

Oilless Tankmount 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.

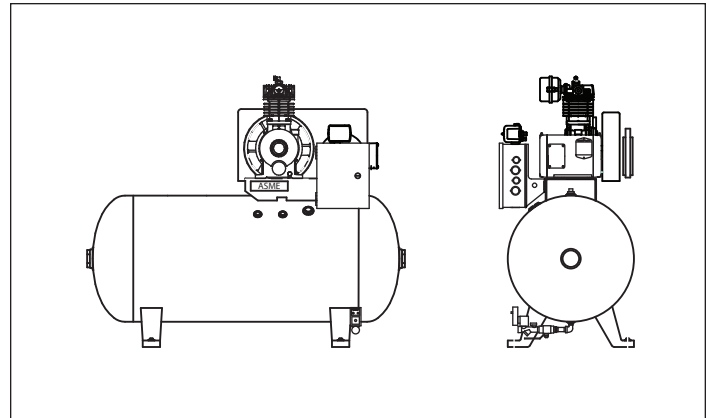
Description

The OTS Series Powerex Simplex Air Compressors have been designed and tested to meet the most demanding specifications in the pneumatic oil free industry for reliability.

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. Powerex oilless pump uses composite piston technology, low compressor speeds and PTFE compression ring(s) at low maintenance costs.

All 2 through 15 hp models are also equipped with an auxiliary cooling fan and air control shroud to achieve low head temperatures and further minimizing ring wear.

Powerex compressor motors are NEMA Class B design. Single-phase 1HP motors have built-in overload protection and a DPST disconnect switch. Three-phase motors require a magnetic starter and adjustable overload which may be ordered as a factory mounted and wired option.



Specifications

Product	OTS Series Powerex Simplex Air Compressors
Performance Specifications	See Table 1
Models and Options	See Table 2
Lubrication	1 Through 15 HP Models: Sealed Bearings
Operating Voltages	1Ø 1 to 1-1/2 HP 115/208 -230 Volts, 60 Hz 2 to 5 HP 208 -230 Volts, 60 Hz 3Ø 208-230/460 Volts, 60 Hz
Compression Cycle	1 Through 3 HP Models: Single-Stage 5 Through 15 HP Models: Two-Stage
Motor Overload Protection	1Ø Built-In Thermal Overload (Only 1 HP) 3Ø Magnetic Starter and IEC Adjustable Overload (Optional)
Pressure Settings	Cut-In: Factory Set at Approximately 90 psig Cut-out: Factory Set at Approximately 120 psig
Overpressure Protection	ASME Safety Valve Factory Set and Sealed at Approximately 140 psig
Outlet Air Connections	1/2 inch NPT on 30, 60 and 80 Gallon Tanks; 1 inch NPT on 120 Gallon Tanks
Tank Sizes	See Table 2
California Ordinance 462 (L) (2)	Meets Requirements of this Ordinance
Tank Isolation	Standard All Units
Manuals	Unit Service and Parts Manual

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.

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Performance Specifications

Model	HP	Phase	SCFM @100 psig	RPM	Voltage	Full Load AMP / Motor	Gallon Tank	Dimensions (inches)			Ship Weight (lbs.)
								L	W	H	
OTS110	1	1	3.6	625	115/208/230	13.4/7.4/6.7	30/60	42 51	21 22	39 42	231 312
OTS010	1	3	3.6	625	208/230/460	3.38/3.12/1.56	30/60	42 51	21 22	39 42	231 312
OTS115	1.5	1	5.3	885	115/208/230	18/9.5/9.0	30/60	42 51	21 22	39 42	230 327
OTS015	1.5	3	5.3	885	208/230/460	5.2/4.8/2.4	30/60	42 51	21 22	39 42	230 317
OTS120	2	1	6.5	845	115/208/230	24.0/12.0/12.6	60	51	23	45	350
OTS020	2	3	6.5	845	208/230/460	6.8/6.3/3.15	60	51	23	45	343
OTS130	3	1	10.1	1115	208/230	16.8/16.0	80	64	23	46	485
OTS030	3	3	10.1	1115	208/230/460	8.71/7.88/3.94	80	64	23	46	479
OTS151	5	1	17.9	860	208/230	29.0/26.4	80/120	64 70	24 26	50 54	550 716
OTS050	5	3	17.9	860	208/230/460	14.1/12.8/6.39	80/120	64 70	24 26	50 54	536 702
OTS075	7.5	3	26.1	855	208/230/460	20.8/18.8/9.4	80/120	64 70	29 29	53 53	599 765
OTS100	10	3	35.0	1090	208/230/460	28.1/25.4/12.7	120	69	29	53	790 1045
OTS150	15	3	54.2	1140	208/230/460	41.0/38.0/19.0	120	69	29	53	910 1130

