THE TRANSFORMER® 2000psi and THE BAMBINO®
2000psi Botanical Oil Extraction System
Installation Manual
Scan this QR code to get the most recent version of the installation instructions:
# Table of Contents

1. Critical Safety Overview .......................................................................................................................... 4

2. Facility Requirements .............................................................................................................................. 6
   Temperature ............................................................................................................................................... 6
   Ventilation and Dust Control .................................................................................................................... 6
   Foundation .................................................................................................................................................. 6
   Custom Layout .......................................................................................................................................... 6

3. When the System Arrives .......................................................................................................................... 7
   Verifying Apeks System Contents List ...................................................................................................... 7
   Receiving the Crates .................................................................................................................................. 8
     Apeks Labeling ........................................................................................................................................ 8
     TiltWatch and ShockWatch ....................................................................................................................... 9
     Inspecting Crates for Damage .................................................................................................................. 9
   System Layouts ......................................................................................................................................... 10
   Unpacking Instructions ............................................................................................................................. 18
     Uncrating Extractor/Separator Stand .................................................................................................... 18
     Uncrating Diaphragm Compressor ......................................................................................................... 20
     Uncrating Chiller .................................................................................................................................... 21
   Setup and Assembly ............................................................................................................................... 21
     Coolant Line and Chiller Setup .............................................................................................................. 21
     CO₂ Connections .................................................................................................................................. 25
     CO₂ Vent Connections ............................................................................................................................ 26
     Air Connections ...................................................................................................................................... 27
     Electrical Requirements .......................................................................................................................... 28
     Electrical Connections ............................................................................................................................ 30
     E-mail Alerts and Software Updates ...................................................................................................... 31

4. General Overview and Nomenclature ........................................................................................................ 32
   System Overview ....................................................................................................................................... 32
   General System Specifications .................................................................................................................... 38

5. References .................................................................................................................................................. 38

6. Appendices ................................................................................................................................................ 39
   Appendix A: Torque Requirements ........................................................................................................... 39
1. Critical Safety Overview

Please read these IMPORTANT SAFEGUARDS carefully before installing, operating or performing any user-maintenance activities on the system, and SAVE THESE INSTRUCTIONS to refer to them as needed to ensure continued safe operation. These instructions are critically important to your safety and proper operation of the system. Failure to follow these instructions may result in damage to equipment and/or bodily injury.

- Ensure that a qualified safety officer oversees all installation, operation and user-maintenance activities in accordance with this instruction manual.

- Ensure that only qualified personnel perform all installation, operation and user-maintenance activities in accordance with this instruction manual.

**Note:** Qualified personnel are given documented training and should be qualified by the extractor manufacturer or its designee, or as otherwise required by the Authority Having Jurisdiction (AHJ), prior to performing any installation, operation or user-maintenance activities. Qualified personnel are to be experienced in such work and must be aware of and take all safety precautions.

- Our subcritical and supercritical CO₂ extraction systems operate under high pressure. Operators must be fully trained and familiar with the systems. Failure to operate these systems correctly can result in a rapid release of high-pressure CO₂ and may cause equipment damage and/or bodily injury.

- Our subcritical and supercritical CO₂ extraction systems use large amounts of CO₂ during operation. These systems should be installed in a well-ventilated area to prevent buildup of CO₂, which can cause asphyxiation. Always use a CO₂ monitor to ensure safe operations.

- **WARNING – RISK OF INJURY:** Opening a vessel under pressure can result in a rapid release of pressure and ejection of material from inside the vessel. **DO NOT ATTEMPT TO OPEN A VESSEL UNDER PRESSURE!** Always make sure a vent path for the vessel is opened and the corresponding pressure gauge reads zero prior to loosening the vessel closure. If the handles are difficult to open, this may indicate that the pressure vessel is still pressurized. Do not force it open. Any pressure in the pressure vessel can be hazardous.

