

## 2 HP - 5 HP Scroll Enclosure Air Compressors

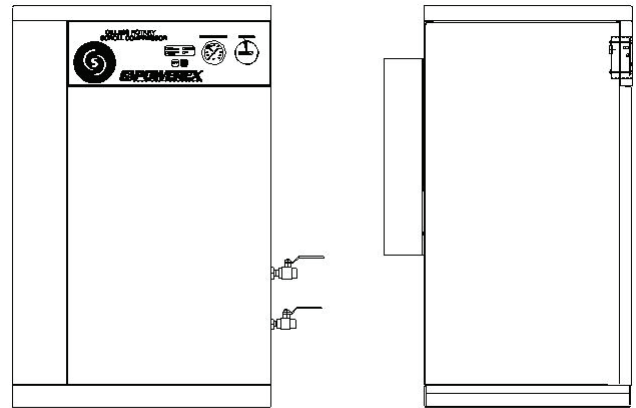
**Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain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

## Description

### GENERAL

The Powerex Oilless Rotary Scroll Air Compressor has advanced scroll compressor technology through the development of a completely oilless compressor. The Powerex Scroll Compressor offers a dynamically balanced air end which insures vibration-free operation. The rotary design permits a continuous 100% duty cycle.

Other standard features on the Powerex Scroll Compressor include: a Magnetic Starter, Motor Overload Protection, a High Temperature Shutdown Switch, an Air Cooled Aftercooler and a Single Phase or Three Phase 4 Pole ODP motor.



## 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.**

## Specifications

|                                  |   |
|----------------------------------|---|
| Product                          | SES Series Powerex Simplex Air Compressors  |
| Performance Specifications       | See Page 2  |
| Lubrication                      | Grease-filled Bearing   |
| Operating Voltages               | 1Ø 230 Volts, 60 Hz<br>3Ø 208-230/460 Volts, 60 Hz  |
| Compression Cycle                | Scroll  |
| Motor Overload Protection        | IEC Magnetic Starter  |
| Pressure Settings                | Cut-In: 95 psig    Cut-Out: 115 psig<br>Cut-In: 125 psig    Cut-Out: 145 psig<br>(High Pressure Unit) |
| Overpressure Protection          | ASME Safety Valve Factory Set and Sealed  |
| Outlet Air Connections           | 3/8 inch NPT  |
| Tank Sizes                       | 10 Gallon ASME Rated 190 psig   |
| California Ordinance 462 (L) (2) | Meets Requirements of this Ordinance  |
| Tank Isolation                   | Standard All Units  |
| Drive                            | V Belt  |
| Control Panel                    | UL508A Listed   |

## 2 HP - 5 HP Scroll Enclosure Air Compressors

### Specifications (Continued)

#### Compressor

| Model         | HP | Air End             | Control System  | Discharge Pressure (PSIG)     | Air Delivery (CFM)                 | Compressor Speed (RPM) | Motor FLA   | Discharge Temp.       | Noise level dB(A) [1.5m from front] | Dimensions In Inches (L x W x H) | Approximate Weight |
|---------------|----|---------------------|-----------------|-------------------------------|------------------------------------|------------------------|-------------|-----------------------|-------------------------------------|----------------------------------|--------------------|
| SES02 / SES12 | 2  | SLAE03E             | Pressure Switch | 95 - 115 (125 - 145 optional) | 6.0 @ 100 PSIG<br>4.6 @ 145 PSIG   | 2200 (1850)            | 9.2/8.4/4.2 | Ambient temp. + 30 °F | 49                                  | 25 x 24 x 39                     | 309 lbs.           |
| SES03 / SES13 | 3  | SLAE03E             |                 |                               | 8.8 @ 100 PSIG<br>7.1 @ 145 PSIG   | 3140 (2770)            | 14/13.8/6.9 |                       | 49                                  |                                  | 309 lbs.           |
| SES05 / SES15 | 5  | SLAE05E (SLAE05EHP) |                 |                               | 15.2 @ 100 PSIG<br>12.5 @ 145 PSIG | 3250 (3250)            | 23          |                       | 51                                  |                                  | 359 lbs.           |

### Installation

#### 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 gases, 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. 20 inches of clearance for sides, 12 inches clearance for back is recommended.
5. If necessary, use metal shims or leveling pads to level the compressor. Never use wood to shim the compressor.
6. Never install the compressor outside.

#### 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. Vent the exhaust air outside to prevent the compressor from operating at high temperatures and shutting down.
4. Never locate the compressor where hot exhaust air from other heat generating units may be pulled into the unit.

#### WIRING

All electrical connections must be performed by a qualified electrician. Installations must be in accordance with local and national electrical codes.

1. Use solderless terminals to connect the electric power source.
2. Remove the front panel.
3. Open the lid of the starter box.
4. Pull the electric cable through the electric source inlet and connect to the primary side of the contactor.
5. Since loosening of wires is possible in shipment, tighten all wire terminals prior to starting the unit.

#### PIPING

1. Make sure the piping is lined up without being strained or twisted when assembling the piping for the scroll 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 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.

#### SAFETY VALVES

Tank mounted compressors are shipped from the factory with safety valves installed in the air receiver manifold. 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 equal or less than the maximum working pressure of the air receiver.
2. Safety valves should be placed ahead of any possible blockage point in the system, i.e. 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. Check the belts for tightness.
5. Be sure all pressure connections are tight.
6. Check to be certain all safety relief valves, etc., are correctly installed.
7. Securely mount all panels and guards.
8. Check that all fuses, circuit breakers, etc., are the proper size.
9. Make sure the inlet filter is properly installed.
10. Confirm that the drain valve is closed.
11. Visually check the rotation of the compressor pump. The rotation should be counterclockwise if viewing the compressor from the belt side. If the rotation is incorrect, have a qualified electrician correct the motor wiring.
12. Remove the shipping bracket attached to the front of the tank feet which is for transportation purposes only.

