



Vertical Scroll Tankmount Compressors

Operating & Maintenance Manual

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.



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Performance

Model	HP	Tank Size	SCFM @ 100 PSIG	Starter Voltage	Phase	Electric Drain	Ref. Dryer w/ E-Drain (Ship Loose)	Desiccant Dryer w/ E-Drain	High Pressure 145 PSIG
STSV0302	3	60	8.8	208/230/460	3	*	*	*	*
STSV1302	3	60	8.8	208/230	1	*	*	*	*
STSV0502	5	60	15.2	208/230/460	3	*	*	*	*
STDV0303	3 (2)	80	17.6	208/230/460	3	*	*	*	*
STDV0503	5 (2)	80	30.4	208/230/460	3	*	*	*	*

*Applicable with the unit

NOTE: For system electrical information (including motor FLA ratings), see the wiring diagram shipped with the unit.

Specification

CA Ordinance 462(L)(2)	Tankmount units meet the requirements of this ordinance
Control Panel	UL508A Listed
Lubrication	Grease filled bearings
Motor Overload Protection	IEC Motor overload relay (optional)
Operating Temperatures	34°F - 104°F (1°C through 40°C at inlet)
Outlet Air Connections	½" FNPT
Overpressure Protection	ASME safety valve factory set and sealed



Description

General

The Powerex Oil-less Rotary Scroll Air Compressor has advanced scroll compressor technology through the development of a completely oil-less unit. The Powerex Scroll Compressor offers a dynamically balanced air end which insures vibration-free operation. The rotary design permits a continuous 100% duty cycle. No oil separation, oil filtration, or inlet valves are required on the Powerex Scroll unit.

Base mount assemblies are intended for use as replacements on original Powerex Scroll systems and are not suitable for use as is to provide compressed air for most applications. In general, an air receiver and appropriate piping and valves, along with electrical controls (base mounts may be provided with controls by Powerex) are needed to provide a functional system. Powerex tank mounted units, simplex or duplex are complete and ready to use.

Compressor Cycle

The Powerex oilless rotary scroll air compressor is based on the theory of scroll compression. A scroll is a free standing, intricate spiral bounded on one side by a solid, flat plane or base. A scroll set, the basic compression element of a scroll compressor, is made up of two identical spirals which form right and left hand parts. One of these scroll components is indexed or phased 180° with respect to the other so the scrolls can mesh. Crescent-shaped gas pockets are formed and bounded by the spirals and the base plate of both scrolls. As the moving scroll is orbited around the fixed scroll, the pockets formed by the meshed scrolls follow the spiral toward the center and diminish in size. The moving scroll is prevented from rotating during this process so the 180° phase relationship of the scrolls is maintained. The compressor's inlet is at the outer boundary of the scrolls. The compressed gas is discharged through the outlet at the center of the fixed scroll so no valves are needed.

Tip Seal

The tip seal on the scroll compressor is self-lubricated and allows the unit to operate efficiently without oil and expensive filtration. On standard pressure units, the tip seal should be replaced every 10,000 hours of operation. On high pressure units, the tip seal should be replaced every 5,000 hours of operation.

Bearings

The bearings on the scroll compressor are regreaseable to allow extended compressor life. For standard pressure units, service should be performed every 10,000 hours of operation. For high pressure units, service should be performed every 5,000 hours of operation.

Hourmeter

The hourmeter on the scroll compressor indicates the actual number of hours the unit has been in operation. The hourmeter is also used to determine maintenance and service timing. An hourmeter must be installed with every Scroll compressor.

Condensate Drain Valve

A condensate drain valve must be installed on every tank to allow removal of the liquid which will collect during compressor operation.

NOTICE

Drain liquid from tank daily.

Safety Guidelines

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS. To help recognize this information, observe the following symbols.

⚠ DANGER

Danger indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

⚠ WARNING

Warning indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

⚠ CAUTION

Caution indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

NOTICE

Notice indicates important information, that if not followed, may cause damage to equipment.

NOTE: Note indicates information that requires special attention.

⚠ DANGER

Breathable Air Warning

This unit is NOT equipped and should NOT be used “as is” to supply breathing quality air. For any application of air for human consumption, you must fit the air compressor/pump with suitable inline safety and alarm equipment. This additional equipment is necessary to properly filter and purify the air to meet minimal specifications for Grade D breathing as described in Compressed Gas Association Commodity Specification for air, OSHA, ANSI and/or Canadian Standards Associations (CSA).

DISCLAIMER OF WARRANTIES

IN THE EVENT THE COMPRESSOR IS USED FOR THE PURPOSE OF BREATHING AIR APPLICATION AND PROPER IN-LINE SAFETY AND ALARM EQUIPMENT IS NOT SIMULTANEOUSLY USED, EXISTING WARRANTIES ARE VOID, AND POWEREX DISCLAIMS ANY LIABILITY WHATSOEVER FOR ANY LOSS, PERSONAL INJURY OR DAMAGE.

Installation

Receiving the Unit

Immediately upon receipt of the Powerex Scroll Compressor, the unit should be inspected for any damage which may have occurred in shipment. Any shipping damage must be immediately filed with the freight carrier.

The compressor nameplate should be checked to see if the unit is the correct model and voltage as ordered.

Application

When the scroll compressor is to be used in applications other than the compressing of atmospheric air, please contact a Powerex representative for engineering and warranty information at 1-888-769-7979.