- **WARNING – MAY CAUSE BURNS:** Liquified gases are normally stored under pressure. When these liquids are released to atmospheric pressure, rapid evaporation occurs resulting in reduced temperatures at the point of evaporation. Exposure of tissue to evaporating liquid can result in freezing and tissue damage. Precautions should be taken to avoid contact of liquid with eyes, skin, or respiratory system. Tissue damaged by exposure to evaporating liquid should be treated as frozen tissue (i.e., frostbite). Reference the Safety Data Sheet (SDS) for more detailed information.

- **WARNING – RISK OF INJURY:** Check that all components are secured before operating the extraction system.

- Our subcritical and supercritical CO₂ extraction systems are designed to operate indoors in a temperature-controlled environment. Extreme temperatures (below 60°F and above 80°F) will negatively impact the functionality of the system, chiller, pump and CO₂ bottles.

- For indoor chiller and cooling system applications, only use propylene glycol and distilled water. **Never use deionized water in the chiller or cooling system for indoor applications.** For outdoor chiller and cooling system applications, use propylene glycol and clean tap water.
• Extraction system components can weigh in excess of 2,000 lb. and must be moved carefully. **Do not attempt to move system pieces without the proper equipment, as this could result in serious injury or death.**

• Personal Protective Equipment (PPE) is recommended for persons during setup, operation, disassembly, and clean-up of the equipment. It is recommended that operators wear the following PPE:
  o Chemical-resistant safety goggles;
  o Gloves;
  o Ear protection devices;
  o Flame-resistant clothing (when working with flammable solvents or in an otherwise hazardous location);
  o Close-toed foot protection; and
  o Respirator mask.

• For CE Code-based installations and NEC-based installations, please refer to the following instructions, as applicable:
  o For CE Code-based installations: “Installations shall be in accordance with the manufacturer’s installation instructions and CSA C22.1, Canadian Electrical Code, Part 1 (CE Code), National Fire Code of Canada (NFC), and CSA B149.1, Natural Gas and Propane Installation Code.”
  o For NEC-based installations: “Installation shall be in accordance with the manufacturer’s installation instructions and NFPA 70, National Electrical Code (NEC), International Fire Code (IFC), NFPA 1, Fire Code, and NFPA 58, Liquified Petroleum Gas Code.”

• It is the responsibility of the AHJ to verify the suitability of the extractors in the end installation in accordance with all applicable codes, together with these installation instructions.

**FAILURE TO FOLLOW THE INSTALLATION AND OPERATION PROCEDURES PROVIDED IN THIS MANUAL MAY VOID THE EXTRACTION SYSTEM’S WARRANTY.**
2. Facility Requirements

Temperature

The Transformer® and The Bambino® systems are designed to run in a climate-controlled facility where the temperature is maintained between 60°F and 80°F. System performance will decrease outside this temperature range, getting progressively worse as temperatures deviate farther from the recommended range.

Ventilation and Dust Control

The Transformer® and The Bambino® systems should be placed in a well-ventilated environment that is free from excess dust from other manufacturing operations.

Foundation

The Transformer® and The Bambino® systems are designed to be installed on a concrete (or similarly stable) flat floor.

Custom Layout

The Transformer® and The Bambino® systems are designed to be able to be located in different rooms or areas to isolate different portions of the process. This modulation should be stated during the purchase process, otherwise additional costs and delays may occur.
3. When the System Arrives

Verifying Apeks System Contents List

Every Apeks machine is sent with a system contents list that contains a quality control checklist and a packing slip, such as the one shown in Figure 3-1.

VERIFY THAT ALL ITEMS ON THE PACKING SLIP HAVE BEEN RECEIVED BEFORE CONTINUING WITH UNPACKING AND INSTALLATION. CONTACT US IF ANY ITEMS ARE MISSING.

![Figure 3-1: Packing Slip](image-url)
Receiving the Crates

Apeks Labeling

An Apeks sticker (such as the one shown in Figure 3-2) should be displayed on the outside of each crate. If the crate delivered to you does not have an Apeks sticker, please contact us to ensure the crate came directly from Apeks.