#### 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. Make sure electric source lamp lights up and that the alarm lamp does not light up.

Note: The alarm lamp light will come on if temperature sensor is not connected. If the sensor is not connected, have a qualified service person reconnect the sensor.

4. Open the 3/8 inch discharge valve completely.
5. Push ON button and check that the compressor operates without excessive vibration, unusual noises or leaks.
6. Close the discharge valve completely.
7. 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 starter box.
8. Check the discharge pressure. Also make sure the air pressure rises to the designated pressure setting by checking the discharge pressure gauge.
9. Check the operation of the pressure switch by opening the outlet valve and confirming the compressor starts at approximately 95 psig for low pressure units and 125 psig or high pressure units.

#### DAILY OPERATION

1. Stop the compressor by pushing the OFF button.

NOTE: If the compressor rotates in reverse for more than five seconds, the check valve needs to be cleaned or replaced.

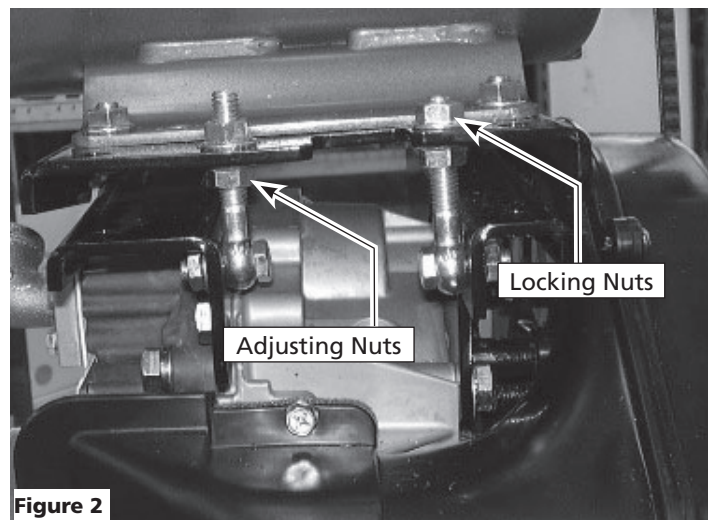
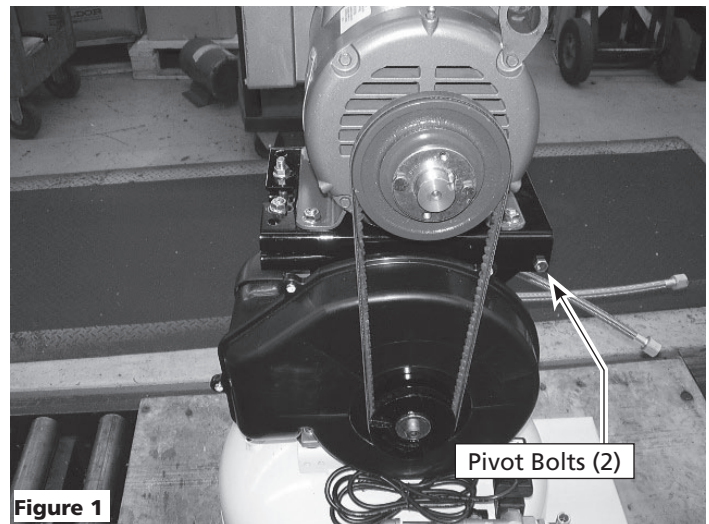
2. Switch the breaker OFF if the compressor is not to be used for a long period of time.

#### STOPPING THE COMPRESSOR DURING NORMAL OPERATION

1. Close the discharge valve.
2. Allow the air pressure to build and the compressor to stop.
3. Turn the compressor off by pushing the OFF button.

#### BELT ADJUSTMENT PROCEDURE

1. Loosen pivot bolts, loosen locking nuts.
2. Tighten belt by adjusting the bottom belt side nut upwards. Make sure motor is level.
3. Tighten locking nuts, tighten pivot bolts.



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### Scroll Unit Parts Breakdown - Models SES02, SES12, SES03, SES13, SES05 and SES15