TABLE 1: Oilless Tankmount Simplex - Model OTS

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.

⚠ WARNING

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

NOTE: Information that requires special attention.

CALIFORNIA PROPOSITION 65

⚠ WARNING

This product or its power cord may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

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.

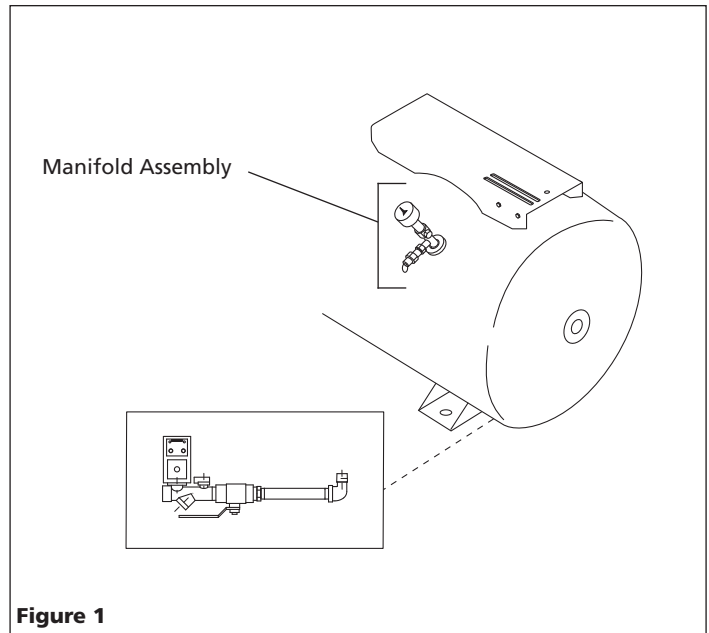
All units are run and tested for air delivery, leakage and power consumption.

Units are furnished with an 5 micron intake filter/ silencer(s) with a replaceable cartridge. This filter/ silencer combination is designed to remove contaminants in the inlet air and provide quieter operation.

AUTO E-DRAIN ASSEMBLY (SEE FIGURE 1)