Installation Site

1. The scroll compressor must be located in a clean, well lit and well ventilated area.
2. The area should be free of excessive dust, toxic or flammable gas, moisture, water, and direct sunlight.
3. Never install the compressor where the ambient temperature is higher than 104°F or where humidity is high.

MINIMUM CLEARANCES

Above	24 in
Drive belt side	24 in
Other sides	24 in

4. Clearance must allow for safe, effective inspection and maintenance.
5. If necessary, use metal shims or leveling pads to level the compressor tank or base mount unit. Never use wood to shim the unit.

Ventilation

1. If the scroll compressor is located in a totally enclosed room, an exhaust fan with access to outside air must be installed.
2. Never restrict the cooling fan exhaust air.
3. Never locate the compressor where hot exhaust air from other heat generating units may be pulled into the unit.

Wiring

⚠ WARNING

All wiring and electrical connections must be performed by a qualified electrician. Installations must be in accordance with local and national codes. Use solderless terminals to connect the electric power source.

Piping

General Guidelines

Refer to the general product manual.

1. Make sure the piping is lined up without being strained or twisted when assembling the piping for the compressor.
2. Appropriate expansion loops, or bends, should be installed at the compressor to avoid stresses caused by changes in hot and cold conditions.
3. Piping supports should be anchored separately from the compressor to reduce noise and vibration.
4. Never use any piping smaller than the compressor outlet connection.
5. Use flexible hose to connect the outlet of the compressor to the piping so that the vibration of the compressor does not transfer to the piping.

Remote Intake Piping

Powerex Compressor Systems with pipe thread connectors on the intake filters are intended for installation with remote air intake. Piping for the remote intake system must be installed at the final operating site.

Under some conditions, the intake piping may facilitate the condensation of humidity in the intake air stream into liquid water.

NOTICE The intake filters supplied by Powerex will not stop ingestion of liquid water by the pumps. Liquid water going into the pumps will damage the pumps and void the warranty.

Always install drip legs with sufficient capacity to capture liquid water in the intake piping before the air filters. Drip legs must be sized with low enough air velocity to make sure they are effective at capturing liquid water in the intake air and must be maintained (drained) at frequent intervals to make sure they remain effective.

Safety Valves

Tank mounted compressors are shipped from the factory with safety valves installed in the tank. Base mounted scroll compressors are shipped from the factory with the safety valves loose for field installation. The flow capacity of the safety valve is equal to or greater than the capacity of the compressor.

1. The pressure setting of the safety valve must be no higher than the maximum working pressure of the tank.
2. Safety valves should be placed ahead of any possible blockage point in the system, i.e., the shutoff valve.
3. Avoid connecting the safety valve with any tubing or piping.
4. Manually operate the safety valve every six months to avoid sticking or freezing.

Operation

Before Start Up

1. Make sure all safety warnings, labels, and instructions have been read and understood before continuing.
2. Remove any shipping materials, brackets, etc.
3. Confirm that the electric power source and ground have been firmly connected.
4. Be sure all pressure connections are tight.

5. Check to be certain all safety relief valves, etc., are correctly installed.
6. Check that all fuses, circuit breakers, etc., are the proper size.
7. Make sure the inlet filter is properly installed.
8. Confirm that the drain valve is closed.
9. Make sure that any optional dryers are powered on and that the appropriate valves are open.

Start Up & Operation

1. Follow all the procedures under “Before start up” before attempting operation of the compressor.
2. Switch the electric source breaker on.
3. Open the tank discharge valve completely.
4. Check that the compressor operates without excessive vibration, unusual noises or leaks.
5. Close the discharge valve completely.
6. If the pressure does not rise on a three phase unit, turn the unit off. Have a qualified electrician switch the breaker OFF and exchange the L1 and L2 connections (two out of three phases of electric source) inside the magnetic enclosure.
7. Check the discharge pressure. Also make sure the air pressure rises to the designated pressure setting by checking the discharge pressure gauge.
8. Check the operation of the pressure switch by opening the tank outlet valve and confirming the compressor starts as pressure drops.

Maintenance Schedule

Item	Action Needed	Operating Hours							Remarks
		500	2,500	5,000	10,000	15,000	20,000	30,000	
Pump	Replace							▲	
Tank	Drain moisture	Daily							
Inlet Air Filter	Inspect Replace	●	▲	(Every 2,500 hours or less)					Element part # ST073921AV
Blower Fan	Clean				●		●		
Fan Duct	Clean				●		●		
Compressor Fins	Clean		●	(Every 2,500 hours or less)					
Bearings	Grease				▲		▲		Service Center only
Bearings*	Grease			▲	▲	▲	▲		Service Center only
Tip Seal	Replace				▲		▲	▲	Every 10,000 hours
Tip Seal*	Replace			▲	▲	▲	▲		Every 5,000 hours
Heat insulation pipe	Replace				▲		▲	▲	Every 10,000 hours
Heat insulation pipe	Replace			▲	▲	▲	▲	▲	Every 5,000 hours
V-Belt	Inspect Replace	Note 3	●	▲	▲	▲	▲	▲	
Pressure Switch	Confirm operation				●		●		
Magnetic Starter	Inspect				●		●		Replace if contact points deteriorated
Safety Valve	Confirm operation		●	(Every 2,500 hours or every 6 months, whichever comes first)					
Pressure Gauge	Inspect		●	(Every 2,500 hours or less)					
LEGEND									
● Inspect									
▲ Replace									
* Maintenance requirements for high pressure units									

