POWEREX
PURE AIR TECHNOLOGY

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.

Features

- Oilless reciprocating compressor pump
- High efficiency ODP tri-voliage motors
- Three year, warranty on compressor pump
- Isolation pads
- Optional R134 dryer
- ASME tank
- UL listed controls

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 teflon® compression ring(s) at low maintenance costs.

All 2 through 20 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 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.

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

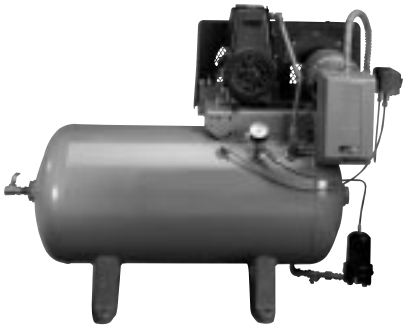


Figure 1 - OTS010142 1 HP Simplex Air Compressor, 30 Gallon, 460 V Starter and Auto Drain

Specifications

Product		OTS Series Powerex Simplex Air Compressors
Performance Specifications		See Table 1
Models & Options		See Table 2
Lubrication	3/4 Through 20 Hp Models	Sealed Bearings
Operating Voltages	1Ø	3/4 to 1 1/2 HP 115-208/230 Volt, 2 to 5 HP 208/230 Volt, 60 Hz
	3Ø	208-230/460 Volts, 60 Hz
Compression Cycle	3/4 Through 3 Hp and 20 HP	Single-Stage
	5 through 15 HP Models	Two-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 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" 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		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.

TABLE 1: OILLESS TANKMOUNT SIMPLEX - MODEL OTS

Model	HP	Phase	SCFM @100 psig	RPM	Voltage	Full Load AMP/Motor	Gallon Tank	Dimension LxWxH	Ship Weight (lbs.)
OTS107	3/4	1	2.8	490	115/208/230	11/5.4/5.5	30/60	42x21x35/51x22x40	222/288
OTS007	3/4	3	2.8	490	208/230/460	2.5/2.6/1.3	30/60	42x21x35/51x22x40	222/288
OTS110	1	1	3.6	620	115/208/230	13.4/7.46.7	30/60	42x21x35/51x22x40	231/312
OTS010	1	3	3.6	620	208/230/460	3.6/3.4/1.7	30/60	42x21x35/51x22x40	231/312
OTS115	1.5	1	5.3	980	11/208/2302	4.8/15.1/12.4	30/60	42x21x35/51x22x40	230/327
OTS015	1.5	3	5.3	980	208/230/460	5.0/4.8/2.4	30/60	42x21x35/51x22x40	230/317
OTS120	2	1	6.5	680	115/208/230	28.4/16.7/14.2	60	51x22x40	350
OTS020	2	3	6.5	680	208/230/460	6.3/6.4/3.2	60	51x22x40	343
OTS130	3	1	10.1	970	208/230	23.3/20.1	80	64x23x41	485
OTS030	3	3	10.1	970	208/230/460	8.5/8.0/4.0	80	64x23x41	479
OTS151	5	1	17.9	850	208/230	29.0/26.4	80/120	64x23x46/71x26x49	550/716
OTS050	5	3	17.9	850	208/230/460	14.8/14.0/7.0	80/120	64x23x46/71x26x49	536/702
OTS075	7.5	3	26.1	840	208/230/460	23/22/11	80/120	64x23x46/71x26x49	599/765
OTS100	10	3	35	1070	208/230/460	30/28/14	120/200	79x27x51/82x30x58	790/1045
OTS150	15	3	54.2	1250	208/230/460	43/41.4/20.7	120/200	79x31x59/82x30x64	910/1130
OTS200	20	3	64.6	1140	208/230/460	54.8/52/26	120/200	79X31X59/82X30X64	990/1210

for all units. All starters are furnished with properly sized overload heaters.

REFRIGERATED AIR DRYER

A factory mounted Model A4300 Series Refrigerated Air Dryer with automatic condensate drain trap assembly and bypass valve is available as an option on all 1/2 through 3 Hp Powerex Simplex air compressors. The air dryer is piped to the compressor at the factory; power wiring to the dryer is done in the field using the integral cord and plug which fits into a standard 120 volt receptacle.