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

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



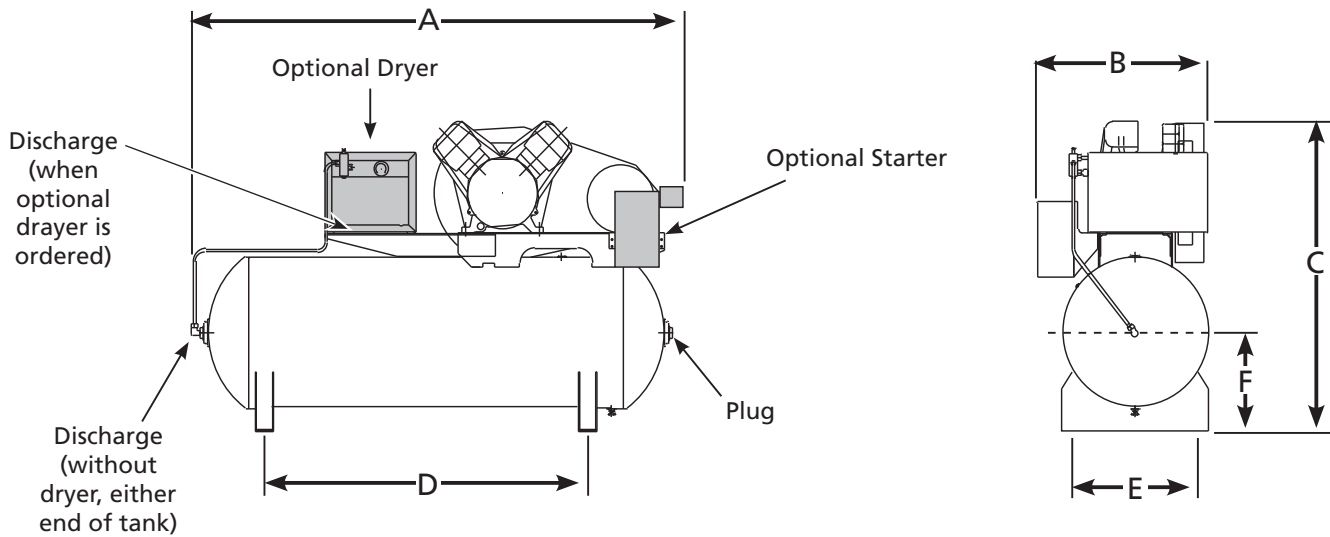


Figure 5a - Dimensions

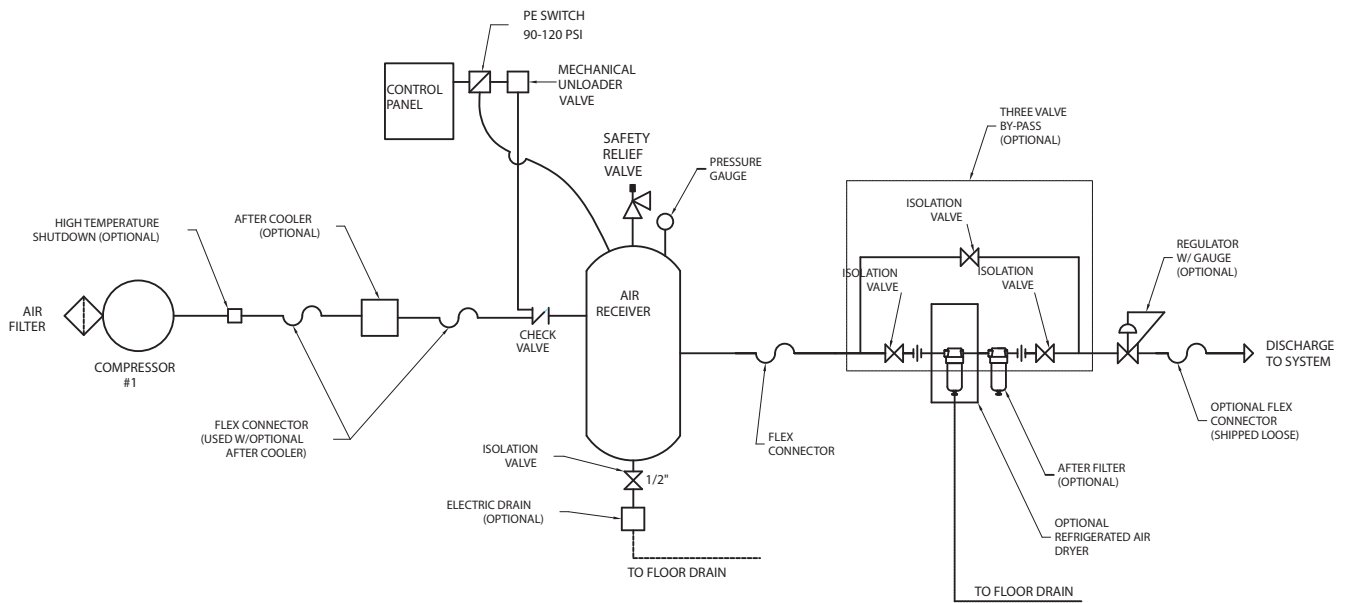


Figure 5b - Wiring Diagram

Base Model	A				B				C	D	E	F	Shipping Weight**	
	w/ Starter w/o Dryer	w/o Starter or Dryer	w/ Starter and Dryer	w/o Starter w/ Dryer	w/ Starter w/o Dryer	w/o Starter or Dryer	w/ Starter and Dryer	w/o Starter w/ Dryer					With Starter	Without Starter
OTS-110-1XX OTS-010-1XX	41-3/4	40	41-3/4	40	20-1/2	17-3/4	20-1/2	17-3/4	39	18	15-3/4	12-1/4	219	210
OTS-110-2XX OTS-010-2XX	50-3/8	50-3/8	50-3/8	50-3/8	21-1/4	20	21-1/4	20	43	30	18	13-3/4	349	340
OTS-015-1XX OTS-115-1XX	41-3/4	40	41-3/4	40	20-1/2	17-3/4	20-1/2	17-3/4	39	18	15-3/4	12-1/4	219	210
OTS-015-2XX OTS-115-2XX	50-3/8	50-3/8	50-3/8	50-3/8	21-1/4	20	21-1/4	20	43	30	18	13-3/4	349	340
OTS-020-2XX OTS-120-2XX	50-1/4	50-1/4	50-1/4	50-1/4	22-3/8	20	22-3/8	20	45	30	18	13-3/4	349	340