Notes:

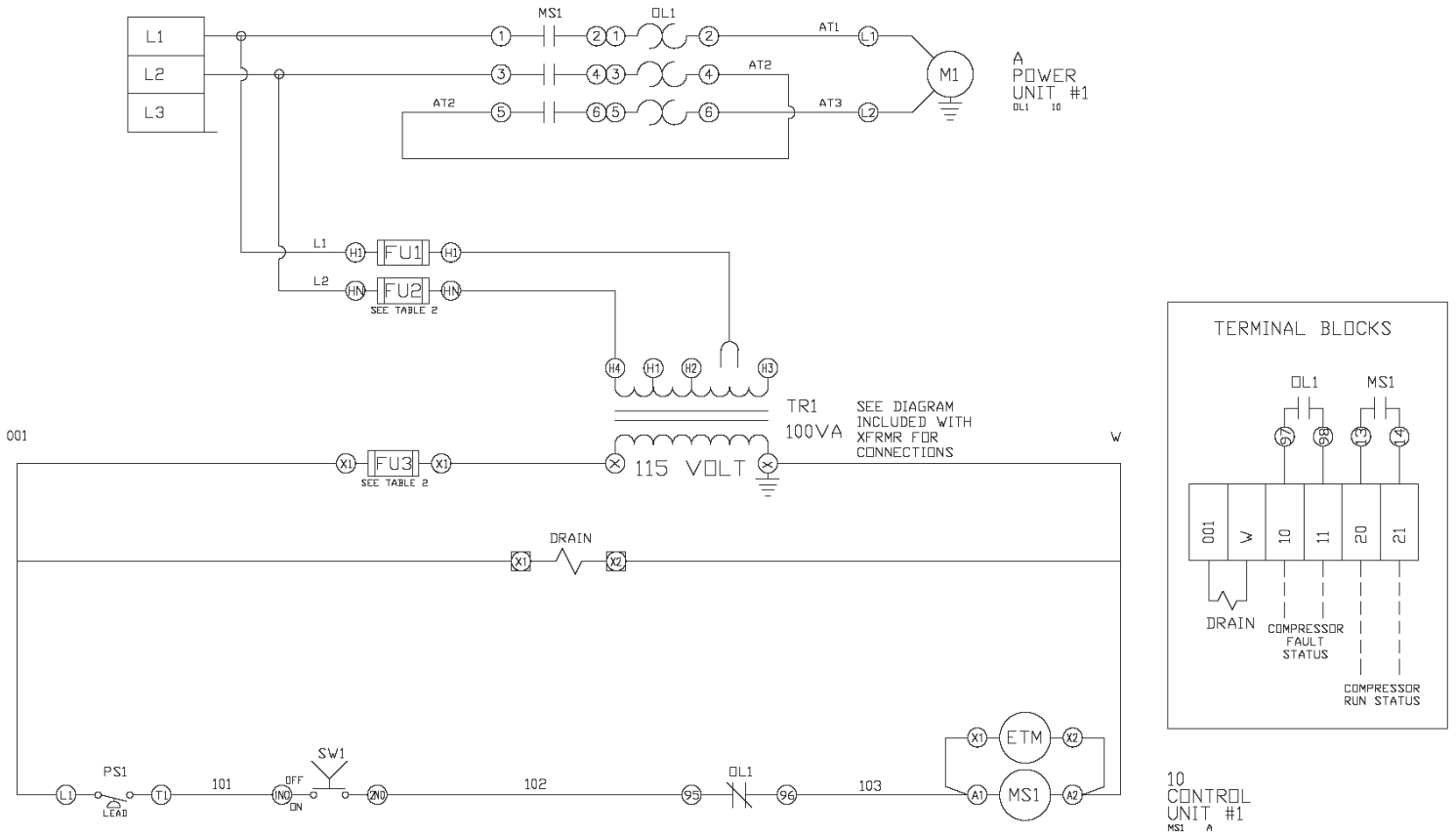
1. Inspect and perform maintenance periodically according to maintenance schedule.
2. The maintenance schedule relates to the normal operating conditions. If the circumstances and load condition are adverse, shorten the cycle time and conduct maintenance accordingly.
3. The tension of the V-belt should be adjusted during the initial stage and inspected every 2,500 hours afterwards. Proper belt tension is just enough to prevent slippage. See following section on belt tensioning method.
4. See Compressor Pump Manuals for replacement or service procedures.

Maintenance Schedule (continued)

Item	Action Needed	Operating Hours							Remarks
		500	2,500	5,000	10,000	15,000	20,000	30,000	
Desiccant dryer	Switch dryer online/ offline	Monthly							Each month (see dryer manual for maintenance instructions)