<table>
<thead>
<tr>
<th>THE TRANSFORMER®</th>
<th>MODEL</th>
<th>SERIAL #</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chiller</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Box ___________ of ___________

*Figure 3-2: Shipping Label (The Transformer® label shown)*
TiltWatch and ShockWatch

Each crate should have TiltWatch Plus sensors and ShockWatch stickers (such as those shown in Figure 3-3) affixed on the outside. The TiltWatch Plus Sensors indicate the degree to which the crate may have tilted to the right or left or if the crate overturned completely during shipping. If the sensors show the crate tilted beyond 30° to the right or left or overturned completely, please contact us. The ShockWatch sticker is an additional sticker that indicates if the crate has been mishandled. If the indicator on the ShockWatch sticker is red, please contact us.

![TiltWatch Label and ShockWatch Sticker](image)

Figure 3-3: TiltWatch Label and ShockWatch Sticker

Inspecting Crates for Damage

Prior to opening any crate, you should verify that there is no visible external damage. If you notice your crate has been damaged, be sure to note the damage on the applicable Proof of Delivery, and please contact us to report the damage.
System Layouts

The Bambino® 2000psi Standard Layout
The Transformer® 2000psi Standard Layout
Applicable to 5L and 20L Systems
The Transformer® 2000psi Floor Layout
Applicable to 5L and 20L Systems
The Transformer® 2000psi Standard Layout
Applicable to 5Lx20L and 20Lx20L Systems
The Transformer® 2000psi Floor Layout
Applicable to 5Lx20L and 20Lx20L Systems
The Transformer® 2000psi Standard Layout
Applicable to 5Lx5L System
The Transformer® 2000psi Floor Layout
Applicable to 5Lx5L System
Unpacking Instructions

⚠️ **WARNING**: Each crate contains heavy components. Do not attempt to lift without the proper equipment.

Uncrating Extractor/Separator Stand

To uncrate the extractor/separater stand, first, remove the sides and top of the shipping crate. Then, remove the wooden tie downs that keep the system attached to the skid. See Figure 3-4.

![Wood Tie-Downs](image)

**Figure 3-4**: Wood Tie-Downs
Carefully use a forklift to remove the system from the skid. The system has features designed specifically to be used with a forklift to properly remove the system from the skid. See Figure 3-5. **WARNING:** Lifting the system from anywhere but the labeled pickup locations can lead to equipment damage and/or serious injury or death.

Attach the four leveling feet to each stand before lowering the stand. Once the system is on the ground, use the leveling feet to level the system and then snug the jam nut against the stand to secure the feet. See Figure 3-6.
Uncrating Diaphragm Compressor

To uncrate the diaphragm compressor, first, remove the sides and top of the shipping crate. Then, remove the lag screw/bolts that keep the diaphragm pump attached to the skid. See Figure 3-7.

![Diaphragm pump on skid](image1)

**Figure 3-7: Diaphragm pump on skid**

Carefully use a forklift to remove the diaphragm compressor from the shipping crate. The diaphragm compressor stand is labeled with proper forklift pickup locations. **WARNING:** Lifting the diaphragm compressor from anywhere but the labeled pickup locations can lead to equipment damage and/or serious injury or death.

Once the diaphragm compressor is off the shipping crate, attach the four rubber vibration dampening feet to the four corners of the pump. See Figure 3-8. Anchor the diaphragm compressor to the floor with concrete lags or other suitable hardware.

![Vibration Dampening Feet](image2)

**Figure 3-8: Vibration Dampening Feet**
Uncrating Chiller

To uncrate the chiller, first, remove the sides and top of the chiller shipping crate. Then, remove the wooden blocks holding the chiller to the base. Using a forklift or the provided ramp, remove the chiller from the base. When the chiller is in its final location, lock the wheels.

Setup and Assembly

Coolant Line and Chiller Setup

The hose on the chiller delivery will connect to the temperature control heat exchanger on the extractor/separator stand. See Figure 3-9.

![Figure 3-9: Chiller Delivery to Temperature Control Heat Exchanger](image-url)
The hose from the flow switch will connect to the regenerative oil heat exchanger on the diaphragm head for The Transformer® system. The hose from the flow switch will connect directly to the diaphragm compressor head on The Bambino® system. See Figure 3-10.
The hose from the regenerative heat exchanger on the diaphragm compressor will connect to the bottom of the collection cup on the separator. The Transformer® and The Bambino® models have different regenerative heat exchanger outlets. See Figure 3-11.