OTS-020-3XX OTS-120-3XX	65	64	66 23/32	66	23-1/4	20	23-5/16	21	41	40	18-1/8	13	384	375
OTS-030-3XX OTS-130-3XX	63-1/4	63-1/4	63-1/4	63-1/4	22-3/8	20	22-3/8	20	45-3/4	40	18-1/2	14-5/8	509	500
OTS-050-3XX OTS-151-3XX	63-1/4	63-1/4	—	—	22-5/8	20	—	—	49-1/4	40	18-1/2	14-5/8	609	600
OTS-050-4XX OTS-151-4XX	70-3/4	70-3/4	—	—	25-3/8	24	—	—	54-1/4	42	18	16-7/8	714	705
OTS-075-3XX OTS-075-4XX	64	64	—	—	29-1/4	28-1/2	—	—	52-7/8	42	26-1/2	14	621	610
OTS-100-4XX OTS-150-4XX	69-1/4	69-1/4	—	—	28-1/2	25-1/2	—	—	53-3/8	42	22	16	714	714
OTS-100-4XX OTS-150-4XX	69-1/4	69-1/4	—	—	28-1/2	25-1/2	—	—	53-3/8	42	22	16	915	904
OTS-100-4XX OTS-150-4XX	69-1/4	69-1/4	—	—	28-1/2	25-1/2	—	—	53-3/8	42	22	16	915	904

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

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

TABLE 3: Dimensions (Inches*) and Shipping Weights (Pounds*)

Air Filter Replacement

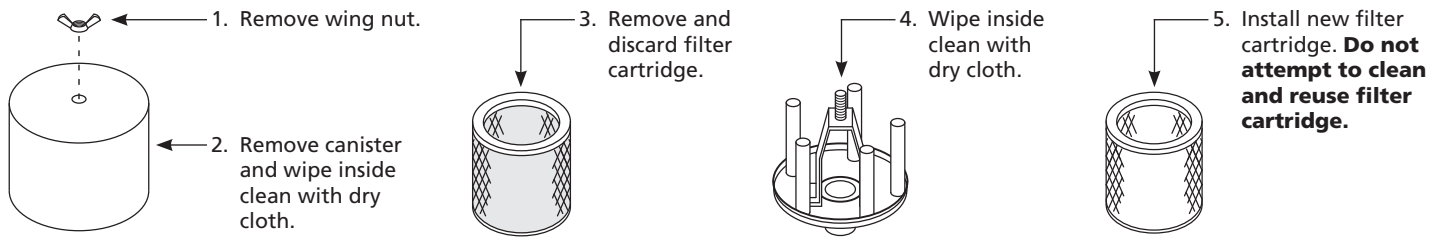


Figure 6

Ring and Piston Set Replacement (every 10,000 Hours)

