

Climate Control Simplex

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.

Features

- Guaranteed low oil carryover rate of less than 2 PPM
- Three year warranty on compressor pump
- Isolation pads
- Optional R134 dryer
- ASME tank
- UL listed controls

The AS-XXX Series Powerex Simplex Air Compressors have been designed, broken-in and tested to meet the most demanding specifications in the pneumatic climate control industry for low oil carryover and long life.

All Powerex air compressors have reliable operation and feature high quality construction and components. An unloading feature is included on all compressors to provide loadless starting. Oil entrainment is minimized by the use of lap joint piston rings, low compressor speeds and a special lubricating oil with a high flash point and low carbon content.

All 1/2 through 10 hp models are also equipped with an auxiliary cooling fan and air control shroud to achieve low head temperatures and further minimize oil carryover.

Powerex compressor motors are NEMA Class B design. Single-phase motors have built-in overload protection and a DPST disconnect switch. Three-phase motors require a manual or magnetic starter and three overload heater coils which may be ordered as a factory mounted and wired option.



Figure 1 - AS-XXX 1 Hp Simplex Air Compressor

| Specifications | |
|----------------------------------|---|
| Product | AS-XXX Series Powerex Simplex Air Compressors |
| Performance Specifications | See Table 1 |
| Models & Options | See Table 2 |
| Lubrication | 1/2 Through 10 Splash Lubrication System |
| Operating Voltages | 1Ø 115 - 208/230 Volts, 60 Hz 3Ø 208-230/460 Volts, 60 Hz |
| Compression Cycle | 1/2 Through 10 Hp Models Single-Stage |
| Motor Overload Protection | 1Ø Built-In Thermal Overload (Standard) 3Ø Magnetic Starter and Three Thermal Overload Switches (Optional) |
| Pressure Settings | Cut-In: Factory Set at Approximately 70 psig (490kPa) Cut-out: Factory Set at Approximately 90 psig (630 kPa) |
| Overpressure Protection | ASME Safety Valve Factory Set and Sealed at Approximately 115 psig (805 kPa) |
| Outlet Air Connections | 1/2" NPT on 30, 60 and 80 Gallon Tanks; 1" NPT on 120 and 200 Gallon Tanks |
| Tank Sizes | See Table 2 |
| California Ordinance 462 (L) (2) | Meets Requirements of this Ordinance |
| Tank Isolation | Standard All Units |
| Manuals | 200 Page Service Manual Available |

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Powerex office. Powerex shall not be liable for damages resulting from misapplication or misuse of its products.

Climate Control Simplex

**TABLE 1: AS-XXX SERIES POWEREX SIMPLEX AIR COMPRESSORS
PERFORMANCE SPECIFICATIONS**

| Base Model | Actual Hp | | Motor Rating | | Compressor RPM | Compressor Capacity ACFM* | | |
|------------|-----------|------|--------------|------|----------------|---------------------------|-------------|-------------|
| | 1Ø | 3Ø | Hp | RPM | | 100% Runtime | 50% Runtime | 33% Runtime |
| AS-105 | .54 | — | — | 1725 | 810 | 1.8 | 0.9 | 0.6 |
| AS-005 | — | .54 | .54 | 1720 | | | | |
| AS-107 | .73 | — | — | 1725 | 970 | 2.5 | 1.25 | 0.83 |
| AS-007 | — | .73 | .73 | 1725 | | | | |
| AS-110 | 1.07 | — | — | 1725 | 1120 | 4.2 | 2.1 | 1.39 |
| AS-010 | — | 1.07 | 1.07 | 1725 | | | | |
| AS-015 | — | 1.54 | 1.54 | 1750 | 860 | 5.2 | 2.6 | 1.72 |
| AS-020 | — | 2.0 | 2.0 | 1750 | | | | |
| AS-030 | — | 3.1 | 3.1 | 1745 | 1050 | 11.0 | 5.5 | 3.63 |
| AS-050 | — | 5.6 | 5.6 | 1745 | | | | |
| AS-075 | — | 8.2 | 8.2 | 1745 | 950 | 31.0 | 15.5 | 10.23 |
| AS-100 | — | 10.3 | 10.3 | 1750 | | | | |

Mounted and Connected Options

MAGNETIC MOTOR STARTER

An optional magnetic motor starter which has been selected and wired for the intended input voltage is available for all units. All starters are furnished with properly sized overload heaters.

