

## 7.5 & 10 HP Basemount & Tankmount Scroll Air Compressors

***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.***

### 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.

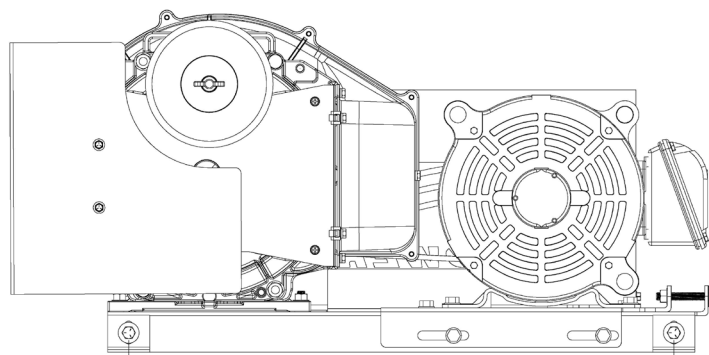
Base mount assemblies are intended for use as replacements on original Powerex Scroll systems and are not suitable for use as is to provide compressed air for most applications. In general, an air receiver and appropriate piping and valves, along with electrical controls (base mounts may be provided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

The base mount assemblies include the scroll pumps, with provision for intake filters to be mounted on the pump. The scroll pump is belt driven using a 2 pole three phase electric motor. The electric motor is mounted on a slide base to facilitate adjusting belt tension. The belt drive is covered by a sheet metal belt guard. The pump delivers compressed air into the after cooler that uses the air from the pump blower fan to bring the compressed air temperature near ambient. A check valve is installed in Powerex Scroll systems after the after cooler. Compressed air is routed to the receiver tank. A pressure relief valve is installed on systems where there is a possibility of accidentally closing a shut off valve between the compressor and air receiver.

Controls on Simplex systems respond to pressure demand and engage the electric motor when pressure in the receiver tank drops to the cut in setting. (Approximately 95 psig) The motor runs and the pump delivers air until the cut off point is reached (Approximately 115 psig). On Duplex systems, the controls alternate which pump runs to respond to the air demand. If air demand exceeds the ability of one pump, the second, or lag, pump is engaged at the lag switch cut in point. It runs until the lag switch cut off is achieved, while the lead pump continues to run until the lead switch cut off is achieved.

The after cooler on Powerex Scroll systems is mounted on resilient mounts to prevent damage to the cooler. Piping is designed to accommodate temperature and vibration encountered in normal use.

Powerex Scroll systems can be provided with separately powered electric timer controlled automatic tank drains to expel condensation that accumulates in the compressor tank. Make sure the tank drain is working properly by operating the manual drain regularly to check for



accumulated condensation. Optional tank lining can be provided to assure minimal corrosion of the tank interior. Dispose of condensate as required by applicable regulations.

Powerex Scroll systems can also be provided with dryers. Dryers must be provided with electrical power from a separate source and cannot be powered from the control system, as the controls are not designed for this load. Dryers will also expel water and the condensate must be disposed of according to applicable regulations.

SPECIFICATIONS	
Product	SBS, STS, and STD series
Performance Specifications	See Product Data Sheet
California Ordinance 462 (L) (2)	Tank Mount units meet the requirements of this ordinance
Compression Cycle	Scroll
Control Panel	UL508A Listed (panels are optional)
Drive	2-3V Belts
Lubrication	Grease filled bearings
Motor Overhead Protection	IEC Motor overload relay (optional)
Operating Temperature	34°F - 104°F (1°C - 40°C) at inlet
Operating Voltages	1Ø 208-230 Volts, 60 Hz
	3Ø 208-230/460 Volts, 60 Hz
Outlet Air Connections	Model specific - see detail drawings
Overpressure Protection	ASME safety valve factory set and sealed
Standard Pressure Settings	Simplex: 95-115 psi
	Duplex: 90-110 psi; 95-115 psi

### Compression Cycle

The Powerex Oil-less 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 degree 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 7.5 and 10 HP models, tip seals must be replaced every 8,000 hours of operation.

### Bearings

The bearings on the scroll compressor are regreaseable to allow extended compressor life. On 7.5 and 10 HP models, grease must be replaced every 8,000 hours of operation.

### Hour Meter

The hour meter on the scroll compressor indicates the actual number of hours the unit has been in operation. The hour meter is also used to determine maintenance and service timing. An hour meter 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. MAKE SURE EVERYONE OPERATING OR SERVICING THE COMPRESSOR READS AND UNDERSTANDS ALL THE INFORMATION PROVIDED.

#### **⚠ 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.
4. Clearance must allow for safe, effective inspection and maintenance.

MINIMUM CLEARANCES	
Above	24 in
Drive belt side	12 in
Other sides	20 in

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

Refer to the general product manual. All electrical hook-ups must be performed by a qualified electrician. Installations must be in accordance with local and national electrical codes.

Use solder-less 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. In base mounted scroll compressors, all fittings including check valves and safety valves should be installed after a flexible hose.

### 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

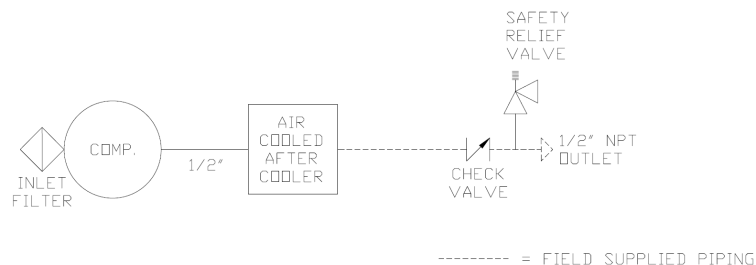
1. Make sure all safety warnings, labels, and instructions have been read and understood before continuing.
2. Remove any shipping materials, brackets, etc.
3. Confirm that the electric power source and ground have been firmly connected.
4. Be sure all pressure connections are tight.
5. Check to be certain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

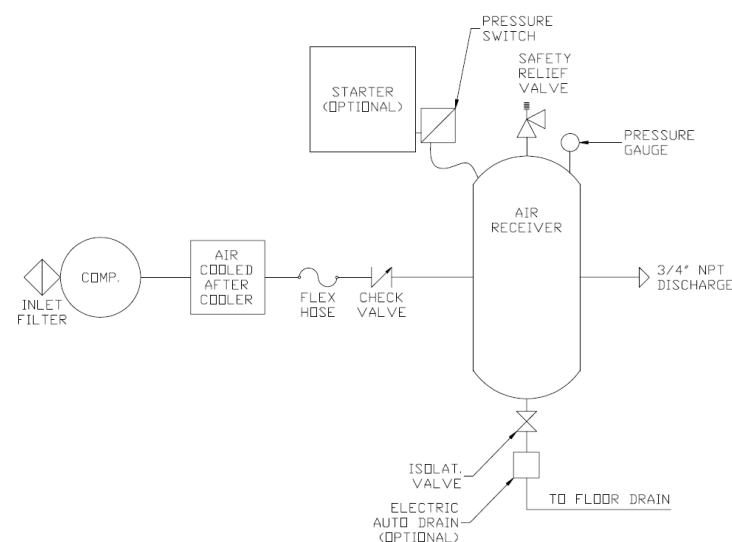
## System Flow Schematics

### Basemount



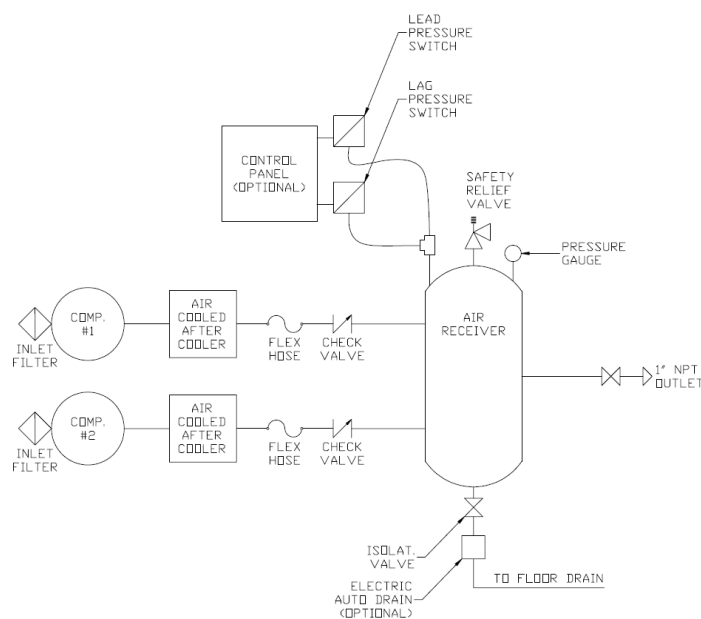
### Tankmount Simplex

(diagram is typical, actual pipe and connection size may vary)



