

# PowerAir™ Compressor Installation

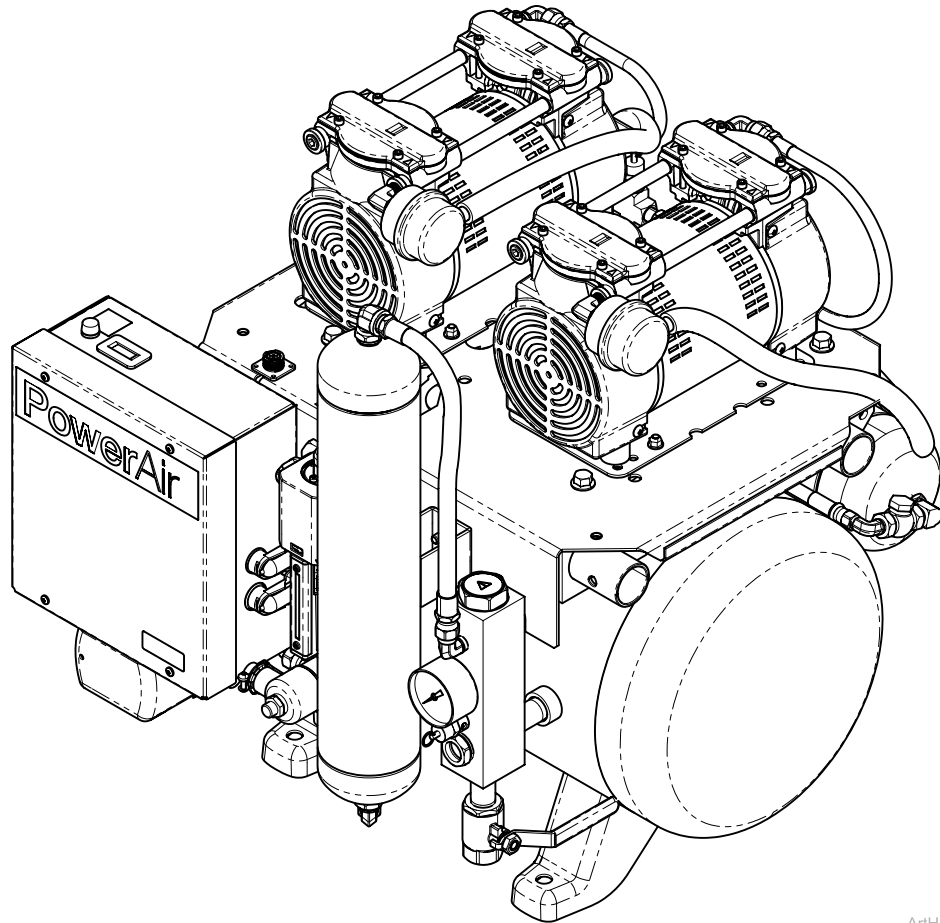
## Applies to Models:

P21 - 115 Volts  
P22, P32 - 230 Volts  
P52, P72 - 230 Volts



### Equipment Alert

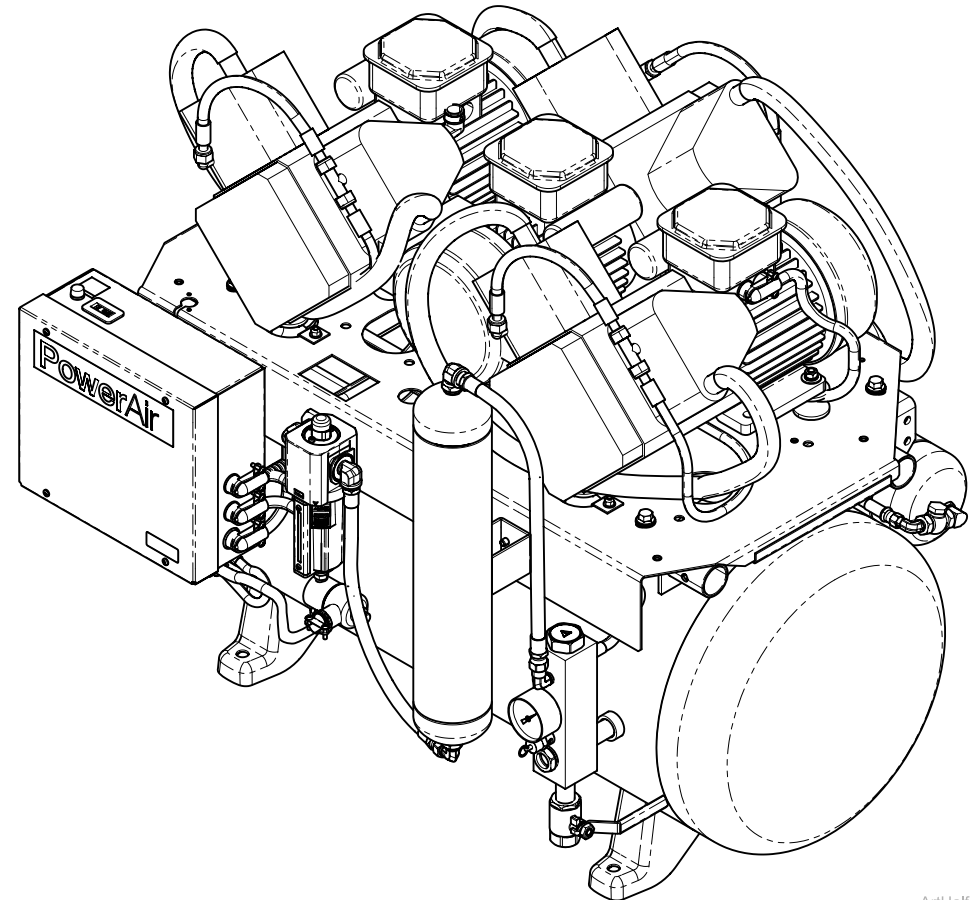
Compressor system must be installed per local plumbing and electrical codes.