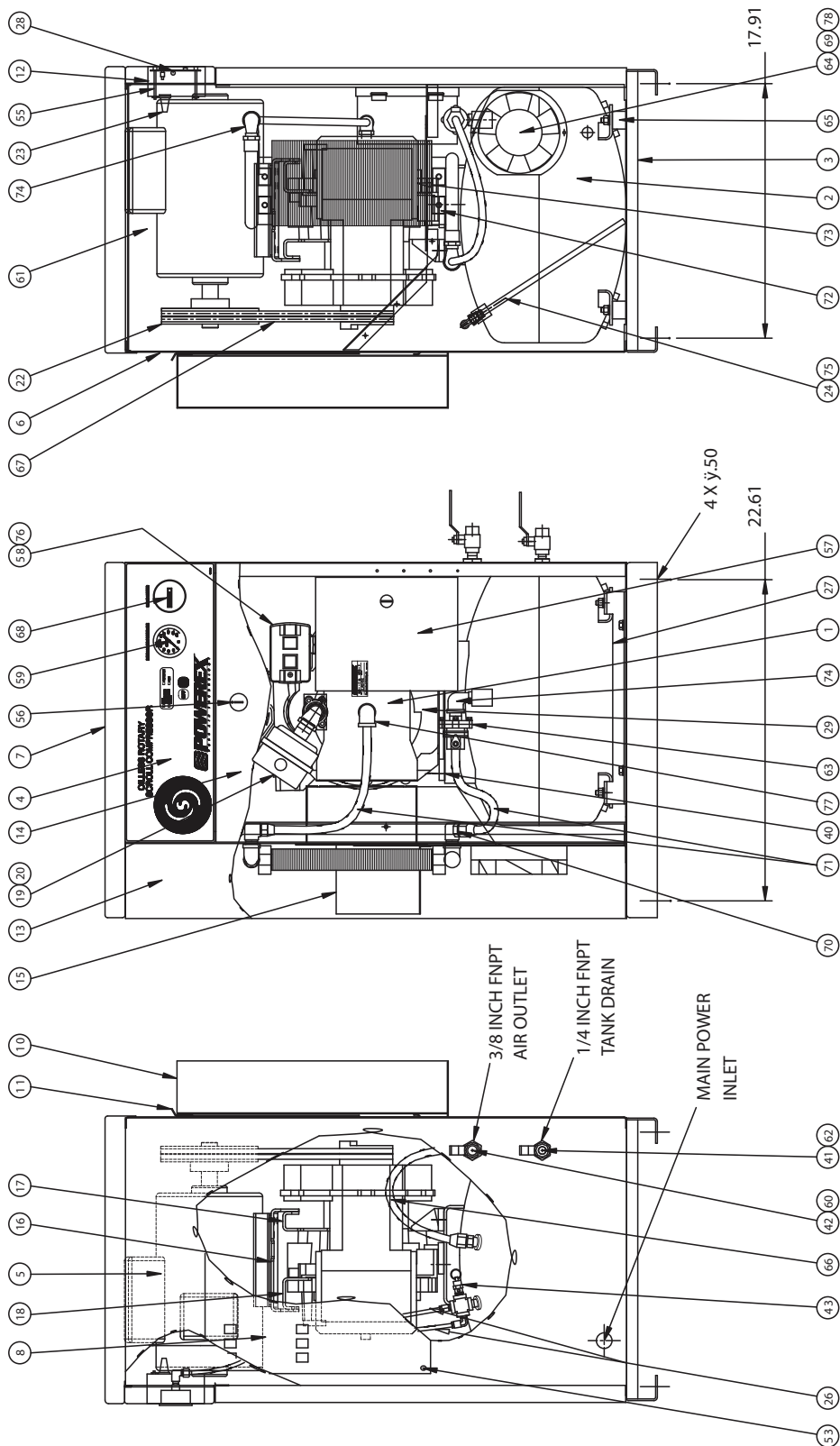


Figure 3

## 2 HP - 5 HP Scroll Enclosure Air Compressors

| Ref. No. | Description                                 | SES02 / SES12 | SES03 / SES13 | SES05 / SES15 | Qty.    |
|----------|---|---------------|---------------|---------------|---------|
| 1        | Air end (Low Pressure)                      | SL014002AJ    | SL014002AJ    | SL016502AJ    | 1       |
|          | (High Pressure)                             | SL014002AJ    | SL014002AJ    | SL016511AJ    | 1       |
| 2        | Tank  | AR033200ST    | AR033200ST    | AR033200ST    | 1       |
| 3        | Base  | IP630800AV    | IP630800AV    | AP603800AV    | 1       |
| 4        | Control panel                               | IP630600AV    | IP630600AV    | IP630600AV    | 1       |
| 5        | Right panel                                 | IP631600AV    | IP631600AV    | IP631600AV    | 1       |
| 6        | Rear panel                                  | IP631400AV    | IP631400AV    | IP631400AV    | 1       |
| 7        | Top panel                                   | IP631200AV    | IP631200AV    | IP631200AV    | 1       |
| 8        | Intake panel                                | IP631300AV    | IP631300AV    | IP631300AV    | 1       |
| 10       | Exhaust duct                                | IP630900AV    | IP630900AV    | IP630900AV    | 1       |
| 11       | Metal screen                                | IP630700AV    | IP630700AV    | IP630700AV    | 1       |
| 12       | Circuit board protector                     | IP632100AV    | IP632100AV    | IP632100AV    | 1       |
| 13       | Left panel                                  | IP631500AV    | IP631500AV    | IP631500AV    | 1       |
| 14       | Door  | IP631100AV    | IP631100AV    | IP631100AV    | 1       |
| 15       | Inside panel                                | IP631701AV    | IP631701AV    | IP631701AV    | 1       |
| 16       | Motor mounting bracket                      | SL303500AV    | SL303500AV    | SL303500AV    | 1       |
| 17       | Rear scroll bracket                         | SL303400AV    | SL303400AV    | SL303400AV    | 1       |
| 18       | Front scroll bracket                        | SL303300AV    | SL303300AV    | SL303300AV    | 1       |
| 19       | Inlet filter                                | ST073922AV    | ST073922AV    | ST073922AV    | 1       |
| 20       | Inlet filter element                        | 91348550      | 91348550      | 91348550      | 1       |
| 22       | Motor pulley<br>(Low Pressure, 4.45PD 3V-1) | PU009740AV    | —             | —             | 1       |
|          | (High Pressure, 3.65PD 3V-1)                | PU009739AV    | —             | —             | 1       |
| 22       | Motor pulley<br>(Low Pressure, 6.0PD 3V-1)  | —             | PU009753AV    | —             | 1       |
|          | (High Pressure, 5.3PD 3V-1)                 | —             | PU009793AV    | —             | 1       |
| 22       | Motor pulley<br>(Low Pressure, 6.9PD 3V-2)  | —             | —             | PU009754AV    | 1       |
|          | (High Pressure, 6.9PD 3V-2)                 | —             | —             | PU009754AV    | 1       |
| 23       | Special grommet                             | IP608900AV    | IP608900AV    | IP608900AV    | 2       |
| 24       | Drain tube assembly                         | ZZ003915AJ    | ZZ003915AJ    | ZZ003915AJ    | 1       |
| 26       | 1/4 inch Nylon tubing                       | PS010300AV    | PS010300AV    | PS010300AV    | 1.5 ft. |
| 27       | Shipping bracket                            | IP632200AV    | IP632200AV    | IP632200AV    | 1       |
| 28       | Circuit board                               | IP087800AV    | IP087800AV    | IP087800AV    | 1       |
| 29       | Thermosensor                                | IP609600AV    | IP609600AV    | IP609700AV    | 1       |
| 40       | Isolation rubber                            | RE002600AV    | RE002600AV    | RE002600AV    | 4       |
| 41       | 1/4 inch Drain flange fitting               | PS006701AV    | PS006701AV    | PS006701AV    | 1       |
| 42       | 3/8 inch Outlet flange fitting              | PS006702AV    | PS006702AV    | PS006702AV    | 1       |
| 43       | Safety valve (Low Pressure)                 | V-215104AV    | V-215104AV    | V-215104AV    | 1       |
|          | (High Pressure)                             | V-215401AV    | V-215401AV    | V-215401AV    | 1       |
| 53       | Pan head machine screw                      | ST074003AV    | ST074003AV    | ST074003AV    | 10      |
| 55       | Aluminium spacer                            | IP632900AV    | IP632900AV    | IP632900AV    | 2       |
| 56       | Door latch                                  | IP630200AV    | IP630200AV    | IP630200AV    | 1       |
| 57       | Starter OL Assly 3PH 208-230 V              | ZZ000760AJ    | ZZ000745AJ    | ZZ000748AJ    | 1       |
|          | Starter OL Assly 3PH 460 V                  | ZZ000759AJ    | ZZ000746AJ    | ZZ000749AJ    | 1       |
| 57       | Starter OL Assly 1PH 208-230 V              | ZZ000747AJ    | ZZ000747AJ    | ZZ000750AJ    | 1       |
| 58       | Pressure switch<br>(Low Pressure)           | CW207573AV    | CW207573AV    | CW207573AV    | 1       |
|          | (High Pressure)                             | CW207595AV    | CW207595AV    | CW207595AV    | 1       |
| 59       | Pressure gauge                              | IP632600AV    | IP632600AV    | IP632600AV    | 1       |
| 60       | Ball valve 3/8 inch                         | ST079802AV    | ST079802AV    | ST079802AV    | 1       |