### Tankmount Duplex

(diagram is typical, actual pipe and connection size may vary)



## Maintenance

Item	Action Needed	OPERATING HOURS							Remarks
		500	2000	4000	8000	12000	16000	24000	
Pump	Replace							▲	
Tank	Drain moisture	Daily							
Inlet Air Filter	Inspect Replace	●	▲	(Every 2,500 hours or less)					Element Part # ST073907AV
Blower Fan	Clean				●		●		
Fan Duct	Clean				●		●		
Compressor Fins	Clean		●	(Every 2,500 hours or less)					
Bearings	Grease				▲		▲		Service Center only
Tip Seal	Replace				▲		▲	▲	Every 8,000 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					
<b>LEGEND</b> ● Inspect ▲ Replace									

### 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.

### Pump Maintenance

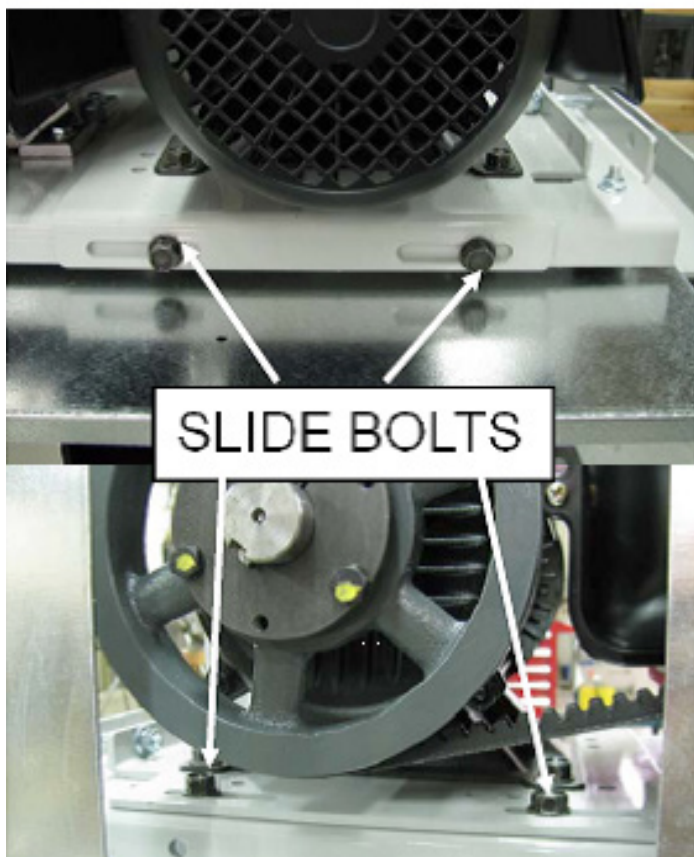
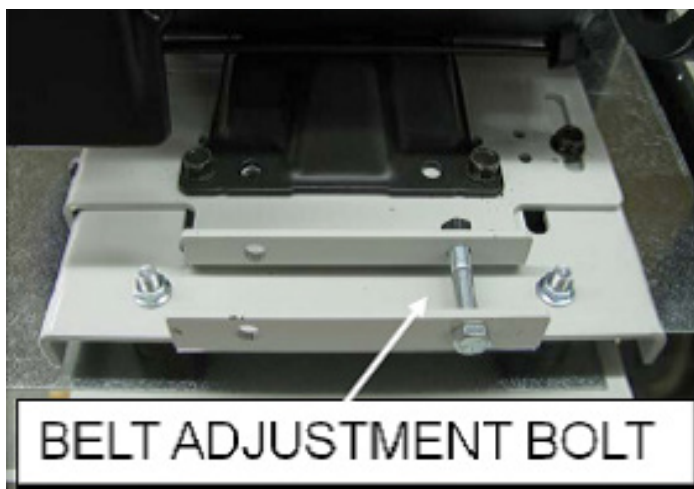
See the detailed pump maintenance manual included in the manual set.



### Adjusting Belt Tension

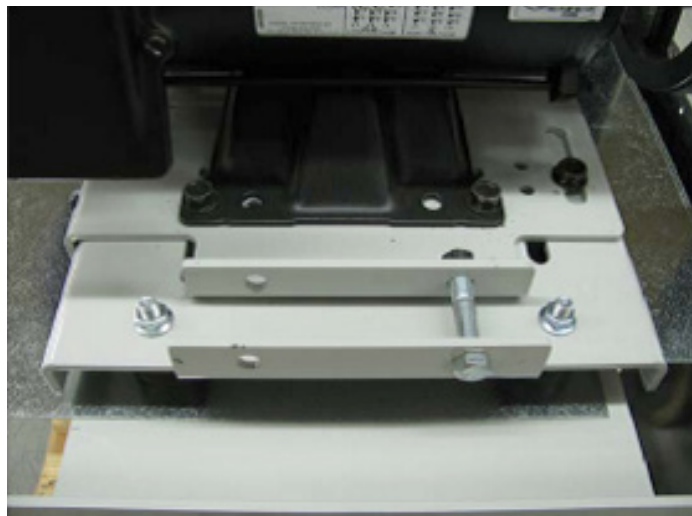
Belt tension is set at the factory. If slippage is detected, reset the tensions as follows:

After the first 200 to 500 running hours or at any time chirping is heard on start up, check the belt tension. If tension is below 25 pounds on any belt, increase the center distance using the motor slide base so that belt tension is 45 to 50 pounds. The motor slide base details are shown below. If installing new belts see the procedure below.



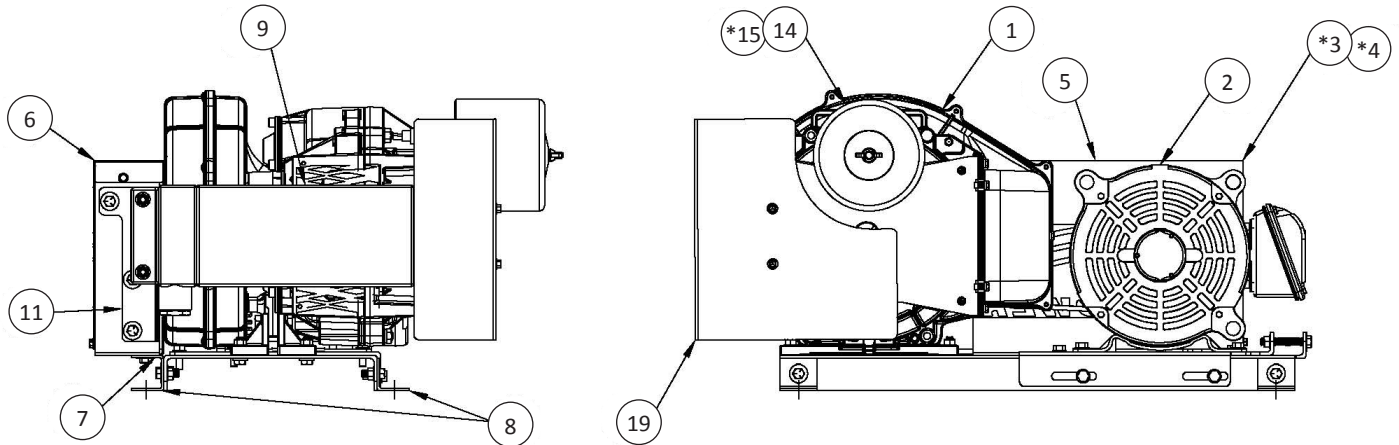
### New Belt Installation Procedure

1. Loosen the two slide bolts near the motor pulley and the two slide bolts on the front edge of the base. Keep enough torque on them to take up any slack between the slider and the main base, but enough slack to allow the slider to move.
2. Tighten the belt adjustment bolt using a torque wrench to 45 inch pounds. This will bring the belts to the proper tension.
3. Tighten the slider bolts, the two on the front edge of the base, then the two slider bolts closest to the motor pulley so the belt tension is 45 to 50 pounds.