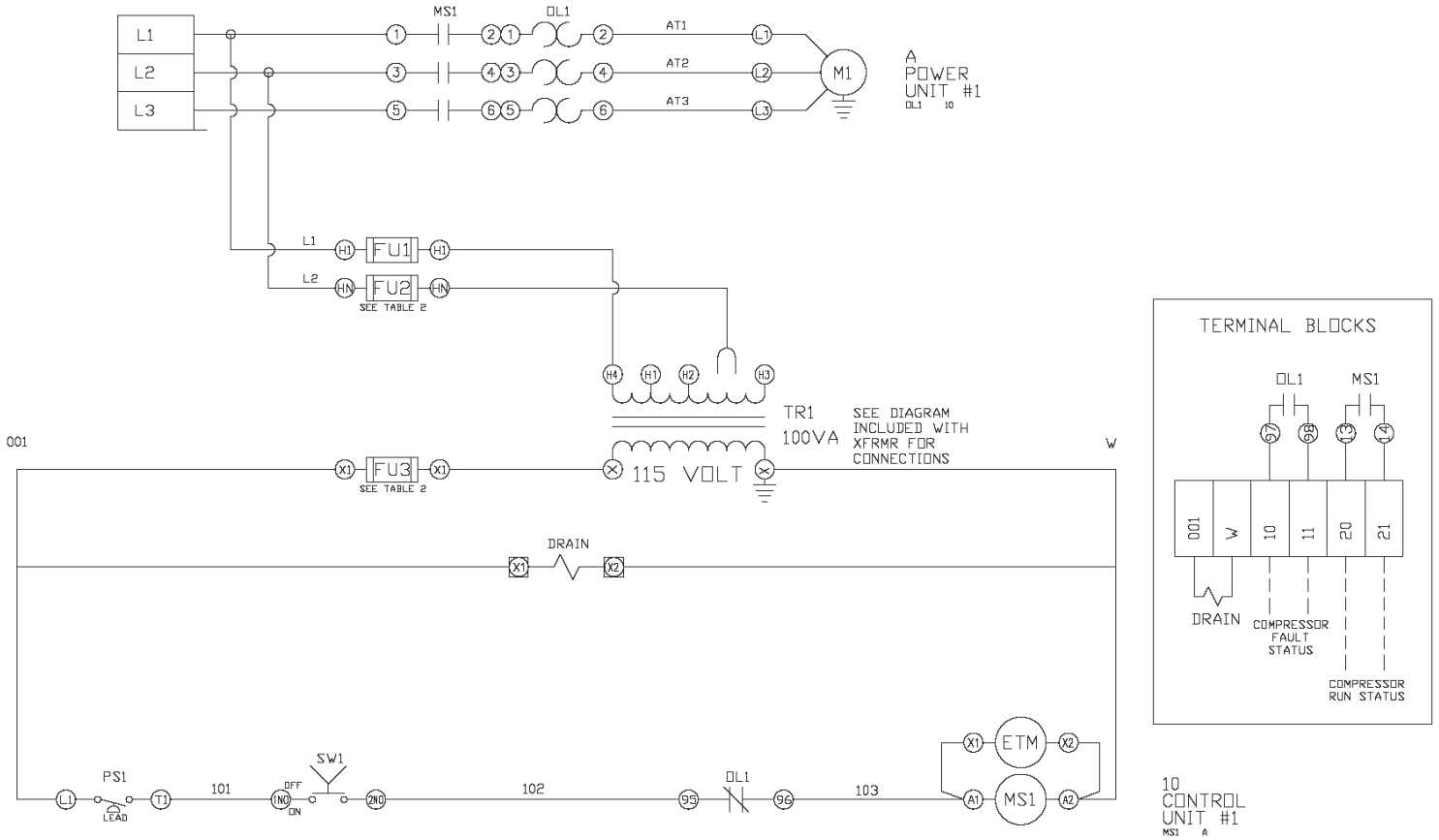
Electrical Wiring Diagram

Simplex - 3HP Simplex Single Phase 208-230 Volts



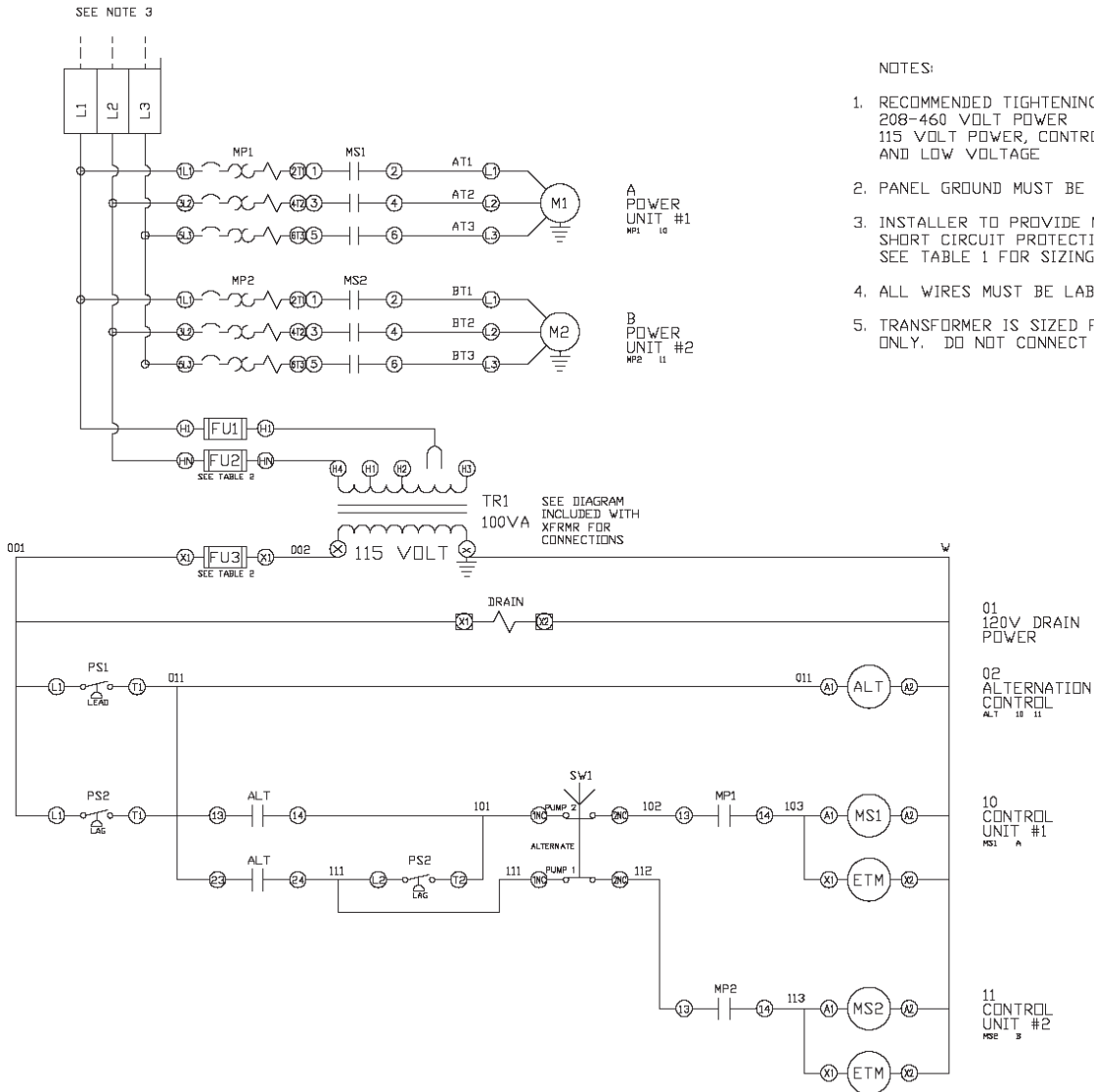
Electrical Wiring Diagram

Simplex - 3-5HP Simplex 3 Phase 208/230/460 Volts



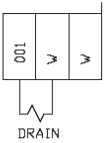
Electrical Wiring Diagram

Duplex - 3-5HP Duplex 3 Phase 208/230/460 Volts



NOTES:

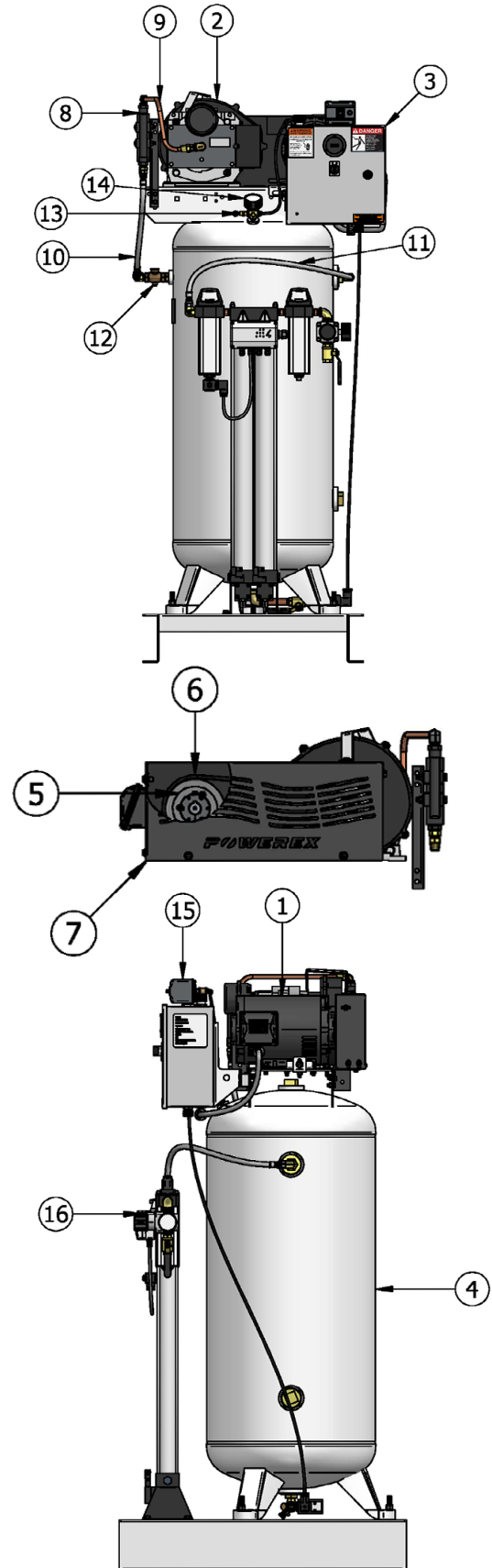
1. RECOMMENDED TIGHTENING TORQUES FOR WIRE TERMINALS:
 208-460 VOLT POWER 35 POUND INCHES
 115 VOLT POWER, CONTROL AND LOW VOLTAGE 20 POUND INCHES
2. PANEL GROUND MUST BE CONNECTED TO EARTH GROUND
3. INSTALLER TO PROVIDE MAIN DISCONNECTING DEVICE WITH SHORT CIRCUIT PROTECTION FOR THIS ELECTRICAL ASSEMBLY. SEE TABLE 1 FOR SIZING INFORMATION.
4. ALL WIRES MUST BE LABELED ON BOTH ENDS
5. TRANSFORMER IS SIZED FOR LOADS SHOWN ON DRAWING ONLY. DO NOT CONNECT ANY OTHER DEVICES