Model P21 (115 Volt) or P22 (230 Volt) - Twin .75 HP Heads

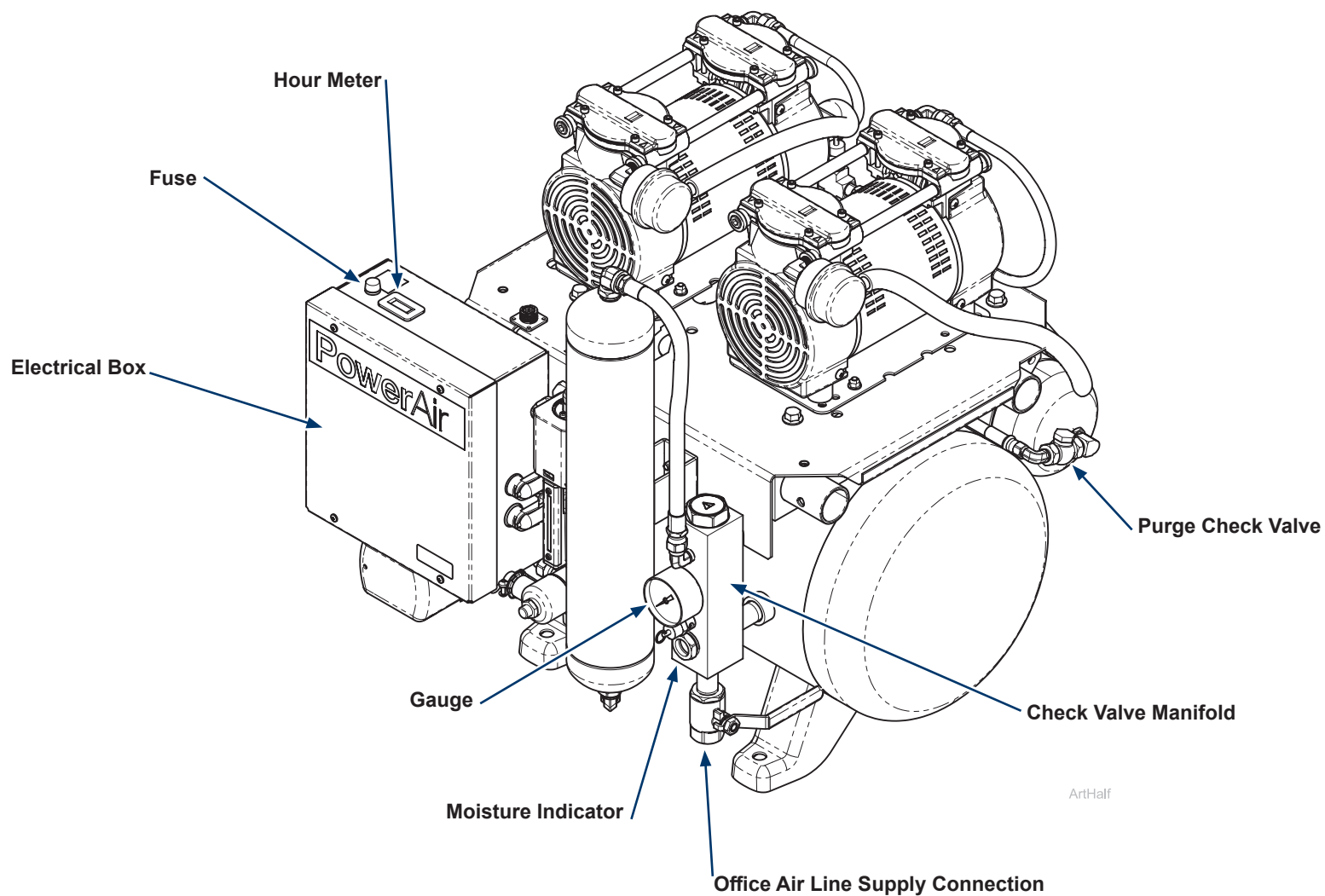
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Model P72 - Triple 1.6 HP Heads



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# Compressor Main Component Locations



**P21 / P22 Model Shown**  
**Components Shown are Typical on all PowerAir™ Compressor Models**

# Compressor Site Requirements

## Electrical

Supply	P21	P22	P32	P52	P72
Voltage	115	208-230	208-230	208-230	208-230
Single Phase					
Disconnect Switch Box - Fused - User Supplied - Box(es) must be located within 3 ft. of compressor	20 Amps	20 Amps	20 Amps	30 Amps	40 Amps

## Models

## Plumbing

Fresh Air Intake Line	
Type	PVC
Line Sizing	<b>1" Minimum (Provided by Contractor)</b>
Compressor Connections	1" MPT or 1" PVC Slip Connectors
Drain	
Type	Poly Tube (Provided with Install Kit)
Delivery Line	
Main Trunk Line	3/8" to 3/4" Copper, as site layout dictates. Terminate in mechanical room with 1/2" FPT. Flex hose provided for service connection. Trunk line to slope 1/4" / 10ft toward source compressor.
Operatory Branch Lines	3/8" to 3/4" Copper - Same size as trunk line. Terminate 1/2" or 5/8" FPT at Operatory junction box location.

