alarm.....	95	16. Contacting ALTEC AIR	109
13.7 High Outlet Pressure Alarm.....	96	16.1 General.....	109
13.8 Can't Create a High Pressure Alarm....	96	16.2 Sales.....	109
13.9 Low Outlet Pressure Alarm	97	16.3 Service	109
13.10 Can't Create a Low Pressure Alarm ..	97	16.4 Technical Support.....	109
13.11 High Flow Rate Alarm.....	98	17. Notes.....	110
13.12 High Humidity	98		
13.13 Can't Create a High Humidity Alarm / Shutdown.....	99		

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.

**WARNING!**

High Noise. ALTEC AIR air dryers are meant to be installed in an unattended area.

**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 Air Dryer must be:

- 30-amp service recommended
- 230 VAC +/- 10%, 1 Phase for P20KW model
- 208 VAC +/- 10%, 3 Phase for P30KW model
- If hard wiring directly, reference local NEC guidelines

**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!**

DO NOT USE DISTILLED OR DE-IONIZED WATER IN THIS UNIT. It will cause damage to the compressor and other major components over time. This unit is designed for **clean tap water only**.

**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**.

**IMPORTANT!**

If installing more than one air dryer in the same location, use individual drain tubing. If plumbed together, damage to the air dryers may occur.

**IMPORTANT!**

Installation of ALTEC AIR air dryers are intended for network telecommunication facilities (non-customer premises) only.

5. Overview & Specifications

5.1 Product Description

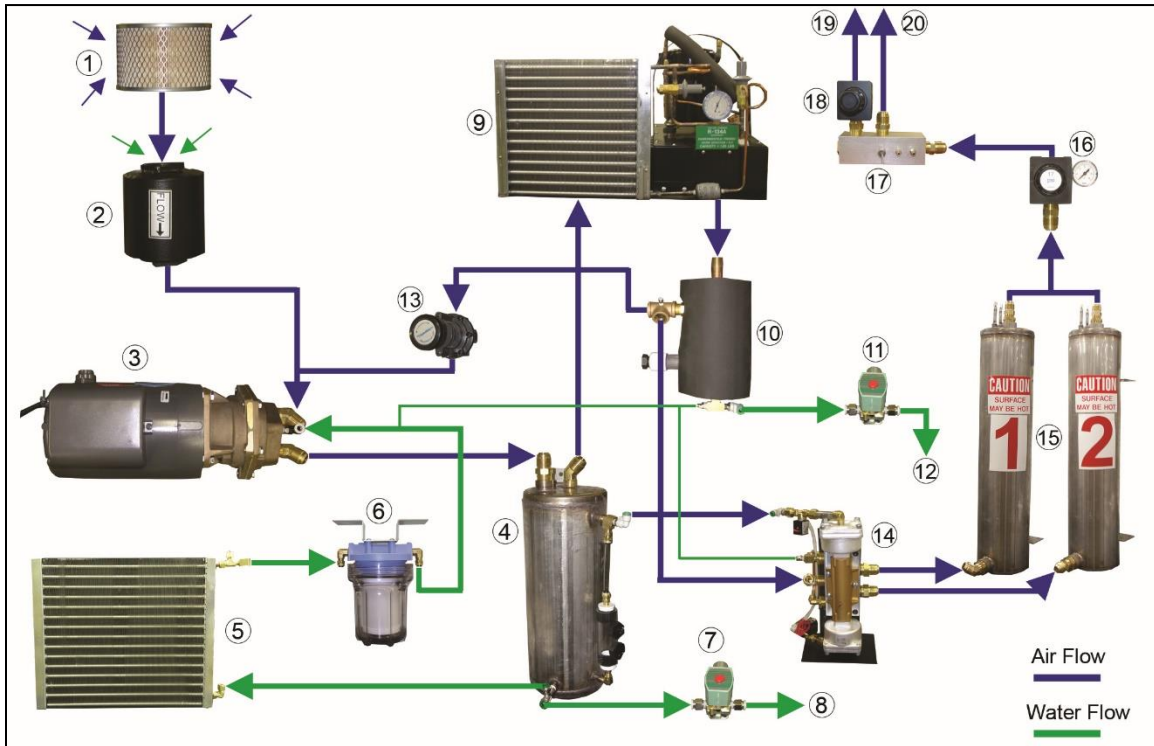
The P20KW / P30KW Air Dryer from ALTEC AIR is designed to intake wet ambient air and remove the moisture for delivery to applications requiring a constant, on-demand source of dry, pressurized air. This process is fully automatic and will remain consistent with minimal required periodic maintenance. This dryer is designed specifically for indoor use.

The P20KW / P30KW Air Dryer employs a fully digital operating platform offering the most accurate readings of dryer variables, removable access panels allowing easy access for adjustment and maintenance, heat activated desiccant towers, a refrigeration system, and a single water sealed air compressor.

5.2 Key Features

- Real-time monitoring of over 15 points
- Remote access and alarm reset capabilities
- LCD display of all operating parameters
- Solid state microprocessor-based circuitry
- Accurate humidity sensing within $\pm 0.1\%$ RH
- Lowest Energy Cost
- Single water sealed compressor
- Dual pressure outlets
- Unique heated drying system
- Maintenance-free sealed cooling system

5.3 Dryer Function Overview



#	Component	Description
1	Inlet Air Filter	Draws in ambient air.
2	Accumulator	Prevents the return of air or water from the compressor.
3	Compressor	Creates compressed air.
4	Primary Water Separator	Separates water from compressed air.
5	Precooler	Cools water from the compressor.
6	Water Filter	Filters water.
7	Primary Dump Valve	Dumps excessive water from the primary water separator.
8	Primary Drain Outlet	Outputs the water released by the primary dump valve.
9	Refrigeration Unit	Lowers the temperature of the moist compressed air causing condensation.
10	Secondary Water Separator	Separates condensation from compressed air.
11	Secondary Dump Valve	Dumps excessive water from the secondary water separator.
12	Secondary Drain Outlet	Outputs the water released by the secondary dump valve.
13	System Pressure Regulator	Maintains operating pressure.
14	4-Way Valve Assembly	Directs the cold, saturated air from the secondary separator to the on-line desiccant tower.
15	Desiccant Towers	Dries the saturated air.
16	Static Pressure Regulator	Regulates the static pressure (17 PSI). Maintains constant pressure on the combo block for accurate flow measuring.
17	Combo Block	Measures the flow of compressed air, houses the adjustable pressure regulator, humitter and outlet temperature probe.
18	Outlet Pressure Regulator	Regulates the outlet pressure
19	Pressure Outlet	Outputs the air at the pressure set by the adjustable pressure regulator.
20	Static Pressure Outlet	Outputs the air at the pressure set by the Static Pressure Regulator (17 PSI).

5.4 Technical Specifications

	P20KW	P30KW
Output Capacity	20,000 SCFD	30,000 SCFD
Power Requirements	230 VAC +/- 10%, 1 Phase	208 VAC +/- 10%, 3 Phase
Electrical Characteristics (30 Amp service recommended)	Running Amps: 17.5	Running Amps: 16.5
Outlet Pressure Range	Variable Pressure Outlet: 0 – 15 PSI (adjustable) Static Pressure Outlet: 17 PSI	
Outlet Air Humidity	Less than 2% RH	
Compressor Type	Water sealed, 2 HP, 1 Phase	Water sealed, 3 HP, 3 Phase
Drying Method	Refrigeration (R134A) and Heat Desiccant	
Operating Temperature Range	40° to 85°F (5° to 30°C) optimal	
Noise Level	86.6 dBA	
Heat Dissipation	12,420 BTU/hr.	16,100 BTU/hr.
Alarms	Standard alarms – complete readings of all critical measurement points, individual alarm indication display	
Outlet Connections	Variable Pressure Outlet: 3/4" NPT Female Static Pressure Outlet: 3/4" NPT Female	
Dimensions	20.5" D x 40" W x 58.5" H (52 cm x 101.6 cm x 148.6 cm)	
Net / Shipping Weight	550 lbs. (249.5 kg) / 621 lbs. (282 kg)	

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.



WARNING!

High Noise. ALTEC AIR air dryers are meant to be installed in an unattended area.



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 Air Dryer must be:

- 30-amp service recommended
- 230 VAC +/- 10%, 1 Phase for P20KW model
- 208 VAC +/- 10%, 3 Phase for P30KW model
- If hard wiring directly, reference local NEC guidelines

**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!**

Installation of ALTEC AIR air dryers are intended for network telecommunication facilities (non-customer premises) only.

**IMPORTANT!**

If installing more than one air dryer in the same location, use individual drain tubing. If plumbed together, damage to the air dryers may occur.

**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.

6.2 Before You Begin

6.2.1 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.

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

6.2.3 Verify the installation location of the air dryer:

6.2.3.1 Well ventilated and free from abrasive dust or chemicals.

6.2.3.2 Unobstructed drain or bucket for water dump.

6.2.3.3 Ambient temperature is between 40° and 85° F (optimum).

NOTE: Higher temperatures will decrease component lifespan.

6.2.3.4 Meets the following power requirements:

- 230 VAC +/- 10%, 1 Phase for P20KW
- 208 VAC +/- 10%, 3 Phase for P30KW
- Minimum 30-amp service
- If hard wiring directly, reference local NEC guidelines

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

6.3 Included Contents

- (1) P20KW / P30KW Air Dryer
- (2) 10' - 3/8" Drain Tubing
- (1) Installation Guide (not shown)

Package located inside the dryer:

- (1) User's Guide -
Paper copy or digital file on CD (not shown)
- (1) Alarm Plug
- (1) Compressor Connector Tool



6.4 Required Tools and Materials

- Large adjustable wrench
- Medium adjustable wrench
- Band cutters or snips
- 7/16" wrench
- 1/2" wrench
- 3/8" wrench
- Medium Phillips head screwdriver
- 1+ gallon of clean tap water
(DO NOT USE DISTILLED WATER)
- Medium flat head screwdriver
- Small flat head screwdriver
- Pipe dope or pipe thread tape
- Cup of soapy water
- 1-inch paint brush
(recommended)
- Shop Towels

6.5 Installation Steps

6.5.1 Remove all shipping materials.

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



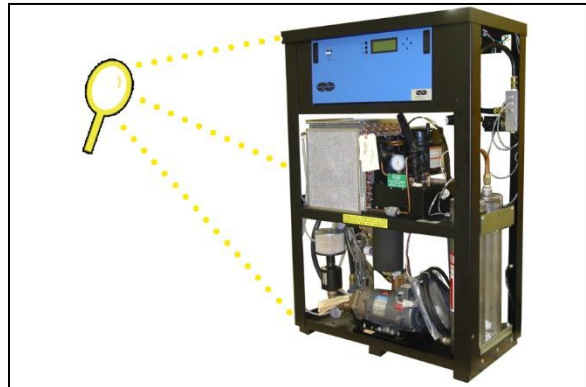
6.5.2 Place the dryer at the operating location.

6.5.3 Remove the Lower Front and Side Panels.



6.5.4 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.



6.5.5 Using a 1/2" wrench, loosen the nuts on the RRU Compressor.

6.5.6 Remove the shipping blocks and discard.

6.5.7 Retighten the RRU Compressor nuts.

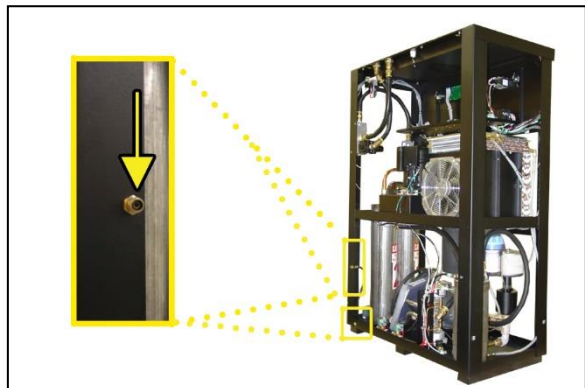
6.5.8 Using a 7/16" wrench, remove bolt and shipping block from under the compressor plate. Discard block and bolt.

6.5.9 Remove the ship-loose contents package.



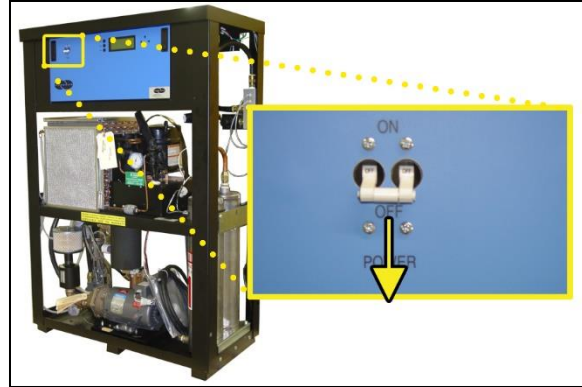
On BACK of dryer:

6.5.10 Install 3/8" drain tubing into the primary and secondary fittings and route to an unobstructed drain or bucket.



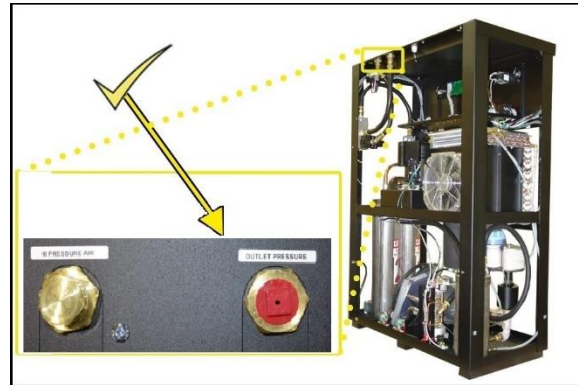
⚠ CAUTION: Use individual drain tubing. If plumbed together, damage to the air dryer may occur.

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



On TOP of dryer:

6.5.12 Verify that the orifice plug is still installed where shown.



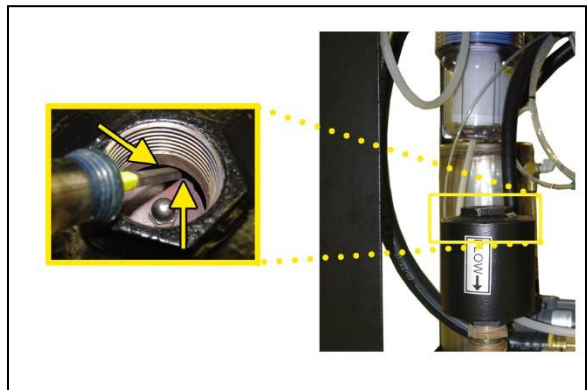
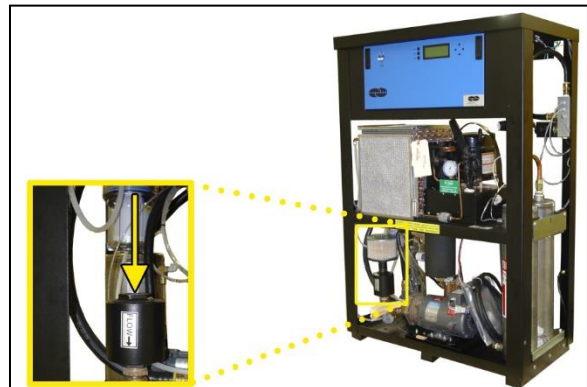
6.5.13 Wire directly or plug the power cord into a power outlet

- 230 VAC +/- 10%,
1 phase for the **P20KW**
- 208 VAC +/- 10%,
3 phase for the **P30KW**

NOTE: ALTEC AIR recommends using a 20-amp 250 VAC plug. (not provided)

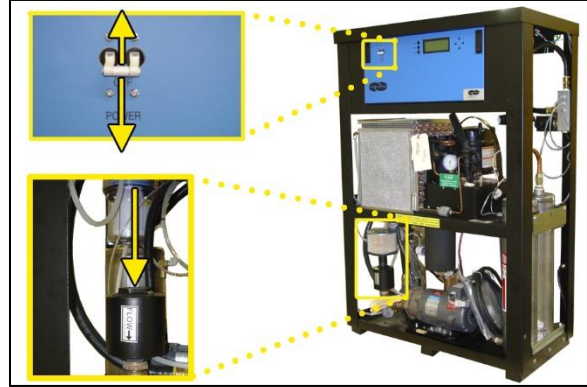
6.5.14 Prime the compressor:

⚠ CAUTION: The following steps must be performed to avoid **damage to the compressor**.

6.5.14.1 Remove Inlet Air Filter Assembly.**6.5.14.2** Push the Accumulator's diaphragm down by inserting a screwdriver as shown.**6.5.14.3** Slowly pour water into the Accumulator until it is full.

6.5.15 Power the dryer **ON** momentarily and then power **OFF**.

NOTE: If water is **NOT** drawn into the Accumulator move to the next step.

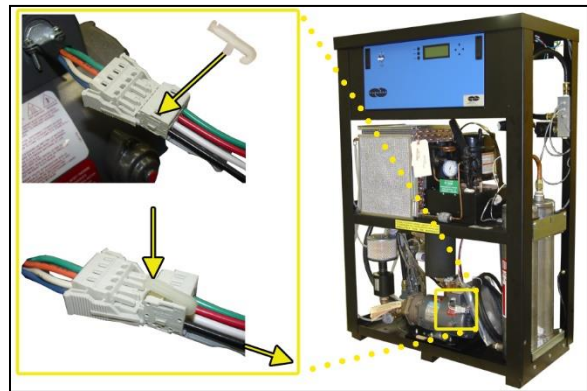


If the water **IS** being drawn into the Accumulator move to step 6.5.17).

6.5.16 Interchange the compressor wires. (Skip these steps if water is being drawn into the compressor):

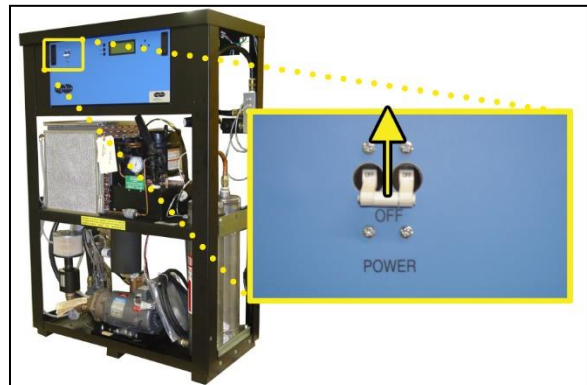
6.5.16.1 Verify dryer Power is **OFF**.

6.5.16.2 Use the Compressor Connector Tool to remove the Red & Black wires from the dryer side connector.

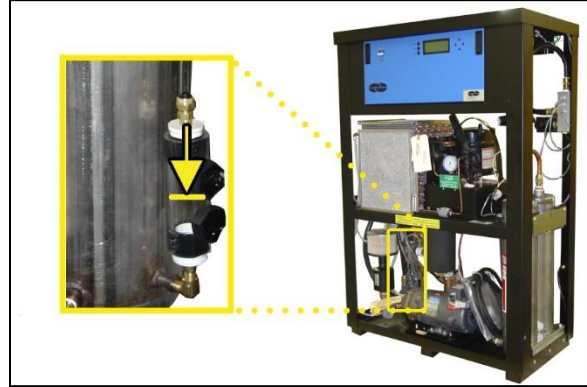


6.5.16.3 Switch the Red & Black wires and re-insert.

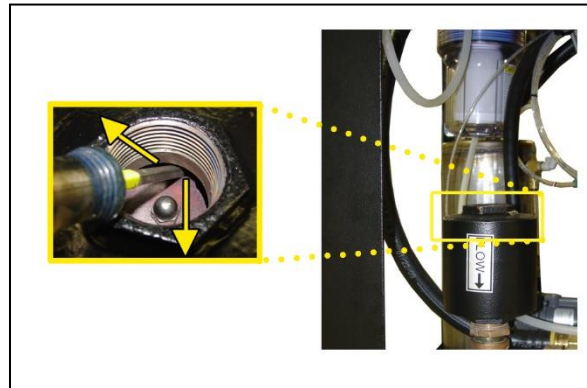
6.5.17 Power the dryer **ON**.