AUTOMATIC TANK DRAIN

Powerex air compressors are ordered with either a manual, float or electric type automatic tank drain. This unit is furnished with a manual drain attachment and must be mounted to the compressor in the field.

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 and tested for air delivery, leakage and power consumption.

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

OPTIONAL: AUTO FLOAT DRAIN ASSEMBLY (See Figure 2)

NOTE: The automatic float drain is not assembled to tank. Follow instructions for proper assembly.

1. Install quick coupler into the open port on the auto drain using a pipe sealant to prevent leakage.
2. Attach female quick connect to male quick connect.
3. Turn swivel nut on female quick connect until tightly sealed.
4. Push 1/4" nylon line into 1/4" push-in fitting on auto float drain. Push firmly at least twice for secure connection.
5. Test connection by pulling on the nylon line. Connection is secure if line cannot be pulled out of push-in fitting.
6. Cut nylon line to proper length to reach 1/4" push-in fitting on manifold assembly.
7. Secure nylon line into fitting on manifold assembly and test connection.

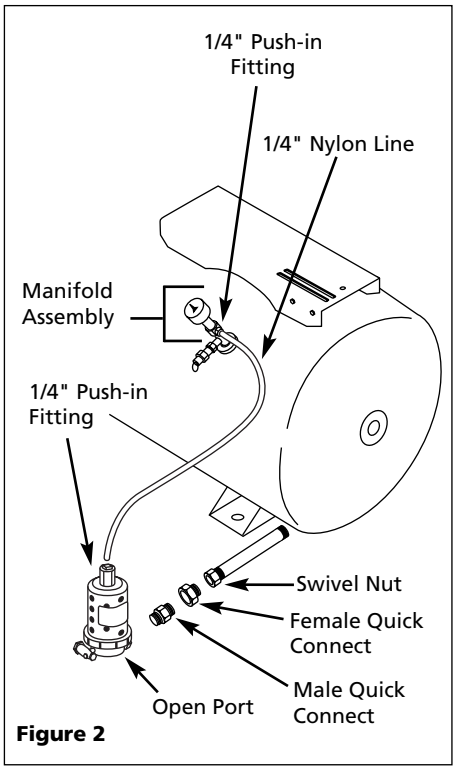


Figure 2

TABLE 2: MODEL NUMBER

OTS ☐☐☐ OR ☐☐☐ ☐ ☐

Horsepower & Voltage Phase | Tank Size | Starter | Tank Drain/Dryer

Motor Horsepower, Voltage Phase		
1Ø	Horsepower	3Ø
107 =	3/4	= **007**
110 =	1	= **010**
115 =	1½	= **015**
120 =	2	= **020**
130 =	3	= **030**
151 =	5	= **050**
NA =	7½	= **075**
NA =	10	= **100**
NA =	15	= **150**
NA =	20	= **200**

NA = Not Available

Tank Size (Gallons)	Available on:
30 = **1**	3/4 Through 1½ Hp
60 = **2**	3/4 Through 2 Hp
80 = **3**	2 Through 7½ Hp
120 = **4**	5 Through 10 Hp
200 = **5**	7½ Through 20 Hp

Starter Options

None = **0**
3Ø, 208V Starter* = **2**
3Ø, 208/230V Starter** = **3**
3Ø, 460V Starter = **4**
1Ø, 115V Starter = **5**
1 Ø, 208/230 V Starter = **6**

1Ø vs 3 Ø selection must agree with base model selection.

* Available on 15 and 20 Hp models only.

**This starter selection is dual rated. Choosing digit "3" means 230 V for 15 and 20 Hp models and 208/230 V for lesser Hp models.

Tank Drain/Dryer Options

Manual Drain, No Dryer = **1**
Auto Drain, No Dryer = **2**
Manual Drain, with Dryer = **3**
Auto Drain, with Dryer = **4**

Available on 3/4 through 3 Hp models only.

Example 1: To order a Simplex air compressor with a 3/4 Hp single-phase motor, 60 gallon tank, single-phase 115 volt starter, automatic tank drain and an air dryer, use product code OTS-107-254.