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| Ref. No. | Description                      | SES02 / SES12 | SES03 / SES13 | SES05 / SES15 | Qty.   |
|----------|----------------------------------|---------------|---------------|---------------|--------|
| 61       | Motor 2HP 1PH 208/230/460V       | MC022317AV    | —             | —             | 1      |
| 61       | Motor 2HP 3PH 208/230/460V       | MC022373AV    | —             | —             | 1      |
| 61       | Motor 3HP 1PH 230V               | —             | MC022309AV    | —             | 1      |
| 61       | Motor 3HP 3PH 208/230/460V       | —             | MC022374AV    | —             | 1      |
| 61       | Motor 5HP 1PH 230V               | —             | —             | MC022393AV    | 1      |
| 61       | Motor 5HP 3PH 208/230/460V       | —             | —             | MC022307AV    | 1      |
| 62       | 1/4 inch Ball valve              | ST079806AV    | ST079806AV    | ST079806AV    | 1      |
| 63       | Check valve                      | IP087700AV    | IP087700AV    | IP087700AV    | 1      |
| 64       | Exhaust fan                      | IP632400AV    | IP632400AV    | IP632400AV    | 1      |
| 65       | Mounting foot                    | IP630300AV    | IP630300AV    | IP630300AV    | 4      |
| 66       | Discharge air hose               | IP633600AV    | IP633600AV    | IP633600AV    | 1      |
| 67       | V-belt<br>3VX-355 (Low Pressure) | BT012500AV    | —             | —             | 1      |
|          | XPZ-812 (High Pressure)          | BT013200AV    | —             | —             | 1      |
| 67       | V-belt<br>XPZ-912 (Low Pressure) | —             | BT012300AV    | —             | 1      |
|          | 3VX-350 (High Pressure)          | —             | BT013300AV    | —             | 1      |
| 67       | V-belt<br>3VX-385 (Low Pressure) | —             | —             | BT013400AV    | 2      |
|          | 3VX-385 (High Pressure)          | —             | —             | BT013400AV    | 2      |
| 68       | Hour meter                       | IP632700AV    | IP632700AV    | IP632700AV    | 1      |
| 69       | Fan cord                         | IP632800AV    | IP632800AV    | IP632800AV    | 1      |
| 70       | Brass elbow                      | ST186402AV    | ST186402AV    | ST186402AV    | 2      |
| 71       | Braided hose                     | ST186600AV    | ST186600AV    | ST186600AV    | 2      |
| 72       | Silicone isolator                | AG007501AV    | AG007501AV    | AG007501AV    | 4      |
| 73       | Aftercooler                      | SL300100AV    | SL300100AV    | SL300100AV    | 1      |
| 74       | 1/2 inch Brass street elbow      | ST071229AV    | ST071229AV    | ST071229AV    | 3      |
| 75       | 3/8 inch Drain tube              | PS001800AV    | PS001800AV    | PS001800AV    | 1.2 ft |
| 76       | Pressure switch cord             | IP087900AV    | IP087900AV    | IP087900AV    | 1      |
| 77       | 3/8 inch Brass elbow             | ST074217AV    | ST074217AV    | ST074217AV    | 1      |
| 78       | Fan guard                        | IP632401AV    | IP632401AV    | IP632401AV    | 1      |
| ▲        | Power supply cord, circuit board | IP612800AV    | IP612800AV    | IP612800AV    | 1      |