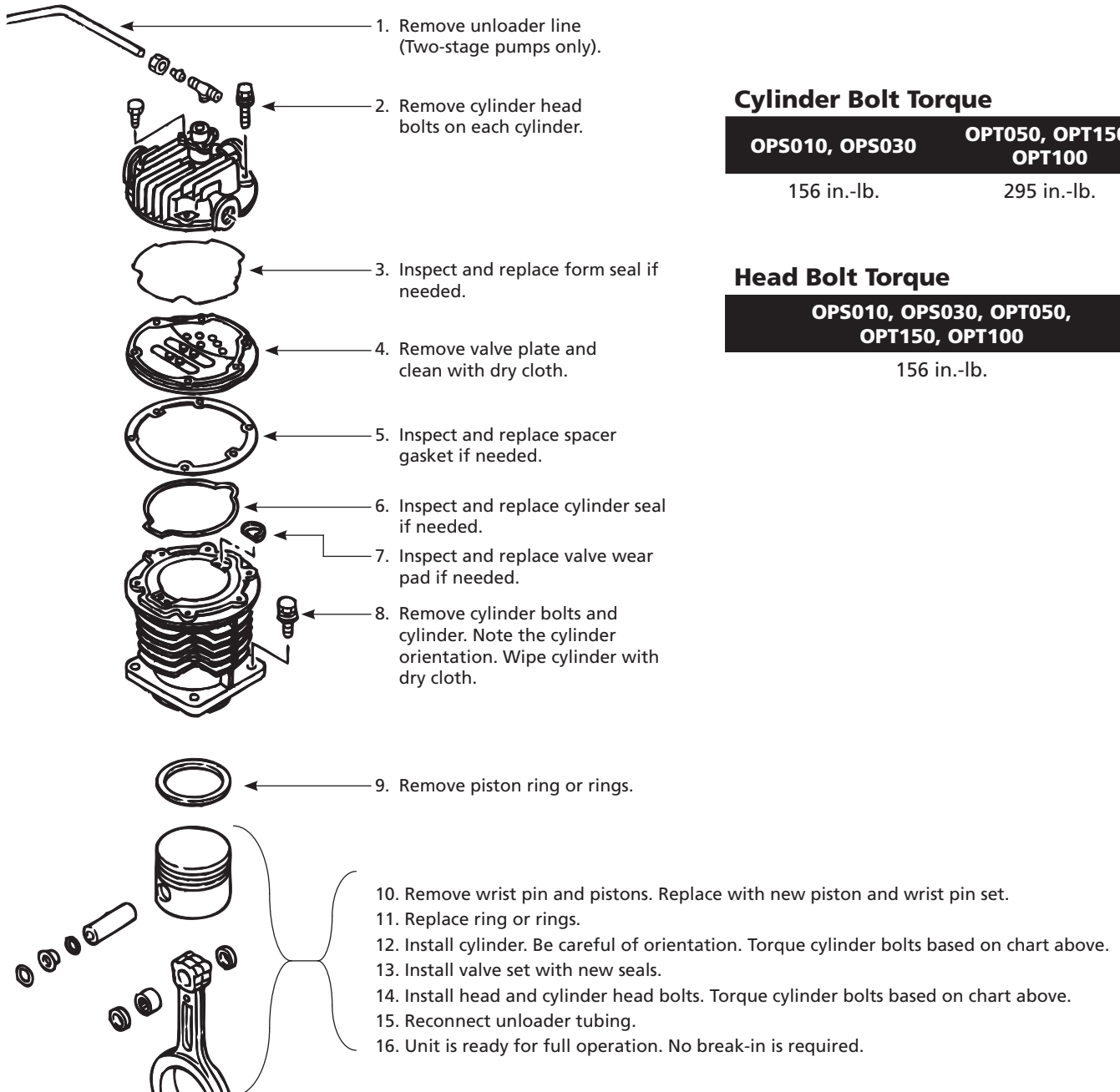


Figure 7

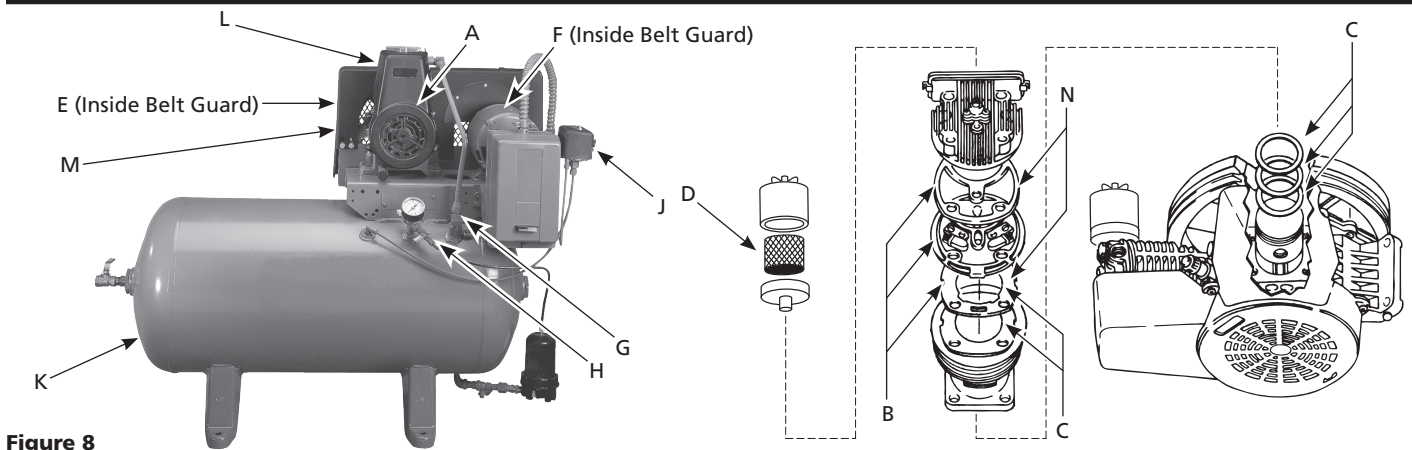


Figure 8

Replacement Parts List

Item	Description	Quantity Required	Shipping Weight (lbs.)	Code Number	
A	Pump and Flywheel:	Motor HP			
		1, 1-1/2	1	34.0	OPS010
		2, 3	1	65.0	OPS030
		5	1	95.0	OPT050
		7-1/2, 10	1	134.0	OPT100
	15	1	137.0	OPT150	
B	Valve Kit: Includes valve plate and seals	Motor HP			
		1, 1-1/2	1	0.5	91933640
		2, 3	2	0.7	91933640
		5 (High pressure)	1	1.0	91934683
		5 (Low pressure)	2	1.2	91933681
		7-1/2, 10 (High pressure)	1	1.2	91934681
		7-1/2, 10 (Low pressure)	2	1.2	91934691
		15 (High Pressure)	1	1.0	91934681
15 (Low Pressure)	2	1.2	91933681		
C	Ring Kit: Includes all compression rings, oil control ring(s)	Motor HP			
		1, 1-1/2	1	0.1	91246640
		2, 3	2	0.1	91246640
		5 (High pressure)	1	0.1	91946680
		5 (Low pressure)	1	0.1	91236681
		7-1/2, 10 (High pressure)	1	0.1	91946680
		7-1/2, 10 (Low pressure)	2	0.1	91236671
		15 (High pressure)	1	0.1	91946680
15 (Low pressure)	2	0.1	91236681		
D	Intake Filter Element:	Motor HP			
		1, 1-1/2	1	0.2	91348550
		2, 3	2	0.2	91353660
		5	1	0.3	91353660
		7-1/2, 10	1	0.3	91353690
	15	1	0.3	91353690	