Example 2: To order a Simplex air compressor with a 10 Hp three-phase motor, 200 gallon tank (no starter) and an auto drain, use product code OTS-100-502.

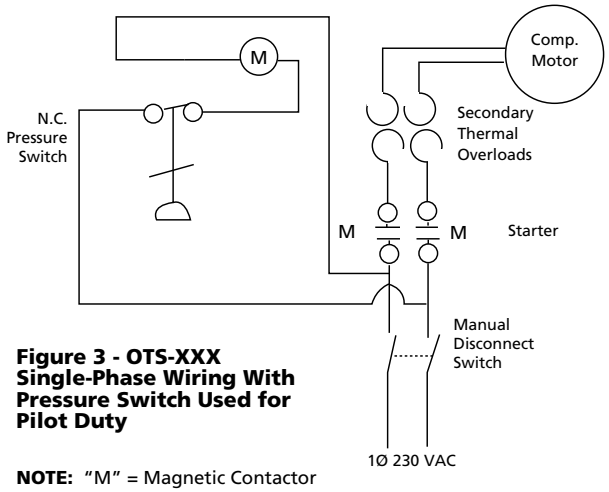


Figure 3 - OTS-XXX Single-Phase Wiring With Pressure Switch Used for Pilot Duty

NOTE: "M" = Magnetic Contactor

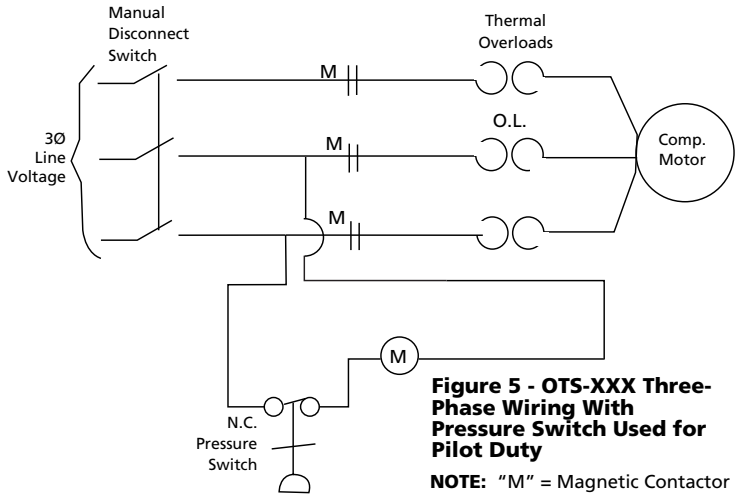


Figure 5 - OTS-XXX Three-Phase Wiring With Pressure Switch Used for Pilot Duty

NOTE: "M" = Magnetic Contactor

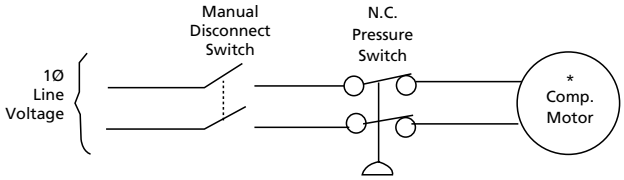


Figure 4 - OTS-XXX Single-Phase Wiring With Pressure Switch Used as Contactor

* With Integral Overload

Figure 6 - Dimensions (See Table 3)

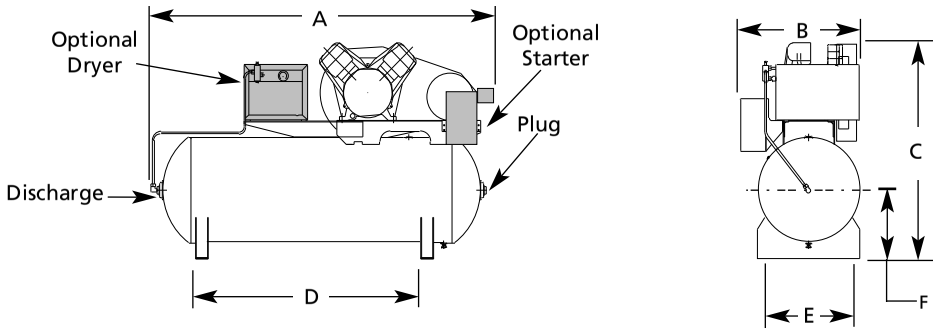
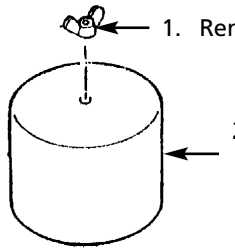