### PARTS UNIQUE TO SF120PH

|    |                         |            |  |  |   |
|----|-------------------------|------------|--|--|---|
| 22 | Motor pulley<br>(50 Hz) | PU009748AV |  |  | 1 |
|    | (60 Hz)                 | —          |  |  | 1 |
| 61 | Motor<br>(50 Hz)        | MC301553AV |  |  | 1 |
|    | (60 Hz)                 | MC022309AV |  |  | 1 |
| 67 | V-belt<br>(50 Hz)       | BT012800AV |  |  | 1 |
|    | (60 Hz)                 | —          |  |  | 1 |
| 68 | Hour meter<br>(50 Hz)   | IP632701AV |  |  | 1 |
|    | (60 Hz)                 | —          |  |  | 1 |

▲ = Not shown

## 2 HP - 5 HP Scroll Enclosure Air Compressors

### Maintenance Schedule (see Pump Manual for "How To" Instructions)

| Item               | Action needed     | Operating Hours |                 |  |        |        | Remarks  |
|--------------------|-------------------|-----------------|-----------------|--|--------|--------|--|
|                    |                   | 500             | 2500            | 5000                                       | 10,000 | 20,000 |  |
| Receiver           | Drain moisture    | Daily           |                 |  |        |        | If equipped with an Electric Drain, test daily |
| Cartridge Filter   | Clean, Replace    | ●               | ▲               |  |        |        | Part # 91348550                                |
| Ventilation Screen | Clean             | ●               |                 |  |        |        |  |
| Blower Fan         | Clean             |                 |                 | ●  |        |        |  |
| Fan Duct           | Clean             |                 |                 | ●  |        |        |  |
| Compressor Fins    | Clean             |                 |                 | ●  |        |        |  |
| Compressor         | Regrease          |                 |                 | ▲<br>(Every 5000 hours for 145 psig units) | ▲      | ▲      | Use genuine Powerex grease                     |
| Tip Seal Set       | Replace           |                 |                 | ▲<br>(Every 5000 hours for 145 psig units) | ▲      | ▲      |  |
| V-belt             | Inspect, Replace  |                 | * Readjust<br>● | ▲  | ▲      | ▲      |  |
| Temperature Sensor | Confirm operation |                 |                 |  |        | ●      |  |
| Pressure Switch    | Confirm operation |                 |                 |  | ●      |        |  |
| Magnetic Starter   | Inspect           |                 |                 |  | ●      |        | Replace is contact point is deteriorated       |
| Safety Valve       | Confirm operation |                 |                 |  | ●      |        |  |
| Pressure Gauge     | Inspect           |                 |                 |  | ●      |        |  |
| Ventilation Fan    | Inspect           |                 |                 |  | ●      |        | Replace if malfunctions                        |

● 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 interval time and perform maintenance accordingly.
3. \* Marked "Readjust" means the tension of the V-belt should be adjusted during the initial stage and inspected every 2,500 hours afterwards.

