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

Model P72 - Triple 1.6 HP Heads
Compressor Main Component Locations

P22 Model Shown
Components Shown are Typical on all PowerAir™ Compressor Models
Compressor Site Requirements

### Electrical

<table>
<thead>
<tr>
<th>Supply</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>P21</td>
</tr>
<tr>
<td>115</td>
<td>208-230</td>
</tr>
</tbody>
</table>

**Single Phase**

<table>
<thead>
<tr>
<th>Disconnect Switch Box</th>
<th>20 Amps</th>
<th>20 Amps</th>
<th>20 Amps</th>
<th>30 Amps</th>
<th>40 Amps</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fused</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- User Supplied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Box(es) must be located within 3 ft. of compressor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Plumbing

#### Fresh Air Intake Line

<table>
<thead>
<tr>
<th>Type</th>
<th>PVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Sizing</td>
<td>1&quot; Minimum (Provided by Contractor)</td>
</tr>
<tr>
<td>Compressor Connections</td>
<td>1&quot; MPT or 1&quot; PVC Slip Connectors</td>
</tr>
</tbody>
</table>

#### Drain

<table>
<thead>
<tr>
<th>Type</th>
<th>Poly Tube (Provided with Install Kit)</th>
</tr>
</thead>
</table>

#### 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. |
| Operatory Branch Lines | FPT at Operatory junction box location. |

### Environmental

| Equipment Room Ambient Temperature - Operational | 40° - 104° Fahrenheit / 4° - 40° Celsius |

### Installation Kit Provided with Compressors

- Exhaust Silencer
- Indicator for Coalescing Filter
- Fresh Air Intake Hose Length - 10’
- Elbow for Operatory Line Connection
- Oil
- Feet with Hardware
- Operatory Air Line Length - 6’
Compressor Site Layout

Elevation View

To prevent moisture from entering the compressor:
* Fresh air intake should be routed to outside air source.
* Use one or more 90° elbows to cap an outside vertical fresh air line.

Disconnect Box
Refer to: Specification Table
(Provided by Electrician)

6” Clearance must be maintained on all sides, front and back of Compressor

Operating Air Line Connection

Sample Plumbing Layout

AIR LINE SIZING CHART

<table>
<thead>
<tr>
<th>Compressor CFM @ 80 psig</th>
<th>Main Header Line Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 10</td>
<td>3/8” ODT</td>
</tr>
<tr>
<td>10 - 20</td>
<td>1/2” ODT</td>
</tr>
<tr>
<td>20 - 30</td>
<td>5/8” ODT</td>
</tr>
<tr>
<td>30 - 40</td>
<td>3/4” ODT</td>
</tr>
</tbody>
</table>

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

Fresh Air Intake to Another Room or Drop Ceiling

Drop Ceiling

To prevent moisture from entering the compressor:
* Fresh air intake should be routed to outside air source.
* Use one or more 90° elbows to cap an outside vertical fresh air line.

6” Clearance must be maintained on all sides, front and back of Compressor
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
Maximum stacking height (palletted units)
Fuse rating specification
Caution hot surface
Disposal of Equipment
These products have been evaluated with respect to electrical shock, fire & mechanical hazards only, in accordance with UL60601-1 and CAN/CSA C22.2 NO. 601.1.
**Before you Install...**

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

**Step 2:** Verify o-rings are seated on bottom of indicator. Remove plate on top of coalescing filter. Install indicator on top of coalescing filter.

**Step 3:** Install feet.

**Step 4:** Screw exhaust silencer into bottom of solenoid.

**Step 5:** Connect poly tube to bottom of exhaust silencer. Position opposite end next to floor drain or over the edge of a floor sink.

**Step 6:** Move compressor to a dry, well ventilated area on a solid, level surface.

---

**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.

**Note:** This step is optional but, might be required by local codes.

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

**Note:** Temperature of room 40° (4°C) min. - 100° (38°) max.
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 7: Install elbow to valve.
Connect hose assembly to valve.
Connect office air supply line.
Note: Hose assembly included in the installation kit.

Step 8: Connect fresh air intake hose to barbed fitting behind compressor to fresh air intake pipe.
**Installation**

**Electrical Connections**

*Refer to Specification Sheet for Electrical Ratings in this manual.

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

**Step 9:**
Connect remote panel wires to Low Voltage Control wires if applicable.

**Remote Panel**

**Control Panel Cross Wiring**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Wire</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B (Light)</td>
<td>C</td>
</tr>
<tr>
<td>Midmark</td>
<td>Blue</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>Air Techniques</td>
<td>Yellow</td>
<td>Brown</td>
<td>Orange</td>
</tr>
<tr>
<td>DentalEz</td>
<td>Black</td>
<td>Brown</td>
<td>Yellow</td>
</tr>
<tr>
<td>Matrix</td>
<td>Red</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>Apollo</td>
<td>Blue</td>
<td>White</td>
<td>Red</td>
</tr>
</tbody>
</table>

**Step 10:**
Connect conduit cable to user supplied electrical box.

**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)

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**Installation Check & Test**

**Step 11:** Verify shut-off valve is closed.

**Note:** Compressor will shut-off automatically when gauge registers 100 PSI.

**Step 12:** Turn power on.

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

**Access On/Off Switches**
Loosen four screws in front of electrical box to remove cover. Replace cover after turning switches on.

**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 13:** Use soapy water to check for pressure leaks.
Installation
Check & Test

Note:
Monitor line pressure gauge when testing for leaks.

Step 14: Open the shut-off valve slowly and allow air to flow into the office air system.

Step 15: Allow office line to pressurize for 20-30 seconds. Check storage pressure gauge reading.

Step 16: 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.

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.

Equipment Alert
Verify all leaks are sealed. Air leaks are the main cause of premature compressor failures!
# PowerAir™ Compressors

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

<table>
<thead>
<tr>
<th>Model</th>
<th># Users</th>
<th>CFM @ 80 PSI</th>
<th>Total HP</th>
<th>Tank Capacity</th>
<th>Voltage</th>
<th>Total Amps</th>
<th>Breaker Size</th>
<th>Sound Level (dBA)</th>
<th>Sound Level (dBA) With Quiet Cover</th>
<th>Dimensions H x W x D (IN.)</th>
<th>Dimensions With Sound Cover H x W x D (IN.)</th>
<th>Product Weight (LBS.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P21</td>
<td>1 - 3</td>
<td>5.2</td>
<td>1.5</td>
<td>10</td>
<td>115</td>
<td>16.0</td>
<td>20</td>
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<td>60</td>
<td>27 x 26 x 24</td>
<td>32 x 26 x 25</td>
<td>225</td>
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<tr>
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<td>5.2</td>
<td>1.5</td>
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<td>65</td>
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<td>27 x 26 x 24</td>
<td>32 x 26 x 25</td>
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<td>3 - 5</td>
<td>7.8</td>
<td>2.25</td>
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<td>208-230</td>
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<td>29.0</td>
<td>40</td>
<td>73</td>
<td>68</td>
<td>33 x 40 x 27</td>
<td>39 x 40 x 30</td>
<td>425</td>
</tr>
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</table>