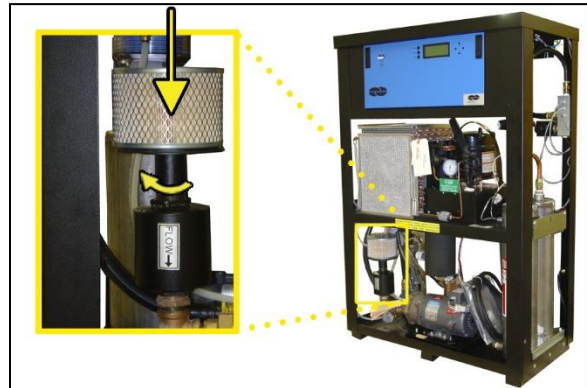
- 6.5.18** Continue adding water until the water level stabilizes below the Dump Water Sensor.



- 6.5.19** Remove Screwdriver.

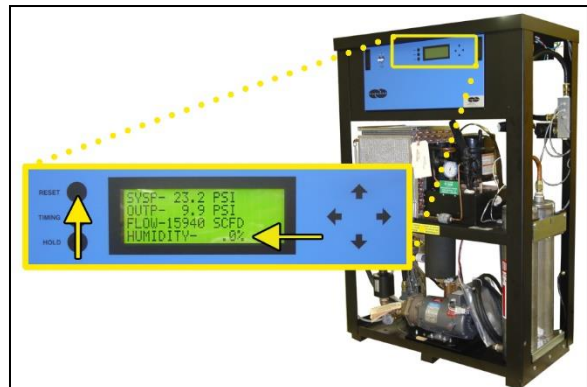


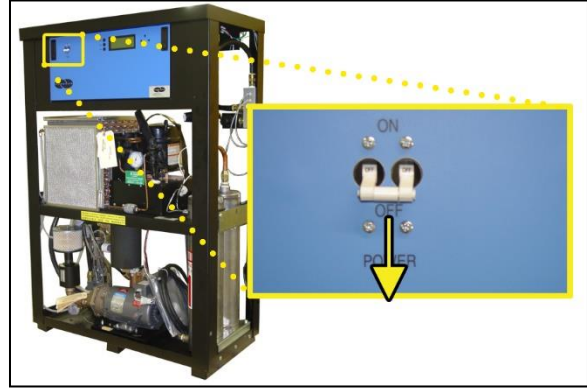
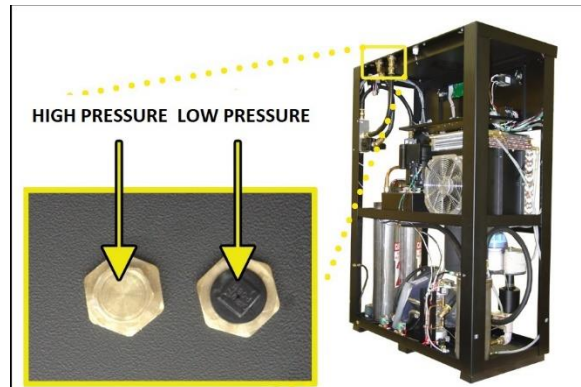
- 6.5.20** Reinstall Inlet Air Filter assembly.



- 6.5.21** Let the dryer run until the Humidity drops under 2% (may take up to 15 minutes).

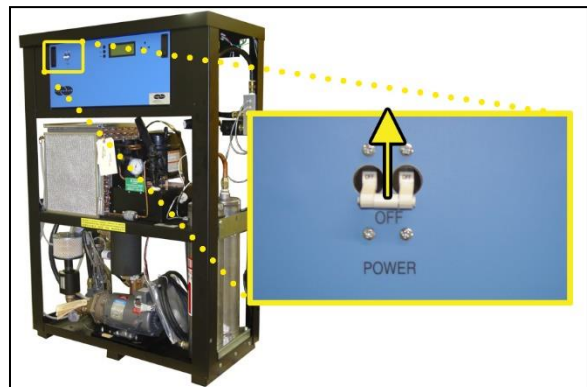
NOTE: Press **RESET** Button if the System goes into **SHUTDOWN**.



6.5.22 Power the dryer **OFF**.**6.5.23** Connect the air supply line(s) to the dryer Outlet Pressure and/or Static Pressure port(s).

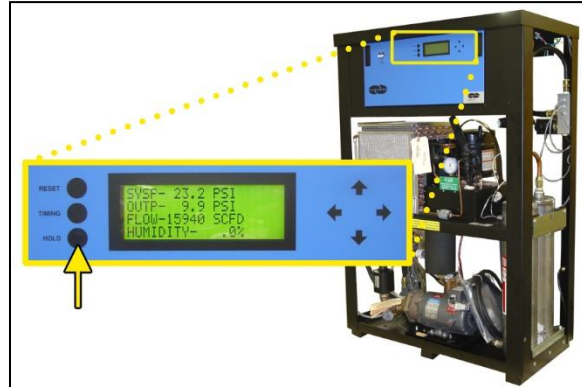
⚠ CAUTION: Be careful when removing outlet plug(s). System may be pressurized.

*ALTEC AIR recommends using Installation Kit **P011890** to connect your air dryer to the air supply line (See section 11.7 for detail).*

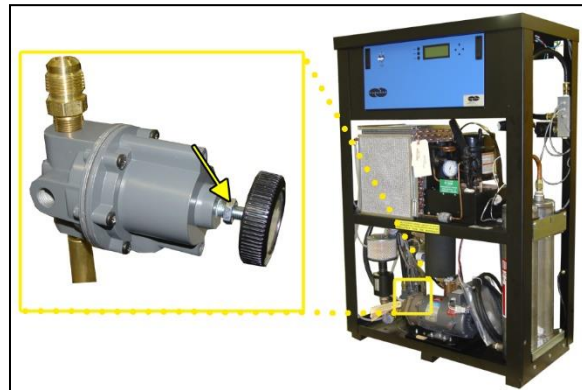
6.5.24 Power the dryer **ON**.

6.5.25 Set the System Pressure:

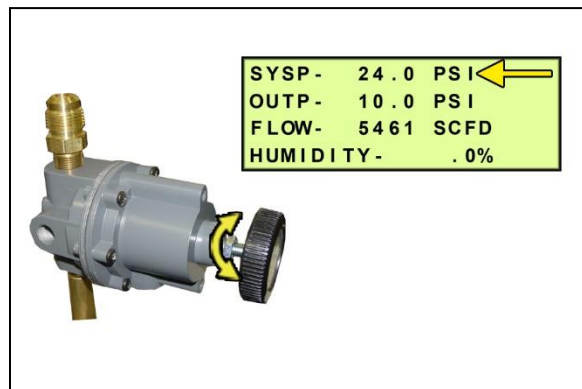
6.5.25.1 When the SYSP Screen (8.4.5.1) appears on the display, press the **HOLD** Button on the Front Panel to freeze that screen.



6.5.25.2 Unlock the knob on the System Pressure Regulator by loosening the retaining nut with a 1/2" wrench.



6.5.25.3 Adjust the System Pressure Regulator until the **SYSP** reading on the Front Panel Display is 24 PSI.



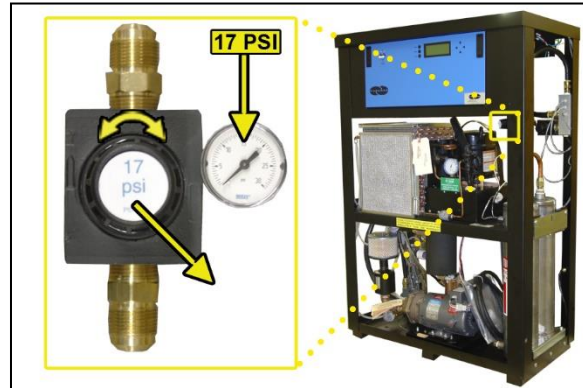
6.5.25.4 Lock retaining nut on the System Pressure Regulator.

6.5.26 Set the Static Pressure:

6.5.26.1 Pull the Static Pressure Regulator knob out.

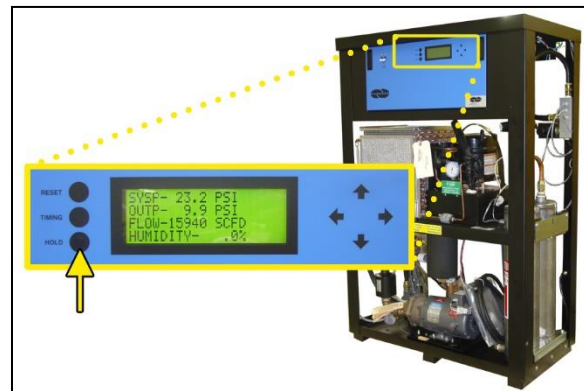
6.5.26.2 Turn the knob until the reading on the pressure gauge is **17 PSI**.

6.5.26.3 Push knob in to lock.



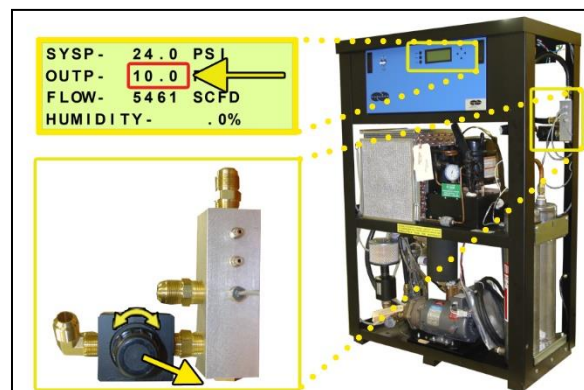
6.5.27 Set the Outlet Pressure:

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



6.5.27.2 Pull the Outlet Pressure Regulator knob out.

6.5.27.3 Turn knob until Outlet Pressure (**OUTP**) reading is at the desired setting.



6.5.27.4 Push knob in to lock.

6.5.28 Check for leaks:

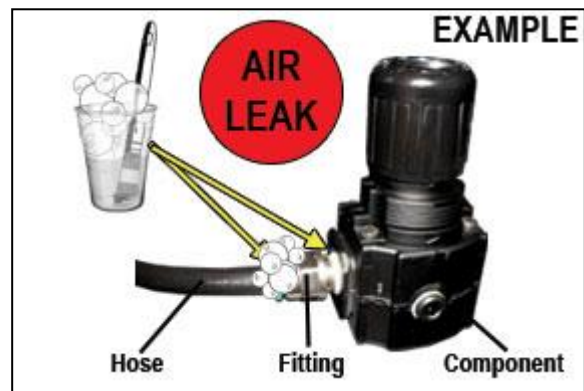
NOTE: This is a general procedure that can be applied to any fitting or hose that has air pressure in it. **DO NOT SOAP TEST THE HUMITTER FITTING. DAMAGE TO THE HUMITTER MAY OCCUR.**

6.5.28.1 Visually inspect for water leaks.

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

6.5.28.3 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*

6.5.29 Re-install the Lower Front and Side Panels.



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

6.6 Installation Checklist

- No shipping damage was detected.
- Dryer location meets the following requirements:
 - Well ventilated
 - Free from abrasive dust or chemicals
 - Drain tubing routed to unobstructed drain or bucket
 - Ambient temperature is between 40° and 85° F (optimal)
- Shipping block removed.
- System Pressure is set to 24 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 P20KW / P30KW 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 #: **P20KW / P30KW** 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.



WARNING!

High Noise. Altec AIR air dryers are meant to be installed in an unattended area.



CAUTION!

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

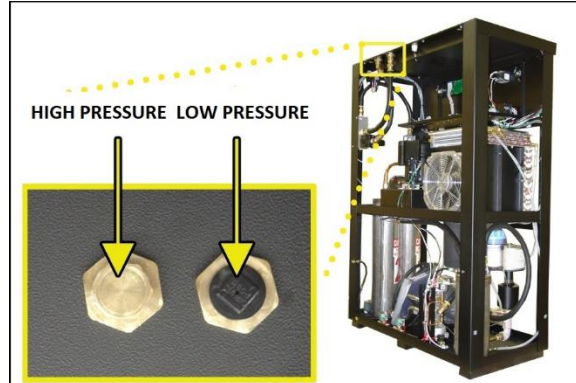


IMPORTANT!

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 Connect the air supply line(s) to the dryer Outlet Pressure and/or Static Pressure port(s).



⚠ CAUTION: Be careful when removing outlet plugs. System may be pressurized. *ALTEC AIR recommends using Installation Kit **P011890** to connect your air dryer to the air supply line (See section 11.7 for detail).*

8.3 Powering the Dryer ON & OFF



CAUTION!

Incoming power to Air Dryer must be:

- 30-amp service recommended
- 230 VAC +/- 10%, 1 Phase for P20KW model
- 208 VAC +/- 10%, 3 Phase for P30KW model
- If hard wiring directly, reference local NEC guidelines

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

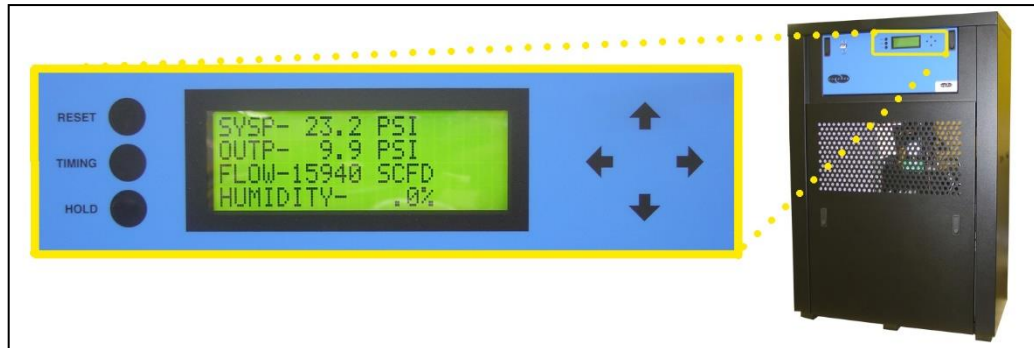


8.4 Using the Front Panel Display



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 TIMING Button** – Used to access the Cycle Time screen to allow the adjustment of the cycle time of the air dryer.
- 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 and Cycle Time 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 SYSP Screen

SYSP -	24 . 0	PSI
OUTP -	10 . 0	PSI
FLOW -	5461	SCFD
HUMIDITY -	. 0%	

SYSP – System Operating Pressure

OUTP – Outlet Pressure regulated by the Outlet Pressure Regulator

FLOW – Air Flow Rate

HUMIDITY – Humidity level of the System

8.4.5.2 RRU TMP Screen

RRU TMP -	40 . 3° F
WTR TMP -	71 . 3° F
OUT TMP -	77 . 2° F
WATER LVL -	

RRU TMP – Temperature of the refrigeration unit

WTR TMP – Temperature of the water

OUT TMP – Temperature of the outlet air

WATER LVL – Current status of the water level

- **<Blank>** – Indicates a normal water state
- **Low** – Indicates a low water state
- **Dump** – Indicates the dryer is ejecting excess water
- **High** – Indicates a high-water state

8.4.5.3 Comp Run Screen



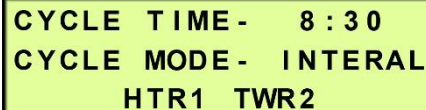
```
COMP RUN - 38HRS
SYSTEM STAT - ON
```

COMP RUN – How many hours the compressor has run since the last Total Hour Reset.

SYSTEM STAT - Running Status of System:

- **ON** – System is Online
- **SHUTDOWN** – System has been shut down as a result of either a Low Water, Humidity, High Outlet Temperature, or High-Water Temperature alarm.

8.4.5.4 Cycle Time Screen



```
CYCLE TIME - 8:30
CYCLE MODE - INTERNAL
HTR1 TWR2
```

CYCLE TIME – Indicates the present hour and minute status of the tower and heater cycle.

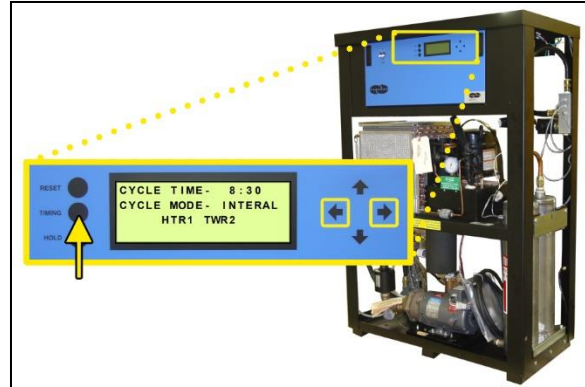
CYCLE MODE – Displays the current System Cycle Mode setting:

- **INTERNAL** – Cycle time is being managed by an internal clock
- **EXTERNAL** – Cycle time is being managed externally (i.e., Cycle Kit)
- **TWR 1**– Tower 1 is online
- **HTR 1**– Heater 1 is online
- **TWR 2**– Tower 2 is online
- **HTR 2**– Heater 2 is online

8.4.6 Using the TIMING Button -

8.4.6.1 Press the **TIMING** Button to access the **CYCLE TIME** Screen.

8.4.6.2 Press the Right (→) Arrow Button to increase the minute value of the cycle time.



8.4.6.3 Press the Left (←) Arrow Button to increase the hour value of the cycle time.

⚠ IMPORTANT: Altec AIR only recommends adjusting the Cycle Time for testing or troubleshooting purposes. Adjusting the Cycle Time may cause a High Temperature alarm or Humidity alarm in the air dryer.

8.5 Identifying Dryer Alarms

8.5.1 System Pressure Alarm –

Occurs when the System Pressure (**SYSP**) drops below the alarm set point for more than one (1) minute. (Default setting is 18.0 PSI)

SYSP -	17.8	PSI	ALR
OUTP -	10.0	PSI	
FLOW -	5461	SCFD	
HUMIDITY -		.0%	

See section 13.5 for troubleshooting information

8.5.2 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)

SYSP -	24.0	PSI	
OUTP -	13.0	PSI	HALR
FLOW -	5461	SCFD	
HUMIDITY -		.0%	

See section 13.7 for troubleshooting information.

8.5.3 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)

SYSP -	24.0	PSI	
OUTP -	6.0	PSI	LALR
FLOW -	5461	SCFD	
HUMIDITY -		.0%	

See section 13.9 for troubleshooting information.

8.5.4 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 15000 SCFD)

SYSP -	24.0	PSI	
OUTP -	10.0	PSI	
FLOW -	15461	SCFD	ALR
HUMIDITY -		.0%	

See section 13.11 for troubleshooting information.

8.5.5 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%)

SYSP -	24.0	PSI	
OUTP -	10.0	PSI	
FLOW -	5461	SCFD	
HUMIDITY -	11.0%		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.

COMP RUN -	38HRS	
SYSTEM STAT -	SHUTDOWN	

See section 13.12 for troubleshooting information.

8.5.6 High RRU Temperature Alarm –

Occurs when the refrigeration temperature rises above 60°F for more than one (1) minute.

```
RRU TMP - 50.3°F ALR
WTR TMP - 71.3°F
OUT TMP - 77.2°F
WATER LVL -
```

See section 13.15 for troubleshooting information.

8.5.7 High Water Temperature Alarm -

Occurs when the water temperature rises above 150°F for more than one (1) minute.

If this alarm is present for one (1) minute or more, the air dryer will go into **SHUTDOWN** mode to protect against damage due to overheating.

```
RRU TMP - 45.0°F
WTR TMP - 151.3°F ALR
OUT TMP - 77.2°F
WATER LVL -
```

```
COMP RUN - 38HRS
SYSTEM STAT - SHUTDOWN
```

See section 13.20 for troubleshooting information.

8.5.8 High Outlet Temperature Alarm –

Occurs when the outlet air temperature rises above 140°F for more than one (1) minute.

If this alarm is present for one (1) minute or more, the air dryer will go into **SHUTDOWN** mode to protect against damage due to overheating.

```
RRU TMP - 45.0°F
WTR TMP - 71.3°F
OUT TMP - 147.2°F ALR
WATER LVL -
```

```
COMP RUN - 38HRS
SYSTEM STAT - SHUTDOWN
```

See section 13.14 for troubleshooting information.

8.5.9 High Water Alarm –

Occurs when the Water level rises above the High-Water Sensor in the Secondary Sight Glass.

See section 13.18 for troubleshooting information.

RRU TMP - 45.0° F	
WTR TMP - 71.3° F	
OUT TMP - 77.2° F	
WATER LVL -	HALR

8.5.10 Low Water Alarm –

Occurs when Water level drops below the Low Water Sensor in the Primary Sight Glass.

If this alarm is present for one (1) minute or more, the air dryer will go into **SHUTDOWN** mode to prevent damage to the compressor.