REFRIGERATED AIR DRYER

A factory mounted Model Hankinson HPR 5-10 Series refrigerated air dryer with automatic condensate drain trap assembly, bypass valve is available as an option on all 1/2 through 3 Hp Powerex Simplex air compressors. Piping for air dryer is done at the factory. Wiring to power source must be done in the field using integral cord and plug which fits into a standard 120 volt receptacle. Refer to Table 2 for ordering details.

AUTOMATIC TANK DRAIN

Powerex air compressors are ordered with either a manual or electric type automatic tank drain. This unit is furnished with a manual drain attachment.

VIBRATION DAMPENING PADS

Waffle type design vibration pads are provided as standard equipment.

Operation

Factory calibrated snap-acting DPST pressure electric switches provide automatic cut-in and cut-out. Overpressure protection is provided by an ASME safety relief valve. Receiver tanks have a condensate drain valve with an extension for easy access. All mounting bases are slotted for V-belt tension adjustment to aid in maintaining proper compressor and motor alignment.

All units are run through the factory break-in and are tested for air delivery, leakage and power consumption.

Units are shipped with a proper fill of compressor oil in the crankcase and are furnished with an intake filter/silencer with a replaceable cartridge. This filter/silencer combination is designed to remove contaminants in the inlet air and provide quieter operation. The 5 through 10 Hp models are complimented by this design utilizing dual element filtration which consists of a pleated element and a foam element for filtration against larger particles from the atmosphere.

LUBRICATION

Check lubricating oil level at gauge. Refill if necessary.

Change oil according to maintenance schedule. Before draining oil, remove oil supply cap and loosen oil drain cap

to release trapped air. Use Mobil Rarus 427® or Mobil DTE heavy oils.

WARNING *Dispose of oil in accordance with state or local codes.*

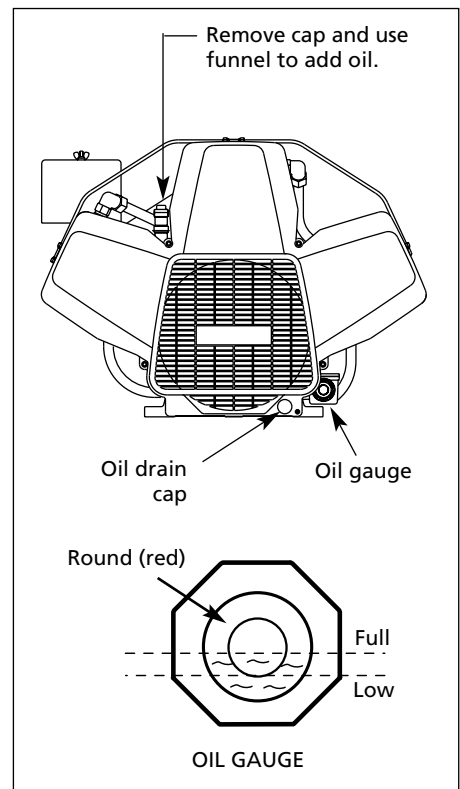


Figure 2 - Lubrication

AUTO E-DRAIN ASSEMBLY (See Figure 3)

NOTE: The automatic E-drain is assembled to tank.