TABLE 3: DIMENSIONS (Inches*) **AND SHIPPING WEIGHTS** (Pounds*)

Base Model	A w/Starter w/oDryer	A w/o Starter or Dryer	A w/Starter and Dryer	A w/o Starter w/Dryer	B w/Starter w/o Dryer	B w/o Starter or Dryer	B w/Starter and Dryer	B w/o Starter w/Dryer	C	D	E	F	Shipping with Starter	Weight** without Starter
OTS-105-1XX OTS-005-1XX	42-1/2	40	43-19/32	42	21-1/4	17-3/4	21-13/16	18-3/4	35-1/2	18	15-3/4	12-1/4	209	200
OTS-107-1XX OTS-007-1XX	42-1/2	40	43-19/32	42	21-1/4	17-3/4	21-13/16	18-3/4	36	18	15-3/4	12-1/4	209	200
OTS-107-2XX OTS-007-2XX	50-3/4	50-3/4	51-27/32	52-3/4	22-1/4	20	22-5/16	21	40	29	18	14	339	330
OTS-110-1XX OTS-010-1XX	42-1/2	40	43-19/32	42	21-1/4	17-3/4	21-13/16	18-3/4	36	18	15-3/4	12-1/4	219	210
OTS-110-2XX OTS-010-2XX	50-3/4	50-3/4	51-27/32	52-3/4	22-1/4	20	22-5/16	21	40	29	18	14	349	340
OTS-015-1XX OTS-115-1XX	42-1/2	40	43-19/32	42	21-1/4	17-3/4	21-13/16	18-3/4	36	18	15-3/4	12-1/4	219	21
OTS-015-2XX OTS-115-2XX	50-3/4	50-3/4	51-27/32	52-3/4	22-1/4	20	22-5/16	21	40	29	18	14	349	340
OTS-020-2XX OTS-120-2XX	51-1/2	50-3/4	52-19/32	52-3/4	23-1/4	20	23-5/16	21	42	29	18	14	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	65-1/2	64	66-23/32	66	23-1/4	20	23-5/16	21	41	40	18-1/2	13	509	500
OTS-050-3XX OTS-151-3XX	64	64	—	—	23-1/4	20	—	—	46	43-3/4	18-1/2	13	609	600
OTS-050-4XX OTS-151-4XX	70-3/4	70-3/4	—	—	26-1/4	24	—	—	49-1/4	42	22	15-3/4	714	705
OTS-075-3XX	64	64	—	—	23-1/4	20	—	—	46	43-3/4	18-1/2	13	621	610
OTS-075-4XX	70-3/4	70-3/4	—	—	26-1/4	24	—	—	49-1/4	42	22	15-3/4	714	714
OTS-075-5XX	81-3/4	81-1/3	—	—	30	30	—	—	55-1/2	42	22	18-3/4	951	940
OTS-100-4XX	79	76-1/2	—	—	27-1/4	24	—	—	51	42	22	15-3/4	915	904
OTS-100-5XX	81-3/4	79-1/4	—	—	30	30	—	—	58	42	22	18-3/4	1141	1130
OTS-150-4XX	79	76-1/2	—	—	27-1/4	24	—	—	51	42	22	15-3/4	915	904
OTS-150-5XX	76	76	—	—	35	32	—	—	64-1/2	42	22	18-3/4	1653	1640
OTS-200-4XX	79	76-1/2	—	—	27-1/4	24	—	—	51	42	22	15-3/4	935	924
OTS-200-5XX	76	76	—	—	35	32	—	—	64-1/2	42	22	18-3/4	1693	1680

*Inches x 2.54 = Centimeters, Pounds x 0.454 = Kilograms
**Add 60.0 lbs. for units equipped with a factory mounted air dryer

