Open Frame Electric Rotary Screw Compressor

Installation Guide

Notice: Air compressors should only be installed trained installation personnel call 800-531-9656 to find a local trained air compressor service technician

Warning: Read all installation steps, compressor package operation manual, notices and warnings prior to beginning compressor package installation. Failure to do so can result in personal injury or damage to compressor package.

Warning: Always wear proper protective eye wear, hearing protection, and other mandated safety clothing and devices when installing compressor packages

ATTENTION: All incoming electrical power connections are to be made on the main motor contactor(s) DO NOT attach incoming power wires to package pressure switch. This will result in electrical component damage not covered under warranty.

Notice: Compressor package should not be mounted to a moving piece of equipment that will be moving while the compressor package is in operation. The compressor package should not be mounted to a piece of equipment that adds additional vibration to the compressor package. The compressor package is only designed to handle its own organic vibration during operation. Failure to follow either one of these guidelines may result in pre-mature failure of compressor package, components and/or personal injury.

NOTICE: To ensure full compressor tank warranty all tank mounted compressor packages must be mounted on factory supplied vibration isolation pads.

Warning: Before beginning steps 6-17 verify power supply is off to compressor disconnect, and compressor package

Notice: All compressor air receivers should be inspected by a certified pressure vessel technician at least once per year, to check for leaks, weak points in the metal or any other deformity of the air receiver. If at any time a receiver appears out of conformance with ASME/CRN certification or a deformity is believed to have developed no matter how minor it may appear the tank should be locked out of service immediately

Quality Air Compressor at a Great Price.
2626 Skyway Drive
Grand Prairie, TX, 75052
417-206-6353
800-531-9656
### NEC (National Electric Code) Guide Lines

1 Phase Motor Requirements (Copper wire must be THW, THHN-THWN, XHHW) No solid core wire

**NOTE:** Wire size is based on being within 30ft of main electrical panel installation further would need a qualified electrician to properly size the wire to account for voltage drop

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<tr>
<th>Horse Power</th>
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**NOTE:** Some rotary screw compressors have additional drive motors for the coolings fans these need to be taken into account when sizing the electrical system

### 3 Phase Motor Requirements (Copper wire must be THW, THHN-THWN, XHHW) No solid core wire

**NOTE:** Wire size is based on being within 30ft of main electrical panel installation further would need a qualified electrician to properly size the wire to account for voltage drop

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**NOTE:** Some rotary screw compressors have additional drive motors for the coolings fans these need to be taken into account when sizing the electrical system
Step 1
Verify compressor package install site can handle weight load of compressor package.
(Note: this should have been done prior to the sale of the compressor package)
Notice: Installing compressors on the roof, mezzanine, 2nd story or higher of a building can result in higher DBA readings for the compressor package as well as additional vibration

Step 2
Make sure compressor installation site is clear of debris and has adequate space around where the compressor will sit for service (minimum of 24in.) and ventilation (must be able to get clean fresh air through oil/air cooler during operation, without recirculating cooler hot air discharge) If site is excessively dusty or dirty due to grinding, sanding, or due to the nature of the selected application site a new site should be sought out.

Step 3
Make sure site voltage for compressor installation is correct
(When reading voltage read across the lines to get and exact voltage. On single phase units read across L1 (Line 1) and L2 (Line 2) to get the operational voltage. On 3 phase units read across L1 to L2, then L2 to L3 (Line 3), then from L1 to L3 this gives the most accurate reading of the voltage. It is also recommended to read the voltage at both the main electrical panel and at the compressor disconnect to check for voltage drops prior to installation)

A. 208-230 volt compressors can operate on voltages from 207-253 volts
B. 460-480 volt compressor can operate on voltage from 420-505 volts
C. On either 208-230 or 460-480 volt compressor packages; the lower the site voltage, the more amps the compressor motor will draw. (See electric motor MFG. website for amp draw at 208 volt if applicable)
D. If voltage is lower than 207 on 208-230 or higher than 505 on 460-480 volt package then, a special low or high voltage motor is required as well as a different motor contactor and controls (this should be confirmed prior to compressor sale)
E. If compressor package is being powered by a generator verify generator has enough power to start the compressor package. An easy calculation for the amount of power required to start a compressor is below.
Max running amps X operating voltage = running kilowatts (then) Running Kilowatts x 4= Starting Kilowatts required to start the compressors drive motor.