1. Plug E-drain into 115V power outlet supply.
2. Adjust times accordingly.

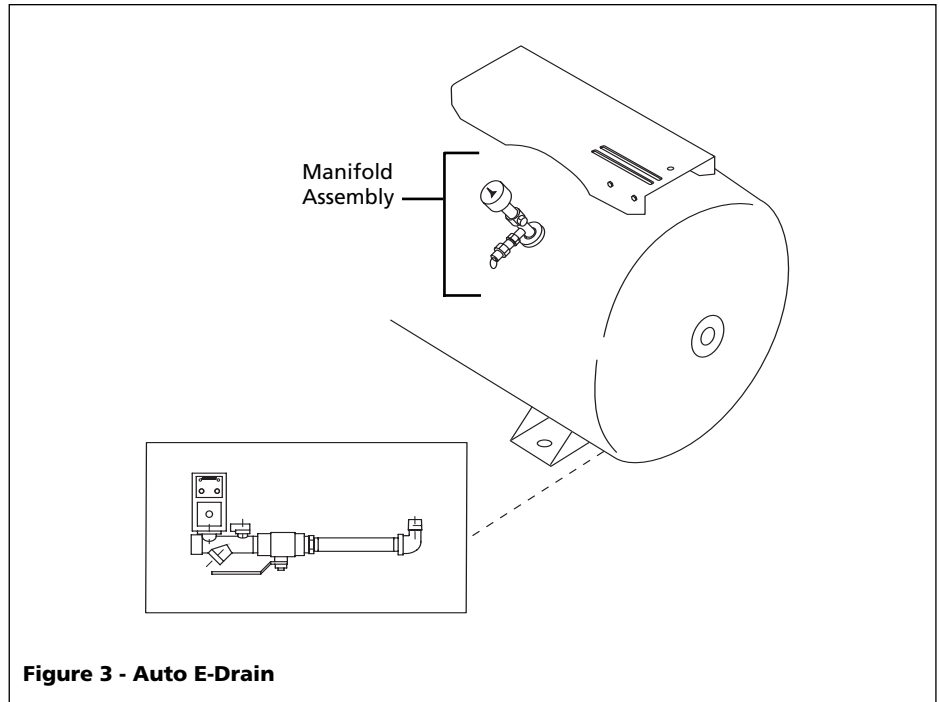
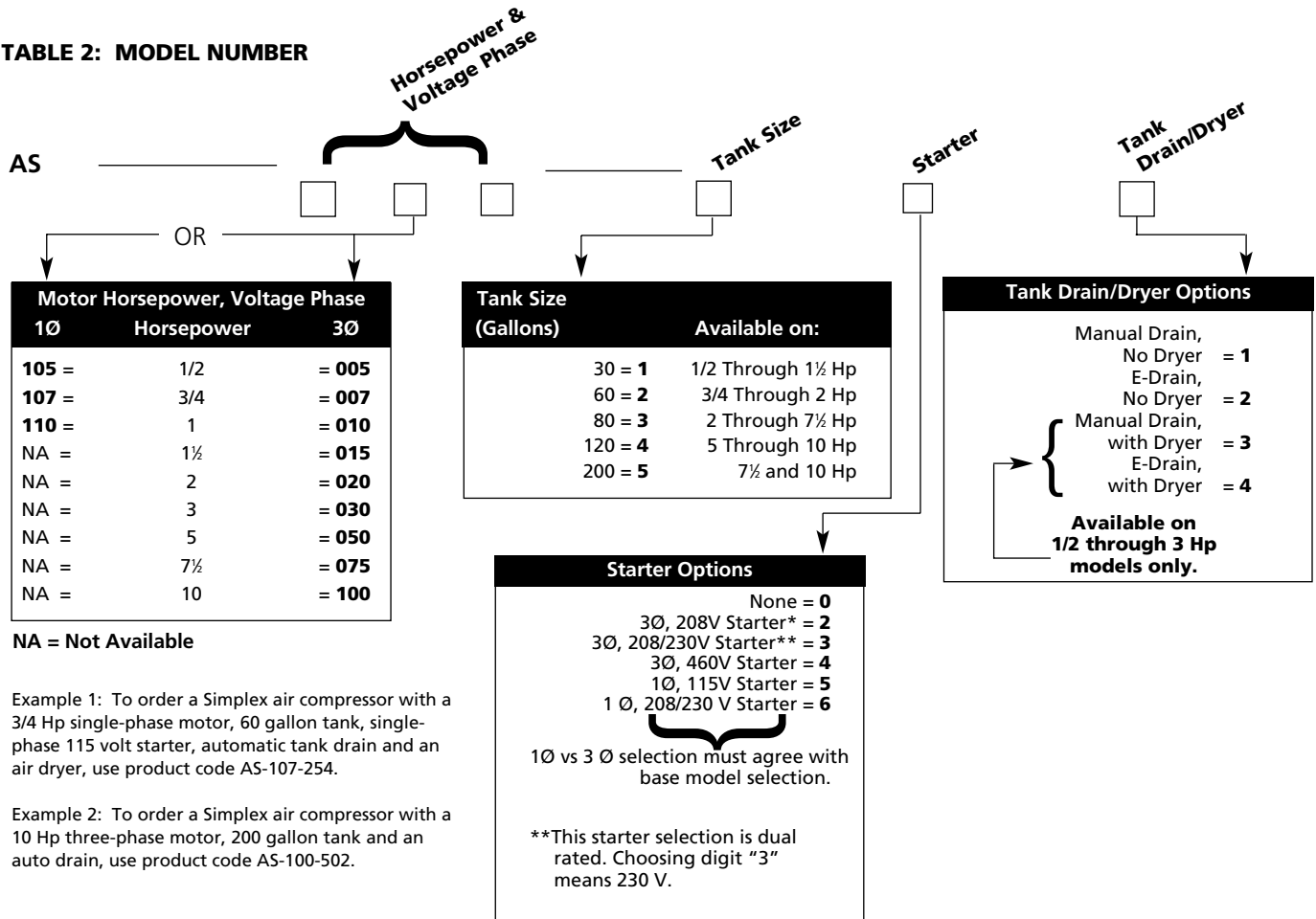