## Environmental

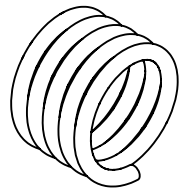
Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius
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### Installation Kit Provided with Compressors

Exhaust Silencer



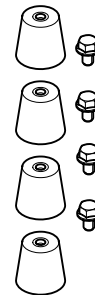
Fresh Air Intake Hose Length - 10'



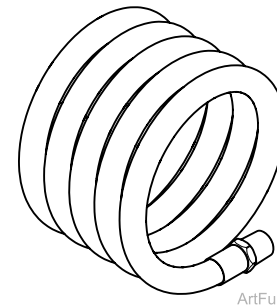
Elbow for Operatory Line Connection



Feet with Hardware

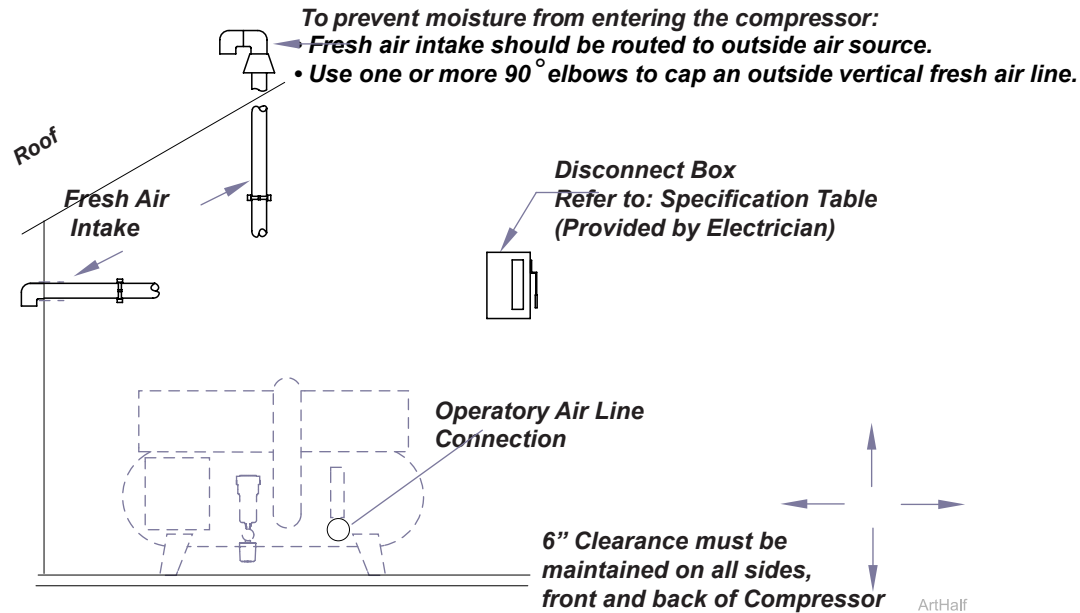


Operatory Air Line Length - 6'



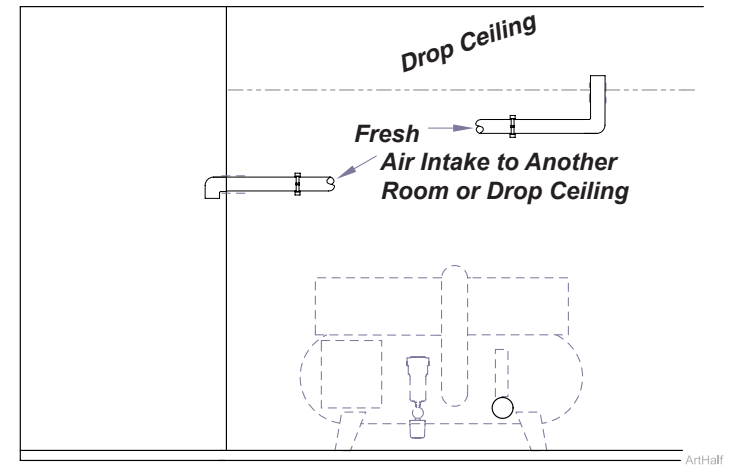
# Compressor Site Layout

## Elevation View



OR

- Fresh air intake can be set-up to pull air from a drop ceiling or another room.

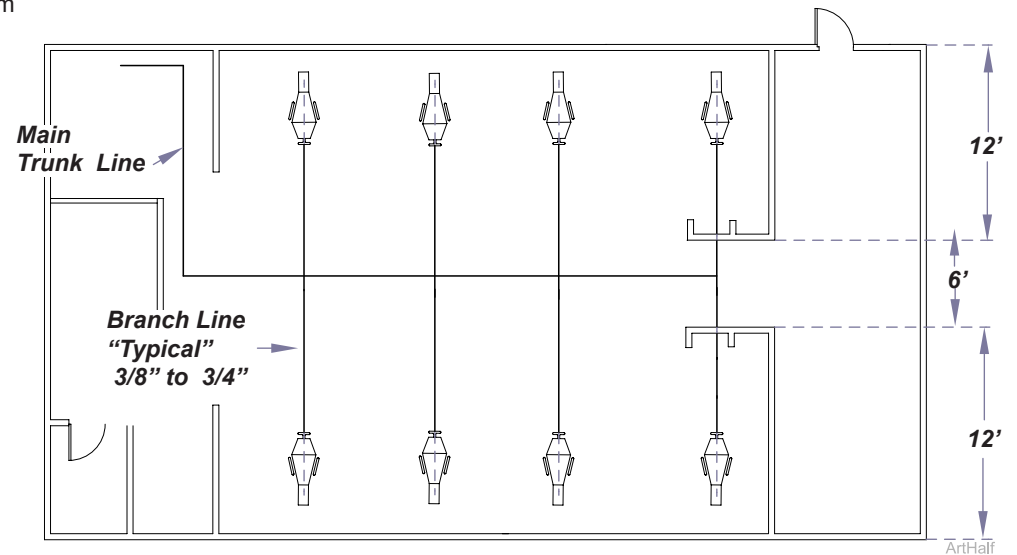


## Sample Plumbing Layout

AIR LINE SIZING CHART	
Compressor CFM @ 80 psig	Main Header Line Size
5 - 10	3/8" ODT
10 - 20	1/2" ODT
20 - 30	5/8" ODT
30 - 40	3/4" ODT

100 PSI max (+ / - 5psi)

Equipment Room



# Important Information

## Intended Use

To provide compressed air during general examinations and procedures conducted by qualified dental professionals.

## Electromagnetic Interference

This Midmark Liquid Ring Vacuum is designed and built to minimize electromagnetic interference with other devices.