Figure 3-11: Regenerative Heat Exchanger Outlet to Collection Cup Inlet
The hose from the top of the separator will connect to the process return line on the chiller. See Figure 3-12.

Figure 3-12: Separator Outlet to Chiller Return
**CO₂ Connections**

Use supplied CO₂ bottle valve gaskets when connecting bottles to the system. There are two CO₂ lines to be connected on the system. Avoid kinks and abrasion when routing the CO₂ hoses.

Both CO₂ lines are 60" long black nylon flexible lines with ½" compression fittings and a minimum bend radius of 4". Installing the hose with a bend radius less than the required minimum can result in a kink or blockage. Connect the CO₂ outlet on the diaphragm compressor to the CO₂ inlet on the extractor/separator stand. Connect the CO₂ inlet on the diaphragm compressor to the CO₂ outlet on the extractor/separator stand. The Transformer® and The Bambino® models have different diaphragm compressor CO₂ inlets/outlets. See Figure 3-13.

![CO₂ Connections Diagram](image)

*Figure 3-13: CO₂ Connections*
CO₂ Vent Connections

There is one $\frac{3}{8}$" compression fitting vent line located on the back of the extractor/separator stand. See Figure 3-14.

The customer is responsible for running the vent line to a safe vent location outside the building. The vent line should be rated to the pressure of the system. We recommend $\frac{3}{8}$" x .049" or $\frac{1}{2}$" x .065" stainless steel tubing. Note that an adapter fitting will be necessary if you are not using $\frac{3}{8}$" tubing.

Figure 3-14: Vent line connection
Air Connections

There are air operated ball valves that are used to control the CO₂ flow path throughout the system. These valves are controlled by an air manifold on the back of the control panel mount. The air manifold receives electrical signals from the controller and uses compressed air to open valves. The air outputs for the air manifold can be seen in Figure 3-15.

![Figure 3-15: Air Manifold Outputs](image1)

An air compressor is provided to supply the system with the necessary air pressure to actuate the air operated ball valves. The air tube connection to supply the system with air can be seen in Figure 3-16.

![Figure 3-16: Air Compressor Connection to System](image2)
### Electrical Requirements

**WARNING**: Do not modify power connections.

#### ELECTRICAL SPECIFICATIONS

**The Bambino®**

Unless otherwise noted, all voltage for all components of all systems 60Hz

<table>
<thead>
<tr>
<th>Compressor Motor HP*</th>
<th>Phase</th>
<th>Voltage</th>
<th>Motor FLA</th>
<th>Recommended Fuses where field wired</th>
<th>Compressor mfg and model</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.5</td>
<td>1</td>
<td>230V</td>
<td>40A</td>
<td>AJT70</td>
<td>PDC3</td>
</tr>
<tr>
<td>7.5</td>
<td>3</td>
<td>208V</td>
<td>24A</td>
<td>AJT50</td>
<td>PDC3</td>
</tr>
<tr>
<td>7.5</td>
<td>3</td>
<td>230V</td>
<td>22A</td>
<td>AJT40</td>
<td>PDC3</td>
</tr>
<tr>
<td>7.5</td>
<td>3</td>
<td>460V</td>
<td>11A</td>
<td>AJT20</td>
<td>PDC3</td>
</tr>
<tr>
<td>7.5</td>
<td>3</td>
<td>575V</td>
<td>9A</td>
<td>AJT15</td>
<td>PDC3</td>
</tr>
</tbody>
</table>

*Motor overload will be set @Apeks to nameplate FLA. Recommended motor branch circuit fuse protection is 175% of NEC FLA from Table 430.250 per 430.52. Explanation here: http://www.cooperindustries.com/content/dam/public/bussmann/Electrical/Resources/solution-center/technical_library/BUS_Ele_Tech_Lib_Motor_Circuit_Notes.pdf*