Figure 3 - Auto E-Drain

TABLE 2: MODEL NUMBER



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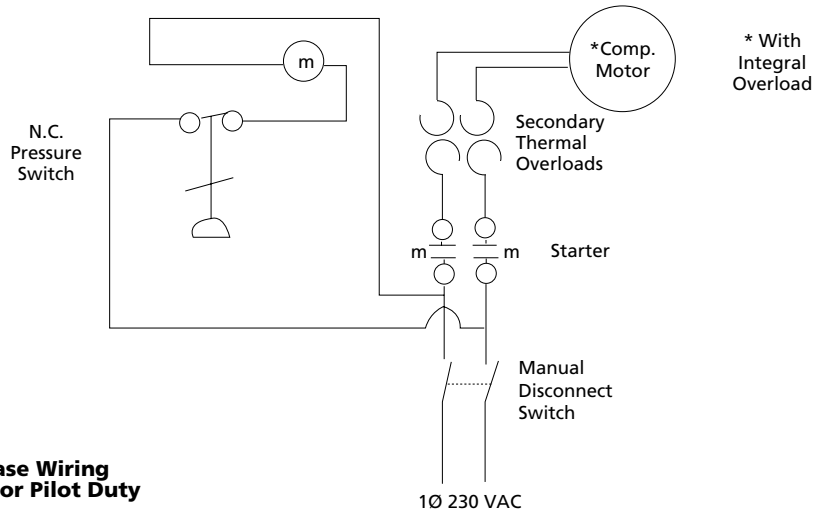


Figure 4 - AS-XXX Single-Phase Wiring With Pressure Switch Used for Pilot Duty

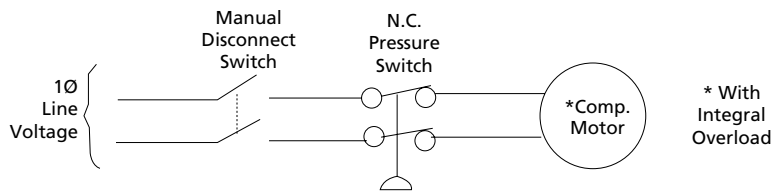
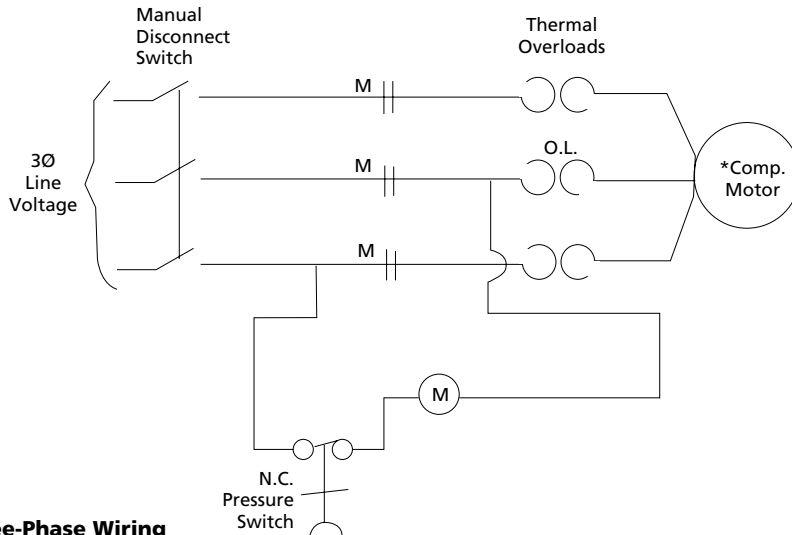


Figure 5 - AS-XXX Single-Phase Wiring With Pressure Switch Used as Contactor



NOTE: "M" = Magnetic Contactor

Figure 7 - Dimensions
(See Table 3)