Replacement Parts List

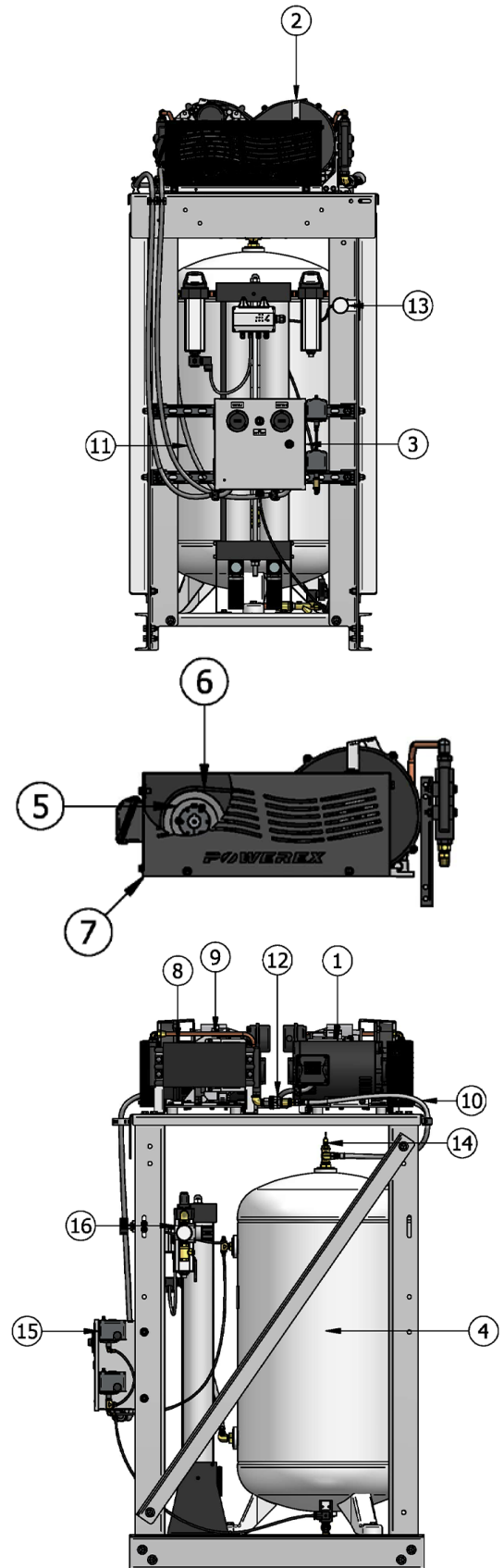
Simplex Models

Ref #	Description	Part Number	QTY
1	Motor 3HP/ 1 Phase 3HP/ 3 Phase (200V) 3HP/ 3 Phase (230-460V) 5HP/ 3 Phase (200V) 5HP/ 3 Phase (230-460V)	MC022309AV MC304237AV MC304201AV MC304229AV MC304203AV	1
2	Scroll Air Pump 3HP Standard Pressure 3HP High Pressure 5HP Standard Pressure 5HP High Pressure	SL014003AV SL014003AV SL016502AV SL016511AV	1
3	Starter 3HP 208-230V/1P STD Pressure 3HP 208V/3P STD Pressure 3HP 230V/3P STD Pressure 3HP 460V/3P STD Pressure 5HP 208V/3P STD Pressure 5HP 230V/3P STD Pressure 5HP 460V/3P STD Pressure 3HP 208-230V/1P High Pressure 3HP 208V/3P High Pressure 3HP 230V/3P High Pressure 3HP 460V/3P High Pressure 5HP 208V/3P High Pressure 5HP 230V/3P High Pressure 5HP 460V/3P High Pressure	PSI10036AJ PSI10032AJ PSI10033AJ PSI10034AJ PSI10052AJ PSI10053AJ PSI10054AJ PSI10036HP PSI10032HP PSI10033HP PSI10034HP PSI10052HP PSI10053HP PSI10054HP	1
4	Air Receiver 60 Gallon	AR231602PX	1
5	Motor Pulley 3HP/1P Standard Pressure 3HP/1P High Pressure 3HP Standard Pressure 3HP High Pressure 5HP Standard Pressure 5HP High Pressure	PU202625AV PU202624AV PU202625AV PU202624AV PU009754AV PU009754AV	1
6	Belt 3-5HP	BT012001AV	2
7	Beltguard Front Beltguard Bottom Beltguard	BG310000AV BG309900AV	1
8	Aftercooler	SL300100AV	1
9	Pump End/Aftercooler	SL300901AP	1
10	Aftercooler/Tank Hose	ST187101AJ	1
11	Tank/Dryer Hose	ST187102AJ	1
12	Check Valve	IS025003AV	1
13	Pressure Gauge	GA031901AV	1
14	Safety Valve Standard Pressure High Pressure	V-215100AV V-215106AV	1
15	Pressure Switch Standard Pressure High Pressure	CW207573AV CW207595AV	1
16	1/2" FNPT Air Regulator	ST178409AJ	1