## 2 HP - 5 HP Scroll Enclosure Air Compressors

### Electrical Diagram - Single Phase Units 230 Volts

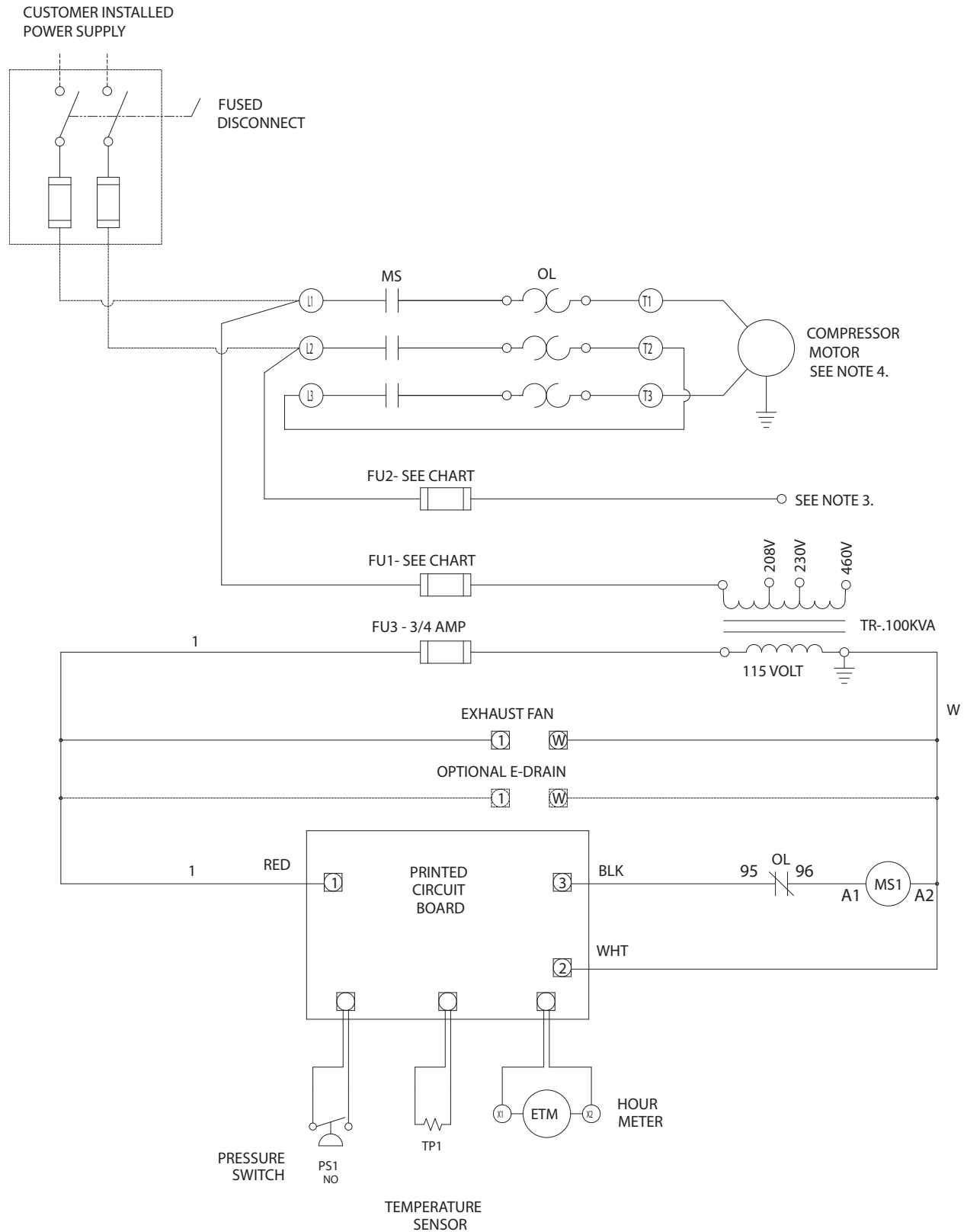
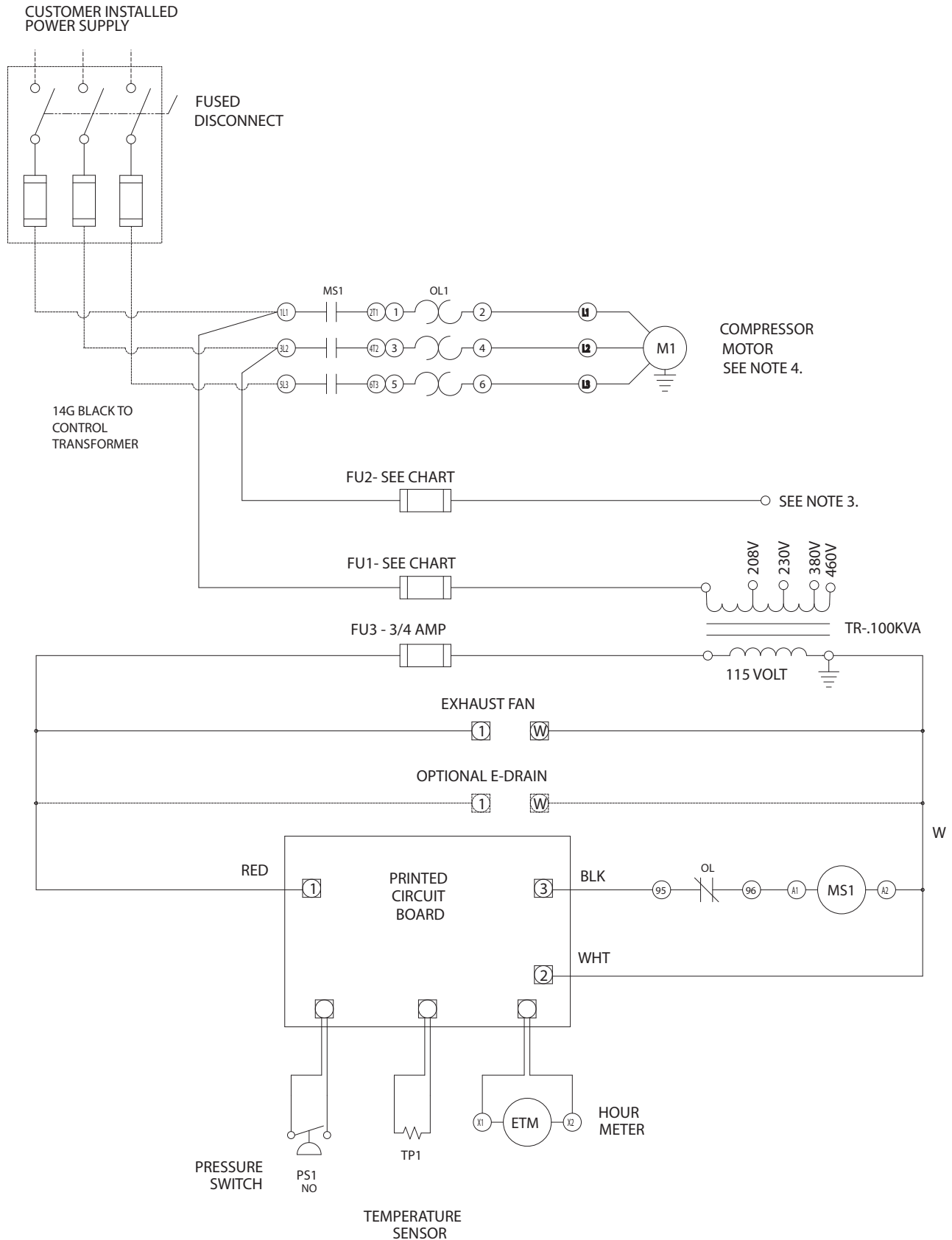