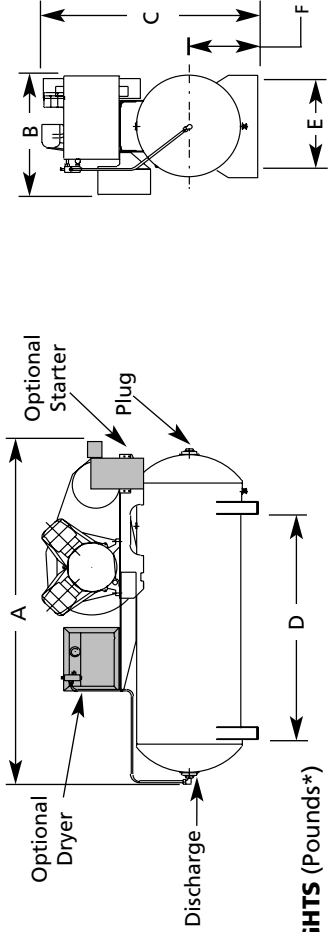


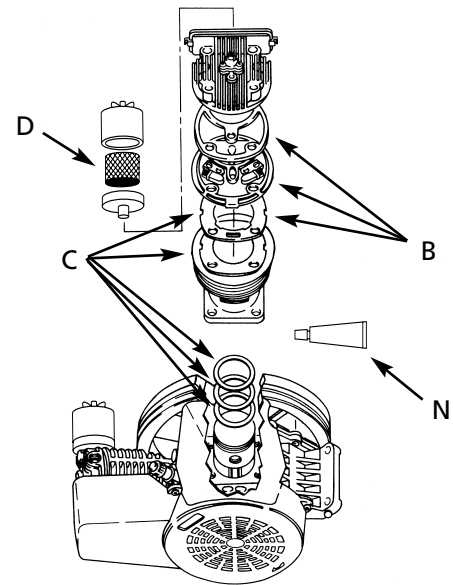
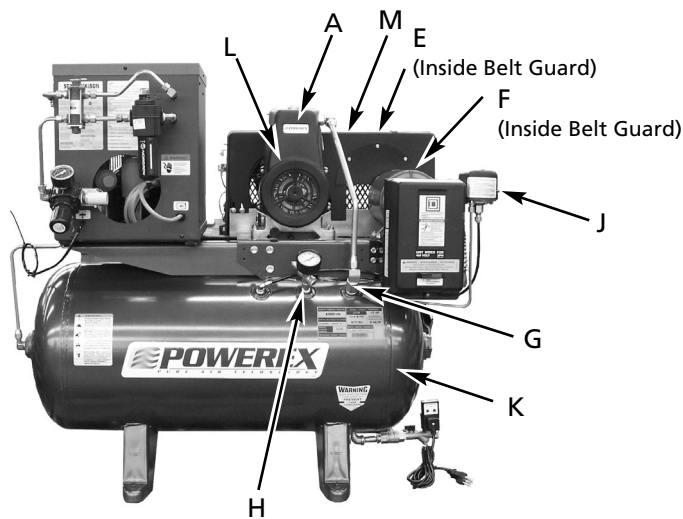
TABLE 3: DIMENSIONS (Inches*) AND SHIPPING WEIGHTS (Pounds**)