Replacement Parts List
Duplex Models

Ref #	Description	Part Number	QTY
1	Motor 3HP/ 3 Phase (200V) 3HP/ 3 Phase (230-460V) 5HP/ 3 Phase (200V) 5HP/ 3 Phase (230-460V)	MC304237AV MC304201AV MC304229AV MC304203AV	2
2	Scroll Air Pump 3HP Standard Pressure 3HP High Pressure 5HP Standard Pressure 5HP High Pressure	SL014003AV SL014003AV SL016502AV SL016511AV	2
3	Starter 3HP 208V/3P STD Pressure 3HP 230V/3P STD Pressure 3HP 460V/3P STD Pressure 5HP 208V/3P STD Pressure 5HP 230V/3P STD Pressure 5HP 460V/3P STD Pressure 3HP 208V/3P High Pressure 3HP 230V/3P High Pressure 3HP 460V/3P High Pressure 5HP 208V/3P High Pressure 5HP 230V/3P High Pressure 5HP 460V/3P High Pressure	PSI20032AJ PSI20033AJ PSI20034AJ PSI20052AJ PSI20053AJ PSI20054AJ PSI20032HP PSI20033HP PSI20034HP PSI20052HP PSI20053HP PSI20054HP	1
4	Air Receiver 80 Gallon	AR068400AV	1
5	Motor Pulley 3HP Standard Pressure 3HP High Pressure 5HP Standard Pressure 5HP High Pressure	PU202625AV PU202624AV PU009754AV PU009754AV	2
6	Belt 3-5HP	BT012001AV	4
7	Beltguard Front Beltguard Bottom Beltguard	BG310000AV BG309900AV	1
8	Aftercooler	SL300100AV	2
9	Pump End/Aftercooler	SL300901AP	2
10	Aftercooler/Tank Hose	ST187101AJ	2
11	Tank/Dryer Hose	ST187102AJ	1
12	Check Valve	IS025003AV	2
13	Pressure Gauge	GA031901AV	1
14	Safety Valve Standard Pressure High Pressure	V-215100AV V-215106AV	1
15	Pressure Switch Standard Pressure High Pressure	CW207573AV CW207595AV	2
16	1/2" FNPT Air Regulator	ST178409AJ	1



Desiccant Dryer

Dryer Model	Pre-Filter	Pre-Filter Element	After-Filter	After-Filter Element	Carbon Filter	Carbon Filter Element
Dryspell Plus 10	ST940401AV	ST940405AV	ST40411AV	ST940415AV	ST940421AV	ST9404205AV
Dryspell Plus 20	ST940401AV	ST940405AV	ST40411AV	ST940415AV	ST940421AV	ST9404205AV
Dryspell Plus30	ST940401AV	ST940405AV	ST40411AV	ST940415AV	ST940421AV	ST9404205AV

Desiccant Dryer Part Kits

Dryer Model	Seal Kit	Exhaust Valve Kit	Seal Kit with Desiccant
Dryspell Plus 10	ST940500AV	ST940510AV	ST940530AV
Dryspell Plus 20	ST940501AV	ST940511AV	ST940531AV
Dryspell Plus30	ST940502AV	ST940511AV	ST940532AV

Refrigerated Dryer

Dryer Model	After-Filter	After-Filter Element
NDR010	ST178184AV	ST178185AV
NDR015	ST178184AV	ST178185AV
NDR025	ST178184AV	ST178185AV
NDR035	ST178108AV	ST178109AV

Applicable to Non-OEM Customers in the U.S. & Canada Only

The limited warranty below supersedes any other documentation provided. In the event of a conflict between these terms and conditions and any other document provided, the terms and conditions below shall control.

Warranty and Remedies.

(a) General. Powerex warrants each Compressor System, Vacuum System, Vacuum Pump, Compressor Air-End, or Powerex branded Accessory (collectively “Products”, individually each a “Product”) to be free from defects in material and workmanship (“Defects”) at the date of shipment. This warranty shall apply only to Products that are purchased and used in the United States of America and in Canada. EXCEPT AS SET FORTH BELOW, NO OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL EXIST IN CONNECTION WITH THE SALE OR USE OF SUCH PRODUCTS. TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. All warranty claims must be made in writing and delivered to Powerex in accordance with the procedures set forth on its website (www.powerexinc.com), or such claim shall be barred. Upon timely receipt of a warranty claim, Powerex shall inspect the Product claimed to have a Defect, and Powerex shall repair, or, at its option, replace, free of charge, any Product which it determines to have had a Defect ; provided, however, that if circumstances are such as to preclude the remedying of Defect by repair or replacement, Powerex shall, upon return of the Product, refund to buyer any part of the purchase price of such Products paid to Powerex. Freight for returning Products to Powerex for inspection shall be paid by buyer. The warranties and remedies herein are the sole and exclusive remedy for any breach of warranty or for any other claim based on any Defect, or non-performance of the Products, whether based upon contract, warranty or negligence.

(b) (i) Standard Period of Warranty – Parts and Labor. The purchase of any system includes our standard warranty. Powerex warrants and represents all Products shall be free from Defects for the first eighteen (18) months from the date of shipment by Powerex, or twelve (12) months from the documented date of startup, or five thousand (5,000) hours of use, whichever occurs first. During such warranty period, Powerex shall be fully liable for all Defects in the Products (the “Product Defects”), i.e., all costs of repair or replacement, which may include “in and out” charges, so long as the Products are located in the United States or Canada, and the Products are reasonably located and accessible by service personnel for removal. “In and out” charges include the costs of removing a Product from buyer’s equipment for repair or replacement.