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Replacement Parts List

Item	Description			Quantity Required	Shipping Weight (lbs.)	Code Number
E	Belt:	Motor HP	Size			
		1 (1 Ø)	A-43	1	0.3	BT009400AV
		1 (3 Ø)	AX-41	1	0.3	BT023300AV
		1-1/2	A-45	1	0.3	BT009500AV
		2	A-62	1	0.4	BT009700AV
		3	BX-66	1	0.4	BT008500AV
		5 (80, 120 gal tank)	B-69	2	1.6	BT006000AV
		5 (200 gal tank)	B-80	2	2.0	BT010400AV
		7-1/2	B-84	2	2.0	BT011200AV
		10	B-87	2	2.4	BT009200AV
15	B-92	2	4.0	BT010200AV		
F	Motor Pulley:	Motor HP	Type			
		1 (1 Ø)	1A-4.0 inch P.D., 5/8 inch Bore	1	3.2	PU009723AV
		1 (3 Ø) (Uses 3450 Motor)	1A-2.0 inch P.D., 5/8 inch Bore	1	3.2	PU202617AV
		1-1/2	1A-5.5 inch P.D., 7/8 inch Bore	1	5.6	PU009725AV
		2 (1 Ø)	1A-6.4 inch P.D., 1.125 inch Bore	1	5.2	PU009787AV
		2 (3 Ø)	1A-6.4 inch P.D., 7/8 inch Bore	1	5.2	PU009778AV
		3	1B-8.4 inch P.D., 11/8 inch Bore	1	6.3	PU009777AV
		5	2B-8.0 inch P.D., 11/8 inch Bore	1	7.6	PU009747AV
		7-1/2	2B-8.6 inch P.D., 13/8 inch Bore	1	12.5	PU009775AV
		10	2B-11.0 inch P.D., 15/8 inch Bore	1	13.5	PU009772AV
15	2B-13.6 inch P.D., 15/8 inch Bore	1	13.5	PU009758AV		
G	In-Tank Check Valve:	Motor HP	Size			
		1 Through 3	1/2 inch MPT x 1/2 inch FPT	1	0.3	CV003204AV
		5 Through 15	3/4 inch MPT x 3/4 inch FPT	1	0.4	CV003205AV
H	Safety Relief Valve: Set at approximately 140 psig (1/2 Through 15 HP Models)			1	0.1	V-215100AV
J	Pressure Electric Switches: (For all models) Lead Switch: Set at approximately 90 psig cut-in and 120 psig cut-out			1	0.9	CW207558AV
K	Tank:	Motor HP	Tank Size			
		3/4 Through 1-1/2	30 gallon	1	134.0	AR022100ST
		3/4 Through 1-1/2	60 gallon	1	175.0	AR022200ST
		2	60 gallon	1	184.0	AR022500ST
		3	80 gallon	1	243.0	AR022300ST
		5	80 gallon	1	398.0	AR023400ST
		5	120 gallon	1	415.0	AR022400ST
		7-1/2	80 gallon	1	398.0	JQ001000AV
7-1/2 Through 15	120 gallon	1	419.0	TQ003201AJ		

Replacement Parts List

Item	Description	Quantity Required	Shipping Weight (lbs.)	Code Number
L	Cooling Shroud:			
	Motor HP			
	2, 3	1	11.7	91134560
	5	1	1.7	91134660
	7-1/2, 10	1	1.9	91134690
	15	1	1.9	91134690
M	Belt Guard:			
	Motor HP			
	3/4 Through 1-1/2 (Whole Assembly - ZZ000605PX)	1	2.4	BG012400AV
	2 and 3	1	12.5	BG012802AV
	5	1	12.5	BG012802AV
	7-1/2, 10, 15 (Whole Assembly Back - ZZ000620AJ)	1	18.5	BG218400AV
	7-1/2, 10, 15 (Whole Assembly Front - ZZ000620AJ)	1	18.5	BG218500AV
N	Motor:			
	Motor HP			
	1 (1 Ø)	1	36	MC022371AV
	1 (3 Ø)	1	23	MC301561AV
	1-1/2 (1 Ø)	1	39	MC022320AV
	1-1/2 (3 Ø)	1	40	MC022388AV
	2 (1 Ø)	1	65	MC022317AV
	2 (3 Ø)	1	44	MC022373AV
	3 (1 Ø)	1	73	MC022309AV
	3 (3 Ø)	1	59	MC301566AV
	5	1	69	MC301567AV
	7-1/2	1	103	MC301568AV
	10	1	109	MC301569AV
	15	1	187	MC022376AV