## Part Identification and Parts List:

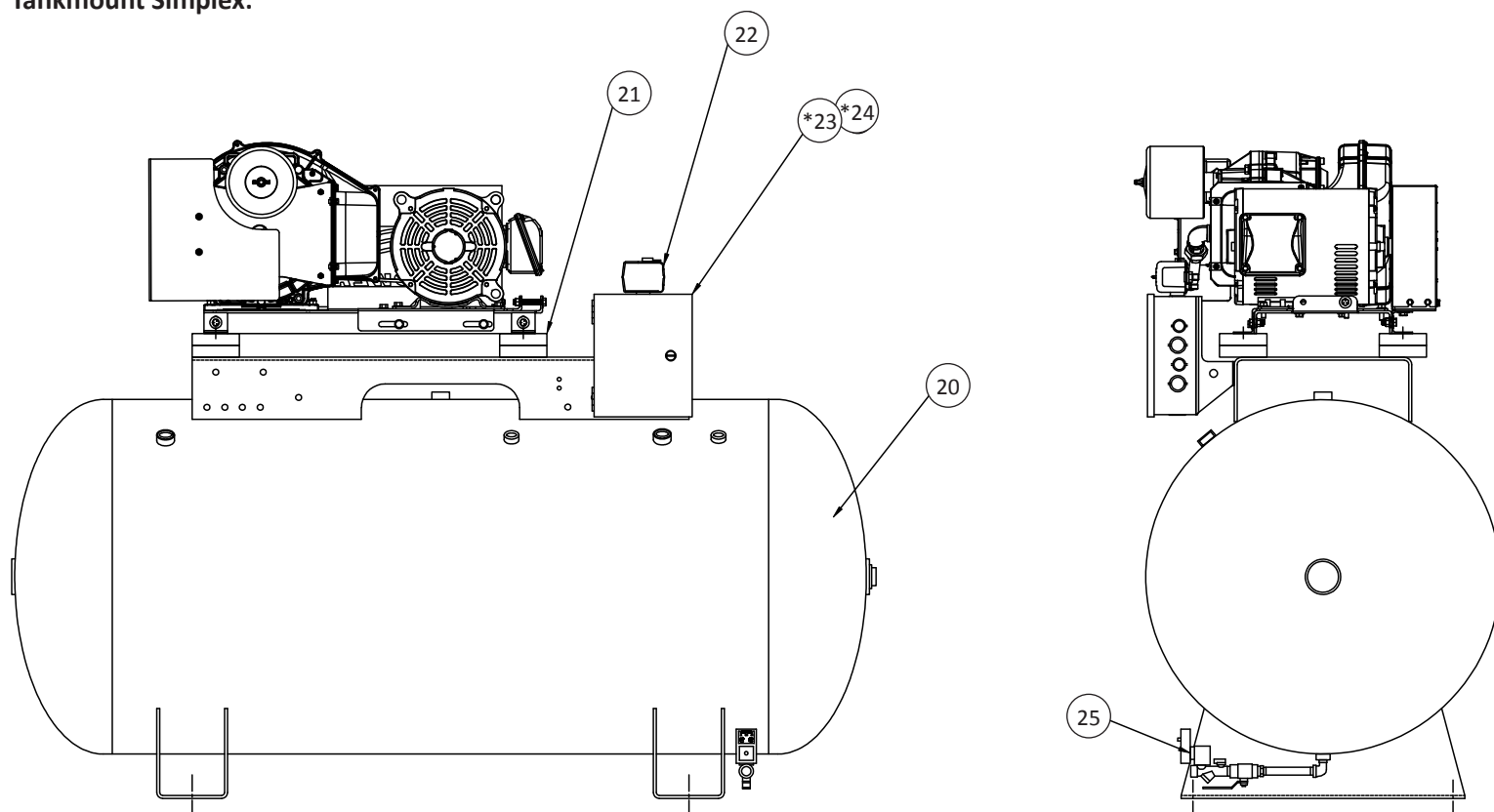
### General Basemount:



Key No.	Description	7.5 HP	10 HP	Quantity
1	Pump	SL020500AV	SL021000AV	1
2	Motor 208-230/460V 60Hz 2 Pole ODP	MC304232AV	MC304234AV	1
	Motor 575V 60Hz 2 Pole ODP	MC304209AV	MC304236AV	1
	Motor 208-230/460V 60Hz 2 Pole TEFC	MC304233AV	MC304235AV	1
*3	2 Groove 3V Drive Sheave with Taper Bushing (for ODP Motor)	PU202649AV	PU202648AV	1
	2 Groove 3V Drive Sheave with Taper Bushing (for TEFC Motor)	PU202651AV	PU202648AV	1
*4	3VX Belt	BT024000AV	BT023900AV	2
5	Belt Guard – Back	BG308500AV	BG308500AV	1
6	Belt Guard – Front (Wave Logo Cutout)	BG308400AV	BG308400AV	1
7	Belt Guard Support Bracket	SL051300AV	SL051300AV	3
8	Foot Bracket	SL051300AV	SL051300AV	4
9	After Cooler	SL060000AV	SL060000AV	1
*10	Outlet Flex Hose	SM008113AV	SM008113AV	1
11	Belt Guard Side After Cooler Mounting Bracket	SL060100AV	SL060100AV	4
*12	Inlet Air Filter Threaded Adapter	IP638900AV	IP638900AV	1
*13	Inlet Air Filter Adapter Gasket	IP639000AV	IP639000AV	1
14	Inlet Filter Assembly (Non-Remote)	91907690	91907690	1
*15	Inlet Air Filter Element	ST073907AV	ST073907AV	1
*16	Check Valve	IP087700AV	IS025003AV	1
*17	Relief Valve	V-215100AV	V-215100AV	1
*18	Pump Side After Cooler Mounting Bracket	SL051400AV	SL051400AV	1
19	Heat Shield	SL060300AV	SL060300AV	1

\*Not visible in diagram

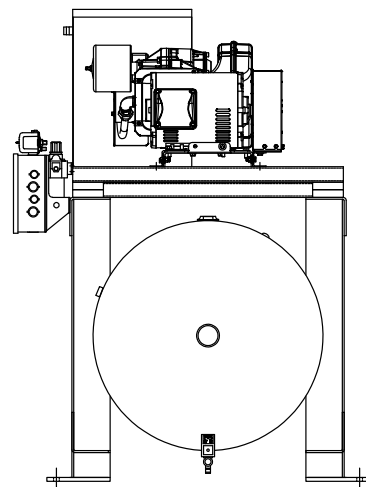
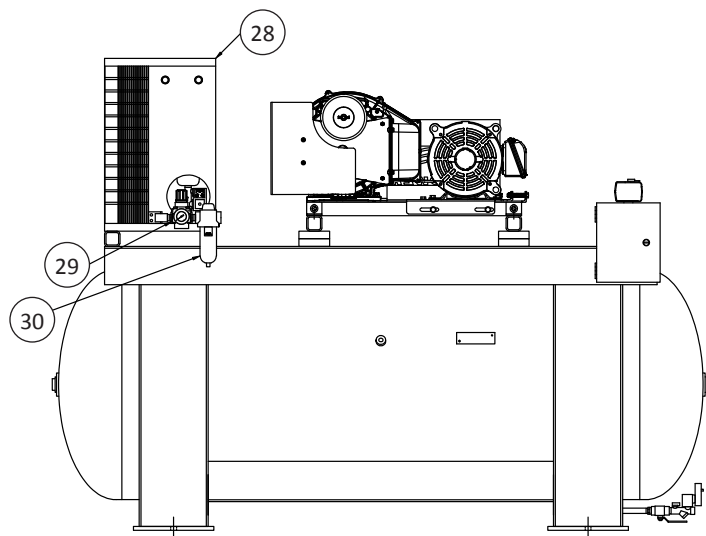
## Tankmount Simplex:



Key No.	Description	7.5 HP	10 HP	Quantity
20	Air Receiver 120 Gallon	TQ003201ST	TQ003201ST	1
	Air Receiver 200 Gallon	JP000600ST	JP000600ST	1
	Air Receiver 240 Gallon Grass Hopper	JQ000100AJ	JQ000100AJ	1
21	Vibration Isolation Pads	JP004101AV	JP004101AV	8
22	Pressure Switch	CW207573AV	CW207573AV	1
*23	Hour Meter	N/A	N/A	
	208-230V 60Hz	PE001002AV	PE001002AV	1
	460V 60Hz	PE001003AV	PE001003AV	1
*24	Starter Assembly Complete - 208-230V 60Hz	JP001080AJ	JP001083AJ	1
	Contactors 208-230V 60Hz	PE000113AV	PE000115AV	1
	OL Relay 208-230V 60Hz	PE000208AV	PE000209AV	1
	Starter Assembly Complete - 460V 60Hz	JP001081AJ	JP001084AJ	1
	Contactors 460V 60Hz	PE000108AV	PE000110AV	1
	OL Relay 460V 60Hz	PE000206AV	PE000207AV	1
	Starter Assembly Complete - 575V 60 Hz	JP001105AJ	JP001107AJ	1
	Contactors 575V 60Hz	PE000121AV	PE000121AV	1
	OL Relay 575V 60Hz	PE000205AV	PE000206AV	1
25	Electric Automatic Timer Drain	SL300701AV	SL300701AV	1
*26	Tank Pressure Gauge	GA016701AV	GA016701AV	1
*27	Tank Safety Valve	V-215400AV	V-215400AV	1

\*Not visible in diagram

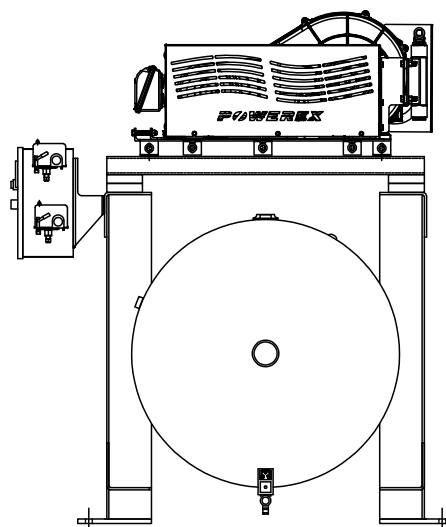
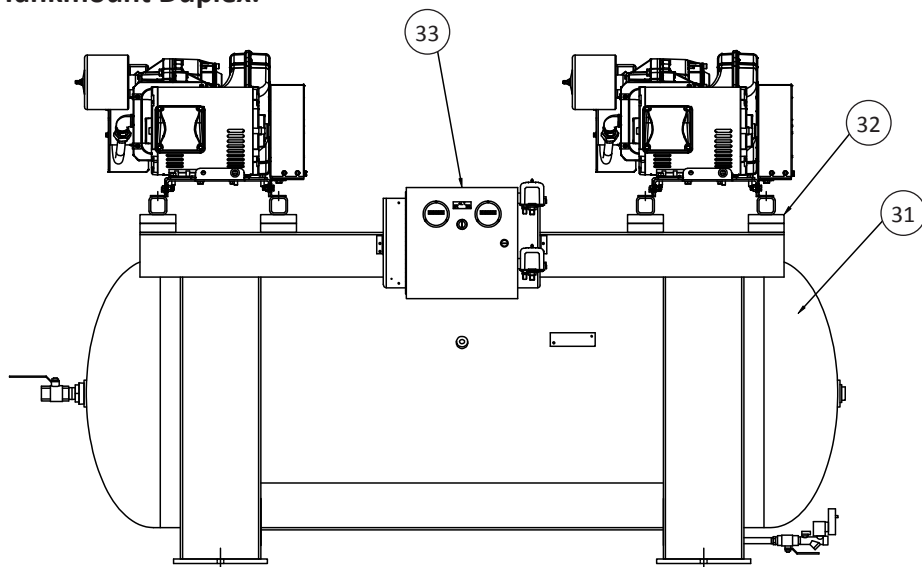




Key No.	Description	7.5 HP	10 HP	Quantity
28	Refrigerated Dryer	ACO016025	ACO016035	1
29	Regulator with Outlet Pressure Gauge	ST178409AJ	ST178409AJ	1
30	Coalescing Final Filter	ST178108AV	ST178108AV	1

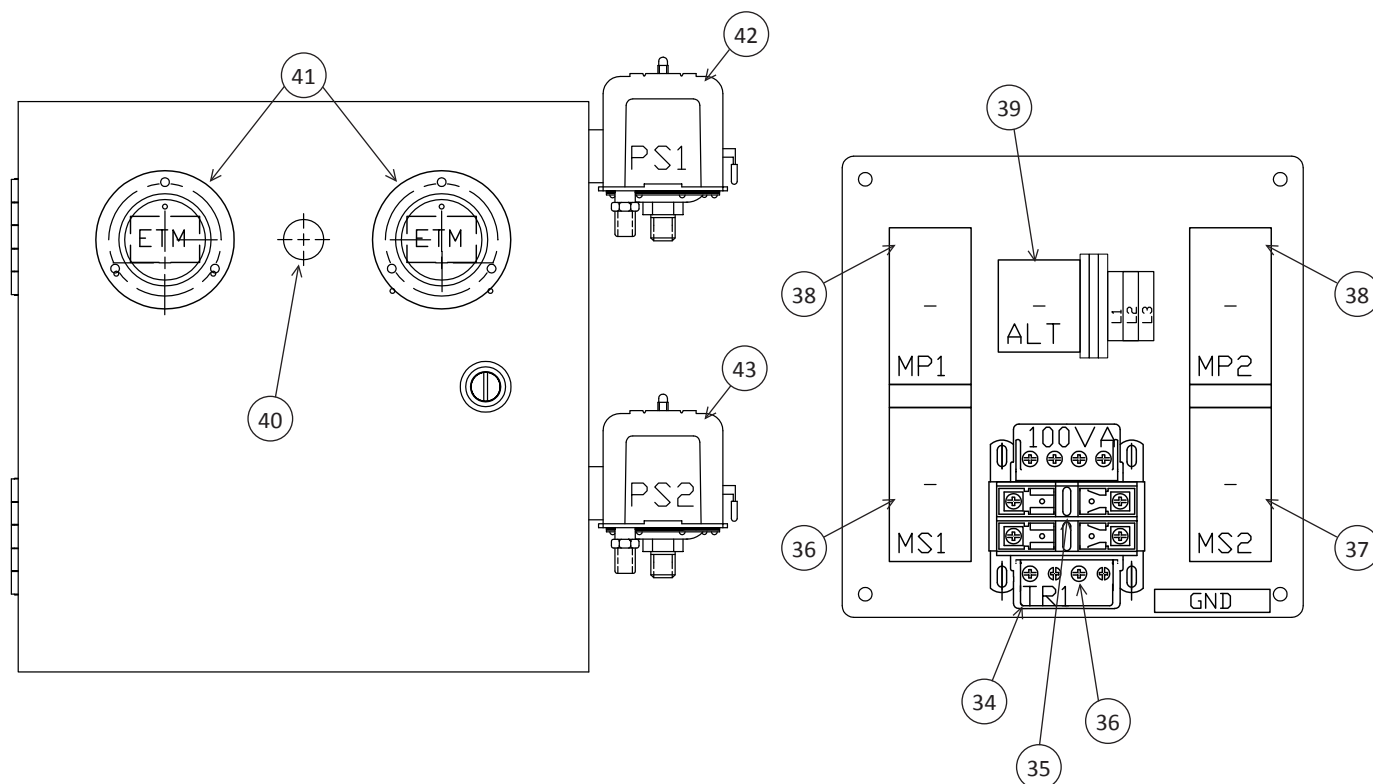
For desiccant dryer parts, see dryer manual included in manual package)