However, if interference is noticed between another device and these units:

- Remove interfering device from room
- Plug interfering device into an isolated circuit
- Increase separation between unit and interfering device
- Contact Midmark if interference persists

## Disposal of Equipment

At the end of product life, the unit(s), accessory and other consumable goods may become contaminated from normal use. Consult local codes and ordinances for proper disposal of equipment, accessories and other consumable goods.

## Transportation / Storage Conditions

Ambient Temperature Range: ..... 40°F to 104°F (4°C to 37°C)  
Relative Humidity ..... 10% to 90% (non-condensing)  
Atmospheric Pressure ..... 500hPa to 1060hPa (0.49atm to 1.05atm)



Keep dry



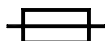
Consult User Guide  
for important information.



Maximum stacking height  
(palletted units)



Proper shipping orientation



Fuse rating specification



Fragile



Caution hot surface



Protective earth ground

**IPX0**

Ordinary Equipment

This product has been evaluated with respect to electrical shock, fire and mechanical hazards only, in accordance with UL60601-1 and CAN/CSA C22.2 NO. 601.1.



DENTAL AIR COMPRESSOR



UL 60601-1, IEC60601-1,  
CAN/CSA C22.2 No.601.1



### WARNING

Indicates a potentially hazardous situation which could result in serious injury if not avoided.



### CAUTION

Indicates a potentially hazardous situation which may result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices.



### Equipment Alert

Indicates a potentially hazardous situation which could result in equipment damage if not avoided

### Note

Amplifies a procedure, practice, or condition.

# Before you Install...



## Equipment Alert

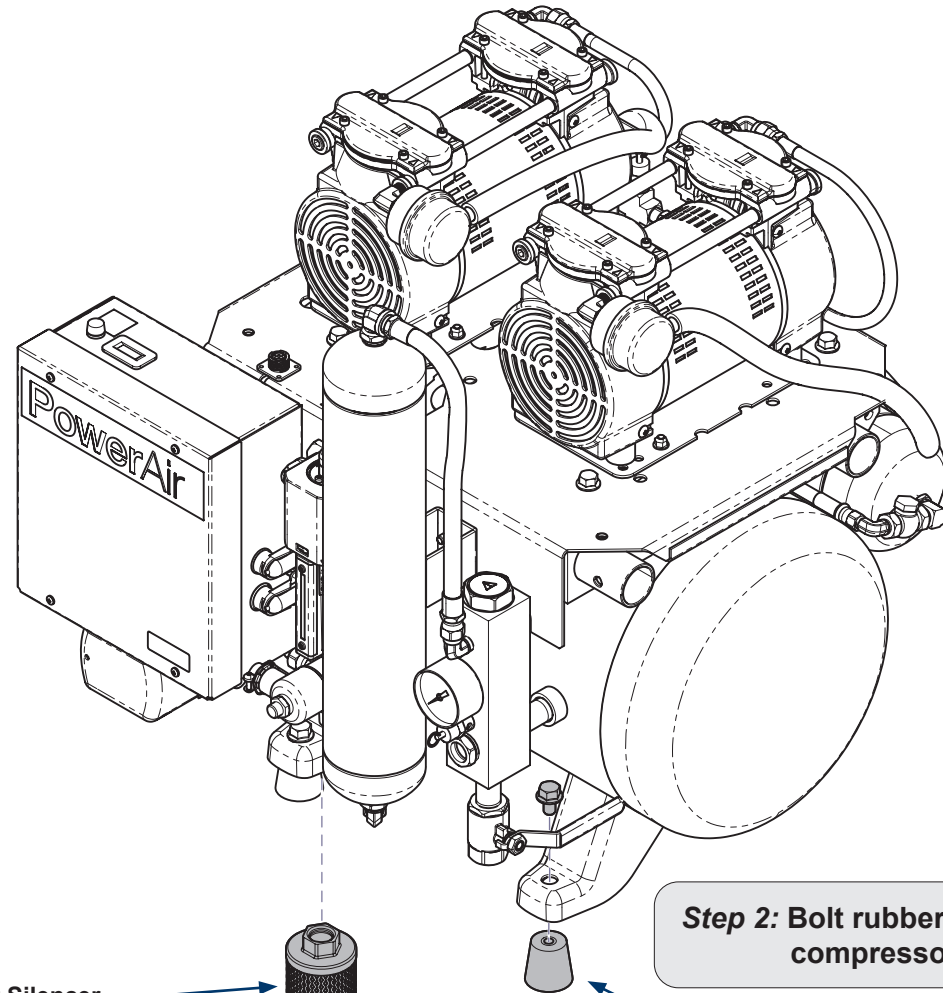
Compressor system must be installed in an air conditioned and or ventilated room to ensure operational ambient temperature of 40° to 104° Fahrenheit (4° - 40° Celsius). A 6" clearance is required on the rear and one side to allow air flow around the unit. Failure to do so could cause premature loss of system performance and void warranty.

**Step 1: Remove compressor and accessories from shipping skid.**



## Equipment Alert

Locate compressor in a dry, well ventilated area on a solid, level surface. Room temperature requirements are 40° (4°C) min. - 100° (38°) max.



## Step 3: Install exhaust silencer.

- A) Screw exhaust silencer into bottom of solenoid.
- B) Connect poly tube to bottom of exhaust silencer. Position opposite end next to floor drain or over the edge of a floor sink.