See section 13.16 for troubleshooting information.

RRU TMP - 45.0° F	
WTR TMP - 71.3° F	
OUT TMP - 77.2° F	
WATER LVL -	LALR

COMP RUN - 38HRS	
SYSTEM STAT -	SHUTDOWN

8.5.11 Compressor Run Alarm –

Occurs when the compressor has reached 4,380 hours of run time, indicating a 6-month maintenance interval (approx.). Perform the next required maintenance.

COMP RUN - 4380HRS	ALR
SYSTEM STAT - ON	

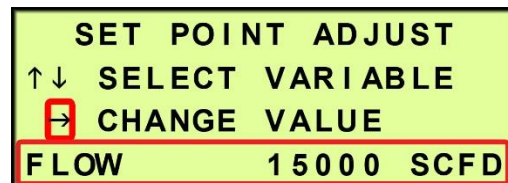
8.6 Adjusting & Resetting Dryer Set Points

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 the Appendix Section 14. for Limits and Defaults.

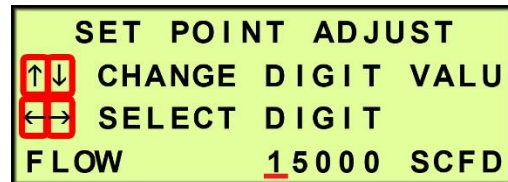
- Press the Up (↑) Arrow Button to access the Set Point Adjust screens.
- Press the Up (↑) & Down (↓) Arrow Buttons to navigate through the available Set Point Adjust screens.
- To change a specific Set Point:

8.6.1 High Flow Rate Alarm Set Point (default setting is 15000 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.

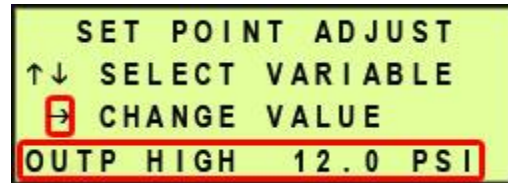


8.6.1.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

8.6.1.4 Press the Right (→) Arrow Button until the underscore disappears. This will lock in the new setting value.

8.6.2 High Outlet Pressure Alarm Set Point (default setting is 12 PSI) –

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



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

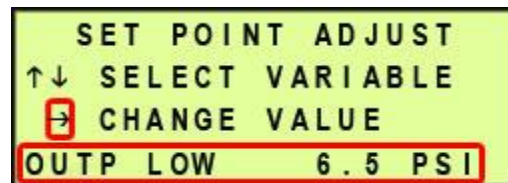


8.6.2.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

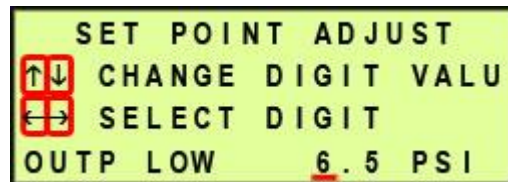
8.6.2.4 Press the Right (→) Arrow Button until the underscore disappears. This will lock in the new setting value.

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.



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

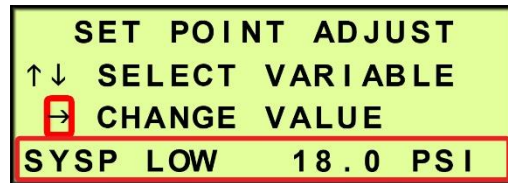


8.6.3.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

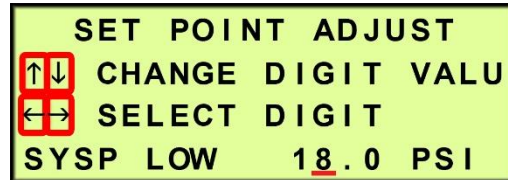
8.6.3.4 Press the Right (→) Arrow Button until the underscore disappears. This will lock in the new setting value.

8.6.4 Low System Pressure Alarm Set Point (default setting is 18.0 PSI) –

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



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

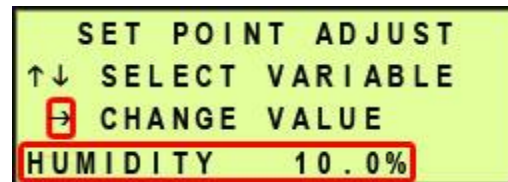


8.6.4.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

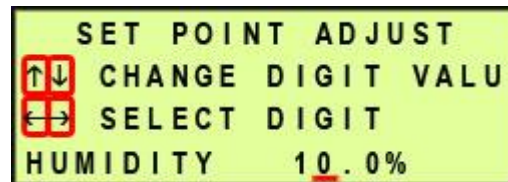
8.6.4.4 Press the Right (→) Arrow Button until the underscore disappears. This will lock in the new setting value

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

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



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



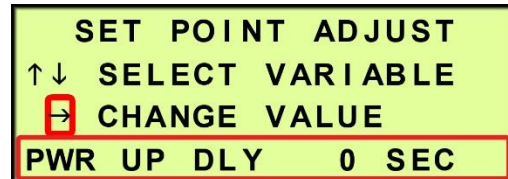
8.6.5.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

8.6.5.4 Press the Right (→) Arrow Button until the underscore disappears. This will lock in the new setting value.

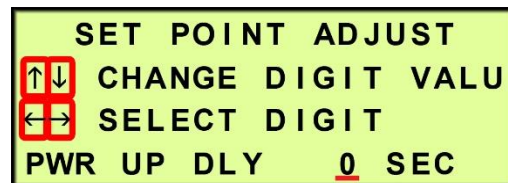
8.6.6 Power Up Delay Set Point (default setting is 0 sec) –

The Power Up Delay keeps the compressor from turning on immediately when the dryer is powered on for up to 10 seconds. This allows multiple dryers to power on in separate intervals in case of a power loss.

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



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

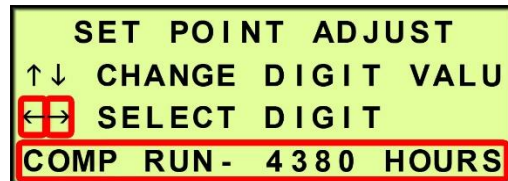


8.6.6.3 Press the Up (↑) & Down (↓) Arrow Buttons to change the value of the selected digit.

8.6.6.4 Press the Right (→) Arrow Button until the underscore disappears. This will lock in the new setting value.

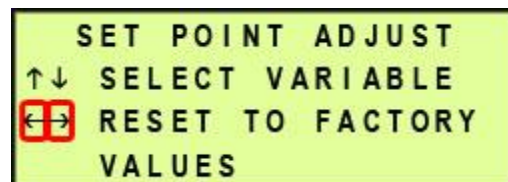
8.6.7 Compressor Total Hour Reset –

8.6.7.1 Press and Hold the Left (←) & Right (→) Arrow Buttons at the same time until the value resets to zero (0).



8.6.8 Reset to Factory Values –

8.6.8.1 Press and Hold the Left (←) & Right (→) Arrow Buttons at the same time until screen flickers. This will signify the default values have reset.

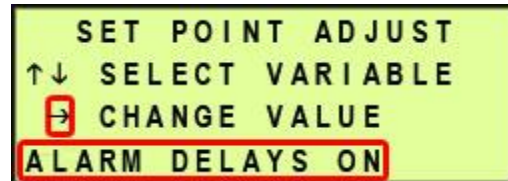


8.6.9 Alarm Delays Set Point

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

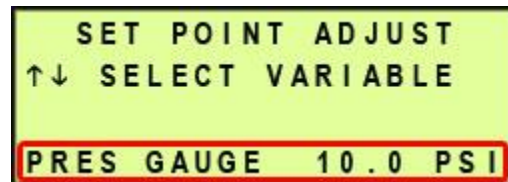
OFF – signals alarms immediately



8.6.9.1 Press the Right (→) Arrow Button to change the value.

8.6.10 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 in use. This screen can be used during air dryer troubleshooting.



8.7 Opening Panels

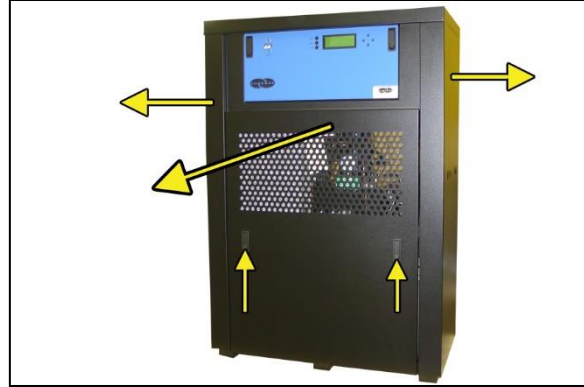
8.7.1 Opening Top Front Panel –

8.7.1.1 Depress the locking latches and pull the Top Front Panel down.



8.7.2 Removing Lower Front and Side Panels –

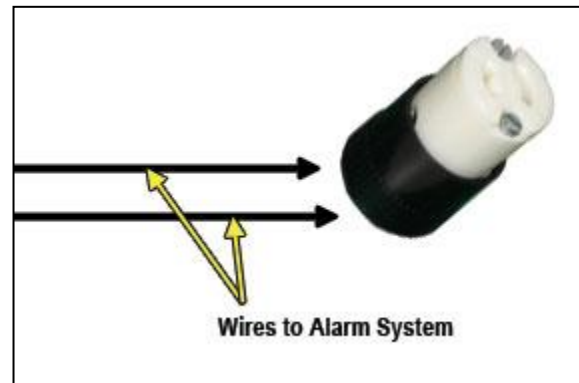
8.7.2.1 Depress the locking latches and pull the Lower Front and Side Panels out.



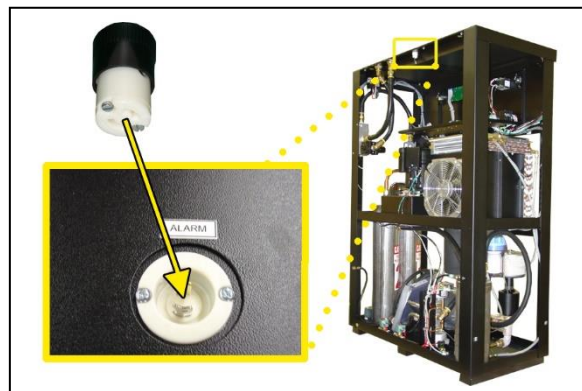
8.8 Connecting to Common Alarm Terminals

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

8.8.1 Wire the external wire pair to the Common Alarm Plug that came with your dryer.



8.8.2 Insert the Common Alarm Plug into the Common Alarm Socket.

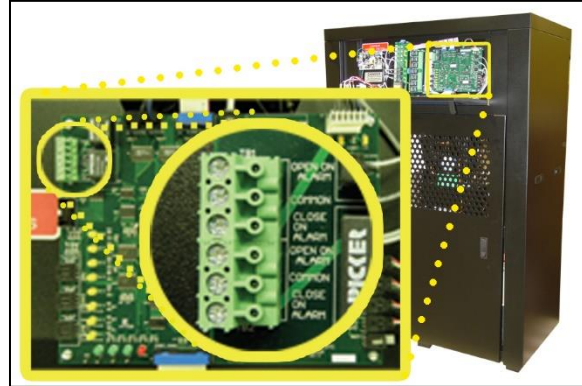


8.9 Rewiring the Common Alarm Socket

8.9.1 Open the Top Front Panel (see section 8.7.1)

8.9.2 Wire the Common Alarm Socket on the Control Board as required:

- **COMMON & CLOSE ON ALARM** operation (default).
- **COMMON & OPEN ON ALARM** operation.



8.9.3 Close Top Front Panel (see section 8.7.1)

8.10 Connecting to Discrete Alarm Terminals

8.10.1 Open the Top Front Panel (see section 8.7.1)

8.10.2 Connect the external wire pair to the specific alarm terminal.



8.10.3 Close Top Front Panel (see section 8.7.1)

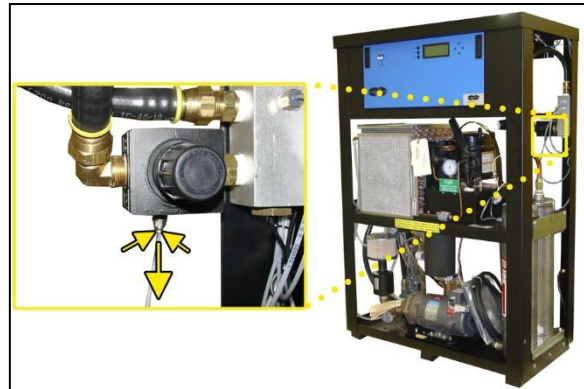
8.11 Depressurizing the Dryer

8.11.1 Power the air dryer off (see section 8.3)

8.11.2 Remove Lower Front Panel (see section 8.7.2)

8.11.3 Push the Outlet Pressure Tube in and hold the ferrule. While holding the ferrule pull the tube out.

8.11.4 Reconnect Outlet Pressure Tube.

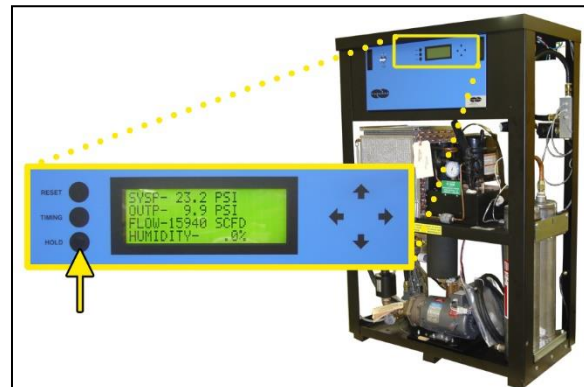


8.11.5 Reinstall The Lower Front Panel (see section 8.7.2)

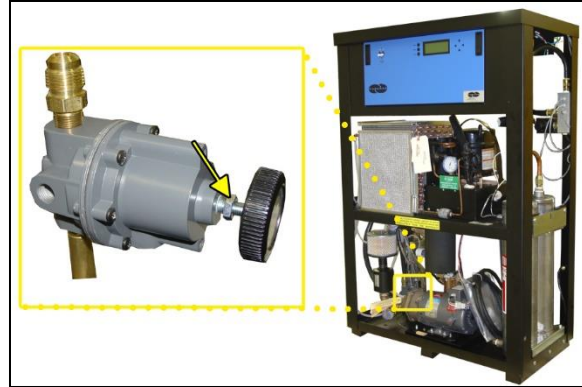
8.12 Setting the System Pressure

8.12.1 Remove Lower Front Panel (see section 8.7.2)

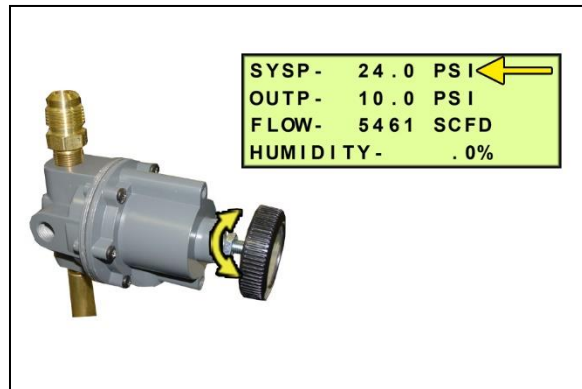
8.12.2 When the SYSP Screen (8.4.5.1) appears on the display, press the **HOLD** Button on the Front Panel to freeze that screen.



- 8.12.3** Unlock the knob on the System Pressure Regulator by loosening the retaining nut with a 1/2" wrench.



- 8.12.4** Adjust the System Pressure Regulator until the SYSP reading on the Front Panel Display is **24 PSI**.



- 8.12.5** Lock retaining nut on the System Pressure Regulator.

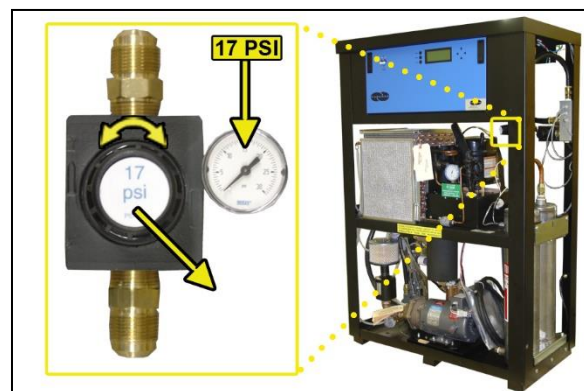
- 8.12.6** Reinstall the Lower Front Panel (see section 8.7.2)

8.13 Setting the Static Pressure

- 8.13.1** Remove Lower Front Panel (see section 8.7.2)

- 8.13.2** Pull the Static Pressure Regulator knob out.

- 8.13.3** Turn the knob until the reading on the pressure gauge is **17 PSI**.



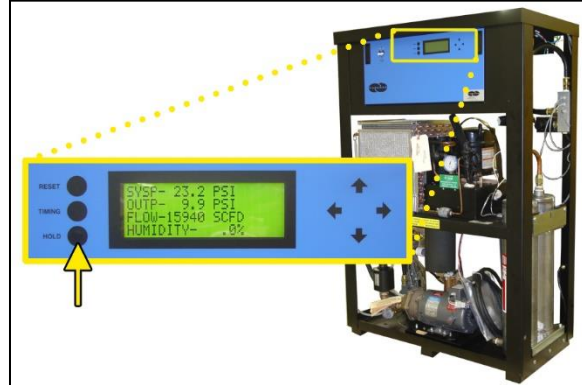
- 8.13.4** Push knob in to lock.

- 8.13.5** Reinstall the Lower Front Panel (see section 8.7.2)

8.14 Setting the Outlet Pressure

8.14.1 Remove Lower Front Panel (see section 8.7.2)

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

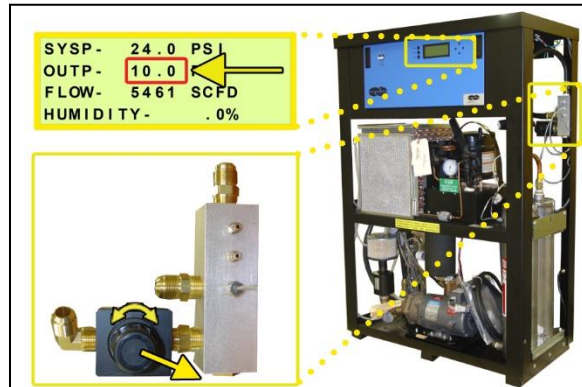


8.14.3 Pull the Outlet Pressure Regulator knob out.

8.14.4 Turn knob until Outlet Pressure (**OUTP**) reading is at the desired setting.

8.14.5 Push knob in to lock.

8.14.6 Reinstall the Lower Front Panel (see section 8.7.2)



8.15 Setting the RRU Temperature



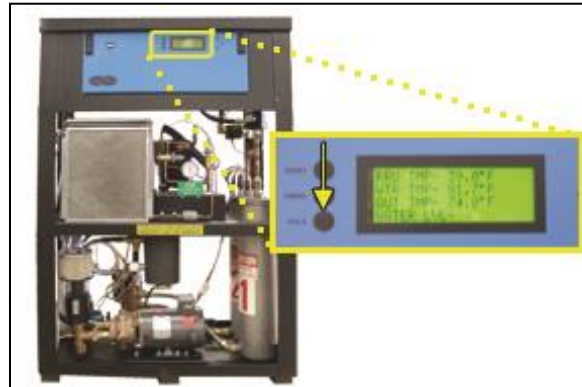
CAUTION!

DO NOT ADJUST THE RRU unless it has been at least **45 Minutes** from time of Installation, Power ON, or previous RRU Adjustment. The Temperature and Pressure need to reach equilibrium before performing additional adjustments. Failure to do so may result in damage to the RRU and/or other air dryer components.