### Tankmount Duplex:



Key No.	Description	7.5 HP	10 HP	Quantity
31	Air Receiver 120 Gallon Grass Hopper	JQ000900AJ	JQ000900AJ	1
	Air Receiver 200 Gallon Grass Hopper	JQ001100AV	JQ001100AV	1
	Air Receiver 240 Gallon Grass Hopper	JQ000100AJ	JQ000100AJ	1
32	Vibration Isolation Pads	JP004101AV	JP004101AV	16
33	Control Assembly Complete - 208V 60Hz	PSI20072AJ	PSI200A2AJ	1
	Control Assembly Complete - 230V 60Hz	PSI20073AJ	PSI200A3AJ	1
	Control Assembly Complete - 460V 60Hz	PSI20074AJ	PSI200A4AJ	1
	Control Assembly Complete - 575V 60Hz	PSI20077AJ	PSI200B7AJ	1

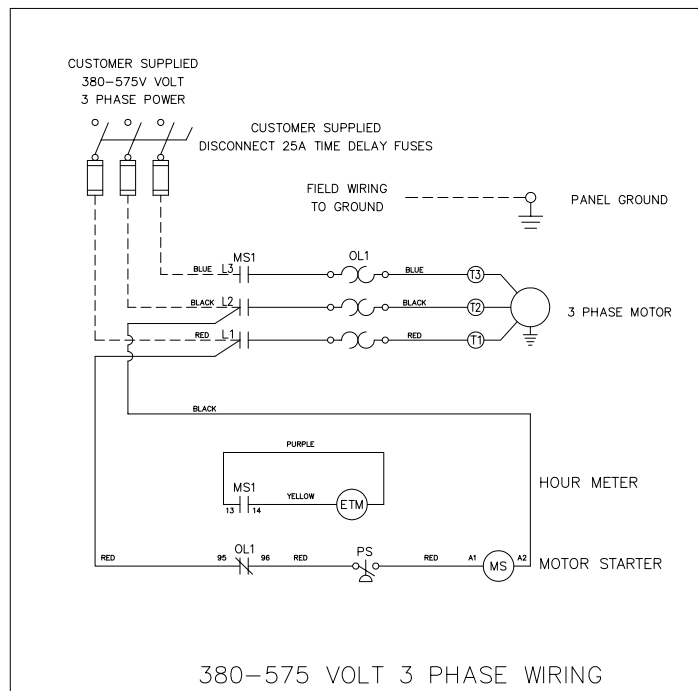
## Duplex Electrical Parts



Key No.	Description	7.5 HP	10 HP	Quantity
34	Control Transformer	PS005834AV	PS005834AV	1
35	Primary Fuse	JP007703AV	JP007703AV	2
36	Secondary Fuse	JP007711AV	JP007711AV	1
37	Contactor 208V 60Hz	PE000103AV	PE000103AV	2
	Contactor 230V 60Hz	PE000103AV	PE000103AV	2
	Contactor 460V 60Hz	PE000102AV	PE000102AV	2
	Contactor 575V 60Hz	PE000102AV	PE000102AV	2
38	Motor Protector 208V 60Hz	PE000308AV	PE000308AV	2
	Motor Protector 230V 60Hz	PE000308AV	PE000308AV	2
	Motor Protector 460V 60Hz	PE000306AV	PE000306AV	2
	Motor Protector 575V 60 Hz	PE000306AV	PE000306AV	2
39	Alternator Relay	JQ000609AV	JQ000609AV	1
40	Control Selector Switch	PE000548AV	PE000548AV	1
41	Hour Meter	PE001004AV	PE001004AV	2
42	Lead Pressure Switch	CW207591AV	CW207591AV	1
43	Lag Pressure Switch	CW207591AV	CW207591AV	1

\*Not visible in diagram

### Simplex Starter:



The schematic diagram illustrates the electrical system for the Model 1000. It features a three-phase power supply (L1, L2, L3) connected to two power units, A and B. Power Unit A includes a main switch (MS1), a fuse (FU1), and a motor (M1). Power Unit B includes a main switch (MS2), a fuse (FU2), and a motor (M2). A transformer (TR1) is connected to the power supply and provides 115 VOLT output. The control circuit includes a 120V DRAIN POWER source, a 120V ALTERNATION CONTROL (AL), a 10V CONTROL UNIT (CU), and a 11V CONTROL UNIT (CU). The control circuit is connected to the main switches (MS1, MS2) and the motors (M1, M2).



Notes

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Notes

Lined area for notes.

**Powerex Limited Warranty – Applicable to Non-OEM Customers in the U.S. & Canada Only****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](http://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, Pow-

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 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.** NOTWITHSTANDING 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.

**Claims.** Any non-warranty claims pertaining to the Products must be filed with Powerex within 6 months of the invoice date, or they will not be honored. Prices, discounts, and terms are subject to change without notice or as stipulated in specific Product quotations. Powerex shall not be liable for any delay or failure arising out of acts of the public enemy, fire, flood, or any disaster, labor trouble, riot or disorder, delay in the supply of materials or any other cause, whether similar or dissimilar, beyond the control of Company. All shipments are carefully inspected and counted before leaving the factory. Please inspect carefully any receipt of Products noting any discrepancy or damage on the carrier's freight bill at the time of delivery. Discrepancies or damage which obviously occurred in transit are the carrier's responsibility and related claims should be made promptly directly to the carrier. Returned Products will not be accepted without prior written authorization by Powerex and deductions from invoices for shortage or damage claims will not be allowed. **UNLESS OTHERWISE AGREED TO IN WRITING, THE TERMS AND CONDITIONS CONTAINED IN THIS LIMITED WARRANTY WILL CONTROL IN ANY TRANSACTION WITH POWEREX.** Any different or conflicting terms as may appear on any order form now or later submitted by the buyer will not control. All orders are subject to acceptance by Powerex.



## Scroll Air Compressor Service and Maintenance

**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.**

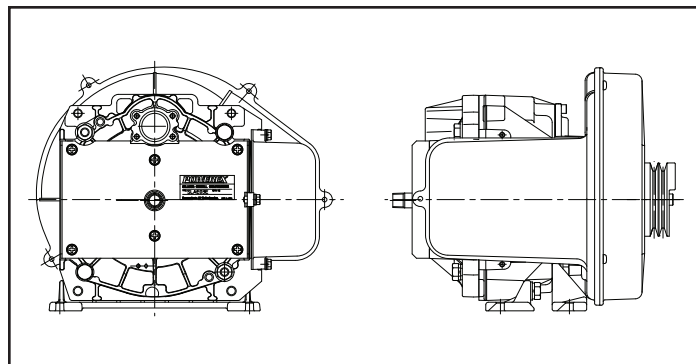
### Description

The Powerex Oilless Rotary Scroll Air Compressor has advanced scroll compressor technology through the development of a completely oilless 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 air compressor.

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 orbiting 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 orbiting 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.