*Note: Do not place in contamination or standing water.*

Exhaust Silencer



Out to Drain

**Step 2: Bolt rubber feet onto compressor legs.**

Rubber Feet

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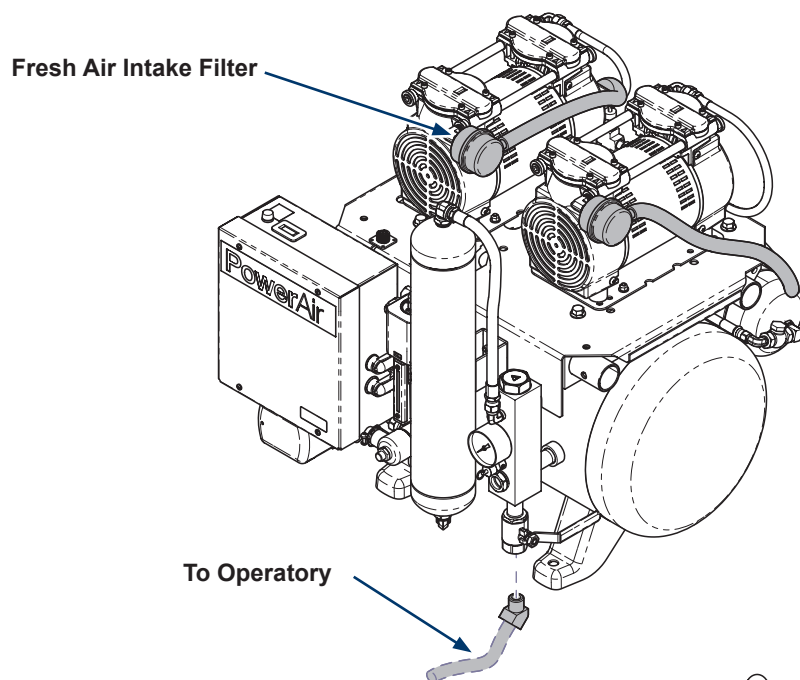
# Installation Plumbing Connections



## Equipment Alert

To prevent moisture from entering the compressor...

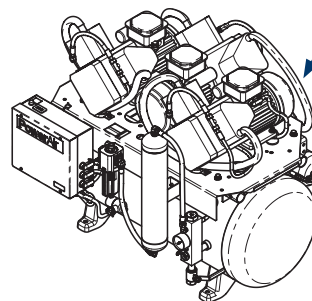
- Incoming fresh air temperature must not exceed room temperature by more than 20° Fahrenheit or -6 Celsius.
- Fresh air intake should be routed to an air source outside the equipment room.
- Refer to "Site Layout" in this manual for routing recommendations.
- Tight bends in the fresh air intake hoses may cause them to collapse, potentially leading to premature compressor failure.



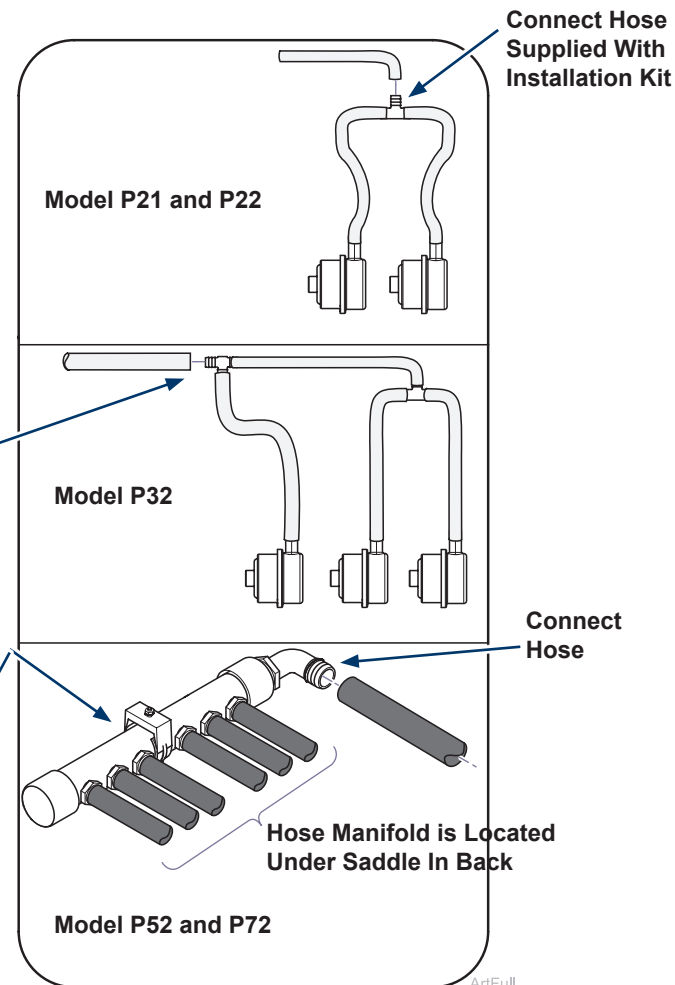
## Step 4: Connect Plumbing.

- Install elbow to shutoff valve.
- Connect compressor to operator air supply line.

Note: Hose assembly included in the installation kit.