| Base Model | A | | B | | C | D | E | F | Shipping Weight** with Starter | Shipping Weight** without Starter | | | | |
|------------|-----------------------|-----------------------|------------------------|-----------------------|--------|--------|--------|--------|-----------------------------------|--------------------------------------|------------------------|---------|------|------|
| | w/Starter w/oDryer | w/Starter or Dryer | w/Starter w/o Dryer | w/Starter or Dryer | | | | | | | w/Starter and Dryer | w/Dryer | | |
| AS-105-1XX | 42 1/2 | 40 | 43 1/2 | 42 | 21 1/4 | 17 3/4 | 21 1/6 | 18 3/4 | 35 1/2 | 18 | 15 3/4 | 12 1/4 | 209 | 200 |
| AS-005-1XX | 42 1/2 | 40 | 43 1/2 | 42 | 21 1/4 | 17 3/4 | 21 1/6 | 18 3/4 | 36 | 18 | 15 3/4 | 12 1/4 | 209 | 200 |
| AS-107-1XX | 50 3/4 | 40 | 51 7/2 | 52 3/4 | 22 1/4 | 20 | 22 2/6 | 21 | 40 | 29 | 18 | 14 | 339 | 330 |
| AS-007-2XX | 42 1/2 | 40 | 43 1/2 | 42 | 21 1/4 | 17 3/4 | 21 1/6 | 18 3/4 | 36 | 18 | 15 3/4 | 12 1/4 | 219 | 210 |
| AS-110-1XX | 50 3/4 | 40 | 51 7/2 | 52 3/4 | 22 1/4 | 20 | 22 2/6 | 21 | 40 | 29 | 18 | 14 | 349 | 340 |
| AS-010-1XX | 42 1/2 | 40 | 43 1/2 | 42 | 21 1/4 | 17 3/4 | 21 1/6 | 18 3/4 | 36 | 18 | 15 3/4 | 12 1/4 | 219 | 210 |
| AS-110-2XX | 50 3/4 | 40 | 51 7/2 | 52 3/4 | 22 1/4 | 20 | 22 2/6 | 21 | 40 | 29 | 18 | 14 | 349 | 340 |
| AS-010-2XX | 42 1/2 | 40 | 43 1/2 | 42 | 21 1/4 | 17 3/4 | 21 1/6 | 18 3/4 | 36 | 18 | 15 3/4 | 12 1/4 | 219 | 210 |
| AS-015-1XX | 50 3/4 | 40 | 51 7/2 | 52 3/4 | 22 1/4 | 20 | 22 2/6 | 21 | 40 | 29 | 18 | 14 | 349 | 340 |
| AS-015-2XX | 51 1/2 | 50 3/4 | 52 1/2 | 52 3/4 | 23 3/4 | 20 | 23 3/6 | 21 | 42 | 29 | 18 | 14 | 349 | 340 |
| AS-020-2XX | 65 | 64 | 66 3/2 | 66 | 23 3/4 | 20 | 23 3/6 | 21 | 41 | 40 | 18 1/2 | 13 | 384 | 375 |
| AS-020-3XX | 65 1/2 | 64 | 66 3/2 | 66 | 23 3/4 | 20 | 23 3/6 | 21 | 41 | 40 | 18 1/2 | 13 | 509 | 500 |
| AS-030-3XX | 64 | 64 | 66 3/2 | 66 | 23 3/4 | 20 | 23 3/6 | 21 | 46 | 43 3/4 | 18 1/2 | 13 | 609 | 600 |
| AS-050-3XX | 70 3/4 | 70 3/4 | 70 3/4 | 70 3/4 | 26 1/4 | 24 | 26 1/4 | 24 | 49 1/4 | 42 | 22 | 15 3/4 | 714 | 705 |
| AS-050-4XX | 64 | 64 | 66 3/2 | 66 | 23 3/4 | 20 | 23 3/6 | 21 | 46 | 43 3/4 | 18 1/2 | 13 | 621 | 610 |
| AS-075-3XX | 70 3/4 | 70 3/4 | 70 3/4 | 70 3/4 | 26 1/4 | 24 | 26 1/4 | 24 | 49 1/4 | 42 | 22 | 15 3/4 | 725 | 714 |
| AS-075-4XX | 81 1/2 | 81 1/2 | 81 1/2 | 81 1/2 | 30 | 30 | 30 | 30 | 55 1/2 | 42 | 22 | 18 3/4 | 951 | 940 |
| AS-100-4XX | 79 | 76 1/2 | 76 1/2 | 76 1/2 | 27 1/4 | 24 | 27 1/4 | 24 | 51 | 42 | 22 | 15 3/4 | 915 | 904 |
| AS-100-5XX | 81 1/4 | 79 1/4 | 79 1/4 | 79 1/4 | 30 | 30 | 30 | 30 | 58 | 42 | 22 | 18 3/4 | 1141 | 1130 |