Notice: Air compressors should only be installed trained installation personnel call 800-531-9656 to find a local trained air compressor service technician
Step 4
Verify that main power wires leading to compressor disconnect are proper size per National Electric Code (NEC) and local applicable standards. Failure to have properly sized wire can cause damage to the electrical components of the compressor package. Incorrect wire size for the compressor package may also result in the loss of electric component warranty.

Step 5
Verify that the breaker for the compressor is properly sized for the compressor total full load amps. NEC and local applicable standards should be followed. Failure to do so will result in damage to electrical components. Incorrect breaker size for the compressor package may also result in the loss of electric component warranty.

STOP
Warning: Before beginning steps 6-17 verify power supply is off to compressor disconnect, and compressor package

Step 6
Uncrate compressor package (verify package is intact and not missing parts).

Step 7
Remove compressor shipping pallet.  
(Warning: Only use forklift or approved lifting device to remove compressor from shipping pallet)

Step 8
Set compressor into place on vibration isolation pads.

Step 9
Drill holes in floor through vibration pads and mounting location on compressor package to set compressor package anchors in place.

Notice: Air compressors should only be installed trained installation personnel call 800-531-9656 to find a local trained air compressor service technician
**Warning:** Always wear proper protective eye ware, hearing protection and safety clothing when working around the compressor package. No loose or baggy clothing should be worn around compressor package at any time.

**Warning:** On Electric motor powered air compressors make sure electrical system is up to National Electric Code (NEC) prior to installing compressor system. Failure to install a compressor with a proper NEC electrical system can cause personal injury, compressor package damage and void compressor package warranty.

**Notice:** To ensure full compressor tank warranty all tank mounted compressor packages must be mounted on factory approved vibration isolation pads. A compressor should NEVER be installed while still on or in its original packaging. Failure to properly install the compressor system with approved vibration isolation pads will result in the compressor tank warranty being void.

**Notice:** Compressed Air Systems compressors can operate at pressures from 0-250psi depending on the compressor package design and build specifications. Always verify that the system the compressor is installed into can handle the maximum operational pressure the compressor. NEVER install a compressor in a system that can not handle the compressors maximum operating pressure.

**Notice:** Compressed air is extremely dangerous when not properly used or installed. Always make sure a trained compressed air professional has looked over the air system prior to use. Improper installation or use of compressed air can cause bodily injury or death. NEVER pressurize an object that was not designed to be pressurized. Pressurizing objects not properly engineered for the maximum operating pressure of the compressor system can cause bodily injury or death.

**Warning:** Before beginning steps 6-17 verify power supply is off to compressor disconnect, and compressor package

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**Step 10**

Tighten compressor package anchor nuts to set anchors in floor.

**Step 11**

Back anchor nuts off to ½ to ¾ turn past hand tight.

**Step 12**

Connect airline to compressor package air discharge. (Note: It is recommended to use a flexible line between the compressor package and the system piping to avoid damage due to compressor vibration)

**Step 13**

Remove knock out on compressor operation panel or drill/cut hole for main electrical power wires for compressor. (No connections are to be made on the pressure switch during standard installation. Pressure switch's are pre-set from the factory)

**Step 14**

Attach incoming compressor package wire conduit to compressor operation panel.

**Step 15**

Install compressor package incoming power wires to proper terminal on main motor contactor.

A. On single phase compressor packages ports L1(line 1) and L2 (line 2)

B. On 3 phase compressor packages ports L1 L2 L3 (line 3)

**Note:** Make sure incoming power wires are properly torqued into place. This is also a good time to verify all electrical power wires are torqued properly.

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**Notice:** Air compressors should only be installed trained installation personnel call 800-531-9656 to find a local trained air compressor service technician
Step 16
Install ground wire in compressor panel.

Step 17
Verify all wire terminal connections in compressor package are torqued to proper specs,

Step 18
Turn power on to the compressor package

Step 19
Verify voltage of incoming power on the main drive motor starter

Step 20
Wait for green light on compressor smart contactor to come on.