Air Filter Replacement



1. Remove wing nut.
2. Remove canister and wipe inside clean with dry cloth.
3. Remove and discard filter cartridge.
4. Install new filter cartridge. **Do not attempt to clean and reuse filter cartridge.**

5. Wipe inside clean with dry cloth.

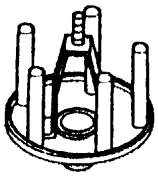


Figure 7

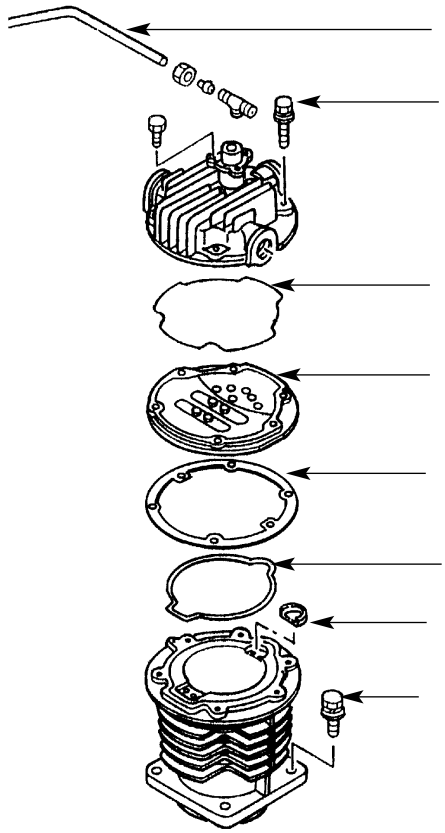
Ring and Piston Set Replacement 10,000 Hours

Cylinder Bolt Torque

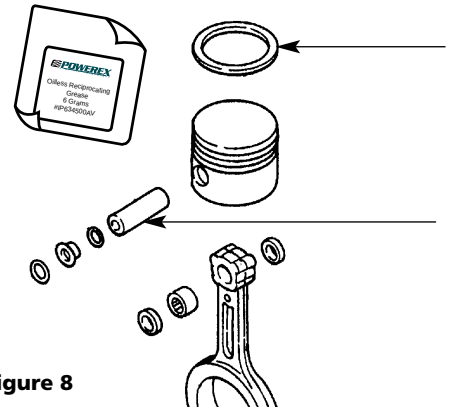
OPS010 OPS030	OPT050, OPT150 OPT100, OPS200
156 in. lb.	295 in. lb.

Head Bolt Torque

OPS010, OPS030, OPT050, OPT100, OPT150, OPS200
156 in. lb.



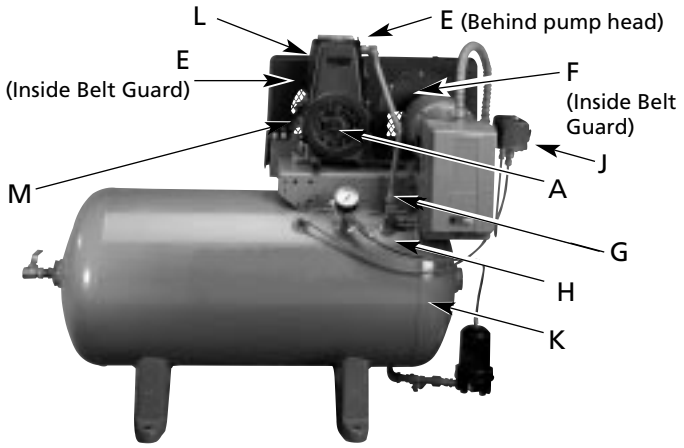
1. Remove unloader line (Two-stage pumps only).
2. Remove cylinder head bolts on each cylinder.
3. Remove and discard form seal. Replace with new form seal.
4. Replace form seal.
5. Remove valve plate and clean with dry cloth.
6. Remove and discard spacer gasket. Replace with the new gasket.
7. Remove and discard cylinder seal. Replace with the new seal.
8. Remove and discard valve wear pad. Replace with new pad.
9. Remove cylinder bolts and cylinder. Note the cylinder orientation. Wipe cylinder with dry cloth.