### Specifications

Product	SLAE03EB, SLAE05E, SLAE05EHP
Discharge Pressure	95-115 psi (125-145 psi optional)
Compression Cycle	Scroll
Operating Temperature Range	32°F to 104°F

### 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 minor or moderate injury.

**NOTE:** This provides information that requires special attention.

#### ⚠ DANGER

#### Breathable Air Warning

**This compressor/pump 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 in-line 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 G 7.1 - 1966, OSHA 29 CFR 1910. 134, 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 VOIDED, AND POWEREX DISCLAIMS ANY LIABILITY WHATSOEVER FOR ANY LOSS, PERSONAL INJURY OR DAMAGE.**

### Maintenance

#### DRY TYPE INLET FILTER

##### 2500 Hours - Maintenance

The inlet filter on the scroll compressor assures 99% particulate free air is admitted to the unit. Change every 2,500 hours or more often in dirty locations.

1. Remove filter cover.

**CAUTION** Do not attempt to clean filter. This filter requires replacement and is to be replaced when contaminated.

2. Install new filter element and reassemble cover.

#### CLEAN COMPRESSOR FINS

##### 2500 Hours - Maintenance

1. Remove the FS cover (see page 6).
2. Clean compressor fins using compressed air.
3. Put the FS cover back.

#### GREASE COMPRESSOR BEARINGS

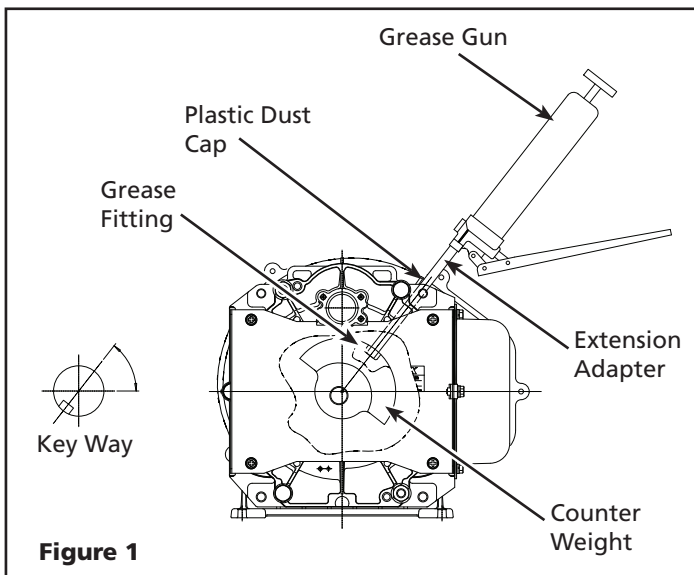
##### 10,000 Hours - Maintenance

**WARNING** Per OSHA regulations, ALL power must be locked out before performing any maintenance.

**CAUTION** This service should be performed by an authorized Powerex Service Center to avoid failure.

#### OS Bearing

1. Remove the plastic dust cap (See Figure 1).
2. Rotate the compressor pulley until the grease fitting is visible through the dust cap hole (See Figure 1). This will allow regreasing of the OS bearing.



3. Use a grease gun extension adaptor to engage the grease fitting and supply the proper volume of grease as indicated on the grease delivery chart (See Grease Delivery chart on Page 2 and on Figure 1).

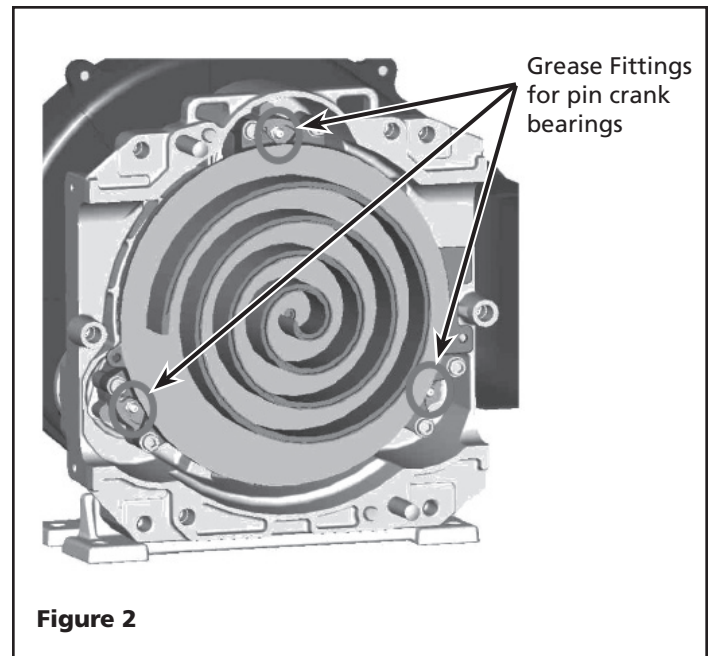
**CAUTION** Use only Powerex genuine grease. Pump grease gun before feeding. This eliminates air from the grease passage of the extension adapter.

4. Replace plastic dust cap.

#### Greasing Pin Crank Bearings

The bearings on the scroll compressor are regreaseable to allow extended compressor life. Service should be performed according to the Maintenance Schedule on Page 2.

1. Remove the fan duct (2), part number 5 on Pages 6 and 7.
2. Remove the nuts and bolts and then the fixed scroll (FS) from the air end.
3. Grease all three pin crank bearings (See Figure 2 below and Grease Delivery Chart on page 2).



4. Replace the fixed scroll and fan duct (2). See the Bolt Torques chart on page 5.

#### TIP SEAL SET REPLACEMENT

##### 5,000/10,000 hours - Maintenance

**WARNING** Per OSHA regulations, ALL power must be locked out before performing any maintenance.

The "Tip Seal Set" is a replacement part for SLAE03EB, SLAE05E, and SLAE05EHP air ends. Please read these instructions thoroughly and carefully to ensure correct replacement.



## Maintenance (continued)

**NOTE:** Replace tip seal on SLAE03EB and SLAE05EHP at 5,000 hours when operated at 145 psig.

The tip seal on the scroll compressor is self-lubricated and allows the unit to operate efficiently without oil and expensive filtration. The tip seal should be replaced every 10,000 hours of operating @ 115 psig.

### Confirmation of the Parts

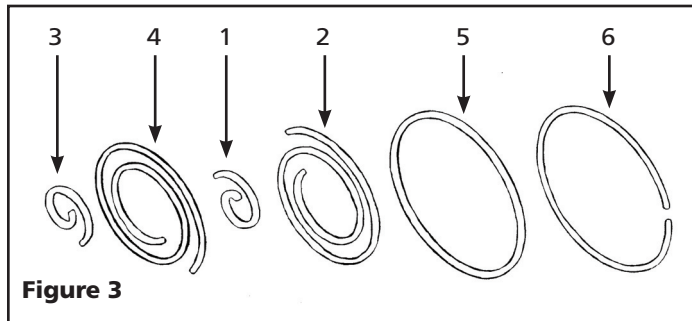
1. Confirm if the tip seal set you purchased is correct for the air end you are repairing. See part number 12 on Page 7 for tip seal set and corresponding pump model number. One tip seal set contains all of the items in Figure 3 below.

Item No.	Description	Qty.
1	HP tip seal for FS	1
2	LP tip seal for FS	1
3	HP tip seal for OS	1
4	LP tip seal for OS	1
5	Dust Seal	1
6	Backup Tube	1

HP= High Pressure  
FS= Fixed Scroll

LP= Low Pressure  
OS= Orbital Scroll

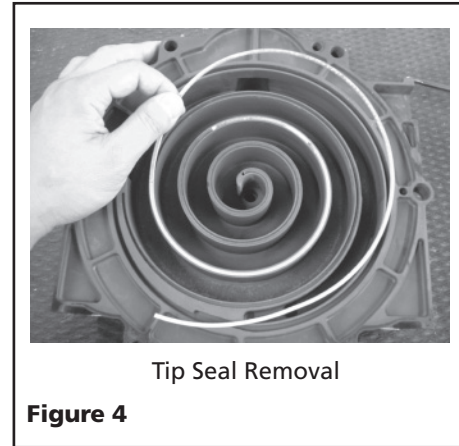
2. Confirm if the following parts are included (See Figure 3).