Step 21
With green light on smart contactor on, turn compressor package on for 1-3 seconds to verify for proper compressor rotation and cooling fan rotation (When facing the front of the compressor air end opposite the motor shaft, the compressor should turn clockwise on standard belt drive compressors, verify direction on direct drive units with directional arrows)

Notice: Do not allow compressor to run for more than 3 seconds on this step, doing so may cause damage to compressor air end

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Step 22
If rotation is incorrect, turn power off to compressor package.
   A. On 3 phase compressors; once power is confirmed to be off, switch incoming power wire from L1 to L3 position and place L3 incoming power wire in L1 position.
   B. On single phase compressor packages; if rotation is incorrect, check motor wiring diagram for proper rotation wiring diagram.

Step 23
Close ball valve on compressor storage tank discharge.

Step 24
Turn power back on to compressor package.

Step 25
(If rotation was incorrect) Turn compressor back on for 1-3 seconds to verify that rotation is now correct if needed.

Step 26
(Read 26A, 26B, 26C prior to starting Step 26)
Turn compressor package on with correct rotation and allow package to build to maximum operating pressure, and unload.
   A. Check voltage on main motor contactor prior to starting.
   B. Continue to check voltage on motor contactor as compressor package starts.
   C. If voltage drops more than 5% or below 207 on 208-230 volt packages or below 420 on 460-480 volt packages; and does not immediately return to original voltage, then check power supply.
(A drop of 5% or more; or below the minimum operating voltage of the electric motor can cause damage to the electrical components of the compressor package resulting in loss of electrical component warranty. If drop occurs, contact electrician and compressor package owner to notify them of power issues that need to be corrected for proper operation.)

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Step 27
Once compressor is running unloaded, wait 10 minutes to verify that compressor package unloaded power save feature is properly functioning. Compressor package should turn off after 10 minute of running unloaded. (Compressor package will unload automatically at maximum operating pressure. Compressor package pressure switch has been pre-set at factory during testing. Do not adjust compressor package pressure switch without consulting factory.)

Step 28
Once compressor has shut down after running unloaded for 10 minutes, open compressor storage tank ball valve to pressurize piping system.

Step 29
Using either the compressor tank safety relief valve or tank discharge drain, release air pressure until compressor package re-starts from unloaded timer stopping package. (Note: In most cases pressurizing the air piping system releases enough air from the system to re-start the compressor) (Warning: When releasing air from compressor safety relief valve or tank drain DO NOT look at valve or drain.)

Step 30
Perform function test on compressor package operating system. Using STEP 29, allow the compressor package to build up to maximum operating pressure and unload. Once unloaded release air from the system to cause the compressor package to re-load and compress air. Repeat this process a minimum of 6 times.

Step 31
Check compressor temperature gauge for current operating temperature. (Note on installation sheet)

Step 32
Check all compressor air and oil lines for leaks, tighten fittings as needed.

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**Step 33**

Check compressor tank drain for proper function. If drain has a timer feature, set timer to appropriate setting. Timer operated drains have a test button, use this to test for proper function. (Warning: Never look directly at compressor drain when testing or during drain operation)

**Step 34**

Make sure compressor installation sheet is properly & completely filled out to be sent in for warranty registration.

**Step 35**

Go over general operation and maintenance instructions of compressor package with owner and other personal that work around the compressor package. Verify if a maintenance agreement has already been set up or if one needs to be established.

**Step 36**

Once steps 1-35 have been completed, turn compressor package off. Allow air end sump pressure to bleed off. (Complete sump depressurization takes approximately 5-10 minutes)

**Step 37**

Once sump pressure has bled off, pull sump safety relief valve to verify sump pressure is gone.

**Step 38**

Remove air end oil fill cap slowly (If hissing or air is coming out around oil cap, tighten back down and verify sump pressure has been relived). Verify proper oil level in compressor package, add oil as needed.

**Step 39**

Turn compressor back on, wipe down surfaces and make sure installation sheet is complete. Compressor is now ready for full operation.

**Notice:**

Air compressors should only be installed trained installation personnel call 800-531-9656 to find a local trained air compressor service technician.
Certificate of Limited Warranty

Rotary Screw Compressors

All component parts on this compressor installed by the manufacturer are warranted to be free of defects, workmanship and material for a period of one year. Transportation charges are the responsibility of the purchaser. This warranty extends to the original purchaser of the compressor only.

There are NO express warranties except other than those contained in this limited warranty statement.

Covered in the one year period of the warranty are defective parts due to defects in the original part only.

The compressor warranty is void in the cases of abuse, lack of proper service, in correct application, in correct installation, and neglect.

Standard compressor warranty covers defective parts and labor for the one year period.