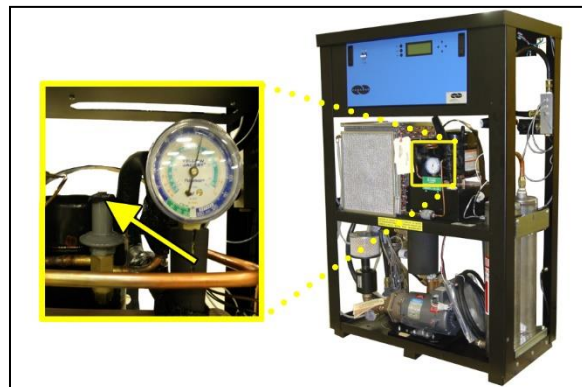
NOTE: Adjustment of the refrigeration system may become necessary throughout the life of the replaceable refrigeration unit (RRU). If adjustment is required, proceed as follows:

8.15.1 Remove Lower Front Panel (section 8.7.2)

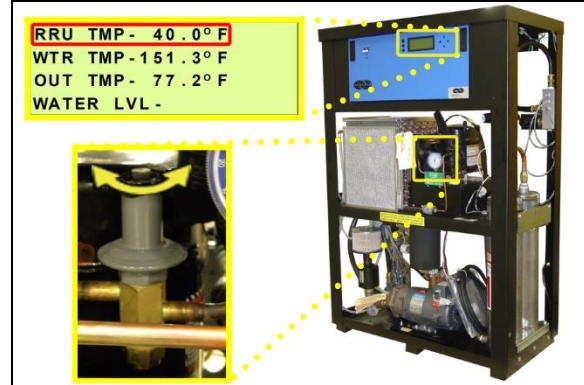
8.15.2 When the Temperature Screen (8.4.5.1) appears on the display, press the **HOLD** Button on the Front Panel to freeze that screen.



8.15.3 Locate the Refrigeration Unit Hot Gas Bypass Valve.



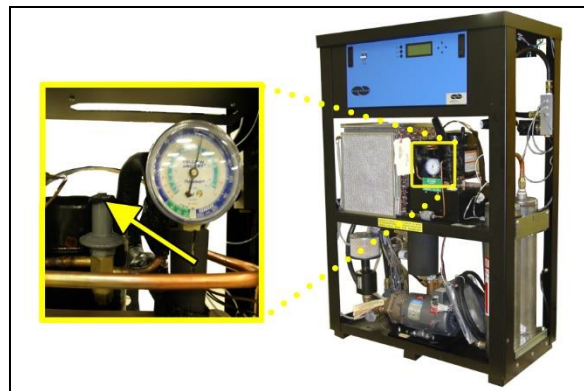
8.15.4 With a 3/8" wrench, turn the adjustment screw on the Valve in 1/4 turn increments until 35° - 45°F is indicated on the **RRU TMP** of the display screen.



8.15.5 Allow the unit to run for at least 45 minutes to reach equilibrium.

NOTE: If after 45 minutes the **RRU TMP** on the display does not stabilize between 35° - 45°F, repeat steps 8.15.4

8.15.6 Reinstall Lower Front Panel (see section 8.7.2)



CAUTION!

DO NOT ADJUST THE RRU unless it has been at least **45 Minutes** from time of Installation, Power ON, or previous RRU Adjustment. The Temperature and Pressure need to reach equilibrium before performing additional adjustments. Failure to do so may result in damage to the RRU and/or other air dryer components.

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.



WARNING!

High Noise. ALTEC AIR air dryers are meant to be installed in an unattended area.



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!**

DO NOT USE DISTILLED OR DE-IONIZED WATER IN THIS UNIT. It will cause damage to the compressor and other major components over time. This unit is designed for **clean tap water only**.

**CAUTION!**

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

**IMPORTANT!**

Installation of ALTEC AIR air dryers are intended for network telecommunication facilities (non-customer premises) only.

9.2 Measuring Compressor Amp Draw



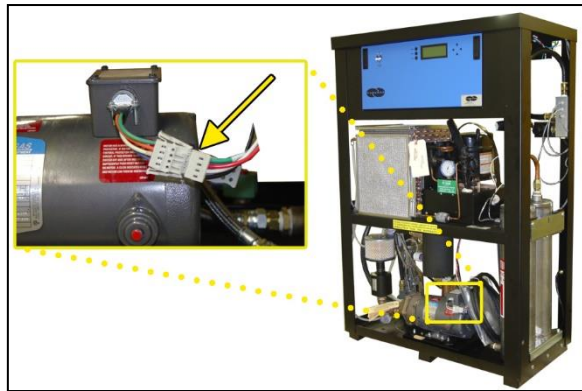
WARNING!

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 Remove Lower Front Panel (see section 8.7.2)

9.2.2 Locate the Power

Connector for the
compressor.



9.2.3 Use an Amp Meter to
measure the running amps for
the compressor.

See chart for proper
amperage.



	Wire No.	Color	Amps (MAX)
P20KW	8	Black	11.7 (Bluffton motor) 11.2 (Baldor motor)
P30KW	8	Black	10.36

9.2.4 Reinstall the Lower Front Panel (see section 8.7.2)

If the compressor amps measure over value in the chart, see section 13.21 for troubleshooting information.

9.3 Measuring Voltage to Compressor

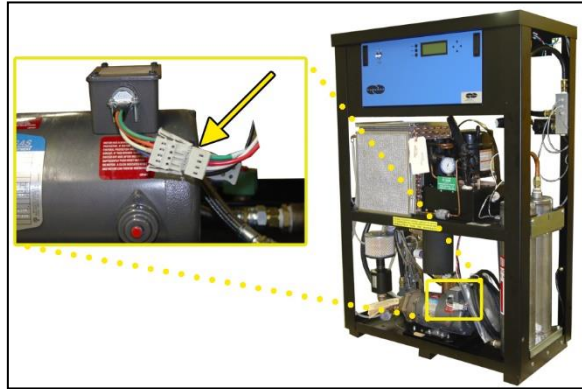


WARNING!

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.

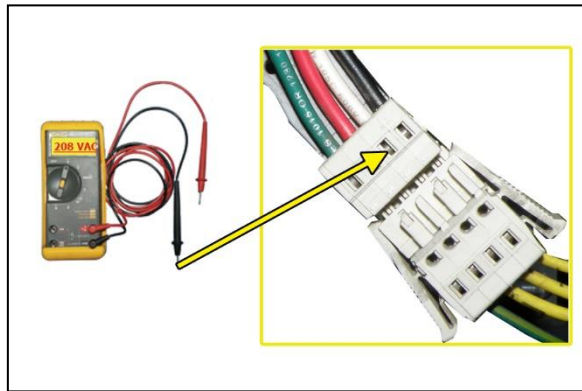
9.3.1 Remove Lower Front Panel (see section 8.7.2)

9.3.2 Locate the Power Connector for the compressor.



9.3.3 Use a Voltmeter to measure the voltage.

Place the probes inside the connector windows to make contact with the connector pins.



	From		To		Voltage
	Wire No.	Color	Wire No.	Color	
P20KW	8	Black	7	White	230 VAC +/- 10%
P30KW	8	Black	7	White	208 VAC +/- 10%
	8	Black	6	Red	208 VAC +/- 10%
	7	White	6	Red	208 VAC +/- 10%

9.3.4 Reinstall the Lower Front Panel (see section 8.7.2)

9.4 Measuring Incoming Voltage

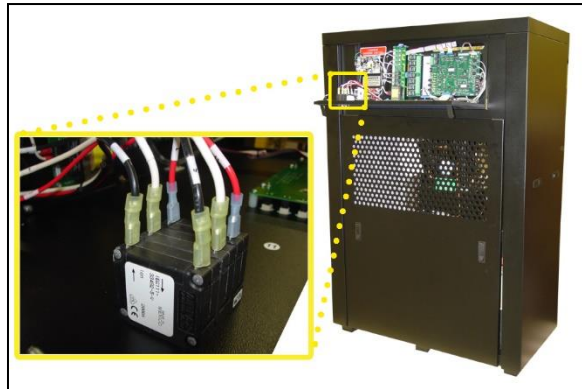


WARNING!

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.

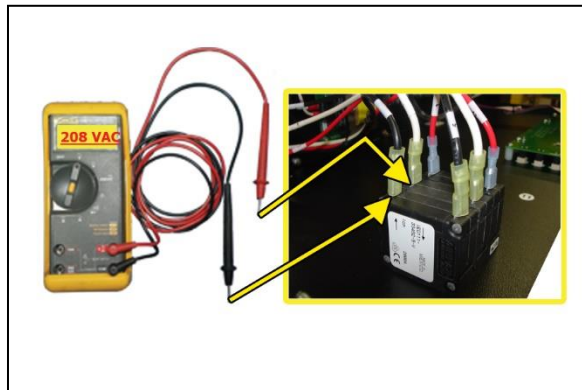
9.4.1 Open the Top Front Panel
(see section 8.7.1)

9.4.2 Locate the POWER Circuit
Breaker.



9.4.3 Use a Voltmeter to measure
the voltage:

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



	From		To		Voltage
	Wire No.	Color	Wire No.	Color	
P20KW	1	Black	2	White	230 VAC +/- 10%
P30KW	1	Black	2	White	208 VAC +/- 10%
	2	White	3	Red	208 VAC +/- 10%

9.4.4 Close the Top Front Panel (see section 8.7.2)

9.5 Testing High Outlet Pressure Alarm

NOTE: All testing values are based on default Dehydrator settings, if settings have been changed, adjust testing values accordingly. Reference the Appendix Section 14.2.1 for Limits and Defaults.

9.5.1 Remove Lower Front Panel (see section 8.7.2)

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

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

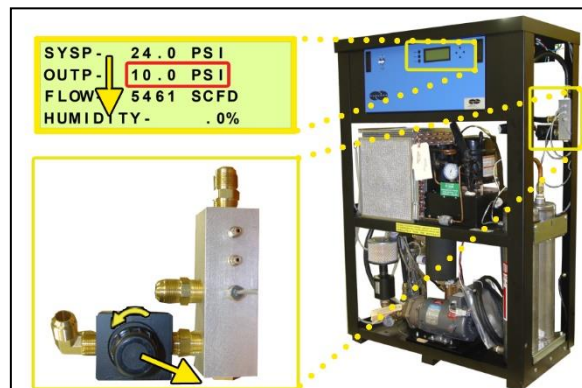
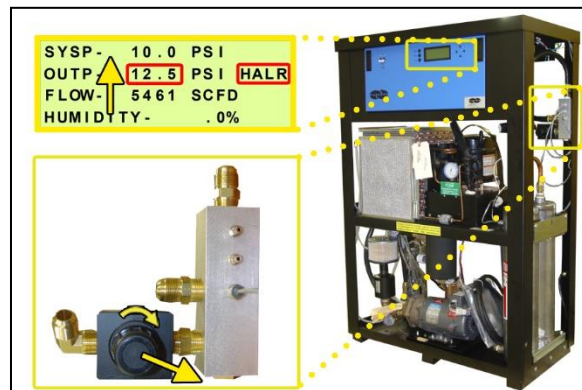
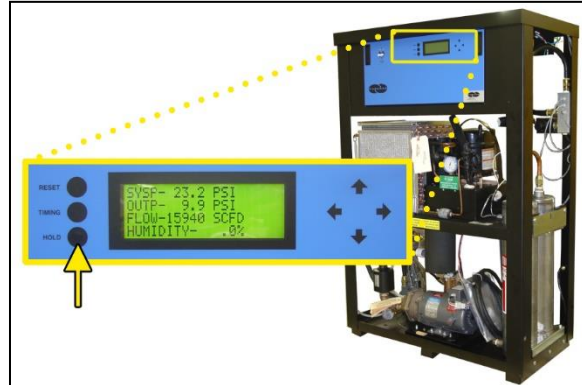
9.5.4 Pull the Outlet Pressure Regulator knob out.

9.5.5 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.

9.5.6 Turn Outlet Pressure Regulator knob counterclockwise until Outlet Pressure (**OUTP**) reading lowers to the reading recorded in step 9.5.3 .

9.5.7 Push knob in to lock.



9.5.8 Press the **RESET** Button

9.5.9 Reinstall the Lower Front Panel (see section 8.7.2)

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

9.6 Testing Low Outlet Pressure Alarm

NOTE: All testing values are based on default Dehydrator settings, if settings have been changed, adjust testing values accordingly. Reference the Appendix Section 14.2.1 for Limits and Defaults.

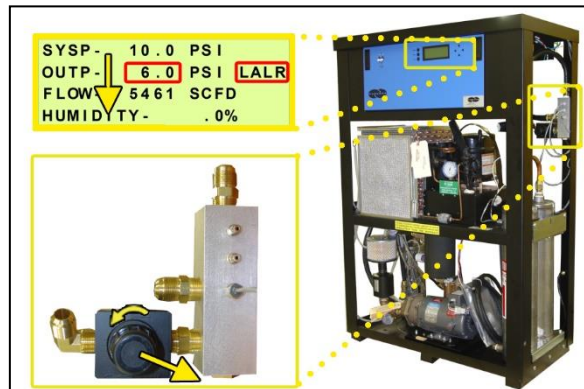
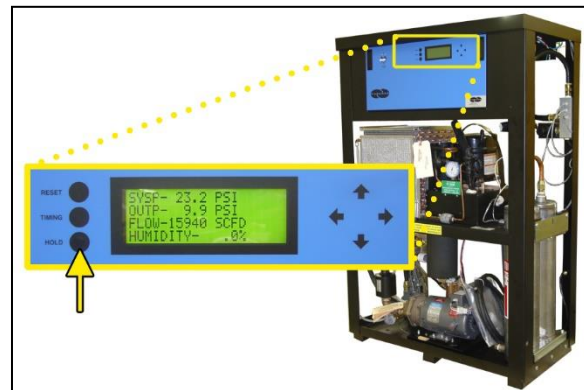
9.6.1 Remove Lower Front Panel (see section 8.7.2)

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

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

9.6.4 Pull the Outlet Pressure Regulator knob out.

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



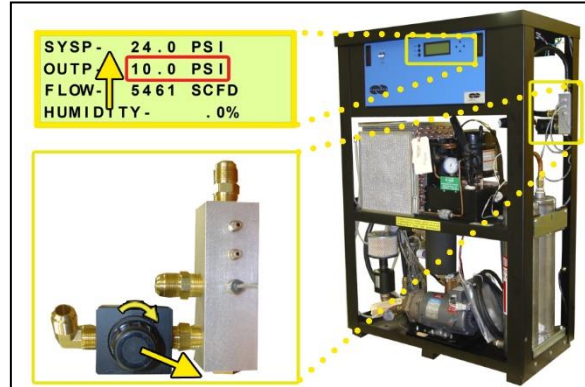
After one (1) minute, the High-Pressure Alarm should appear on the display.

9.6.6 Turn Outlet Pressure

Regulator knob clockwise
until Outlet. Pressure
(**OUTP**) reading rises to the
reading recorded in step 9.6.3

9.6.7 Push knob in to lock.**9.6.8** Press the **RESET** Button.**9.6.9** Reinstall the Lower Front
Panel (see section 8.7.2)

If you are unable to create a Low Outlet Pressure Alarm as described, see section 13.10 for troubleshooting information.

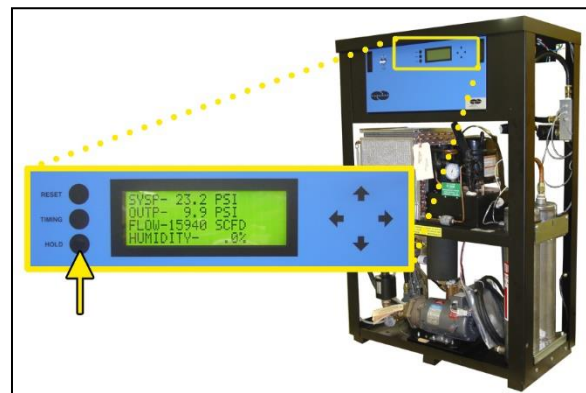
**9.7 Testing Low System Pressure Alarm**

NOTE: All testing values are based on default Dehydrator settings, if settings have been changed, adjust testing values accordingly. Reference the Appendix Section 14.2.1 for Limits and Defaults

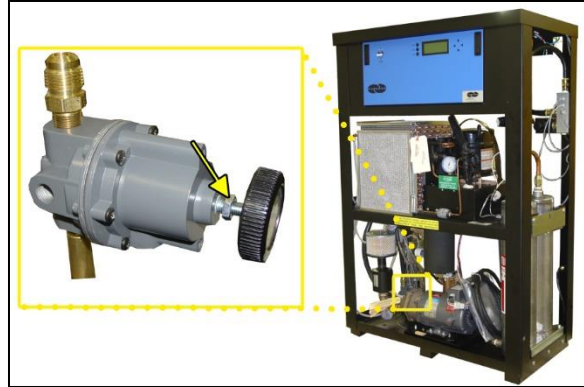
9.7.1 Remove Lower Front Panel (see section 8.7.2)

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

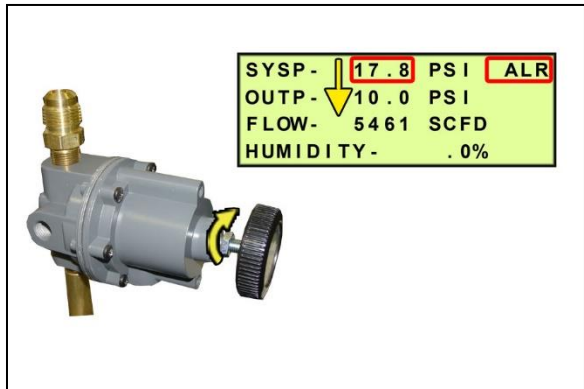
9.7.3 Make a note of the current
System Pressure (**SYSP**)
reading.



- 9.7.4** Unlock the knob on the System Pressure Regulator by loosening the retaining nut with a 1/2" wrench.



- 9.7.5** Turn the System Pressure Regulator counterclockwise until the **SYSP** reading on the Front Panel Display is **below 18.0 PSI**.



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

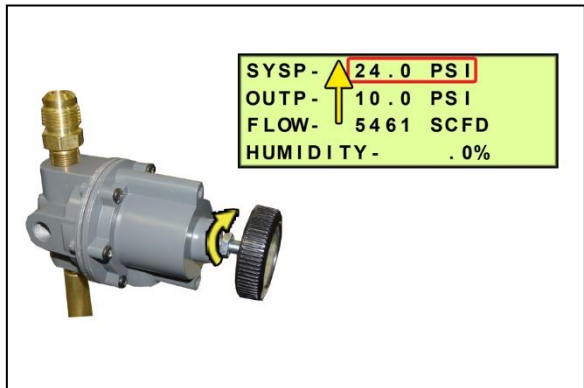
- 9.7.6** Turn the System Pressure Regulator clockwise until System Pressure (**SYSP**) reading rises to the reading recorded in step 9.7.3

- 9.7.7** Press the **RESET** Button.

- 9.7.8** Lock retaining nut on the System Pressure Regulator.

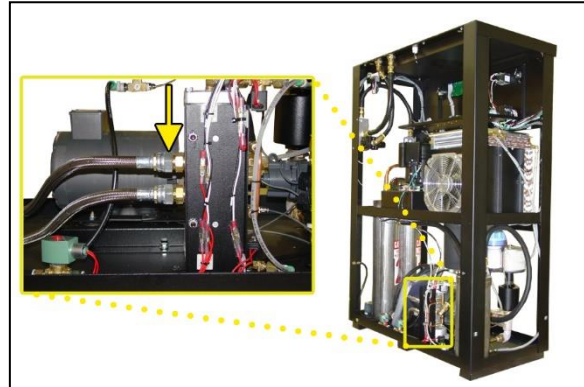
- 9.7.9** Reinstall the Lower Front Panel (see section 8.7.2)

If you are unable to create a Low System Pressure Alarm as described, see section 13.6 for troubleshooting information.