## Step 5: Connect fresh air intake hose to barbed fitting behind compressor.



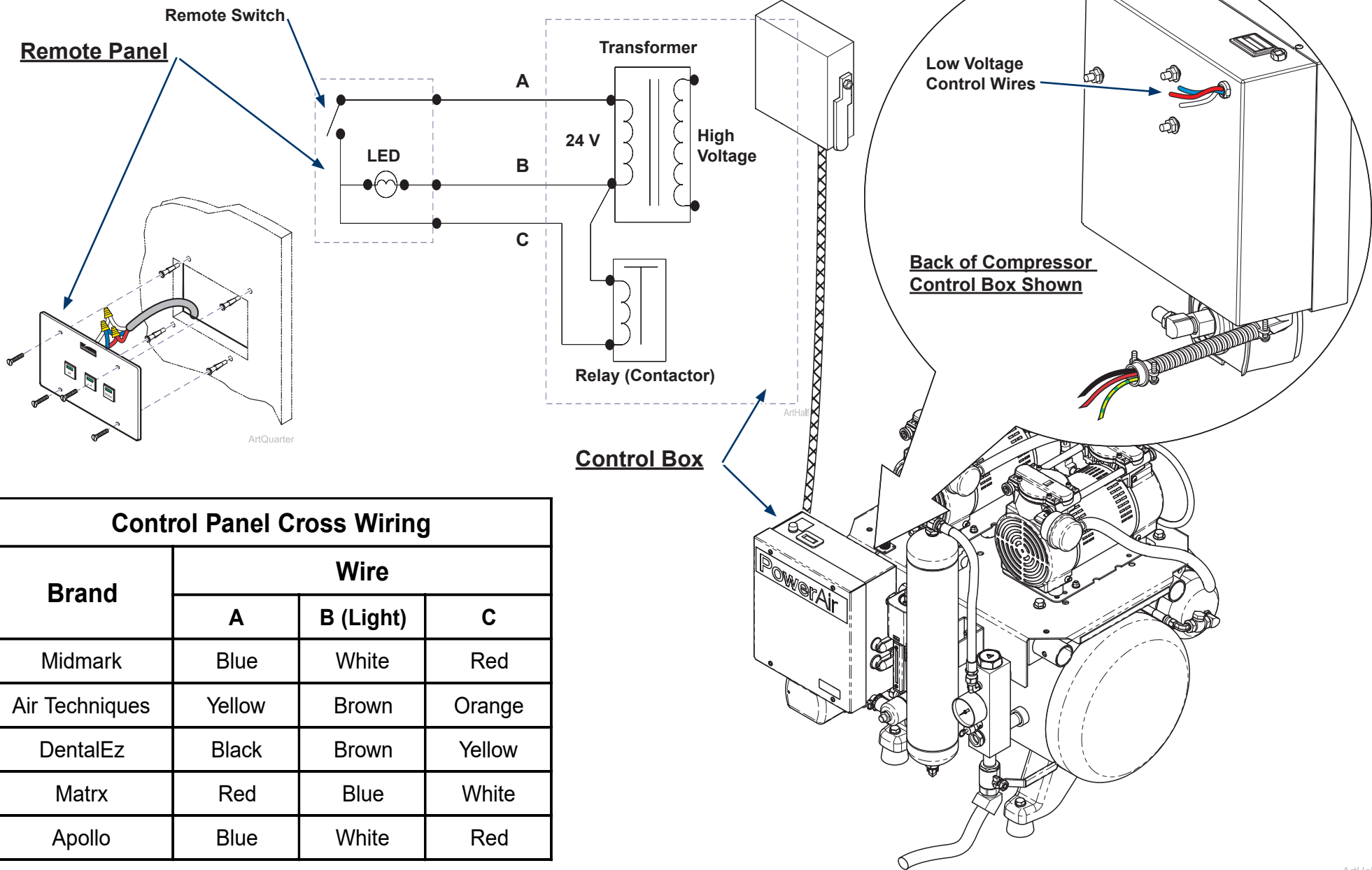


# Installation Low Voltage Electrical Connections

Step 7: Connect remote panel wires to low voltage control wires if applicable.



**WARNING**  
Connect in accordance with NEC Class 2, wiring methods.



Control Panel Cross Wiring

Brand	Wire		
	A	B (Light)	C
Midmark	Blue	White	Red
Air Techniques	Yellow	Brown	Orange
DentalEz	Black	Brown	Yellow
Matrx	Red	Blue	White
Apollo	Blue	White	Red



# Installation Line Voltage Electrical Connections



## **WARNING**

Connect in accordance with NEC Class 2, wiring methods.

## **Note**

Refer to Specification Sheet for Electrical Ratings in this manual.

### **P21-115 Models**

115 Volt Source  
Single Phase, 60 Hz  
20 Amp Fuse  
Circuit Breaker Box  
(Electrician Supplied)

### **P22, P32 Models**

208-230 Volt Source  
Single Phase, 60 Hz  
20 Amp Fuse  
Circuit Breaker Box  
(Electrician Supplied)