<table>
<thead>
<tr>
<th>Chiller size</th>
<th>Goes with</th>
<th>Voltage</th>
<th>Phase</th>
<th>Full Load Amps from Polyscience manual</th>
<th>Polyscience recommended connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4HP</td>
<td>5000PSI Gas booster systems, diaphragm systems with small (7.5-10HP) compressor</td>
<td>230VAC</td>
<td>1</td>
<td>12.2</td>
<td>NEMA 6-15R receptacle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Panel</th>
<th>Goes with</th>
<th>Voltage</th>
<th>Phase</th>
<th>Main Fuse or breaker size</th>
<th>Recommended connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All diaphragm systems</td>
<td>115VAC</td>
<td>1</td>
<td>10A</td>
<td>NEMA 5-15R wall receptacle with surge protector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Compressor</th>
<th>Goes with</th>
<th>Voltage</th>
<th>Phase</th>
<th>FLA</th>
<th>Recommended connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All diaphragm systems</td>
<td>115VAC</td>
<td>1</td>
<td>10</td>
<td>NEMA 5-15R wall receptacle NO GFI</td>
</tr>
</tbody>
</table>

Made in USA at: 31 Greenscape Court, Johnstown, OH 43031 | 740 891-1160 | ApeksSupercritical.com
### ELECTRICAL SPECIFICATIONS

**The Transformer®**

Unless otherwise noted, all voltage for all components of all systems 60Hz

<table>
<thead>
<tr>
<th>Compressor Motor HP*</th>
<th>Phase</th>
<th>Voltage</th>
<th>Motor FLA</th>
<th>Recommended Fuses where field wired</th>
<th>Compressor mfg and model</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>3</td>
<td>208V</td>
<td>46A</td>
<td>AJT80</td>
<td>PPI4100/PDC4</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>230V</td>
<td>42A</td>
<td>AJT70</td>
<td>PPI4100/PDC4</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>460V</td>
<td>21A</td>
<td>AJT40</td>
<td>PPI4100/PDC4</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>575V</td>
<td>17A</td>
<td>AJT30</td>
<td>PDC4</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>380V (50Hz)</td>
<td>27A</td>
<td>AJT50</td>
<td>PDC4</td>
</tr>
<tr>
<td>12.5</td>
<td>1</td>
<td>208V</td>
<td>52A</td>
<td>AJT90</td>
<td>PDC4</td>
</tr>
<tr>
<td>12.5</td>
<td>1</td>
<td>230V</td>
<td>48A</td>
<td>AJT90</td>
<td>PDC4</td>
</tr>
</tbody>
</table>

*Motor overload will be set @Apeks to nameplate FLA. Recommended motor branch circuit fuse protection is 175% of NEC FLA from Table 430-250 per 430.52. Explanation here: http://www.cooperindustries.com/content/dam/public/bussmann/Electrical/Resources/solution-center/technical_library/BUS_Ele_Tech_Lib_Motor_Circuit_Notes.pdf*

<table>
<thead>
<tr>
<th>Chiller size</th>
<th>Goes with</th>
<th>Voltage</th>
<th>Phase</th>
<th>Full Load Amps from manual</th>
<th>Recommended connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermo Fisher TF5000 with heater</td>
<td>Large (12.5HP) diaphragm compressor systems (eff 10/15/2015)</td>
<td>230VAC</td>
<td>1</td>
<td>25.3</td>
<td>Field wired; Thermo Fisher recommends 40Amp dedicated hard wired circuit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Panel</th>
<th>Goes with</th>
<th>Voltage</th>
<th>Phase</th>
<th>Main Fuse or breaker size</th>
<th>Recommended connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All diaphragm systems</td>
<td>115VAC</td>
<td>1</td>
<td>10A</td>
<td>NEMA 5-15R wall receptacle with surge protector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Compressor</th>
<th>Goes with</th>
<th>Voltage</th>
<th>Phase</th>
<th>FLA</th>
<th>Recommended connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porter Cable 3gal</td>
<td>All diaphragm systems</td>
<td>115VAC</td>
<td>1</td>
<td>10</td>
<td>NEMA 5-15R wall receptacle NO GFI</td>
</tr>
</tbody>
</table>
Electrical Connections

Diaphragm Compressor Motor Wiring

The wiring for the motor on the diaphragm compressor terminates in the overload on the bottom of the motor starter assembly in the Motor Enclosure. See Figure 3-17. These two wires are labeled T1 and T3 and should be terminated in their respective locations on the bottom of the overload portion of the motor starter. Three phase motors require an additional wire labeled T2 that should be connected to its respective location on the bottom of the overload portion of the motor starter. The ground wire will connect to the ground terminal on the din rail immediately to the left of the motor starter. The wiring coming to the top of the motor starter contactor will be terminated to the facility power.