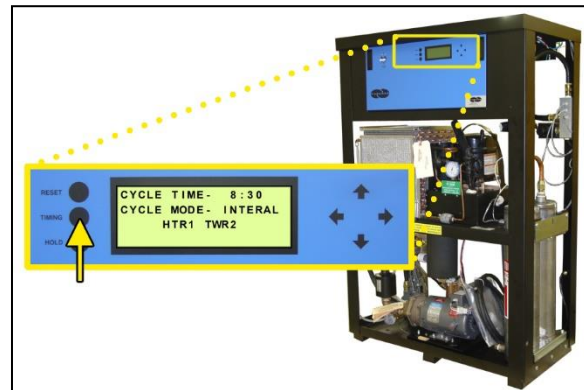


9.8 Testing 4-Way Valve Cycling

9.8.1 Using a 1-1/4" wrench completely disconnect the Top Braided Hose from the 4-Way Valve Assembly.

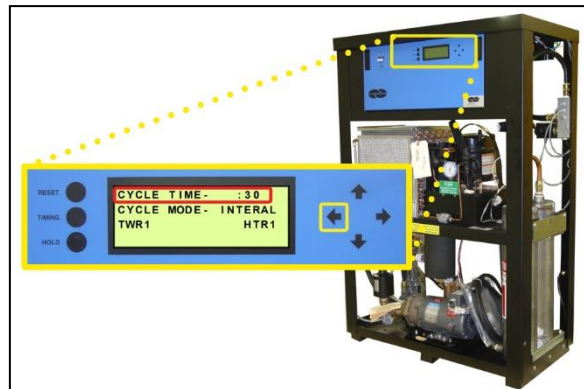


9.8.2 Press the **CYCLE TIME** Button on the Front Panel to freeze that screen.

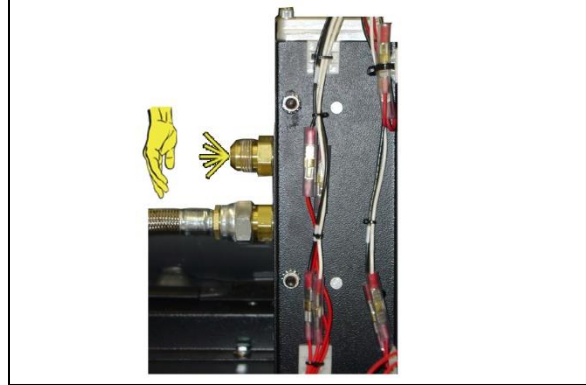


9.8.3 Make a note of the current **CYCLE TIME** reading.

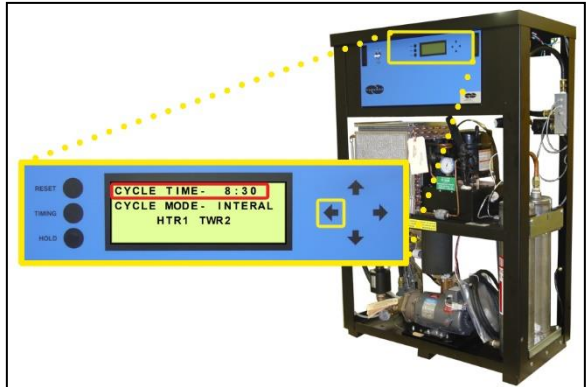
9.8.4 Increase the hour value of the **CYCLE TIME** between **0:01** and **7:59** by pressing the Left (←) Arrow Button.



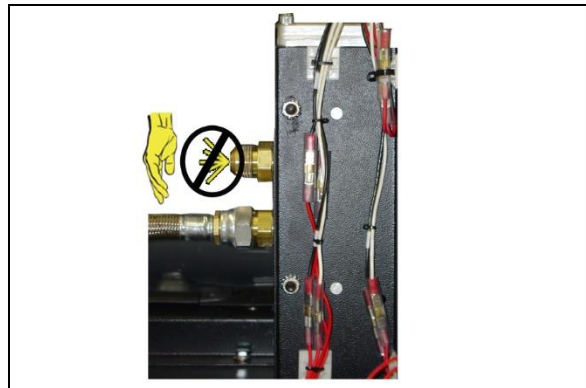
- 9.8.5** Place your hand next to the fitting to verify there **IS** air flow.



- 9.8.6** Increase the hour value of the **CYCLE TIME** between **8:00** and **15:59** by pressing the Left (←) Arrow Button.

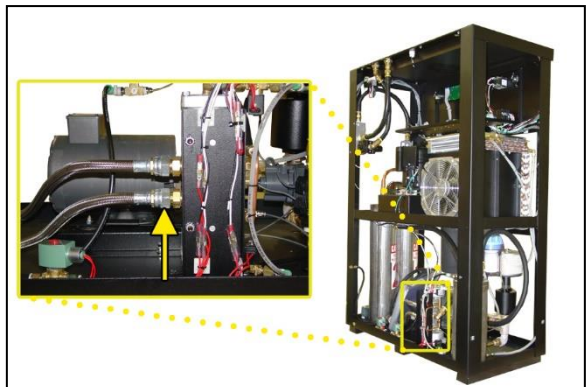


- 9.8.7** Place your hand next to the fitting to verify there is **NO** air flow.

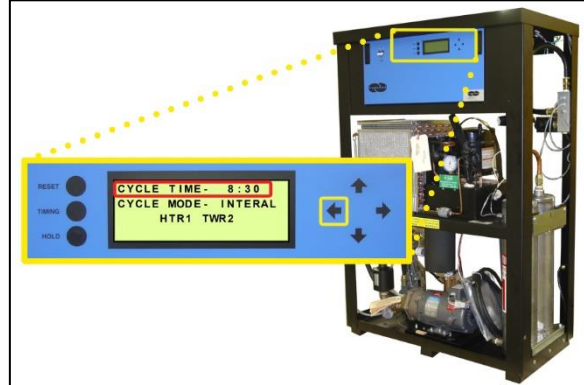


- 9.8.8** Reinstall Top Braided Hose.

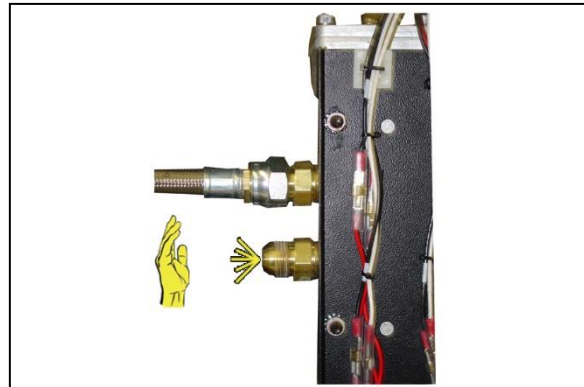
- 9.8.9** Using a 1-1/4" wrench completely disconnect the Bottom Braided Hose from the 4-Way Valve Assembly.



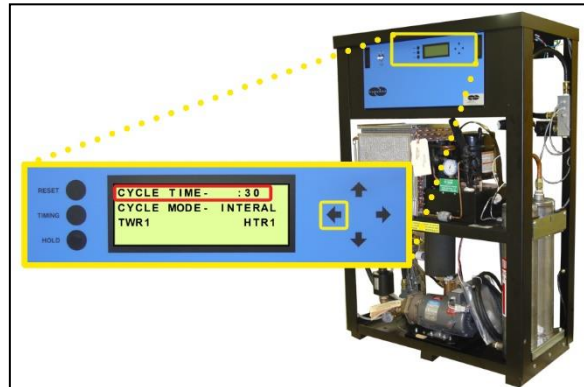
- 9.8.10** With the hour value of the **CYCLE TIME** between **8:00** and **15:59**.



- 9.8.11** Place your hand next to the fitting to verify there **IS** air flow.



- 9.8.12** Increase the hour value of the **CYCLE TIME** between **0:01** and **7:59** by pressing the Left (←) Arrow Button.



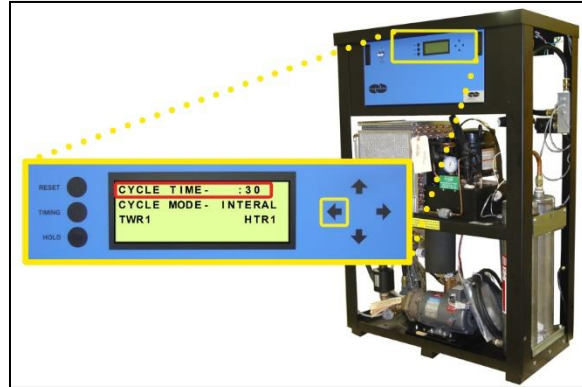
- 9.8.13** Place your hand next to the fitting to verify there is **NO** air flow.



- 9.8.14** Reinstall Bottom Braided Hose.

9.8.15 Return the **CYCLE TIME** to the reading recorded in step 9.8.3 .

9.8.16 Press the **RESET** Button.



9.9 Measuring 4-Way Valve Solenoid Voltage

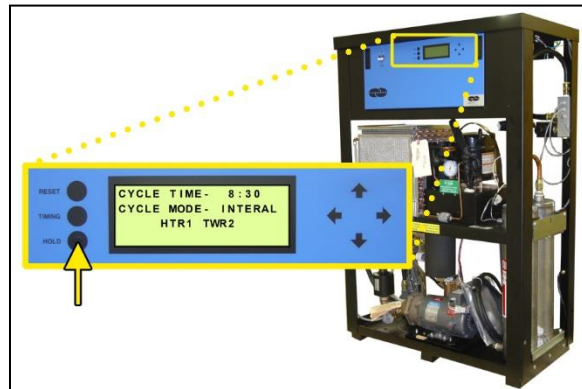


WARNING!

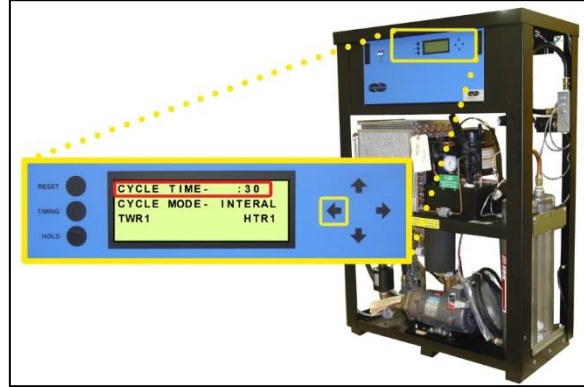
Extreme care should be exercised to avoid contact with live electrical circuits. It is highly recommended that you remove all jewelry before performing any procedures.

9.9.1 When the **CYCLE TIME** Screen (8.4.5.4) appears on the display, press the **HOLD** Button on the Front Panel to freeze that screen.

9.9.2 Make a note of the current **CYCLE TIME** reading.

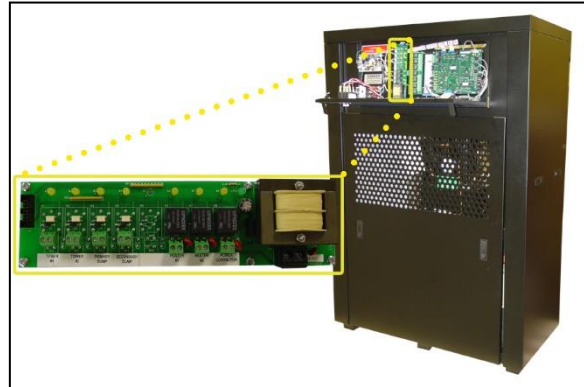


- 9.9.3** Increase the hour value of the **CYCLE TIME** between **0:01** and **7:59** by pressing the Left (←) Arrow Button.



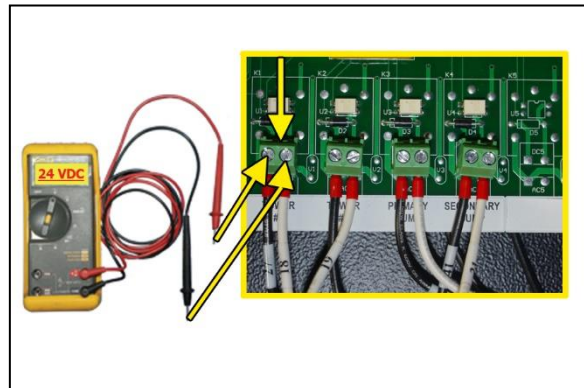
- 9.9.4** Open the Top Front Panel (see section 8.7.1)

- 9.9.5** Locate the Power Relay Board.



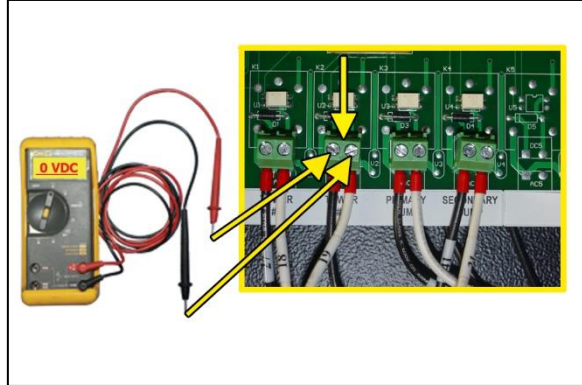
- 9.9.6** Use a Voltmeter to measure the DC voltage across the terminals “**Tower 1**” wire #27 **BLK** & #18 **WHT**.

The voltage should measure **24 Volts DC**.



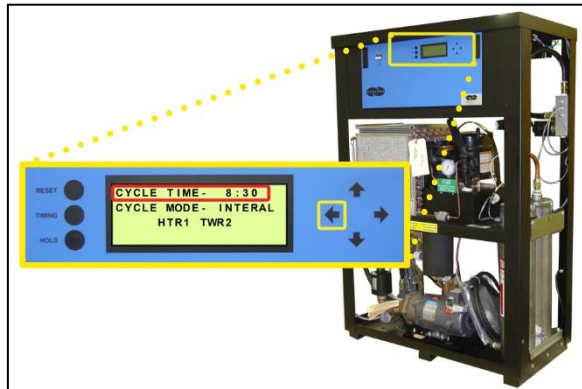
- 9.9.7** Use a Voltmeter to measure the DC voltage across the terminals “**Tower 2**” wire #28 **BLK** & #19 **WHT**.

The voltage should measure **0 Volts DC**.



- 9.9.8** Close the Top Front Panel (see section 8.7.2)

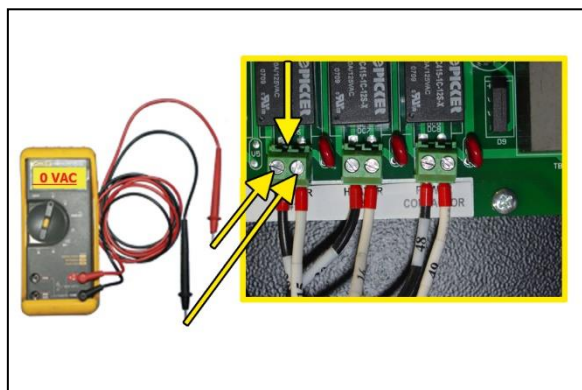
- 9.9.9** Increase the hour value of the **CYCLE TIME** between **8:00** and **15:59** by pressing the Left (←) Arrow Button.



- 9.9.10** Open the Top Front Panel (see section 8.7.1)

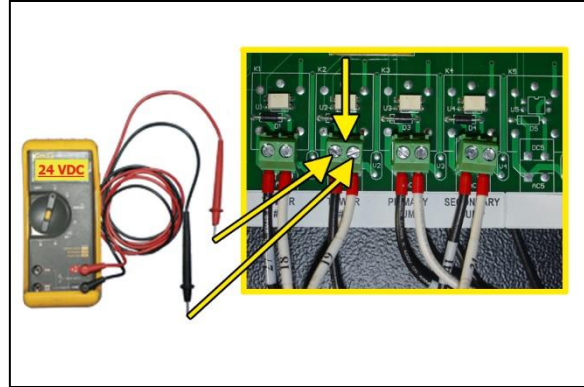
- 9.9.11** Use a Voltmeter to measure the DC voltage across the terminals “**Tower 1**” wire #27 **BLK** & #18 **WHT**.

The voltage should measure **0 Volts DC**



- 9.9.12** Use a Voltmeter to measure the DC voltage across the terminals “**Tower 2**” wire #28 **BLK** & #19 **WHT**.

The voltage should measure **24 Volts DC**



- 9.9.13** Close the Top Front Panel (see section 8.7.2)

- 9.9.14** Return the **CYCLE TIME** to the reading recorded in step 9.9.2 .

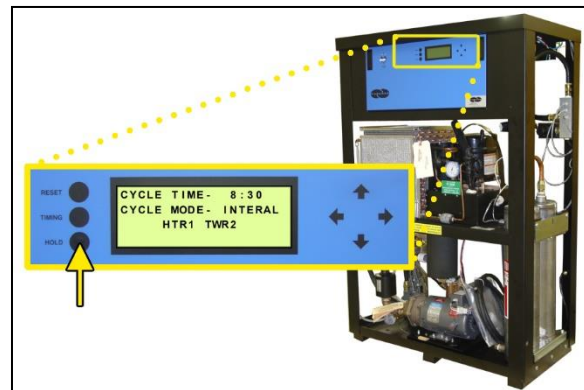
9.10 Measuring Tower Heater Voltage



WARNING!

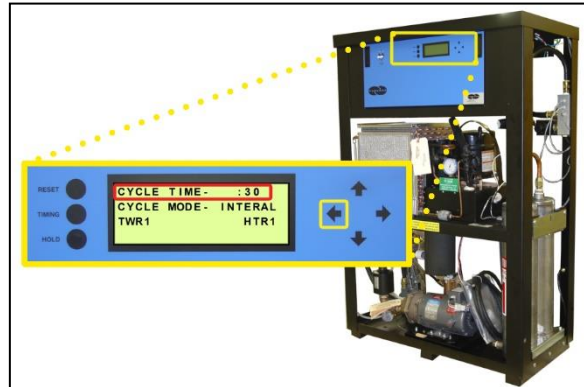
Extreme care should be exercised to avoid contact with live electrical circuits. It is highly recommended that you remove all jewelry before performing any procedures.

- 9.10.1** When the **CYCLE TIME** Screen (8.4.5.4) appears on the display, press the **HOLD** Button on the Front Panel to freeze that screen.



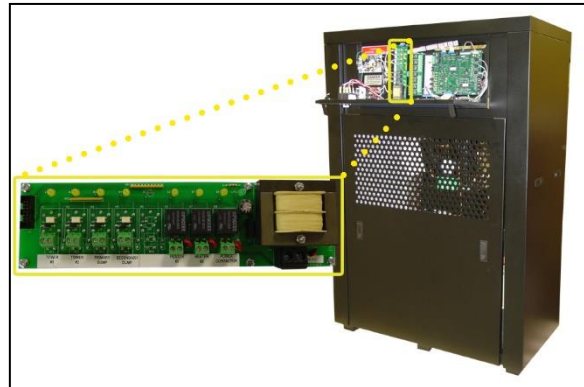
9.10.2 Make a note of the current **CYCLE TIME** reading.

9.10.3 Increase the hour value of the **CYCLE TIME** between **0:01** and **3:59** by pressing the Left (←) Arrow Button.



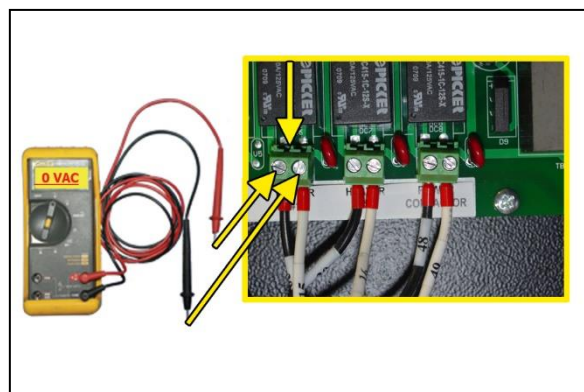
9.10.4 Open the Top Front Panel (see section 8.7.1)

9.10.5 Locate the Power Relay Board.



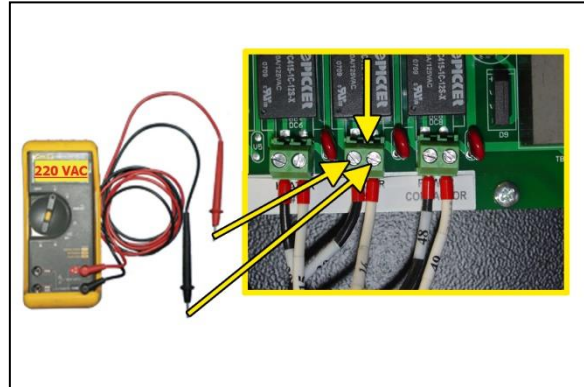
9.10.6 Use a Voltmeter to measure the AC voltage across the terminals “**Heater 1**” wire #29 **BLK** & #15 **WHT**.

The voltage should measure **0VAC**.



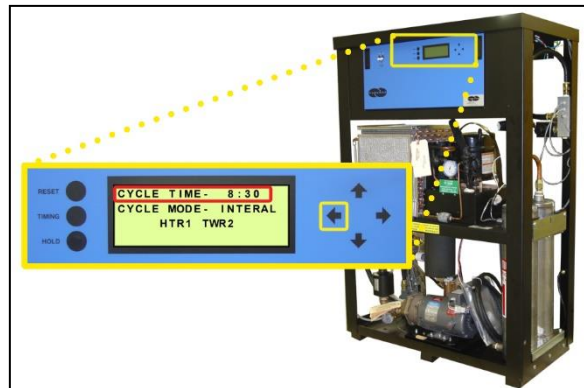
- 9.10.7** Use a Voltmeter to measure the AC voltage across the terminals “**Heater 2**” wire #30 **BLK** & #16 **WHT**.