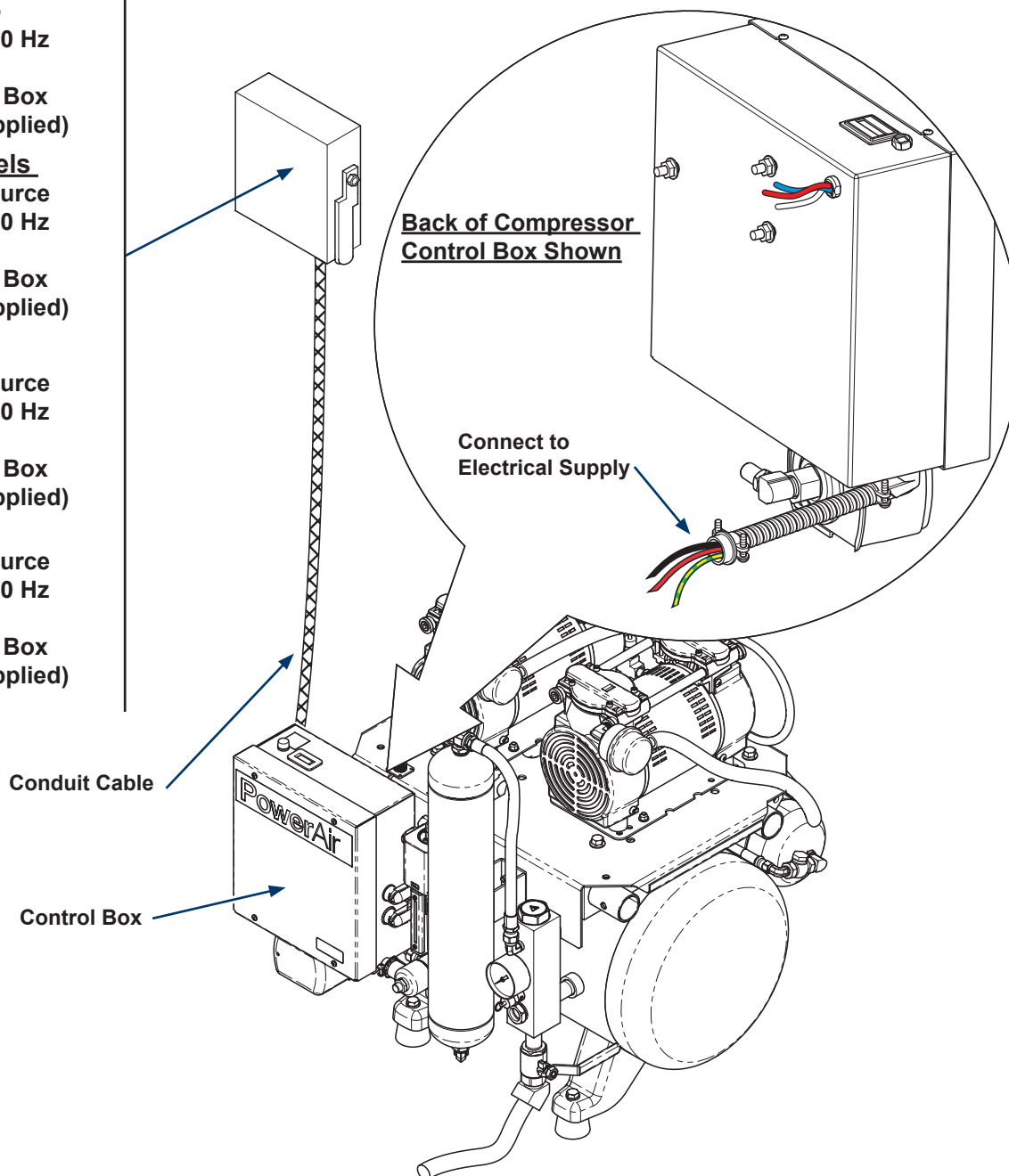
### **P52 Models**

208-230 Volt Source  
Single Phase, 60 Hz  
30 Amp Fuse  
Circuit Breaker Box  
(Electrician Supplied)

### **P72 Models**

208-230 Volt Source  
Single Phase, 60 Hz  
40 Amp Fuse  
Circuit Breaker Box  
(Electrician Supplied)

**Step 8: Connect Conduit Cable from compressor control box to electrician supplied Circuit Breaker box.**



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# Installation

## Check / Test

### Step 10: Turn power on and verify all heads are running.

Note: Compressor should run quietly and storage tank will begin to pressurize.



#### WARNING

The On/Off switch controls only the secondary circuit power. The main power source must be turned off to remove all power in the control box. The circuit breaker panel is the main power disconnect.



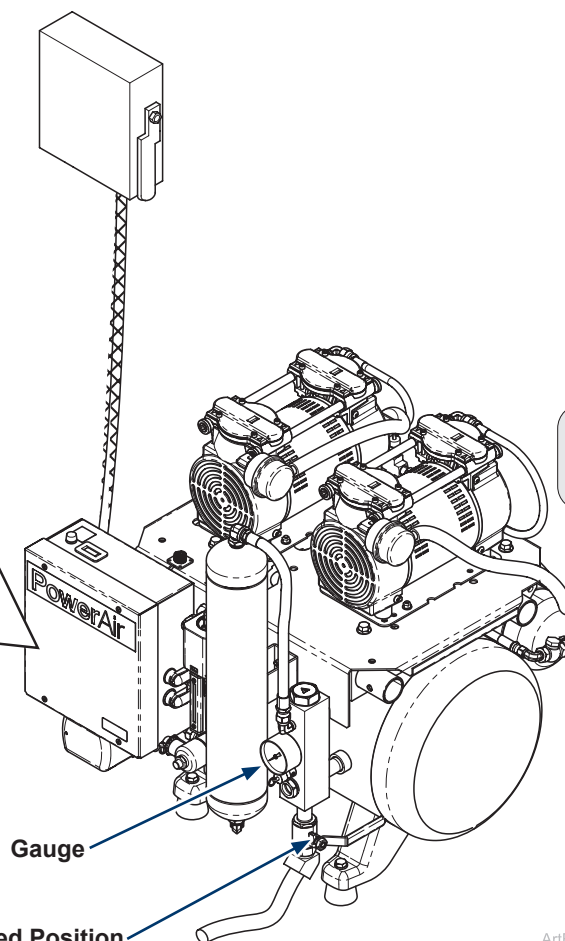
### Step 11: Use soapy water to check for pressure leaks.

#### Note

If all heads are not running turn compressor off. Loosen four screws in front of electrical box to remove cover, verify the on/off switches are in the on position, replace cover.

#### Note

Compressor will shut-off automatically when gauge registers 100 PSI MAX (+/- 5PSI).



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### Step 9: Verify shut-off valve is closed.

# Installation

## Check / Test

### Note

Monitor line pressure gauge when testing for leaks.



### Equipment Alert

Verify all leaks are sealed. Air leaks are the main cause of premature compressor failures!

### Step 14: Check gauge reading after 10 minutes.

Note: If the storage pressure gauge registers a lower reading, an air leak exists. Locate the leak(s) and repair.