*Inches x 2.54 = Centimeters, Pounds x 0.454 = Kilograms

**Add 60.0 lbs. for units equipped with a factory mounted air dryer

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REPLACEMENT PARTS LIST

| Item | Description | Quantity Required | Shipping Weight (lbs.) | Code Number | |
|------|--|-------------------|------------------------|-------------|--------------|
| A | PUMP AND FLYWHEEL: Motor Hp | 1/2, 3/4 | 1 | 19.5 | A-005-6001 |
| | | 1, 1½ | 1 | 35 | A-010-6001NP |
| | | 2 | 1 | 59 | A-020-6001NP |
| | | 3 | 1 | 66 | A-030-6001NP |
| | | 5 | 1 | 115 | A-050-6001NP |
| | | 7½ | 1 | 121 | A-075-6001NP |
| | | 10 | 1 | 180 | A-100-6001NP |
| B | VALVE KIT: Includes valve plate, spacer and head gasket Motor Hp | 1/2 | 1 | 0.4 | A-005-6002 |
| | | 3/4 | 1 | 0.4 | A-005-6002 |
| | | 1, 1½ | 1 | 0.5 | A-010-6002NP |
| | | 2 | 2 | 0.5 | A-010-6002NP |
| | | 3 | 2 | 0.7 | A-030-6002NP |
| | | 5 | 2 | 1.2 | A-050-6002NP |
| | | 7½ | 2 | 1.2 | A-075-6002NP |
| 10 | 3 | 1.2 | A-075-6002NP | | |
| C | RING/CYLINDER KIT: Includes all compression rings, oil control rings, cylinder, gasket and sealant Motor Hp | 1/2 | 1 | 3.6 | A-005-6004 |
| | | 3/4 | 1 | 3.6 | A-005-6004 |
| | | 1, 1½ | 1 | 4.8 | A-010-6004NP |
| | | 2 | 2 | 4.8 | A-010-6004NP |
| | | 3 | 2 | 5.5 | A-030-6004NP |
| | | 5 | 2 | 10 | A-050-6004NP |
| | | 7½ | 2 | 10 | A-075-6004NP |
| 10 | 3 | 10 | A-075-6004NP | | |
| D | INTAKE FILTER ELEMENT: Motor Hp | 1/2 | 1 | 0.1 | A-005-6023 |
| | | 3/4 | 1 | 0.1 | A-005-6023 |
| | | 1, 1½ | 1 | 0.2 | A-010-6023NP |
| | | 2 | 1 | 0.2 | A-030-6023NP |
| | | 3 | 1 | 0.2 | A-030-6023NP |
| | | 5 | 2 | 0.2 | A-030-6023NP |
| | | 7½ | 2 | 0.2 | A-030-6023NP |
| 10 | 3 | 0.2 | A-030-6023NP | | |
| E | BELT: Motor Hp | Size | | | |
| | | 1/2 | 1 | 0.3 | A-005-6006 |
| | | 3/4 | 1 | 0.3 | A-005-6006 |
| | | 1 | 1 | 0.3 | A-010-6006 |
| | | 1½ | 1 | 0.3 | A-015-6006NP |
| | | 2 | 1 | 0.4 | A-020-6006NP |
| | | 3 | 1 | 0.4 | A-030-6006NP |
| | | 5 | 2 | 1.6 | A-050-6006NP |
| | | 7½ (120 gal tank) | 2 | 2.0 | A-075-6046NP |
| | | 7½ (200 gal tank) | 2 | 2.0 | A-075-6056NP |
| 10 | 2 | 2.4 | A-100-6006NP | | |

REPLACEMENT PARTS LIST (Continued)