The voltage should measure **220VAC (±10%)**.



- 9.10.8** Close the Top Front Panel (see section 8.7.2)

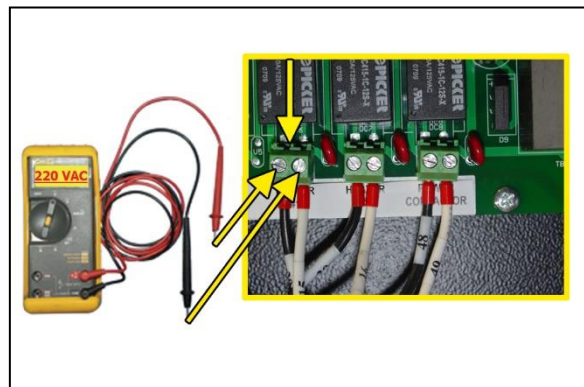
- 9.10.9** Increase the hour value of the **CYCLE TIME** between **8:00** and **11:59** by pressing the Left (←) Arrow Button.



- 9.10.10** Open the Top Front Panel (see section 8.7.1)

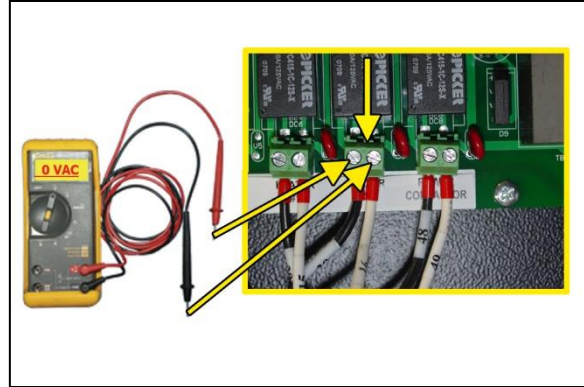
- 9.10.11** Use a Voltmeter to measure the AC voltage across the terminals “**Heater 1**” wire #29 **BLK** & #15 **WHT**.

The voltage should measure **220VAC (±10%)**.



- 9.10.12** Use a Voltmeter to measure the AC voltage across the terminals “**Heater 2**” wire #30 **BLK** & #16 **WHT**.

The voltage should measure **0VAC**.



- 9.10.13** Close the Top Front Panel (see section 8.7.2)

- 9.10.14** Return the **CYCLE TIME** to the reading recorded in step 9.9.2 .

9.11 Testing Precooler Fan

- 9.11.1** Place your hand next to the Precooler Fan to feel for air being blown outwards.



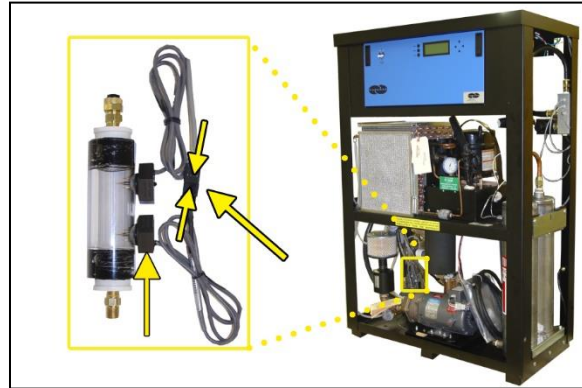
If fan is not blowing air outwards as described:

- *Check for loose wiring. Refer to the Wiring Diagram (section 14.).*
- *Replace defective fan (see sections 11.4 for part location and 11.8 for ordering information).*

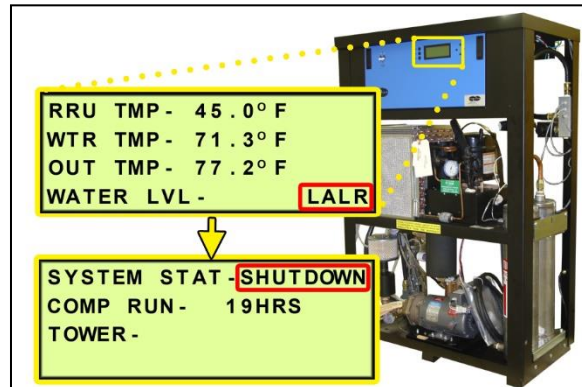
9.12 Testing Low Water Sensor Function & System Shutdown

9.12.1 Remove Lower Front Panel (see section 8.7.2)

9.12.2 Locate and disconnect the Low Water Sensor Connector.



9.12.3 After one (1) minute verify that the Low Water Level Alarm appears, and System goes into **SHUTDOWN** mode.



9.12.4 Reconnect the Low Water Sensor Connector.

9.12.5 Press the **RESET** Button.

9.12.6 Reinstall the Lower Front Panel (see section 8.7.2)

If you are unable to create a Low Water Level / Shutdown alarm as described, see section 13.17 for troubleshooting.

9.13 Testing Dump Sensor and Primary Water Dump Functions

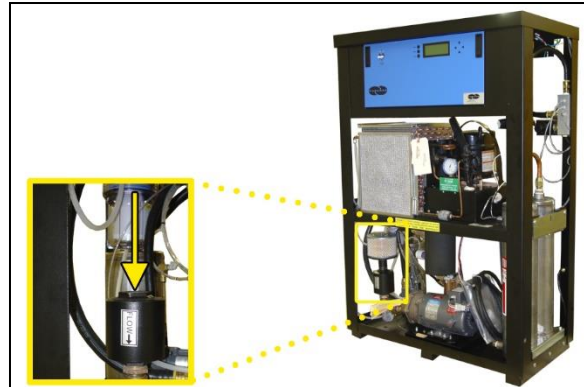
9.13.1 Remove Lower Front Panel (see section 8.7.2)

9.13.2 Remove Inlet Air Filter Assembly.

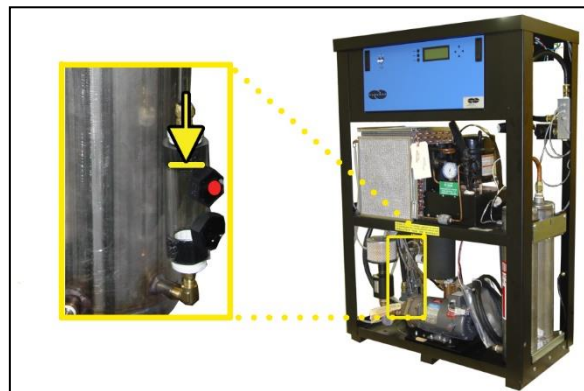


9.13.3 Slowly add water in dryer.

⚠ CAUTION: DO NOT USE DISTILLED OR DE-IONIZED WATER IN THIS UNIT.

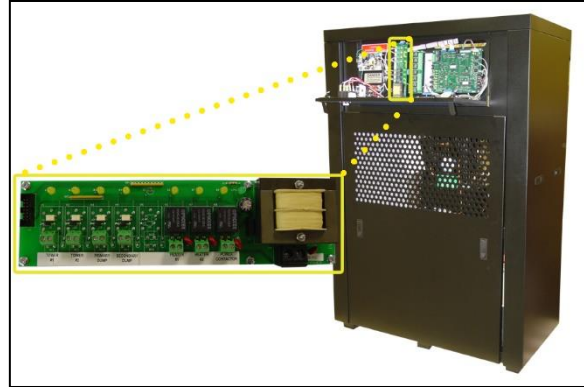


9.13.4 Keep adding water until the water level is above the Dump Water Sensor and the Dump LED on the control board is lit.



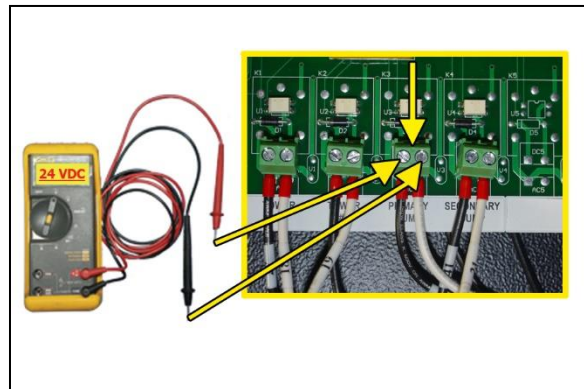
9.13.5 Open the Top Front Panel (see section 8.7.1)

- 9.13.6** Locate the Power Relay Board.



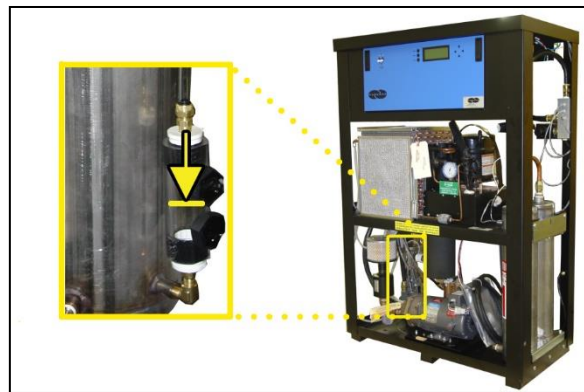
- 9.13.7** Use a Voltmeter to measure voltage to Primary Dump Solenoid while dryer is dumping water.

Wire # 42 **BLK** &
20 **WHT**



The voltage should measure **24 Volts DC**.

- 9.13.8** The dryer will dump the water until it stabilizes just below the Dump Water Sensor, and the Dump LED on the control board will turn off.



9.13.9 Reinstall Inlet Air Filter Assembly.

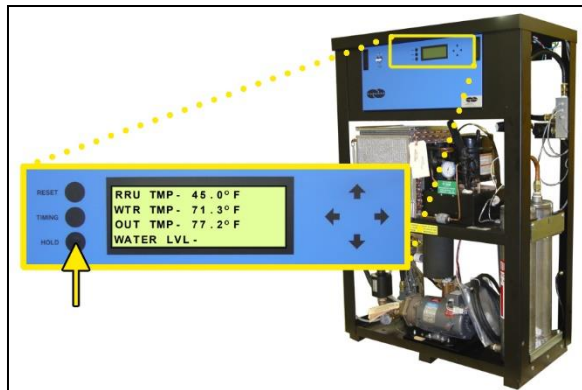
9.13.10 Close the Top Front Panel (see section 8.7.2)

9.13.11 Reinstall the Lower Front Panel (see section 8.7.2)



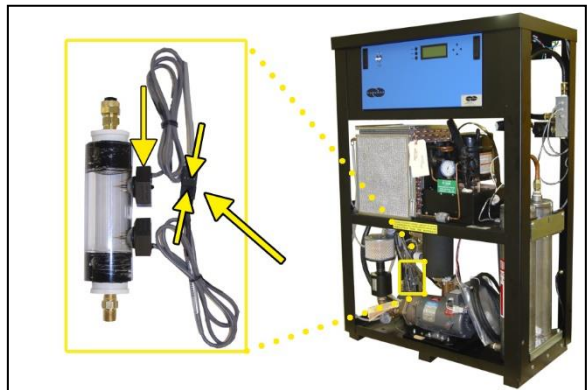
9.14 Testing High Water and Secondary Water Dump Functions

9.14.1 When the RRU TMP Screen (8.4.5.2) appears on the display, press the **HOLD** Button on the Front Panel to freeze that screen.



9.14.2 Remove Lower Front Panel (see section 8.7.2)

9.14.3 Locate and disconnect the Dump Water Sensor Connector.

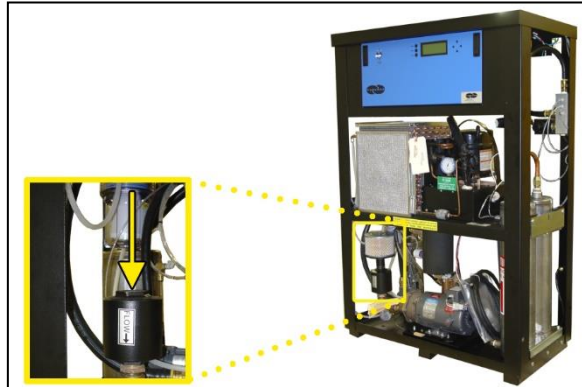


9.14.4 Remove the Inlet Air filter.

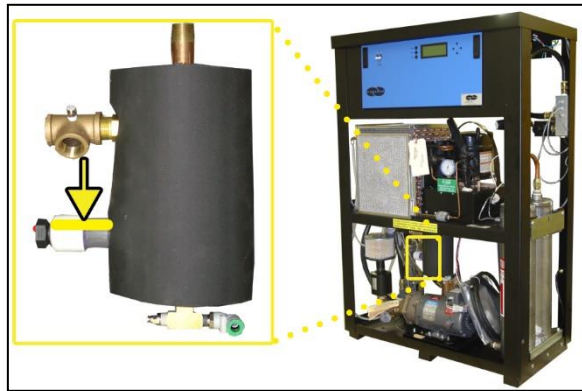


9.14.5 Slowly add water in dryer.

⚠ CAUTION: DO NOT USE DISTILLED OR DE-IONIZED WATER IN THIS UNIT.

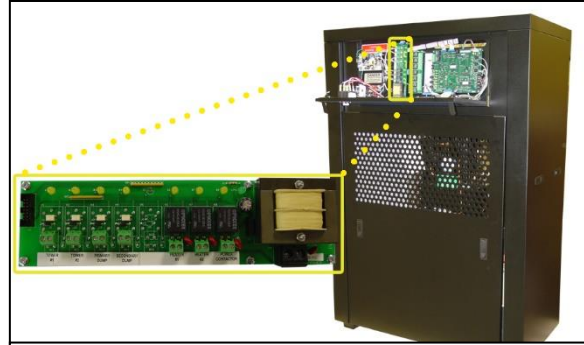


9.14.6 Keep adding water until the water level is above the High-Water Sensor and the LED on the control board is lit.

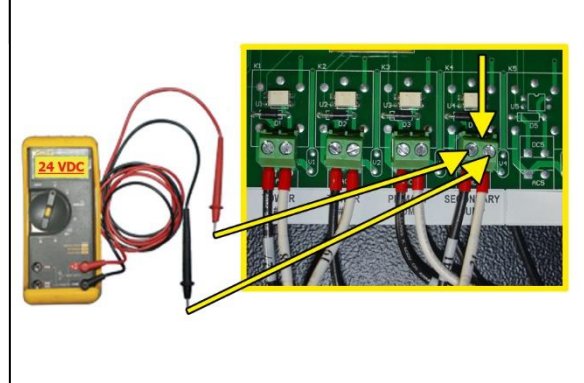


9.14.7 Open the Top Front Panel (see section 8.7.1)

9.14.8 Locate the Power Relay Board.



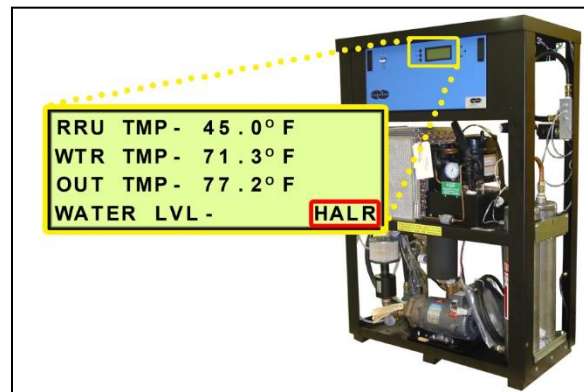
9.14.9 Use a Voltmeter to measure voltage to Secondary Dump Solenoid while dryer is dumping water.



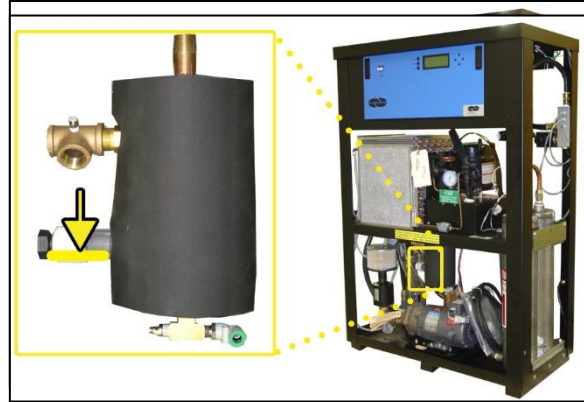
Wire # 41 **BLK** & # 21 **WHT**

The voltage should measure **24 Volts DC**.

9.14.10 Verify that the High-Water Level Alarm appears.



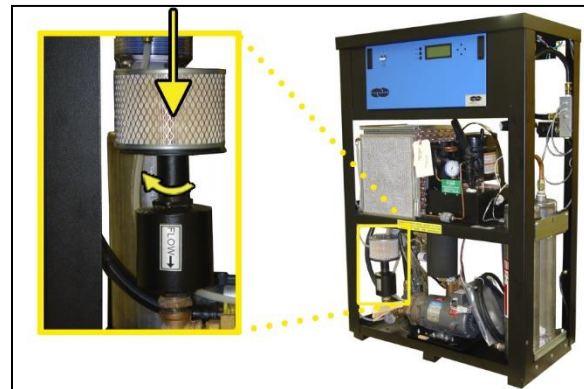
9.14.11 The dryer will dump the water until it stabilizes just below the High-Water Sensor, and the High Sensor LED on the control board will turn off.



9.14.12 Reconnect Dump Water Sensor Connector.

9.14.13 The dryer will dump the water until it stabilizes just below the Dump Water Sensor, and the Dump LED on the control board will turn off.

9.14.14 Reinstall Inlet Air Filter Assembly.



9.14.15 Close the Top Front Panel (see section 8.7.2)

9.14.16 Reinstall the Lower Front Panel (see section 8.7.2)

9.14.17 Press the **RESET** Button.

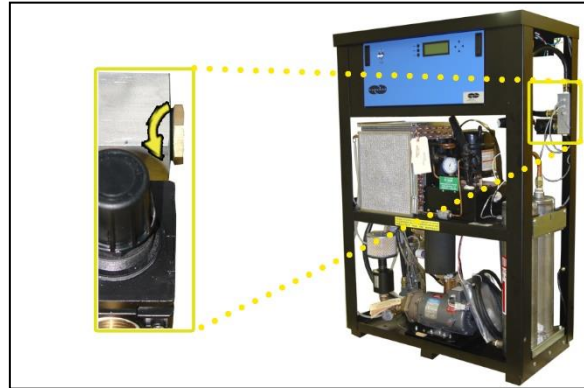
If you are unable to create a High-Water Level alarm as described, see section 13.19 for troubleshooting.

9.15 Testing Humidity Alarm and System Shutdown

NOTE: All testing values are based on default Dehydrator settings, if settings have been changed, adjust testing values accordingly.

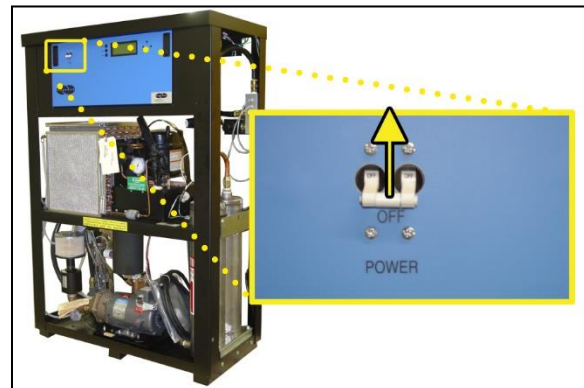
9.15.1 Depressurize the Dryer (see section 8.11)

9.15.2 Unscrew and remove the Humitter from the Combo Block.

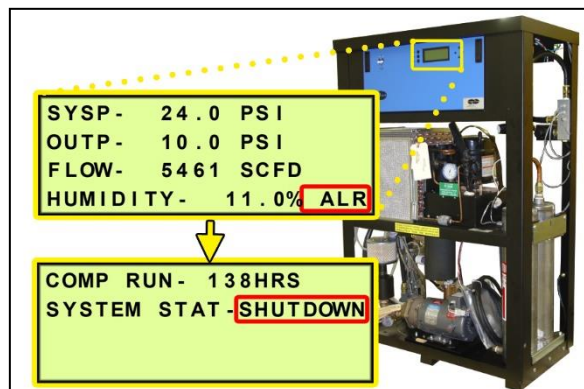


9.15.3 Power the Dryer ON.

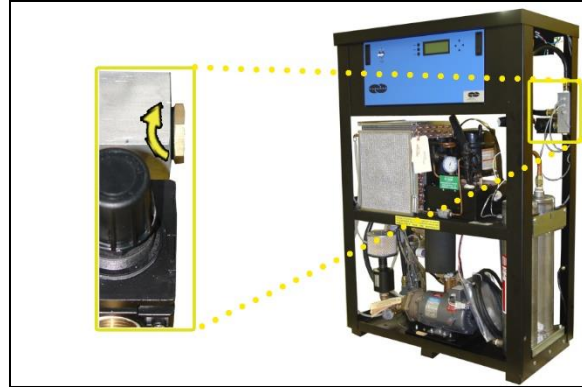
The Humidity reading will begin to rise until it is over 10.0%.