**Figure 3**

### Replacement

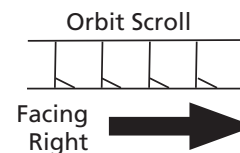
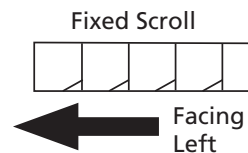
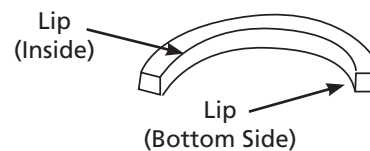
1. Remove the FS nuts and bolts and then FS set from air end.
2. Remove LP and HP tip seals from Fixed Scroll set and Orbit scroll set. Using the tip of a ball-point pen at the start will make it much easier to remove (See Figure 4).



**Figure 4**

3. Remove all dust from the Scroll wraps and tip seal groove with clean cloth or compressed air before inserting the new tip seals.

**NOTE:** In order to distinguish between the tip seal for Fixed Scroll and the tip seal for Orbit Scroll place the tip seal as shown below then view from the arrow direction and refer to the figure below.

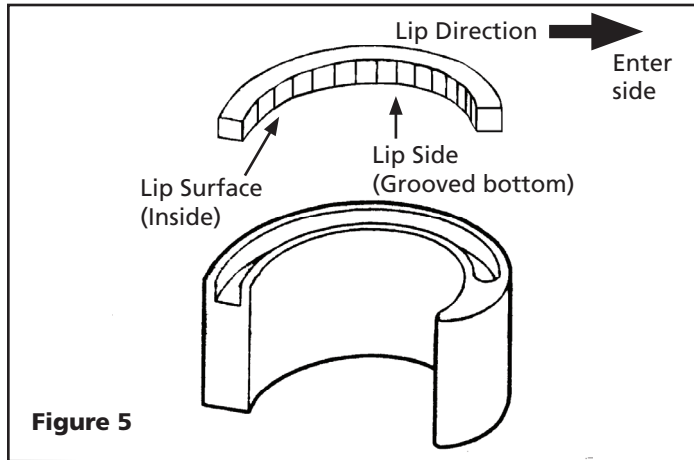


## Maintenance (continued)

### Inserting tip seals

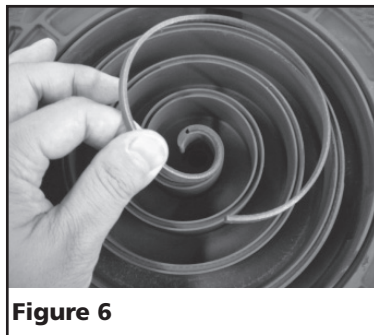
**NOTE:** Tips seals for Fixed Scroll and Orbit Scroll have opposing seal cut angles (See NOTE and explanatory diagram below).

Insert tip seal so that the lip of tip seal is on the bottom of seal groove and inner side of involute and the direction of lip faces the center of involute (curving spiral). See Figure 5. This is to be done for both FS and OS sets.



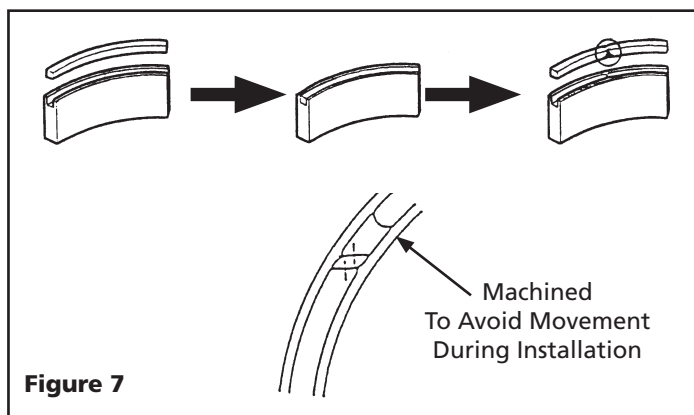
Use caution not to tear or distort lip.

1. Insert new HP tip seal from the center section for OS or Orbit Scroll so that there will be no clearance at the tip (start) section (See Figure 5 and 6).
2. Insert so that new LP tip seal will contact closely with HP tip seal inside Scroll Groove (See Figure 4 on page 4).



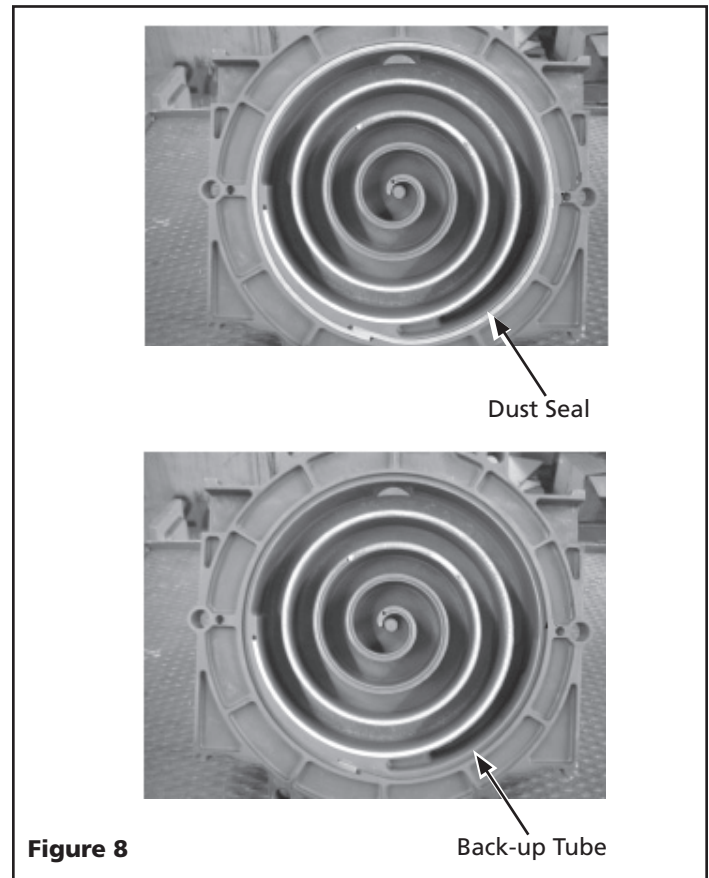
**Figure 6**

**CAUTION** Insert approximately half of the LP tip seal and remove the tip seal to confirm that a notch in the tip seal has been created. This will prevent movement during installation (See Figure 7).



**Figure 7**

3. Repeat the same procedure for FS or Fixed Scroll tip seal set, remove both the dust seal and backup tube located on outermost side FS set.
4. Insert new backup tube in the FS Scroll in the 6 o' clock position (See Figure 8).



**Figure 8**

5. Insert new dust seal on the backup tube.
6. After replacing tip seal set, reassemble Fixed Scroll set to the Orbit Scroll. Tighten nuts and bolts temporarily and confirm if crankshaft rotates smoothly by hand and tighten them firmly. Tightening torques are:

Bolt Torque	First	Second
SLAE03EB	17 in lb.	265 in lb.
SLAE05E/SLAE05EHP	17 in lb.	265 in lb.