10. Remove piston ring or rings.
11. Remove wrist pin and piston. Replace with new piston and wrist pin set.
12. Replace ring or rings.
13. Install cylinder. Be careful of orientation. Torque cylinder bolts to 300 in-lb.
14. Install valve set with new seals.
15. Install head and cylinder head bolts. Torque head bolts to 156 in-lb.
16. Reconnect unloader tubing.
17. Unit is ready for full operation. No break-in is required.

Figure 8

Oilless Tankmount Simplex



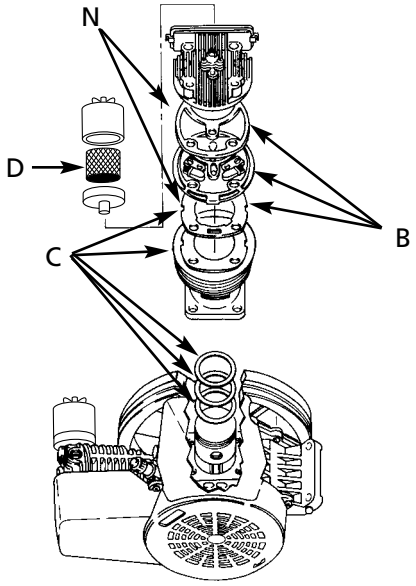


Figure 9

REPLACEMENT PARTS LIST

Item	Description		Quantity Required	Shipping Weight (lbs.)	Code Number
A	**PUMP AND FLYWHEEL:**				
	Motor Hp 3/4, 1, 1½		1	34.0	OPS010
	2, 3		1	65.0	OPS030
	5		1	95.0	OPT050
	7½, 10		1	134.0	OPT100
	15		1	137.0	OPT150
	20		1	137.0	OPS200
B	**VALVE KIT:** Includes valve plate and seals				
	Motor Hp 3/4, 1, 1½		1	0.5	91933640
	2, 3		2	0.7	91933640
	5 (High pressure)		1	1.0	91933681
	5 (Low pressure)		2	1.2	91934682
	7½, 10 (High pressure)		1	1.2	91934681
	7½, 10 (Low pressure)		2	1.2	91934691
	15 (High Pressure)		1	1.0	91934681
	15 (Low Pressure)		2	1.2	91933681
	20		3	1.2	91933681
C	**RING KIT:** Includes all compression rings, oil control ring(s)				
	Motor Hp 3/4, 1, 1½		1	0.1	91237640
	2, 3		2	0.1	91237640
	5 (High pressure)		1	0.1	91237681
	5 (Low pressure)		1	0.1	91236681
	7½,10 (High pressure)		1	0.1	91237681
	7½,10 (Low pressure)		2	0.1	91236671
	15 (High pressure)		1	0.1	91237681
	15 (Low pressure)		2	0.1	91236681
	20		3	0.1	91933681
D	**INTAKE FILTER ELEMENT:**				
	Motor Hp 3/4, 1, 1½		1	0.2	91348550
	2, 3		2	0.2	91353660
	5		1	0.3	91353660
	7½, 10		1	0.3	91353690
	15		1	0.3	91353690
	20		3	0.2	91353660
E	**BELT:**	**Motor Hp** **Size**			
	3/4	AX-38	1	0.3	BT021600AV
	1	AX-41	1	0.3	BT022300AV
	1½	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
	7½	B-84	2	2.0	BT011200AV
	10	B-87	2	2.4	BT009200AV
	15	B-92	2	4.0	BT010200AV
	20	B-92	2	4.0	BT010200AV