9.15.4 After three (4) minutes, verify that a Humidity Alarm appears, and System goes into **SHUTDOWN** mode.



9.15.5 Replace the Humitter into the Combo Block.



9.15.6 Reinstall the Lower Front Panel (see section 8.7.2)

9.15.7 Press the **RESET** Button.

If you are unable to create a Humidity / Shutdown alarm as described, see section 13.13 for troubleshooting information.

9.16 Testing Power Contactor

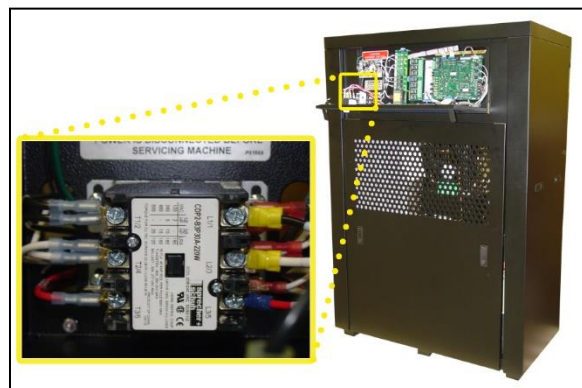


WARNING!

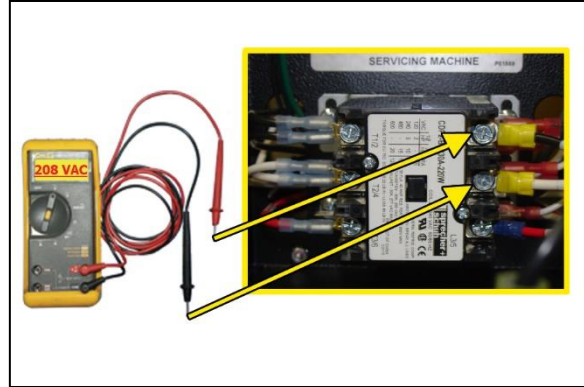
Extreme care should be exercised to avoid contact with live electrical circuits. It is highly recommended that you remove all jewelry before performing any procedures.

9.16.1 Open the Top Front Panel (see section 8.7.1)

9.16.2 Locate the Power Contactor.

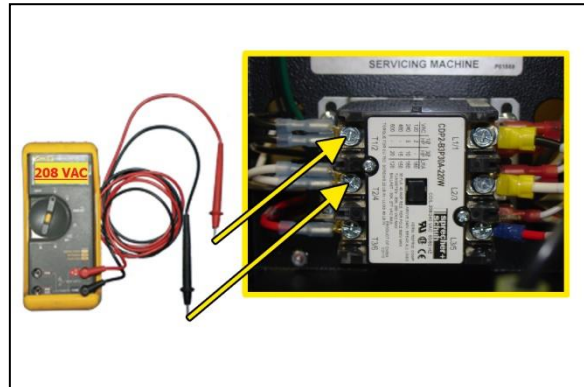


9.16.3 Use a Voltmeter to measure voltage to “L” Side of the Power Contactor.



	From		To		Voltage
P20KW	L1	Black	L2	White	230 VAC +/- 10%
P30KW	L1	Black	L2	White	208 VAC +/- 10%
	L1	Black	L3	Red	208 VAC +/- 10%
	L2	White	L3	Red	208 VAC +/- 10%

9.16.4 Use a Voltmeter to measure voltage to “T” Side of the Power Contactor.



	From		To		Voltage
P20KW	T1	Black	T2	White	230 VAC +/- 10%
P30KW	T1	Black	T2	White	208 VAC +/- 10%
	T1	Black	T3	Red	208 VAC +/- 10%
	T2	White	T3	Red	208 VAC +/- 10%

9.16.5 Close the Top Front Panel (see section 8.7.1)

9.17 Testing Fittings & Hoses for Leaks

9.17.1 Visually inspect for water leaks.

9.17.2 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 HUMITTER FITTING. DAMAGE TO THE HUMITTER MAY OCCUR.**

9.17.2.1 Visually inspect for water leaks.

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

9.17.2.3 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 P20KW / P30KW Air Dryer continues to operate efficiently and reliably, ALTEC AIR recommends performing the following maintenance procedures at the specified Six-Month intervals.

It is also recommended that you print out the included *Six Month Maintenance (section 10.2)* log sheet and record all completed maintenance for historical tracking and reference purposes.

The log sheet includes 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.

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.

**WARNING!**

High Noise. Altec AIR air dryers are meant to be installed in an unattended area.

**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!**

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

**CAUTION!**

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

**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: _____

LOCATION NAME: _____

SERIAL NUMBER: _____

ADDRESS: _____

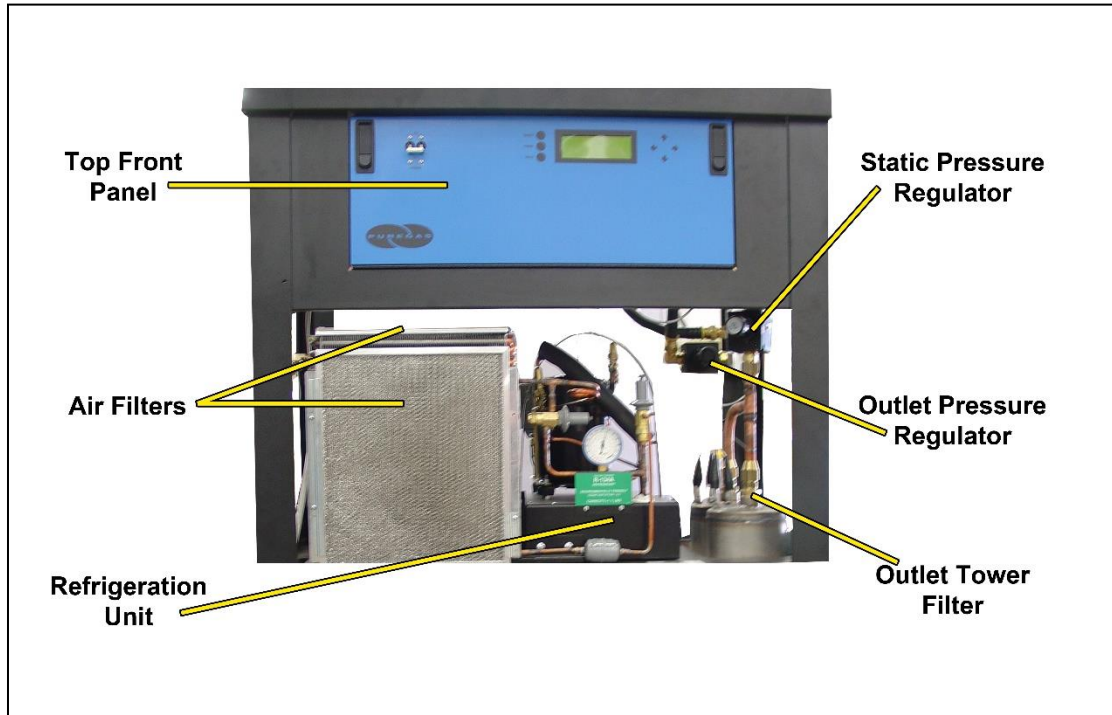
DATE INSTALLED: _____

Procedure	Section	Maintenance Interval (Months)				
		6	12	18	24	30
Install Six Month Maintenance Kit P011240	11.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read & Record Flow Rate (FLOW)	8.4.5.1					
Measure & Record Compressor Amp Draw	9.2					
Measure & Record Incoming Voltage (must be 208 or 230 VAC +/- 10%)	9.4					
Test High & Low Outlet Pressure Alarms	9.5 & 9.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Low System Pressure Alarm	9.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set System Pressure	8.12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set Static Pressure	8.13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Set Outlet Pressure	8.14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Record RRU Temperature	8.4.5.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Precooler Fan	9.11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Low Water Sensor Function & System Shutdown	9.12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Dump Sensor and Primary Water Dump Functions	9.13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test High Water and Secondary Water Dump Functions	9.14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Humidity Alarm & System Shutdown	9.15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Air Fittings for Leaks & Check for Water Leaks	9.17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean Precooler Coils		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visually Inspect Inside & Outside of Unit for Loose Wiring or Hardware		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance Performed by:						
Date of Maintenance:						

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

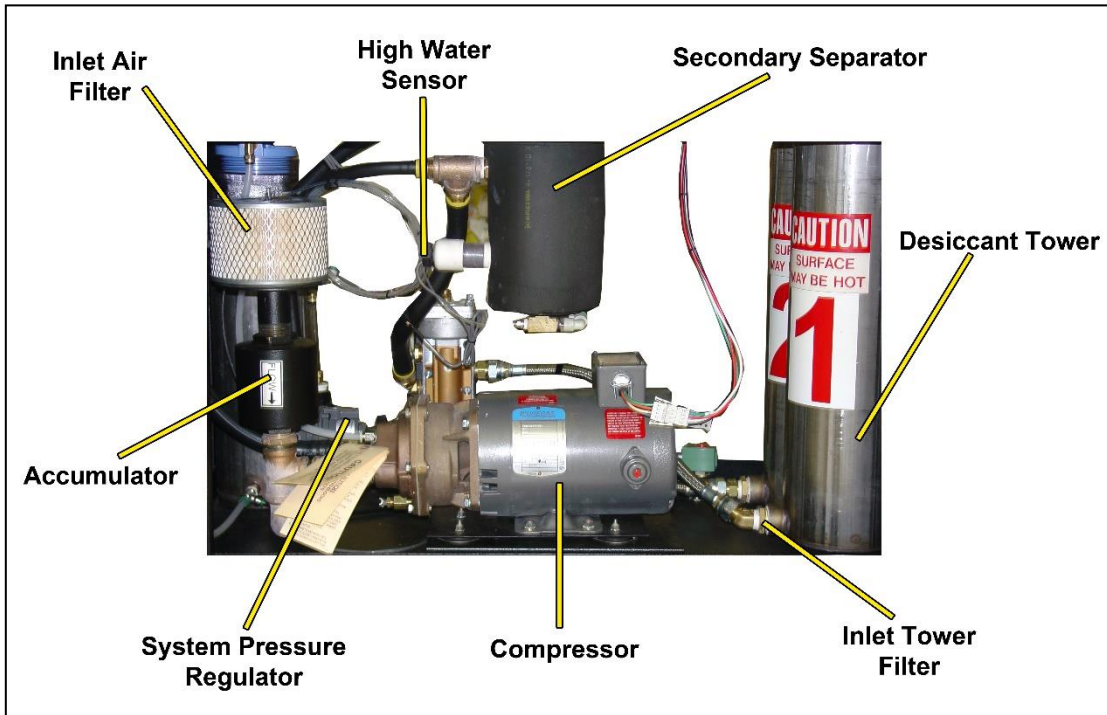
11. Replacement Parts & Accessories

11.1 Top Front Section Parts



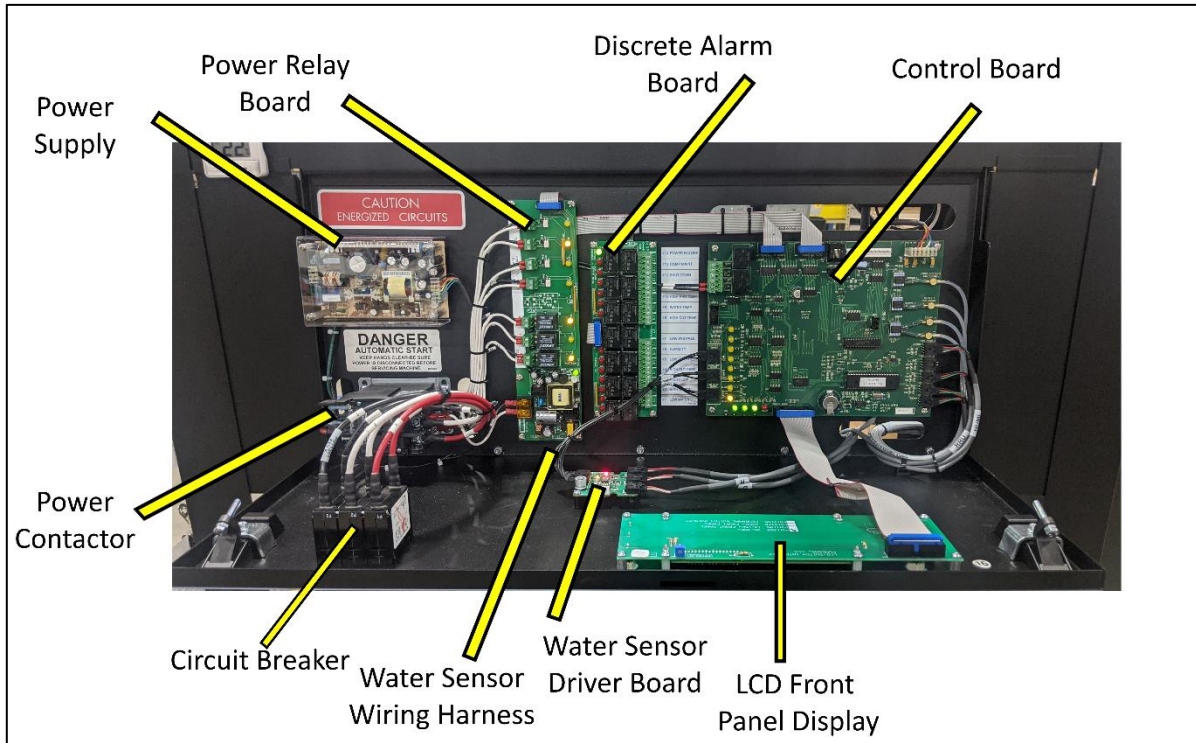
Description	Part Number	Quantity	Recommend Spare
Top Front Panel	<i>See section 0 for detail.</i>		
Air Filters	<i>In Kit P011240. See section 11.7 for detail.</i>		
Refrigeration Unit	P011342	1	
Static Pressure Regulator	P011354	1	✓ (1)
Outlet Pressure Regulator	P011354	1	✓ (1)
Outlet Tower Filter	P011352	2	

11.2 Bottom Front Section Parts



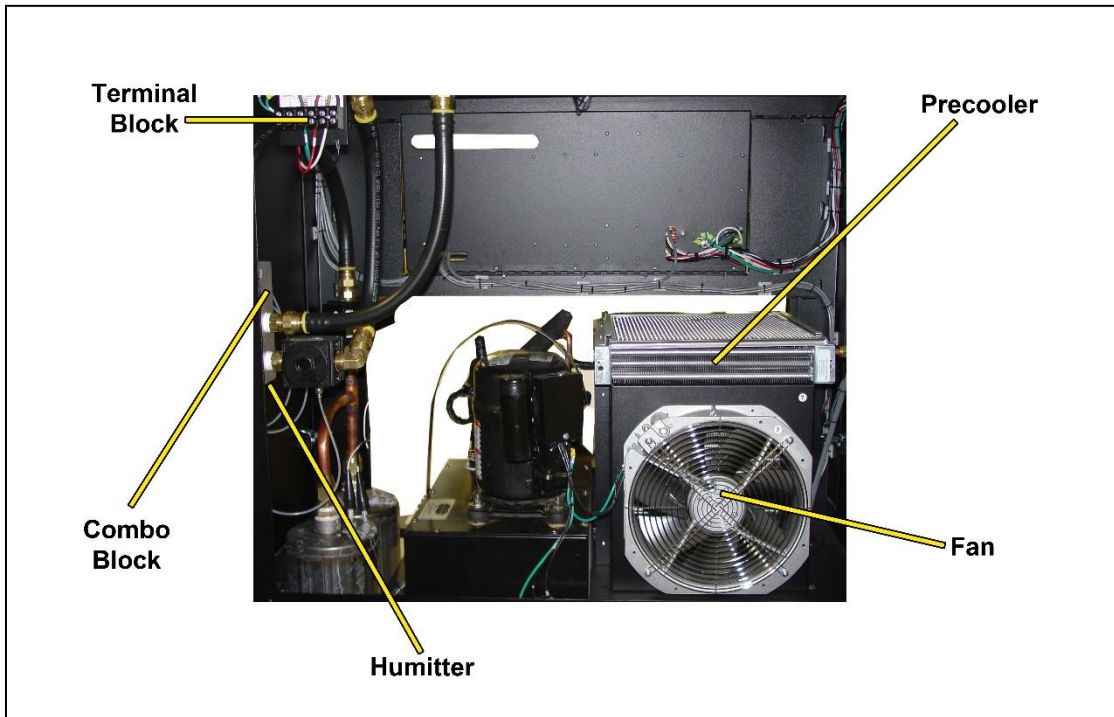
Description	Part Number	Quantity	Recommend Spare
Inlet Air Filter	<i>In Kit P011240. See section 11.7 for detail.</i>		
Accumulator	P011347	1	
System Pressure Regulator	P011356	1	
Compressor	P011534 (P20KW)	1	✓ (1)
	P011535 (P30KW)	1	✓ (1)
Inlet Tower Filter	<i>In Kit P011240. See section 11.7 for detail.</i>		
Desiccant Tower	P011353	2	
Secondary Separator	P011173	1	
High Water Sensor	P017653	1	

11.3 Top Front Panel Parts

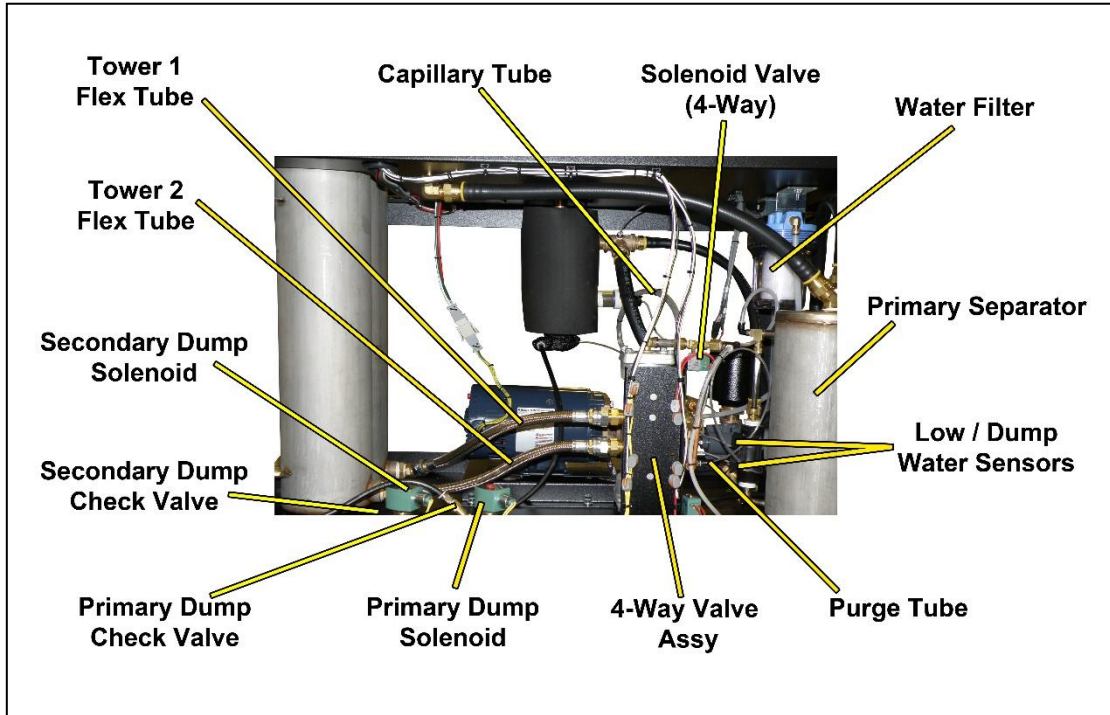


Description	Part Number	Quantity	Recommend Spare
Power Supply Board	P011372	1	
Power Contactor	P011355	1	✓ (1)
Circuit Breaker	P011340	1	✓ (1)
Front Panel Display	P011258	1	
Control Board (w/ Eprom)	P013243	1	✓ (1)
Discrete Alarm Board	P010988	1	
Power Relay Board	P011140F2	1	✓ (1)
Water Sensor Driver Board	P017913	1	
Water Sensor Wire Harness	P018260	1	