(ii) Premium Period of Warranty – Parts and Labor. In order to be eligible for premium warranty coverage, a premium warranty for each system must be purchased when order is placed. Powerex warrants and represents all Products shall be free from Defects for the first thirty (30) months from the date of shipment by Powerex, or twenty-four (24) months from the documented date of startup, or seven thousand five hundred (7,500) hours of use, whichever occurs first. During such warranty period, Powerex shall be fully liable for all Defects in the Products (the “Product Defects”), i.e., all costs of repair or replacement, which may include “in and out” charges, so long as the Products are located in the United States or Canada, and the Products are reasonably located and accessible by service personnel for removal. “In and out” charges include the costs of removing a Product from buyer’s equipment for repair or replacement.

(c) Additional Period of Warranty – Parts Only (No Labor). In addition to the above, Powerex warrants each Powerex branded Compressor Air-End and Vacuum Pump shall be free of Defects for a period of forty-two (42) months from the date of shipment by Powerex, or thirty-six (36) months from the documented date of startup, or ten thousand (10,000) hours of use, whichever occurs first. Supplier’s repair or replacement of any Product shall not extend the period of any warranty of any Product. This warranty applies to the exchange of part(s) found to be defective by an Authorized Powerex Service Representative only.

(d) Replacement Pumps – Parts Only (No Labor). For any replacement Air-End or Vacuum Pumps installed on a Powerex manufactured system or unit after any initial warranty period has expired or where another warranty does not apply for any reason, Powerex warrants that the Air-End or Vacuum Pumps shall be free of Defects

for a period of thirty-six (36) months from the date of shipment by Powerex or ten thousand (10,000) hours of use, whichever comes first. For any replacement Air-End or Vacuum Pumps installed on a system that was not manufactured by Powerex after any initial warranty period has expired or where another warranty does not apply for any reason, Powerex warrants that the Air-End or Vacuum Pumps shall be free of Defects for the first twelve (12) months from the date of shipment by Powerex. Supplier's repair or replacement of any Product shall not extend the period of any warranty of any Product. This warranty applies to the exchange of part(s) found to be defective by an Authorized Powerex Service Representative only.

(e) Replacement Motors – Parts Only (No Labor). For any replacement motor installed on a Powerex manufactured system or unit after any initial warranty period has expired or where another warranty does not apply for any reason, Powerex warrants that the replacement motor shall be free of Defects for the first twelve (12) months from the date of shipment by Powerex. For any replacement motor installed on a system or unit that was not manufactured by Powerex after any initial warranty period has expired or where another warranty does not apply for any reason, Powerex warrants that the replacement motor shall be free of Defects for the first ninety (90) days from the date of shipment by Powerex. Supplier's repair or replacement of any Product shall not extend the period of any warranty of any Product. This warranty applies to the exchange of part(s) found to be defective by an Authorized Powerex Service Representative only.

(f) Replacement Parts – Parts Only (No Labor). For other replacement parts besides motors, Air-End or Vacuum Pumps installed on a Powerex manufactured system or unit after any initial warranty period has expired or where another warranty does not apply for any reason, Powerex warrants that such replacement parts will be free from Defects for the first twelve (12) months from the date of shipment by Powerex. For other replacement parts besides motors, Air-End or Vacuum Pumps installed on a system or unit that was not manufactured by Powerex after any initial warranty period has expired or where another warranty does not apply for any reason, Powerex makes no warranties. Supplier's repair or replacement of any Product shall not extend the period of any warranty of any Product. This warranty applies to the exchange of part(s) found to be defective by an Authorized Powerex Service Representative only.

(g) Coverage. The warranty provided herein applies to Powerex manufactured units or systems only.

(h) Exceptions. Notwithstanding anything to the contrary herein, Powerex shall have no warranty obligations with respect to Products:

- (i) That have not been installed in accordance with Powerex's written specifications and instructions;
- (ii) That have not been maintained in accordance with Powerex's written instructions;
- (iii) That have been materially modified without the prior written approval of Powerex; or
- (iv) That experience failures resulting from operation, either intentional or otherwise, in excess of rated capacities or in an otherwise improper manner.

The warranty provided herein shall not apply to:

- (i) any defects arising from corrosion, abrasion, use of insoluble lubricants, or negligent attendance to or faulty operation of the Products;
- (ii) ordinary wear and tear of the Products; or
- (iii) defects arising from abnormal conditions of temperature, dirt or corrosive matter;
- (iv) any OEM component which is shipped by Powerex with the original manufacturer's warranty, which shall be the sole applicable warranty for such component.

Limitation of Liability. NOT WITHSTANDING ANYTHING TO THE CONTRARY HEREIN, TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, UNDER NO CIRCUMSTANCES SHALL POWEREX BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, PUNITIVE, SPECULATIVE OR INDIRECT LOSSES OR DAMAGES WHATSOEVER ARISING OUT OF OR IN ANY WAY RELATED TO ANY OF THE PRODUCTS OR GOODS SOLD OR AGREED TO BE SOLD BY POWEREX TO

BUYER. TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, POWEREX'S LIABILITY IN ALL EVENTS IS LIMITED TO, AND SHALL NOT EXCEED, THE PURCHASE PRICE PAID.

Warranty Disclaimer. Powerex has made a diligent effort to illustrate and describe the Products in its literature, including its Price Book, accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the Products are merchantable, or fit for a particular purpose, or that the Products will necessarily conform to the illustrations or descriptions.

Product Suitability. Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of Products for certain purposes, which may vary from those in neighboring areas. While Powerex attempts to assure that its Products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a Product, please review the Product applications, and national and local codes and regulations, and be sure that the Product, installation, and use will comply with them.

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