| Item | Description | Quantity Required | Shipping Weight (lbs.) | Code Number | |
|--------------|---|-------------------------|------------------------------|----------------|----------------|
| F | MOTOR PULLEY: | | | | |
| | Motor Hp | | | | |
| | Type | | | | |
| | 1/2 | 1A-4.4" P.D., 5/8" Bore | 1 | 3.8 | A-005-6007 |
| | 3/4 | 1A-5.8" P.D., 5/8" Bore | 1 | 3.9 | A-007-6037 |
| | 1 (1 Ø) | 1A-4.0" P.D., 5/8" Bore | 1 | 3.2 | A-110-6007 |
| | 1 (3 Ø) | 1A-4.0" P.D., 7/8" Bore | 1 | 3.2 | A-010-6007 |
| | 1½ | 1A-6.0" P.D., 7/8" Bore | 1 | 5.6 | A-020-6007 |
| | 2 | 1A-6.0" P.D., 7/8" Bore | 1 | 5.2 | A-020-6007 |
| | 3 | 1A-6.0" P.D., 1½" Bore | 1 | 6.3 | A-030-6007NP |
| | 5 | 2A-5.6" P.D., 1½" Bore | 1 | 7.6 | A-050-6007NP |
| | 7½ | 2A-7.6" P.D., 1½" Bore | 1 | 12.5 | A-075-6007NP |
| 10 | 2A-7.6" P.D., 1½" Bore | 1 | 13.5 | A-100-6007NP | |
| G | IN-TANK CHECK VALVE: | | | | |
| | Motor Hp | | | | |
| | Size | | | | |
| | 1/2 Through 3 | 1/2" MPT x 1/2" FPT | 1 | 0.3 | A-010-6008 |
| | 5 Through 10 | 3/4" MPT x 3/4" FPT | 1 | 0.4 | A-075-6008 |
| H | SAFETY RELIEF VALVE: Set at approximately 115 psig (805 kPa) | | | | |
| | 1/2 Through 5 Hp Models | 1 | 0.1 | A-050-6009 | |
| | 7½ Through 10 Hp Models | 1 | 0.2 | A-200-6009 | |
| J | PRESSURE ELECTRIC SWITCHES: (For all models) | | | | |
| | Lead Switch: Set at approximately | | | | |
| | 70 psig (490 kPa) cut-in and | | | | |
| | 90 psig (630 kPa) cut-out | 1 | 0.9 | A-100-6010 | |
| | Lag Switch: Set at approximately | | | | |
| | 60 psig (420 kPa) cut-in and | | | | |
| | 80 psig (560kPa) cut-out | 1 | 0.9 | A-100-6011 | |
| K | TANK: | | | | |
| | Motor Hp | | | | |
| | Tank Size | | | | |
| | 1/2 Through 1½ | 30 gallon | 1 | 134.0 | A-010-6030NP** |
| | 1/2 Through 1½ | 60 gallon | 1 | 175.0 | A-010-6060NP |
| | 2 & 3 | 60 gallon | 1 | 184.0 | A-020-6060NP |
| | 1/2 Through 1½ | 80 gallon | 1 | 235.0 | A-010-6080NP** |
| | 2 & 3 | 80 gallon | 1 | 243.0 | A-020-6080NP** |
| | 2 & 3 | 120 gallon | 1 | 398.0 | A-020-6120NP** |
| 5 & 7½ | 120 gallon | 1 | 415.0 | A-050-6120NP** | |
| 5 Through 10 | 200 gallon | 1 | 677.0 | A-100-6200NP** | |
| L | COOLING SHROUD: | | | | |
| | Motor Hp | | | | |
| | 1/2 | | 1 | 1.0 | A-005-6013 |
| | 3/4 | | 1 | 1.0 | A-005-6013 |
| | 2 | | 1 | 1.7 | A-020-6013NP |
| | 3 | | 1 | 1.7 | A-030-6013NP |
| | 5 | | 1 | 1.9 | A-050-6013NP |
| | 7½ | | 1 | 1.9 | A-075-6013NP |
| 10 | | 1 | 4.5 | A-100-6013NP | |
| M | BELT GUARD: | | | | |
| | Motor Hp | | | | |
| | 1/2 Through 1½ | | 1 | 2.4 | A-010-6012 |
| | 2 & 3 | | 1 | 12.5 | A-020-6012 |
| | 5 & 7½ | | 1 | 12.5 | A-050-6012 |
| 10 | | 1 | 18.5 | A-100-6012 | |
| N | LIQUID GASKET: | | | | |
| | Motor Hp | | | | |
| | 1/2 Through 10 | 1 | 0.1 | A-999-6000 | |

**This replacement tank is also the replacement tank used on duplex air compressors and will include mounting hardware for a second pump.

Climate Control Simplex

Maintenance Schedule

| Item | Action needed | Operating Hours | | | | | | Remarks |
|-------------------|-------------------|-------------------|------|---------------------------|--------|--------|--------|--|
| | | 500 | 2500 | 5000 | 10,000 | 15,000 | 20,000 | |
| Tank | Drain moisture | Daily | 2500 | | | | | |
| Inlet air filter | Replace | ● | ▲ | (Every 2,500 hrs or less) | | | | |
| Blower fan | Clean | | | ● | ● | ● | ● | |
| Fan duct | Clean | | | ● | ● | ● | ● | |
| Compressor fins | Clean | | ● | (Every 2,500 hrs or less) | | | | |
| Oil change | Replace | (Every 1,500 hrs) | | | | | | |
| Compression rings | Replace | | | | | ▲ | | |
| Check oil | Inspect | Daily | | | | | | |
| Piston set | Replace | | | | | ● | | |
| 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 hrs or less) | | | | |
| Pressure gauge | Inspect | | ● | (Every 2,500 hrs or less) | | | | |

- (●) 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 do maintenance accordingly.
3. * The tension of the V-belt should be adjusted during initial start up and inspected every 1,500 hours afterwards. Proper belt tension for 1/2 to 3 HP units is 2-3 lbs./5" deflection; for 5 to 10 Hp units, 4-6 lbs./5" deflection.

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.

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.

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.

All 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.



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