11.4 Top Back Section Parts



Description	Part Number	Quantity	Recommend Spare
Terminal Block		1	
Combo Block		1	
Humitter	P011380	1	✓ (1)
Precooler	P011358	1	
Fan	P011700	1	

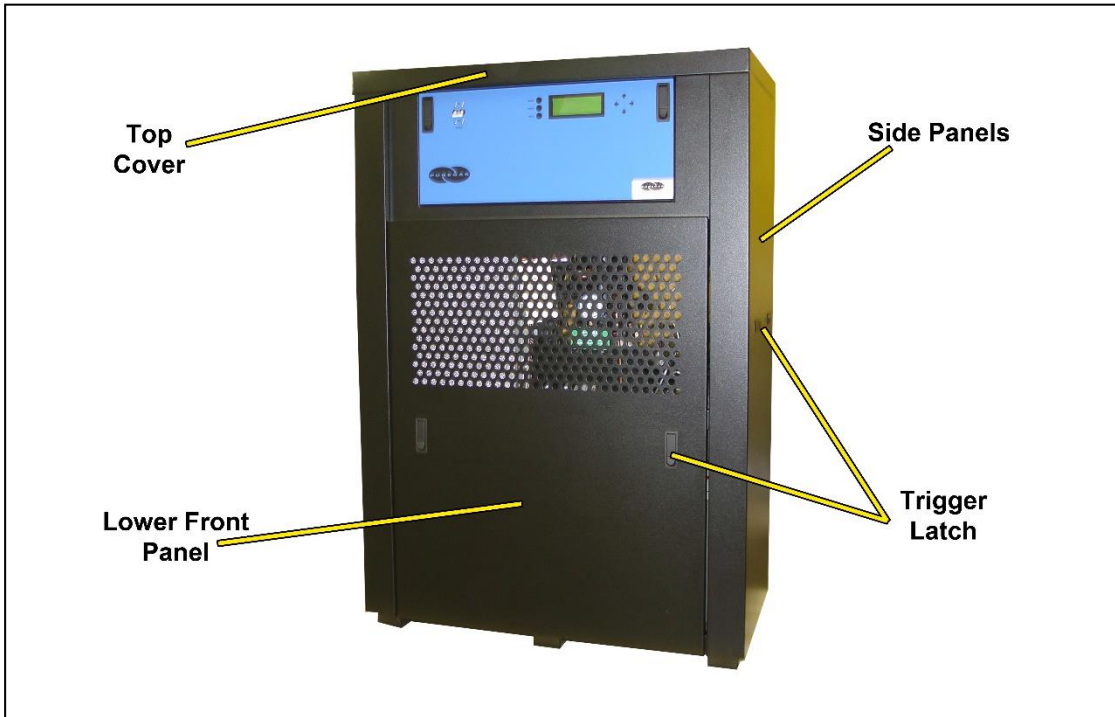


11.5 Bottom Back Section Parts

Description	Part Number	Quantity	Recommend Spare
Tower 1 Flex Tube	P011363	1	
Tower 2 Flex Tube	P011364	1	
Secondary Dump Solenoid	P011136	1	✓ (1)
Secondary Dump Check Valve	P012489	1	✓ (1)
Primary Dump Check Valve	P012489	1	✓ (1)
Primary Dump Solenoid	P011136	1	✓ (1)
4-Way Valve Assembly	P011168	1	
Purge Tube	P011362	1	
Low / Dump Water Sensors	P017653	2	






Primary Separator	P011361	1	
Water Filter	<i>In Kit P011240. See section 11.7 for detail.</i>		
Capillary Tube	P011346	1	
Solenoid Valve (4-Way)	P011166	2	

11.6 Frame Section Parts



Description	Part Number	Quantity	Recommend Spare
Top Cover		1	
Lower Front Panel		1	
Locking Trigger Latch		8	
Side Panels		2	

11.7 Accessories for Your Dryer

	Description	Part Number	Recommend Spare
	<p>Installation Kit Includes fittings required to connect to 3/4" flexible hose.</p>	P011890	
	<p>Six Month Maintenance Kit Includes inlet air filter, water filter, air filters, O-ring, and inlet tower filters.</p>	P011240	✓ (2)
	<p>Cycle Kit Allows multiple dryers to be cycled.</p>	P08033W	
	<p>Interface Kit Includes everything required to connect to P4200W, P6500W, P10\15KW, P20\30KW Air dryers to a ALTEC AIR Cycle Kit.</p>	PVDW31	
	<p>Monitoring Interface Allows the dryer to be fully monitored by ALTEC AIR monitoring systems.</p>	PVDW30	

11.8 Ordering Parts from ALTEC AIR

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

parts@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

- **Water Sealed Compressor Rebuild**
 - Replace motor bearings, seals & gaskets, impeller & cone
 - Test air flow, air pressure, and electrical performance
- **4-Way Valve Assembly Repair**
- **Refrigeration Unit Repair**
- **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.

**WARNING!**

High Noise. Altec AIR air dryers are meant to be installed in an unattended area.

**CAUTION!**

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

**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!

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**.

13.3 Air Dryer Won't Power ON

Possible Cause	Check	Corrective Action
Circuit Breaker in OFF position	Verify the Circuit Breaker is in ON position (section 8.3)	Move the Circuit Breakers 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
Ribbon cable unplugged	Verify that the ribbon cable running from the Control Board to the Display Screen is properly connected at both ends (see section 0for Control Board and Display Screen locations)	Plug in ribbon cable to Control Board and Display Screen (see section 0for Control Board and Display Screen locations)
Defective Display Board	Garbled or no readout with ribbon cable properly connected.	Replace Display Board (section 0)

13.5 Low System Pressure Alarm

Possible Cause	Check	Corrective Action
System Pressure set too low	Verify System Pressure (SYSP) reading (section 8.4.5.1)	Adjust System Pressure Regulator (section 8.12)
High Flow condition	Verify Flow Rate (FLOW) reading is not higher than expected (section 8.4.5.1)	Troubleshoot High Flow condition (section 13.11)
Air Leak	Test fittings and hoses for leaks (section 9.17)	Reconnect or replace bad fitting / hose
System Pressure Alarm set point too low	Verify System Pressure Alarm set point (section 8.6.4)	Raise System Pressure Alarm set point (section 8.6.4)

13.6 Can't Create a Low System Pressure Alarm

Possible Cause	Check	Corrective Action
Defective System Pressure Regulator	Verify that the System Pressure Regulator can be adjusted (section 8.12)	Replace System Pressure Regulator if unable to adjust pressure (section 11.2)
System Pressure Alarm set point too low	Verify System Pressure Alarm set point (section 8.6.4)	Adjust System Pressure Regulator so that System Pressure (SYSP) reading drops below verified set point (section 9.7)
Defective Control Board	Verify System Pressure (SYSP) reading is lower than the System Pressure Alarm set point (above)	Replace Control Board (section 0 if System Pressure (SYSP) reading is under verified System Pressure Alarm set point for more than 1 minute and fails to create an alarm.

13.7 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 8.14)
High Outlet Pressure Alarm set point too low	Verify High Outlet Pressure Alarm set point (section 8.5.2)	Raise High Outlet Pressure Alarm set point (section 8.5.2)

13.8 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 8.14)	Replace Outlet Pressure Regulator if unable to adjust pressure (section 11.1)
High Outlet Pressure Alarm set point higher than default setting	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 9.5)
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 0 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.

13.9 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 8.14)
High Flow condition	Verify Flow Rate (FLOW) reading is not higher than expected (section 8.4.5.1)	Troubleshoot High Flow condition (section 13.11)
Air Leak	Test fittings and hoses for leaks (section 9.17)	Reconnect or replace bad fitting / hose
Low Outlet Pressure Alarm set point too high	Verify Low Outlet Pressure Alarm set point (section 8.5.3)	Lower the Low Outlet Pressure Alarm set point (section 8.5.3)

13.10 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 8.14)	Replace Outlet Pressure Regulator if unable to adjust pressure (section 11.1)
Low Outlet Pressure Alarm set point lower than default setting	Verify Low Outlet Pressure Alarm set point (section 8.5.3)	Adjust Outlet Pressure Regulator so that Outlet Pressure (OUTP) reading drops below verified set point (section 9.6)
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 0 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.

13.11 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 8.4.5.1)	Fix downstream problem
Air Leak	Test fittings and hoses for leaks (section 9.17)	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 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 (SYSP) reading (section 8.4.5.1)	Adjust Bypass Valve (section 8.12)
Low Flow Rate	Verify Flow Rate (FLOW) reading is low (section 8.4.5.1)	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 8.6.5) 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 8.6.5) Over 10% not recommended

Defective Purge Tube	Verify Purge Tube is not obstructed (section 11.5)	Clean or replace Purge Tube (section 11.5)
Defective Humitter	Test Humitter operation. (section 9.15)	Replace Humitter (section 11.4)
Defective 4-Way Valve	Test 4-Way Valve operation. (section 9.8)	Replace 4-Way Valve (section 11.5)
Defective Power Relay Board	Test Power Relay Board operation. (section 9.9)	Replace Relay Board (section 0)
Defective Control Board	Unplug Humitter from Control Board (see section 0 for Control Board location) Humidity reading should drop to 0%	If Humidity did not drop to 0%, replace Control Board (section 0)
Defective RRU	Verify Refrigeration Temperature (RRU TMP) reading (section 8.4.5.2)	Troubleshoot High RRU Temperature Alarm (section 13.15)

13.13 Can't Create a High Humidity Alarm / Shutdown

These troubleshooting steps assume that the Humitter is removed from the Humidity Block during the *Testing Humidity Alarm and System Shutdown* (section 9.15) procedures.

Possible Cause	Check	Corrective Action
Humitter Cable disconnected	Verify that Humitter cable is connected to the Control Board	Connect Humitter cable (section 11.4)
Defective Humitter	Verify that Humidity reading fails to climb higher than 15% or creates sporadic readings	Replace Humitter (section 11.4)
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 0)

13.14 High Outlet Temperature Alarm

Possible Cause	Check	Corrective Action
Fan Failure	Verify fan is running (section 9.11)	Check for loose fan wiring (section 14.) Replace defective fan (section 11.4)
High Ambient Temperature	Verify temperature of dryer operating location. Recommended ambient temperature is 40°-85°F.	Lower ambient temperature of dryer operating location
Defective 4-Way Valve	Test 4-Way Valve operation. (section 9.8)	Replace 4-Way Valve (section 11.5)
Defective Power Relay Board	Test Power Relay Board operation. (section 9.9)	Replace Relay Board (section 0)

13.15 High RRU Temperature Alarm

Possible Cause	Check	Corrective Action
Fan Failure	Verify fan is running (section 9.11)	Check for loose fan wiring (section 14.)

		Replace defective fan (section 11.4)
High Ambient Temperature	Verify temperature of dryer operating location. Recommended ambient temperature is 40°-85°F.	Lower ambient temperature of dryer operating location
RRU out of adjustment		Adjust RRU (section 8.15)
Defective Control Board	Unplug RRU Temperature Probe from Control Board (see section 0for Control Board location)	If temperature did not drop to 0, replace Control Board (section 0)

13.16 Low Water Alarm

Possible Cause	Check	Corrective Action
Water and/or air leaks in the air dryer	Test fittings and hoses for leaks (section 9.17)	Connect, tighten, or replace leaking component
Defective water sensors	Test water sensors (section 9.12 , 9.13 , 9.14)	Replace water sensors as needed
Defective Primary Dump Solenoid	Measure the Primary Dump Solenoid voltage (section 9.13.7)	If voltage is present move to the next step. If no voltage is present and unit still dumps, replace Primary Dump Solenoid (section 11.5)
Defective Control Board	With the water level below the Primary Dump Sensor measure voltages at the Power Relay Board (section 9.13.7)	If voltage is measured replace Control Board (section 0)
Defective Capillary Tube	Verify Capillary Tube is not obstructed (section 11.5)	Clean or replace Capillary Tube (section 11.5)

13.17 Can't Create a Low Water Alarm

Possible Cause	Check	Corrective Action
----------------	-------	-------------------

Loose or poor electrical connection	Check wiring connections	Repair or replace any loose or damaged wire connections
Defective Low Water Sensor	Test Low Water Sensor (section 9.12)	Replace Low Water Sensors (section 11.5)
Defective Control Board	Verify that the unit is in a low water state	Replace Control Board (section 0) if unit is in a low water state for more than 1 minute and fails to create an alarm and shut down

13.18 High Water Alarm

Possible Cause	Check	Corrective Action
Defective High-Water sensor	Test High Water sensor (section 9.14)	Replace High water sensor (section 11.2)
Defective Dump Water sensor	Test Dump Water sensor (section 9.13)	Replace Dump Water sensor (section 11.5)
Defective Primary Dump Solenoid	Measure the Primary Dump Solenoid voltage (section 9.13.7)	If voltage is present and unit does not dump, replace Primary Dump Solenoid (section 11.5) If no voltage is present move to the next step
Defective Control Board	Measure voltages at the Power Relay Board (section 9.14.9)	If no voltage is measured replace Control Board (section 0)

13.19 Can't Create a High-Water Alarm

Possible Cause	Check	Corrective Action
----------------	-------	-------------------

Loose or poor electrical connection	Check wiring connections	Repair or replace any loose or damaged wire connections
Defective High-Water Sensor	Test High Water Sensor (section 9.14)	Replace High Water Sensors (section 11.2)
Defective Control Board	Verify that the unit is in a high-water state	Replace Control Board (section 0) if unit is in a high-water state for more than 1 minute and fails to create an alarm

13.20 High Water Temperature Alarm

Possible Cause	Check	Corrective Action
Fan Failure	Verify fan is running (section 9.11)	Check for loose fan wiring (section 14.) Replace defective fan (section 11.4)
High Ambient Temperature	Verify temperature of dryer operating location. Recommended ambient temperature is 40°-85°F.	Lower ambient temperature of dryer operating location

13.21 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 11.2) 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 Contactor	Measure voltages at the Contactor (section 9.16)	If measurements are good move to the next step. If measurements are bad, replace Contactor (section 0)
System is in Shutdown state	On the Display Panel, verify that the System is in a Shutdown state (section 8.4.5.3)	Press the RESET Button

13.22 Unit Trips Breaker

Possible Cause	Check	Corrective Action
Loose or defective wiring	Check all wiring for loose or damaged connections	Repair or replace loose or damaged wires
Compressor failing	Measure Compressor AMP Draw (section 9.2)	If measurement is high replace compressor (section 11.2) or send it in for repair (section 12.)
Incorrect Pressure Settings	Review; System, Static and Outlet Pressures	Refer to default values in sections; 8.12, 8.13 & 8.14

13.23 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:

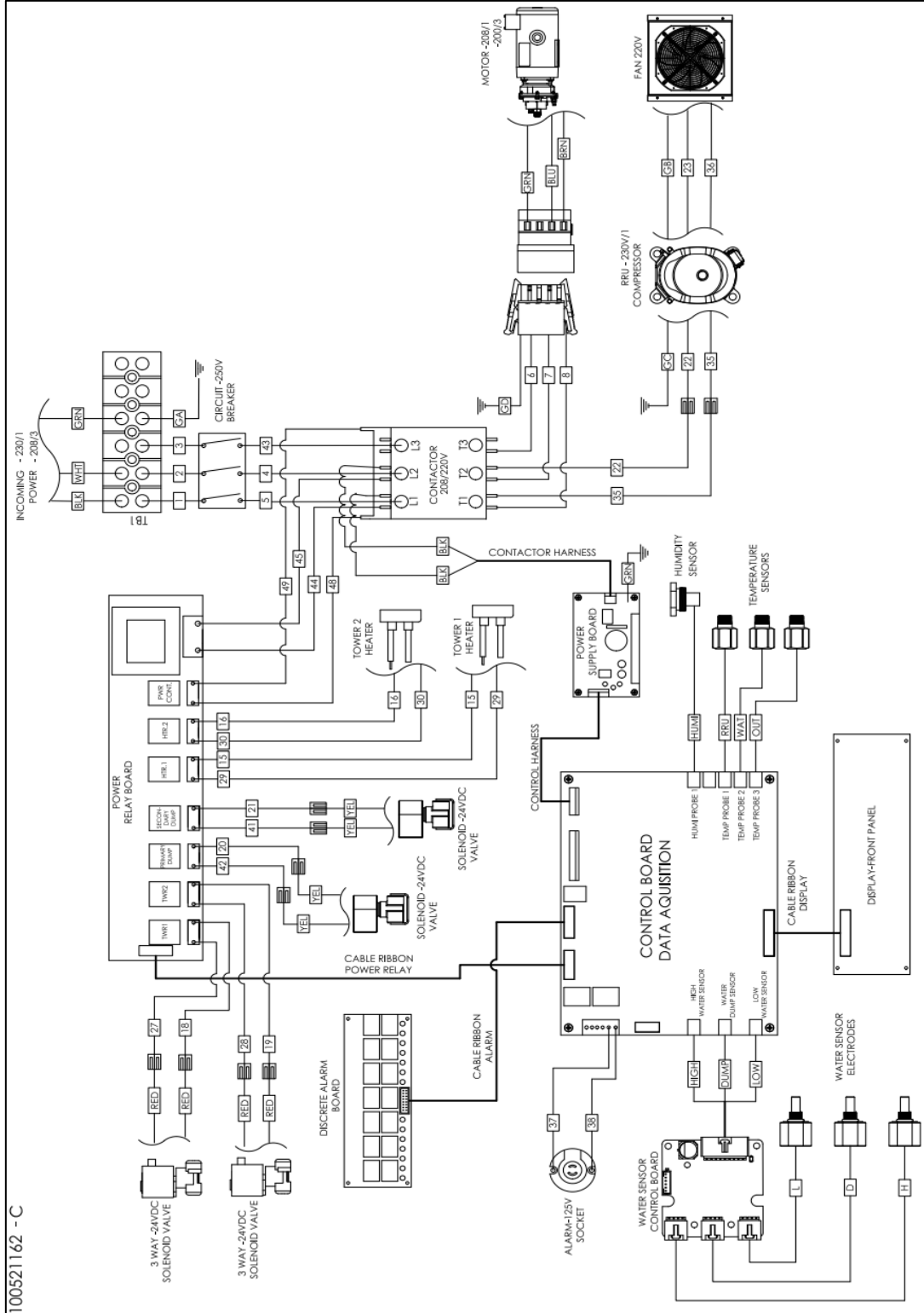
(800) 521-5351 (**option 1**)

Have the following information available:

Trouble Ticket # (if following-up on a previous call): _____
Technician Name: _____ **Phone #:** _____
Model #: **P20KW/P30KW** **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	18.0	26.0	24.0	PSI
Static Pressure	17.0	17.0	17.0	PSI
Outlet Pressure	1.0	15.0	10.0	PSI
RRU Temperature			35.0 - 45.0	Deg F

14.2.2 Alarm Set Points

Description	Minimum Value	Maximum Value	Default Value	Unit of Measurement	Shutdown
High Flow Alarm	100	40,000	15,000	SCFD	
High Outlet Pressure Alarm	0.2	25.0	12.0	PSI	
Low Outlet Pressure Alarm	0.1	24.9	6.5	PSI	
Low System Pressure Alarm	18.0	30.0	18.0	PSI	
High Humidity Alarm	3.0	15.0	10.0	%	YES
High RRU Temperature Alarm			60.0	Deg F	
Low RRU Temperature Alarm			32.9	Deg F	
High Water Temperature Alarm			150.0	Deg F	YES
High Outlet Temperature Alarm			140.0	Deg F	YES

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 P20KW / P30KW 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

service@AltecAIR.com

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.