![Diagram of Contact and Overload](image)

Figure 3-17: Motor starter assembly in Motor Enclosure on back of extractor/separator stand

Other Connections

- Plug the extraction system control panel into a 110-V, 15-A, standard outlet. Use a surge protector for the control panel power.
- Have a licensed commercial electrician field wire the diaphragm pump and the chiller to the facility electric.
- Plug the air compressor into a 110-V, 15-A, standard outlet. Do NOT plug the air compressor into a GFI outlet.
Verify diaphragm compressor motor direction after wiring connections are complete. Motor direction is labeled on the diaphragm compressor housing. See Figure 3-18. If the motor is spinning in the wrong direction, a certified electrical professional will be necessary to correct the issue.

E-mail Alerts and Software Updates

To receive software updates and e-mail alerts, connect your system to the Internet by attaching an Ethernet cable to the Ethernet connection located on the side of the electrical control box. After you have connected your system to the Internet, you can sign up for e-mail alerts. To do so, please visit https://www.apekssupercritical.com/service-request/ and submit a ticket with your system’s information. One of our representatives will contact you once e-mail messaging has been set up, and you can then decide which notifications you wish to receive via the “Message Selection” screen. When setting up e-mail messaging, you can also choose to set up daily data logs.

Figure 3-18: Diaphragm compressor motor direction
4. General Overview and Nomenclature

System Overview

This section is intended to provide a general overview of the system and to showcase the various components. Figures 4-1, 4-3, 4-5, 4-7, 4-9, and 4-11 provide an overhead view of the various systems. Figures 4-2, 4-4, 4-6, 4-8, 4-10, and 4-12 provide a front view of the various systems (diaphragm compressor not shown).

Figure 4-1: Overhead view of standard layout (The Bambino® 2000psi)

Figure 4-2: Front view of standard layout (The Bambino® 2000psi)
The Transformer® 2000psi 5L Standard Layout

Figure 4-3: Overhead view of standard layout (The Transformer® 2000psi 5L)

Figure 4-4: Front view of standard layout (The Transformer® 2000psi 5L)
The Transformer® 2000psi 20L Standard Layout

Figure 4-5: Overhead view of standard layout (The Transformer® 2000psi 20L)

Figure 4-6: Front view of standard layout (The Transformer® 2000psi 20L)
Figure 4-7: Overhead view of standard layout (The Transformer® 2000psi 5Lx20L)

Figure 4-8: Front view of standard layout (The Transformer® 2000psi 5Lx20L)
The Transformer® 2000psi 20Lx20L Standard Layout

Figure 4-9: Overhead view of standard layout (The Transformer® 2000psi 20Lx20L)

Figure 4-10: Front view of standard layout (The Transformer® 2000psi 20Lx20L)

Apeks Supercritical: The Transformer® and The Bambino® Installation Manual 36
Figure 4-11: Overhead view of standard layout (The Transformer® 2000psi 5Lx5L)

Figure 4-12: Front view of standard layout (The Transformer® 2000psi 5Lx5L)
### General System Specifications

<table>
<thead>
<tr>
<th></th>
<th>Extraction Stands</th>
<th>Diaphragm Compressor</th>
<th>Chiller</th>
<th>Air Compressor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Pressure (psi)</strong></td>
<td>2000psi</td>
<td>2000psi</td>
<td>100psi</td>
<td>125psi</td>
</tr>
<tr>
<td><strong>Operating Temperature (°F)</strong></td>
<td>40°F - 160°F</td>
<td>75°F - 250°F</td>
<td>20°F - 150°F</td>
<td>60°F - 80°F</td>
</tr>
<tr>
<td><strong>Dimensions (in) WxDxH</strong></td>
<td>68x42x78</td>
<td>50x33x62</td>
<td>19x30x39</td>
<td>14x24x18</td>
</tr>
<tr>
<td><strong>Weight (lb.)</strong></td>
<td>1,250 lb.</td>
<td>2,750 lb.</td>
<td>450 lb.</td>
<td>80 lb.</td>
</tr>
</tbody>
</table>