Figure 4



## 2 HP - 5 HP Scroll Enclosure Air Compressors

### Electrical Diagram - Three Phase Units 208 - 230 - 460 Volts



**Figure 5**

## 2 HP - 5 HP Scroll Enclosure Air Compressors

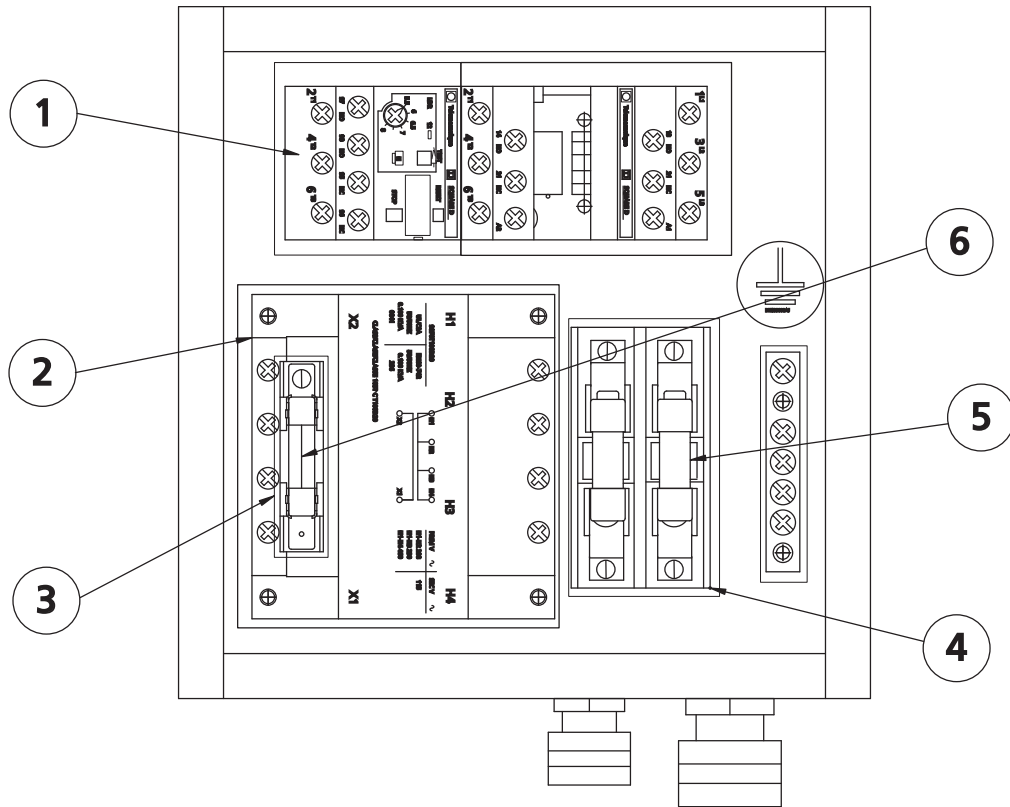


Figure 6

### Scroll Electrical Panel Replacement Parts

| Key #                   |    | 1                  | 2                          | 3                          | 4                          | 5             | 6                          |
|-------------------------|----|--------------------|----------------------------|----------------------------|----------------------------|---------------|----------------------------|
| Model                   | HP | Contactor Assembly | Transformer                | Secondary Fuseholder       | Primary Fuseblock          | Primary Fuses | Secondary Fuse             |
| SES0208<br>208V, 1P     | 2  | ZZ000745AJ         | PS005809AV<br>(ALL MODELS) | PS005812AV<br>(ALL MODELS) | JP007800AV<br>(ALL MODELS) | JP007703AV    | JP007706AV<br>(ALL MODELS) |
| SES03082<br>208V, 3P    | 3  |                    |                            |                            |                            |               |                            |
| SES03083<br>230V, 3P    |    |                    |                            |                            |                            |               |                            |
| SES03084<br>460V, 3P    | 5  | ZZ000746AJ         |                            |                            |                            | JP007702AV    |                            |
| SES13086<br>208-230, 1P |    | ZZ000747AJ         |                            |                            |                            |               |                            |
| SES05082<br>208V, 3P    |    | ZZ000748AJ         |                            |                            |                            | JP007703AV    |                            |
| SES05083<br>230V, 3P    |    | ZZ000749AJ         |                            |                            |                            | JP007702AV    |                            |
| SES05084<br>460V, 3P    |    | ZZ000750AJ         |                            |                            |                            | JP007703AV    |                            |
| SES15086<br>208-230, 1P |    |                    |                            |                            |                            |               |                            |