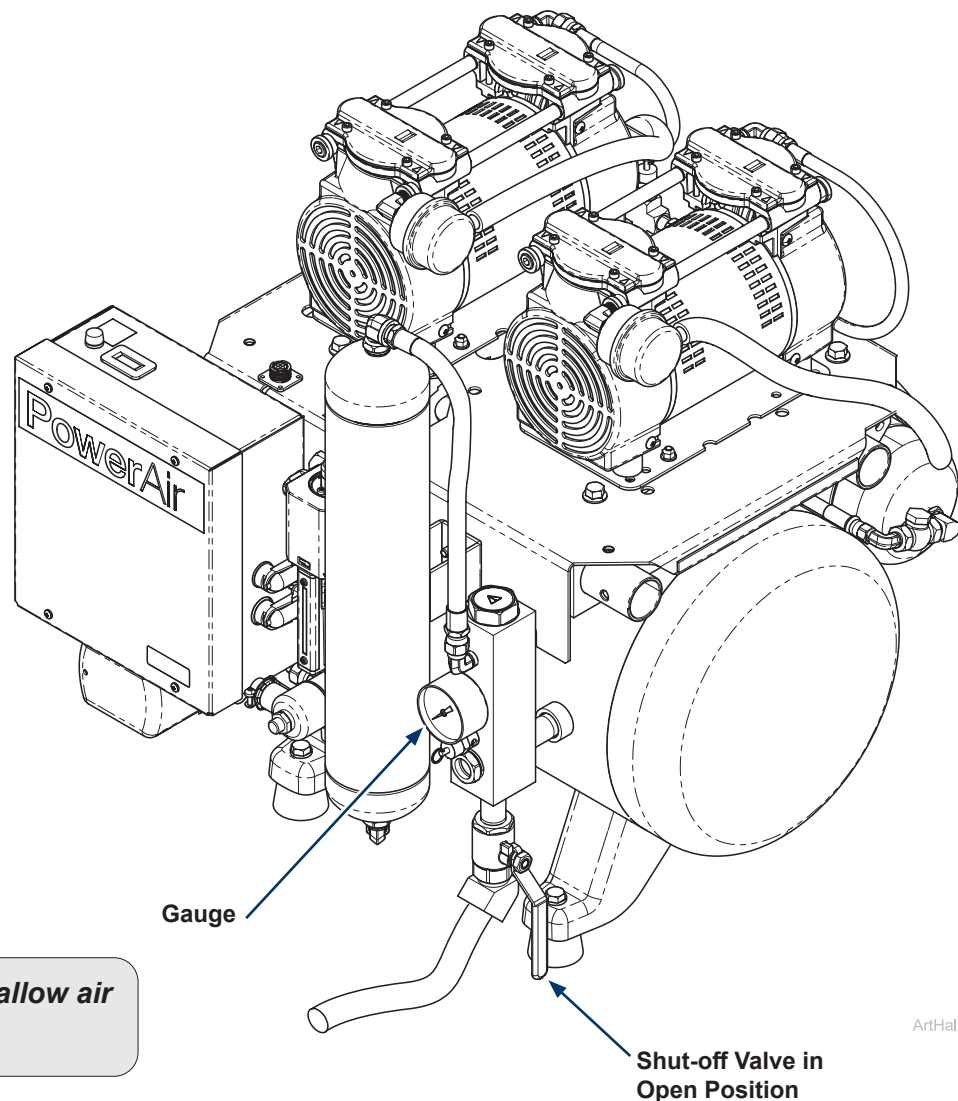
### Step 13: Allow office line to pressurize for 20-30 seconds. Check storage pressure gauge reading.

### Step 12: Open the shut-off valve slowly and allow air to flow into the office air system.



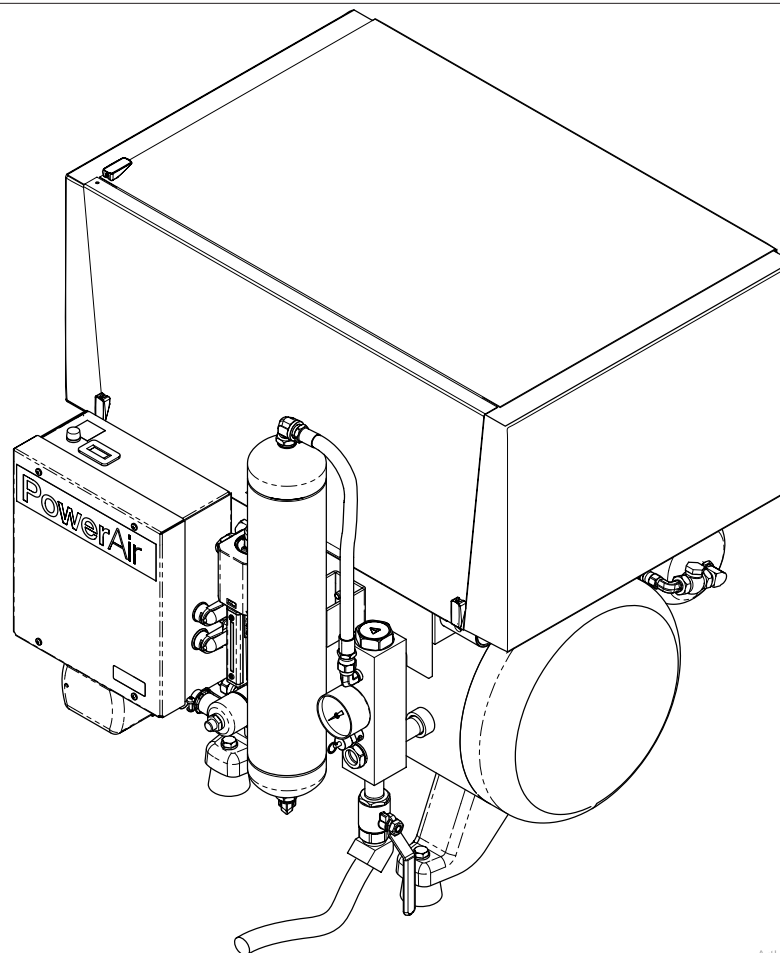
### WARNING

Always disconnect the power before servicing. The head(s) surface(s) can be very hot depending on compressor usage. Do not touch these parts during or directly after operation.



# Specification Sheet

## PowerAir™ Compressors



**Classifications: Class 1, No Applied Part**

Art-Half

Model	# Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size	Sound Level (dBA)	Sound Level (dBA) With Quiet Cover	Dimensions H x W x D (IN.)	Dimensions With Sound Cover H x W x D (IN.)	Product Weight (LBS.)
P21	1 - 3	5.2	1.5	10	115	16.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225
P22	1 - 3	5.2	1.5	10	208-230	7.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225
P32	3 - 5	7.8	2.25	20	208-230	11.0	20	67	62	29 x 33 x 26	33 x 33 x 28	295
P52	5 - 7	10.6	3.2	20	208-230	20.0	30	70	65	31 x 33 x 26	33 x 33 x 28	345
P72	7 - 10	15.9	4.8	32	208-230	29.0	40	73	68	33 x 40 x 27	39 x 40 x 30	425