5. **References**

- Visit and subscribe to our YouTube channel for instructional videos: [https://www.youtube.com/user/ApeksSupercritical](https://www.youtube.com/user/ApeksSupercritical).
- Visit the Apeks online store for parts related to your system: [https://www.apekssupercritical.com/shop/](https://www.apekssupercritical.com/shop/).
- For more information regarding software updates and to sign up for e-mail alerts, visit: [https://www.apekssupercritical.com/service-request/](https://www.apekssupercritical.com/service-request/).
6. Appendices

Appendix A – Torque Requirements

1. Fuse Holders (1492-H6) = 7.1 lb-in
2. Fuse Holders (3046401) = 15.93 lb-in
3. Power Supply (1606-XLE120E) = 7 lb-in
4. Terminal Blocks (1492-J4) = 9 lb-in
5. Terminal Blocks (3044102) = 7.08 lb-in
6. Ground Blocks (1492-JG4) = 9 lb-in
7. Ground Blocks (3044128) = 7.08 lb-in
8. Ground Block Middle Screw (1492-JG4) = 7.1 lb-in
9. JG10 Large Ground Blocks (1492-JG10) = 20.4 lb-in
10. JG10 Large Ground Blocks (3044173) = 15.93 lb-in
11. JG10 Large Ground Block Middle Screw (1492-JG10) = 8.9 lb-in
12. Small Motor Contactor Phillip Screws (100-CS5D10) = 31 lb-in
13. Small Motor Contactor (43-44) Phillip Screws = 13 lb-in
14. Overload Relay (T1/T2/T3) Phillip Screws = 22 lb-in
15. Overload Relay (95-98) Phillip Screws = 5 lb-in
16. Large Motor Contactor Allen Screws (100-C72D10) = 53 lb-in
17. Large Motor Contactor Phillips Screws (100-C72D10) = 13 lb-in
18. Overload Relay Allen Screws (193-EEGE) = 35 lb-in
19. Overload Relay Phillips Screws (193-EEGE) = 5 lb-in
20. Micro 850 Power Supply = 4.4 lb-in
21. Micro 850 Terminal Strip = 4.4 lb-in
22. 2080 TC2 = 2.21 lb-in
23. 2080 IF4 = 2.21 lb-in
24. 2080 IF2 = 2.21 lb-in
25. HMI (2711R-T10T) = 5 lb-in
26. Yellow Terminal Jumpers = 7.1 lb-in
27. Estop Contact (800F-X01) = 8 lb-in
28. Relay Base Screws (700-HN123) = 7 lb-in
29. 2080 IF8 = 5.3 lb-in
30. Relay Output Module (2085-OW8) = 5.3 lb-in
31. 7A Circuit Breaker (18 AWG) = 13.3 lb-in
32. 7A Circuit Breaker (14 AWG) = 17.7 lb-in
33. 7A Circuit Breaker (8 AWG) = 39.9 lb-in
34. Ewon Flexy Power Connector = 7 lb-in
35. Ewon Cosy Power Connector = 7 lb-in
36. 125V Plug = 12 lb-in
37. Lightly Managed Ethernet Switch (Stratix 1783-LM58) GND + Ring Terminal Lugs = 4.5 lb-in
38. Lightly Managed Ethernet Switch (Stratix 1783-LM58) Power Connector = 1.7 lb-in
39. Power Supply (1606-XLE240E) = 7 lb-in
40. Compact Logix I/O Module Terminal Block (5069-RTB18) Screw = 3.5 lb-in
41. Panelview HMI (2715-T12WD) = 4.4 lb-in
42. Small Motor Contactor = 31 lb-in
43. Small Motor Contactor Phillips Screw = 13 lb-in