## Troubleshooting Guide

| <b>PROBLEM</b>                                   | <b>CAUSE</b>  | <b>CORRECTIVE ACTION</b>  |
|--|---|---|
| Power On light does not appear                   | <ol style="list-style-type: none"> <li>1. Main disconnect is not ON</li> <li>2. Blown fuse or circuit breaker at customer provided power supply</li> <li>3. Blown fuse at primary side of transformer</li> <li>4. LED light has failed</li> <li>5. Circuit board has failed</li> </ol>  | <ol style="list-style-type: none"> <li>1. Switch disconnect to ON</li> <li>2. Inspect for any fault replace fuse or trip disconnect to ON</li> <li>3. Replace fuse on primary side be sure use same type and size</li> <li>4. Replace circuit board</li> <li>5. Replace circuit board</li> </ol>  |
| Power On light is on but unit will not start     | <ol style="list-style-type: none"> <li>1. Blown fuse on secondary side of transformer</li> <li>2. Failed push button contact on circuit board</li> <li>3. Motor overload has tripped</li> <li>4. Wrong or low voltage</li> <li>5. Circuit board has failed</li> <li>6. Starter has failed</li> <li>7. Motor has failed</li> </ol>                           | <ol style="list-style-type: none"> <li>1. Replace fuse on secondary side be sure use same type and size</li> <li>2. Replace circuit board on back side of gauge panel</li> <li>3. See last entry of Troubleshooting Guide</li> <li>4. Check incoming power supply and unit power rating</li> <li>5. Replace circuit board</li> <li>6. Replace connector assembly</li> <li>7. Replace motor</li> </ol> |
| Compressor is running but will not make pressure | <ol style="list-style-type: none"> <li>1. Drive belts came off or too loose</li> <li>2. Clogged intake filter element</li> <li>3. Pressure relief valve has opened</li> <li>4. Excessive tip seal wear</li> <li>5. Electric tank drain is open continuously</li> <li>6. Unit running in the wrong direction</li> <li>7. Discharge air is leaking</li> </ol> | <ol style="list-style-type: none"> <li>1. Replace drive belts and (or) tighten</li> <li>2. Replace intake filter element</li> <li>3. Pressure switch needs replaced or motor contacts welded shut</li> <li>4. Replace tip seals</li> <li>5. Replace tank drain</li> <li>6. Correct power connections</li> <li>7. Check discharge piping</li> </ol>  |
| Excessive noise or vibration                     | <ol style="list-style-type: none"> <li>1. Shipping brackets not removed</li> <li>2. Drive belt has separated or flat spot</li> <li>3. Motor has failed</li> <li>4. Pump is damaged</li> <li>5. Cooling air fan is touching fan guard</li> </ol>   | <ol style="list-style-type: none"> <li>1. Remove shipping brackets after installation</li> <li>2. Replace drive belt</li> <li>3. Replace motor</li> <li>4. Fix or replace pump</li> <li>5. Check air fan daily</li> </ol>   |
| Compressor shuts down on high temperature        | <ol style="list-style-type: none"> <li>1. Room temperature is above 104F</li> <li>2. Inlet air duct is obstructed</li> <li>3. Cooling air fan not running</li> <li>4. Aftercooler fins clogged</li> <li>5. Intake filter damaged</li> <li>6. Compressor is dirty</li> </ol>   | <ol style="list-style-type: none"> <li>1. Add ventilation or air conditioning to room</li> <li>2. Remove obstruction or reposition unit to allow for cooling air</li> <li>3. Replace cooling air fan</li> <li>4. Clean aftercooler</li> <li>5. Check intake filter</li> <li>6. Clean unit</li> </ol>  |
| Compressor shuts down on temperature malfunction | <ol style="list-style-type: none"> <li>1. Temperature sensor has faulted / unplugged</li> <li>2. Circuit board has failed</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace temperature sensor / plug in</li> <li>2. Replace circuit board on back side of gauge panel</li> </ol>   |
| Compressor turns on / off rapidly                | <ol style="list-style-type: none"> <li>1. Receiver tank has high level of water</li> <li>2. Compressor check valve has failed</li> <li>3. Defective pressure switch</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace electric tank drain / drain tank</li> <li>2. Replace check valve</li> <li>3. Replace pressure switch</li> </ol>   |
| Safety valves blows off                          | <ol style="list-style-type: none"> <li>1. Pressure switch has failed to open</li> <li>2. Motor starter contacts welded shut</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace pressure switch</li> <li>2. Replace motor starter</li> </ol>  |
| Motor Overload has tripped                       | <ol style="list-style-type: none"> <li>1. Pump has failed</li> <li>2. Motor has failed</li> <li>3. Improper wiring</li> <li>4. Wrong overload setting</li> <li>5. Low voltage</li> </ol>  | <ol style="list-style-type: none"> <li>1. Fix or replace pump</li> <li>2. Replace motor</li> <li>3. Check wiring</li> <li>4. Check overload setting</li> <li>5. Check incoming power supply</li> </ol>  |

### Powerex Limited Warranty

**Powerex 3 Year / 10,000 Hour Extended Parts Limited Warranty** - Powerex warrants each Compressor Pump or Scroll Air-End against defects in material or workmanship from the date of purchase for a period of **Three years or 10,000 hours**, whichever may occur first. This warranty applies to the exchange of part(s) of the compressor pump or air-end found to be defective by an Authorized Powerex Service Center.

**Powerex 1 Year / 5,000 Hour Inlet to Outlet Limited Warranty** - Powerex warrants each Compressor Unit, System, Pump, or Air-End against defects in material or workmanship from the date of purchase for a period of **One Year or 5,000 Hours**, whichever may occur first. This warranty applies to the exchange of defective component part(s) and labor performed by an Authorized Powerex Service Center.

**Coverage.** The above mentioned warranty applies to Powerex manufactured units or systems only. Items listed in the operator's manual under routine maintenance are not covered by this or any other warranty. Failure to complete maintenance as stated in the maintenance schedule will void this warranty.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM THE DATE OF PURCHASE: AND TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. THIS IS THE EXCLUSIVE REMEDY AND LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.

**Limitation of Liability.** To the extent allowable under applicable law, Powerex's liability for consequential and incidental damages is expressly disclaimed. Powerex's liability in all events is limited to, and shall not exceed, the purchase price paid.

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**Claims.** Claims pertaining to the merchandise in this schedule, with the exception of warranty claims, 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. All agreements are contingent upon strikes, accidents, or other causes beyond our control. All shipments are carefully inspected and counted before leaving the factory. Please inspect carefully any receipt of merchandise 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 merchandise 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, THESE TERMS AND CONDITIONS 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. All orders are subject to acceptance by POWEREX.