Industrial electric stationary compressors may be repaired on site as long as the compressor is not located further than 50 miles from the service center. The purchaser is responsible for any additional travel expense past 50 miles from the service center.

Gas/Diesel engine driven compressors must be repaired at the closest service center to the compressor. The purchaser is responsible for any travel expense if they do not wish to bring the compressor to the service center.

ALL “SPECIALTY COMPRESSOR” WARRANTY SERVICE MUST BE PERFORMED AT THE CLOSEST SERVICE CENTER TO THE COMPRESSOR

Specialty compressor- any compressor package with options other than those that apply to the standard model number in the catalog.

Airend - the rotors and bearings of the compressor.

The compressor “airend” is covered by a 2 year warranty to be free from defects from manufacturing. This does not cover abuse, neglect, improper service, misapplication, or improper installation. An oil sample must be submitted with any airend warranty claim for verification. The purchaser must use only Compressed Air Systems synthetic rotary screw oil in the compressor for the duration of the warranty.

ALWAYS CONTACT MANUFACTURER TECH SUPPORT FOR FASTEST SOLUTION BEFORE WARRANTY SERVICE IS PERFORMED.

WARRANTY LABOR FOR THE FIRST YEAR IS ONLY COVERED FOR WORK PERFORMED MONDAY-FRIDAY 8AM-5PM EXCLUDING ALL MAJOR US HOLIDAYS.

Optional 5 year “airend” warranty

To be applicable for this option the purchaser must purchase a Full year Rotary Screw compressor service kit at the same time as the compressor and a subsequent kit every year afterwards for a total of 5 kits during the compressor warranty period. The purchaser must use only Compressed Air Systems synthetic rotary screw oil in the compressor for the duration of the warranty.

The warranty covers the “airend” of the compressor for a period of 5 years parts replacement only, from any defect due to manufacturing. The warranty does not cover wear and tear, abuse, neglect, improper service, misapplication, or improper application.

Important

Always contact manufacturer tech support for fastest solution before warranty service is performed.

Before warranty service can be performed on a unit the servicing company must contact the manufacture to get a warranty procedure verification number. Without a warranty verification number work may not be covered by the manufacturer under warranty. A warranty verification number does not guarantee a part or piece of the product is warrantable but guarantees it will be reviewed for warranty credit.

All warranty replacement parts must be Industrial Gold OEM part unless authorization is given from Industrial Gold factory representative.
Rotary Screw Compressor Installation Sheet

Date of Installation __________________________ Compressor Model# __________________________

Installation Company __________________________ Compressor Serial # __________________________

Installation Technician __________________________ Compressor Voltage __________________________

Site Electrical Phase __________________________ Site Voltage L1 _______ L2 _______ L3 _______

Compressor Electrical breaker size __________________________

Incoming Voltage at motor start up L1 _______ L2 _______ L3 _______

Incoming Voltage at max operating pressure L1 _______ L2 _______ L3 _______

Incoming power connected to Magnetic Starter ________

Breaker size for the compressor ______________ AMPS Wire size for the compressor ______________________

Distance from main electric panel __________________ Disconnect installed at the compressors site _______

If Duplex compressor separate disconnects for each drive motor: ☐ Yes ☐ No

Compressor Rotation Correct ☐ Yes ☐ No

Motor amps at Max operating Pressure L1 _______ L2 _______ L3 _______

Compressor Max Operating Pressure __________________________ Compressor tank drain functional __________

Unit inspected for Air leaks __________________________ Unit inspected for oil leaks __________________________

Unit location: ☐ Indoors ☐ Outdoors

Unit tank fill time 0-125psi __________________________ (Put N/A if pressure not applicable to installed unit)

Unit tank fill time 0-150psi __________________________ (Put N/A if pressure not applicable to installed unit)

Unit tank fill time 0-175psi __________________________ (Put N/A if pressure not applicable to installed unit)

Unit Cooling Fan ☐ Pulls air through cooler ☐ Push's air through cooler

Compressor Temperature switch reading (Before install) ________ (After install) ________

Unit unloads at max operating pressure and begins to release sump pressure ________

Belt tension checked: ☐ Yes ☐ No Vibration Pads properly installed: ☐ Yes ☐ No

All installation steps completed: ☐ Yes ☐ No If no, reason: _______________________________________________________________________________________________________

Send copy of completed installation sheet to manufacture to begin warranty

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