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Maintenance Schedule

Item	Action needed	Operating Hours						Remarks
		500	2500	5000	10,000	15,000	20,000	
Tank	Drain moisture	Daily						Drain tank daily
Inlet Air Filter	Replace	●	▲					Every 2500 hours or less
Blower Fan	Clean			●	●	●	●	
Fan Duct	Clean			●	●	●	●	
Compressor Fins	Clean		●					Every 2500 hours or less
Compression Rings	Replace			●	▲	●	▲	
Wrist Pin Bearing	Regrease			▲	▲	▲	▲	Replace high pressure wrist pins
Piston Set	Inspect				●		●	
V-belt	Inspect, Replace		●	▲	▲	▲	▲	Note 3
Pressure Switch	Confirm operation				●		●	
Magnetic Starter	Inspect				●		●	Replace if contact point deteriorated
Safety Valve	Confirm operation		●					Every 2500 hours or less
Pressure Gauge	Inspect		●					Every 2500 hours 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 the initial stage (500H) and inspected every 2,500 hours afterwards. Proper belt tension for 1 to 3 HP units is 2-3 lbs./0.5 inch deflection; for 5 to 15 HP units, 4-6 lbs./0.5 inch deflection.

Troubleshooting Guide

PROBLEM	CAUSE	CORRECTIVE ACTION
No voltage at terminal block	<ol style="list-style-type: none"> 1. Main disconnect is not ON 2. Blown fuse or circuit breaker at customer provided power supply 3. Blown fuse at primary side of transformer 	<ol style="list-style-type: none"> 1. Switch disconnect to ON 2. Inspect for any fault replace fuse or trip disconnect to ON 3. Replace fuse on primary side be sure use same type and size
Voltage at terminal block	<ol style="list-style-type: none"> 1. Blown fuse on secondary side of transformer 2. Motor overload has tripped 3. Wrong or low voltage 4. Starter has failed 5. Motor has failed 	<ol style="list-style-type: none"> 1. Replace fuse on secondary side be sure use same type and size 2. See last entry of Troubleshooting Guide 3. Check incoming power supply and unit power rating 4. Replace connector assembly 5. Replace motor
Compressor is running but will not make pressure	<ol style="list-style-type: none"> 1. Drive belts came off or too loose 2. Clogged intake filter element 3. Pressure relief valve has opened 4. Excessive piston ring wear 5. Electric tank drain is open continuously 6. Discharge air is leaking 	<ol style="list-style-type: none"> 1. Replace drive belts and (or) tighten 2. Replace intake filter element 3. Pressure switch needs replaced or motor contacts welded shut 4. Replace piston rings 5. Replace tank drain 6. Check discharge piping
Excessive noise or vibration	<ol style="list-style-type: none"> 1. Drive belt has separated or flat spot 2. Motor has failed 3. Pump is damaged 4. Cooling air fan is touching fan guard 	<ol style="list-style-type: none"> 1. Replace drive belt 2. Replace motor 3. Fix or replace pump 4. Check air fan daily
Compressor shuts down on high temperature (when optional high temp shutdown is ordered)	<ol style="list-style-type: none"> 1. Room temperature is above 104° F 2. Inlet air duct is obstructed 3. Unit running in the wrong direction 4. Aftercooler fins clogged 5. Intake filter damaged 6. Compressor is dirty 	<ol style="list-style-type: none"> 1. Add ventilation or air conditioning to room 2. Remove obstruction or reposition unit to allow for cooling air 3. Correct power connections 4. Clean aftercooler 5. Check intake filter 6. Clean unit
Compressor turns on/off rapidly	<ol style="list-style-type: none"> 1. Receiver tank has high level of water 2. Compressor check valve has failed 3. Defective pressure switch 	<ol style="list-style-type: none"> 1. Replace electric tank drain/drain tank 2. Replace check valve 3. Replace pressure switch
Safety valves blows off	<ol style="list-style-type: none"> 1. Pressure switch has failed to open 2. Motor starter contacts welded shut 3. Safety valve blows off at too low of pressure 	<ol style="list-style-type: none"> 1. Replace pressure switch 2. Replace motor starter 3. Replace safety valve
Motor Overload has tripped	<ol style="list-style-type: none"> 1. Pump has failed 2. Motor has failed 3. Improper wiring 4. Wrong overload setting 5. Low voltage 	<ol style="list-style-type: none"> 1. Fix or replace pump 2. Replace motor 3. Check wiring 4. Check overload setting 5. Check incoming power supply

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.

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Warranty Disclaimer. Powerex has made a diligent effort to illustrate and describe the products in this literature 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. 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.