**NOTE:** Assemble so that dust seal and tip seal will not drop between Orbit Scroll set and Fixed Scroll set.

## Scroll Air Compressor Service and Maintenance

### GREASE DELIVERY

Bearing	SLAE03EB		SLAE05E		SLAE05EHP	
	1st Time	2nd Time	1st Time	2nd Time	1st Time	2nd Time
Orbit Scroll Bearing	5 Times	4 Times	7 Times	6 Times	7 Times	6 Times
Pin Crank Bearing Orbit Scroll Side	4 Times	4 Times	5 Times	5 Times	7 Times	7 Times
Pin Crank Bearing Housing Side	Do Not Have to Grease		Do Not Have to Grease		Do Not Have to Grease	

**NOTE:** Each pump of the grease gun equals 0.65 grams of grease.

### MAINTENANCE SCHEDULE

Item	Action needed	Operating Hours						Remarks
		500	2500	5000	10,000	15,000	20,000	
Inlet Air Filter	Clean, replace	●	▲					(Every 2,500 hrs or less)
Blower Fan	Clean			●	●	●	●	
Fan Duct	Clean			●	●	●	●	
Compressor Fins	Clean		●					(Every 2,500 hrs or less)
Bearings	Regrease				▲		▲	Service Center Only (Every 5,000 hours for 145 psig scroll)
Tip Seal Set	Replace				▲		▲	(Every 5,000 hours for 145 psig scroll)
Heat Insulation Pipe	Replace				▲		▲	(Every 5,000 hours for 145 psig scroll)
●	Clean							
▲	Replace, regrease							

#### 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 do maintenance accordingly.

6

## Maintenance Log

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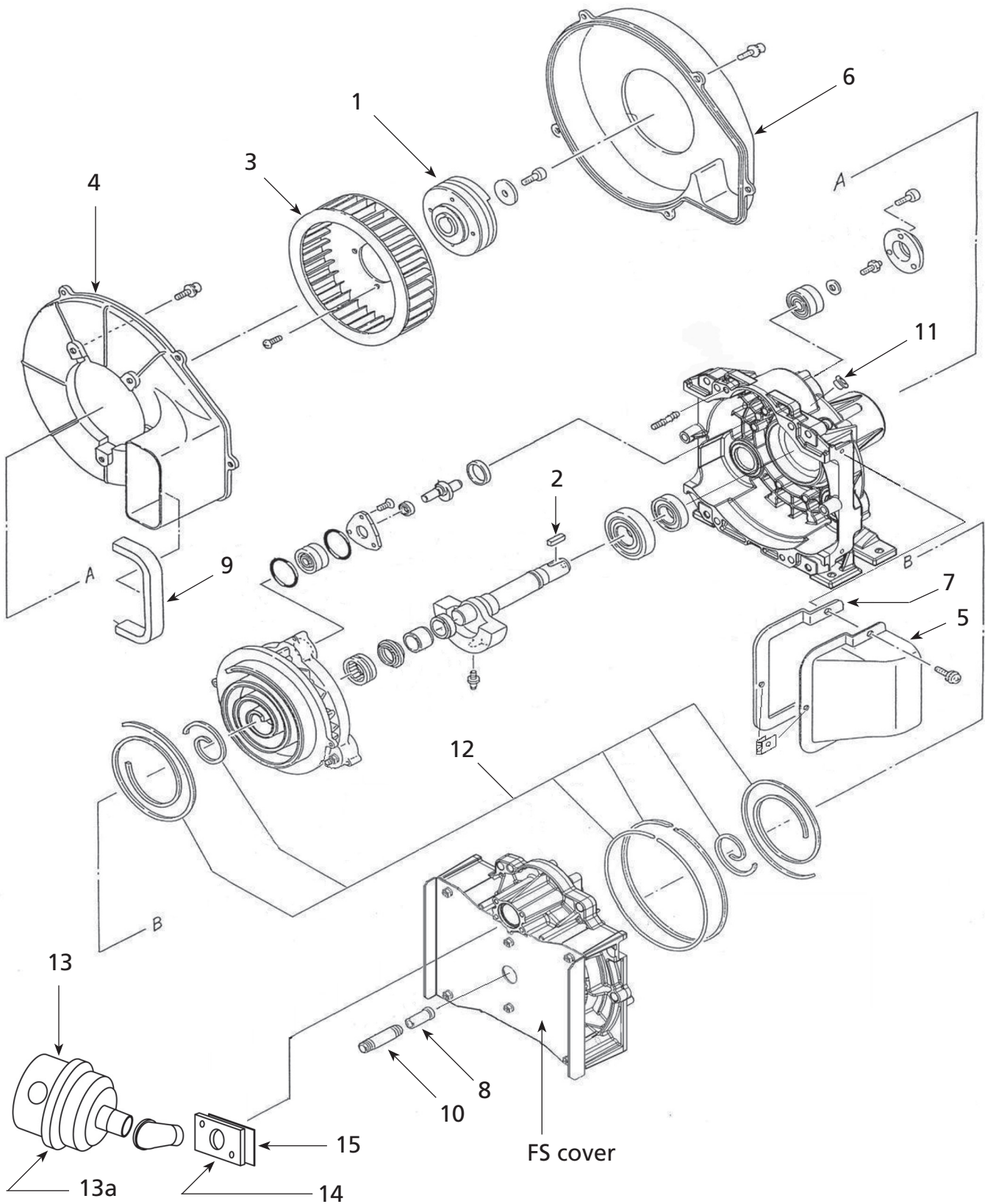


Figure 9 - Compressor Parts

## Scroll Air Compressor Service and Maintenance

Ref. No.	Description	Part Number for Model			Quantity
		SLAE03EB	SLAE05E	SLAE05EHP	
1	Air End Pulley	92721100	92549110	92549110	1
2	Key	IP600600AV	IP600600AV	IP600600AV	1
3	Centrifugal Fan	IP601300AV	IP601300AV	IP601300AV	1
4	Fan Duct (1)	IP601400AV	IP601400AV	IP601400AV	1
5	Fan Duct (2)	IP601500AV	92519042	92519042	1
6	Fan Cover	IP601700AV	IP601700AV	IP601700AV	1
7	Fan dust Gasket (1)	IP601800AV	IP601900AV	IP601900AV	1
8	Heat Insulation Pipe	IP602000AV	IP602000AV	IP602000AV	1
9	Fan Duct Gasket (2)	IP602400AV	IP602400AV	IP602400AV	1
10	Long Nipple	96647011	96647011	96647011	1
11	Dust Cap	IP603500AV	IP603500AV	IP603500AV	1
12	Tip Seal Set	92834090	92832070	92832080	1
13	Filter Assembly	ST073925AV	ST073925AV	ST073925AV	1
13a	Filter Element	ST073921AV	ST073921AV	ST073921AV	1
14	Adaptor Plate	IP088400AV	IP088400AV	IP088400AV	1
15	Intake Gasket	IP088200AV	IP088200AV	IP088200AV	1
*	Grease Gun Kit (Grease gun, Grease, and 2 Nozzles	IP616201AJ	IP616201AJ	IP616201AJ	
*	Grease Gun with 2 Nozzles	IP616101AJ	IP616101AJ	IP616101AJ	
*	Grease (80g.)	IP600000AV	IP600000AV	IP600000AV	

\* Not Shown

[illegible]

### Powerex Limited Warranty – Applicable to Non-OEM Customers in the U.S. & Canada Only

#### 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](http://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.

## Scroll Air Compressor Service and Maintenance

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(i) 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;
- (iii) defects arising from abnormal conditions of temperature, dirt or corrosive matter; or
- (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.** NOTWITHSTANDING 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.

**Claims.** Any non-warranty claims pertaining to the Products must be filed with Powerex within 6 months of the invoice date, or they will not be honored. Prices, discounts, and terms are subject to change without notice or as stipulated in specific Product quotations. Powerex shall not be liable for any delay or failure arising out of acts of the public enemy, fire, flood, or any disaster, labor trouble, riot or disorder, delay in the supply of materials or any other cause, whether similar or dissimilar, beyond the control of Company. All shipments are carefully inspected and counted before leaving the factory. Please inspect carefully any receipt of Products noting any discrepancy or damage on the carrier's freight bill at the time of delivery. Discrepancies or damage which obviously occurred in transit are the carrier's responsibility and related claims should be made promptly directly to the carrier. Returned Products will not be accepted without prior written authorization by Powerex and deductions from invoices for shortage or damage claims will not be allowed. **UNLESS OTHERWISE AGREED TO IN WRITING, THE TERMS AND CONDITIONS CONTAINED IN THIS LIMITED WARRANTY WILL CONTROL IN ANY TRANSACTION WITH POWEREX.** Any different or conflicting terms as may appear on any order form now or later submitted by the buyer will not control. All orders are subject to acceptance by Powerex.