REPLACEMENT PARTS LIST *(Continued)*

Item	Description		Quantity Required	Shipping Weight (lbs.)	Code Number
F	**MOTOR PULLEY:**				
	Motor Hp	**Type**			
	3/4	1A-2.7" P.D., 5/8" Bore	1	3.9	PU002600AV
	1 (1 Ø)	1A-3.2" P.D., 5/8" Bore	1	3.2	PU009722AV
	1 (3 Ø)	1A-3.2" P.D., 7/8" Bore	1	3.2	PU009764AV
	1½	1A-5.5" P.D., 7/8" Bore	1	5.6	PU009725AV
	2(1Ø)	1A-6.4" P.D., 1.125" Bore	1	5.2	PU009787AV
	2(3Ø)	1A-6.4" P.D., 7/8" Bore	1	5.2	PU009778AV
	3	1B-8.4" P.D., 1⅛" Bore	1	6.3	PU009777AV
	5	2B-8.0" P.D., 1⅛" Bore	1	7.6	PU009747AV
	7½	2B-8.6" P.D., 1⅜" Bore	1	12.5	PU009775AV
	10	2B-11.0" P.D., 1⅜" Bore	1	13.5	PU009772AV
	15	2B-13.6" P.D., 1⅜" Bore	1	13.5	PU009758AV
	20	2B-12.4" P.D., 1⅜" Bore	1	16.0	PU009756AV
G	**IN-TANK CHECK VALVE:**				
	Motor Hp	**Size**			
	1/2 Through 3	1/2" MPT x 1/2" FPT	1	0.3	CV003204AV
	5 Through 15	3/4" MPT x 3/4" FPT	1	0.4	CV003205AV
	20	1¼" MPT x 1¼" FPT	1	1.1	CV003206AV
H	**SAFETY RELIEF VALVE:** Set at approximately 140 psig				
	1/2 Through 20 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 1½	30 gallon	1	134.0	AR022100AJ
	3/4 Through 1½	60 gallon	1	175.0	AR022200AJ
	2	60 gallon	1	184.0	AR022500AJ
	3	80 gallon	1	243.0	AR022300AJ
	5	80 gallon	1	398.0	AR023400AJ
	5	120 gallon	1	415.0	AR022400AJ
	7½	80 gallon	1	398.0	TP003600AJ
	7½ Through 20	120 gallon	1	419.0	TQ003201AJ
	10 Through 20	200 gallon	1	677.0	JP000600AV
L	**COOLING SHROUD:**				
	Motor Hp				
	2, 3		1	11.7	91134560
	5		1	1.7	91134660
	7½, 10		1	1.9	91134690
	15		1	1.9	91134690
	20		1	4.5	91134690
M	**BELT GUARD:**				
	Motor Hp				
	3/4 Through 1½(Whole Assembly - ZZ000605AJ)		1	2.4	BG012400AV
	2 & 3		1	12.5	BG012802AV
	5		1	12.5	BG012802AV
	7½, 10 (Whole Assembly - ZZ000620AJ)		1	18.5	BG218500AV
	15 (Whole Assembly - ZZ000620AJ)		1	26.5	BG218500AV
	20 (Whole Assembly - ZZ000620AJ)		1	26.5	BG218500AV
N	**GASKET SET:**				
	Motor Hp				
	3/4, 1, 1½		1	.1	91936640
	2, 3		2	.1	91936640
	5 (High pressure)		1	.1	91937681
	5 (Low pressure)		1	.1	91936680
	7½, 10 (High pressure)		1	.1	91937681
	7½, 10 (Low pressure)		2	.1	91936670
	15 (High pressure)		1	.1	91937681
	15 (Low pressure)		2	.1	91936680
	20		3	.1	91936680

Maintenance Schedule

Item	Action needed	500	2500	Operating Hours 5000	10,000	15,000	20,000	Remarks
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)*				
Bearings	Replace				●	●	▲	
Compression Rings	Replace			●	▲	●	▲	
Wrist pin Bearing	Regrease			▲	▲	▲	▲	
Piston Set	Inspect				●		●	
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 the initial stage and inspected every 1,500 hours afterwards. Proper belt tension for 3/4 to 3 HP units is 2-3 lbs./.5" deflection; for 5 to 20 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.

POWEREX
PURE AIR TECHNOLOGY

Oilless Tankmount Duplex

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

- Oilless reciprocating compressor pump
- High efficiency ODP tri-voltage motors
- Three year warranty on compressor pump
- Isolation pads
- Optional R134 dryer
- ASME tank
- UL listed controls

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

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 pumps use composite piston technology , low compressor speeds and teflon® compression ring(s) at low maintenance costs.

All 2 through 20 hp models are also equipped with an auxiliary cooling fan and air control shroud to achieve low head temperatures, further minimizing ring wear.

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.

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

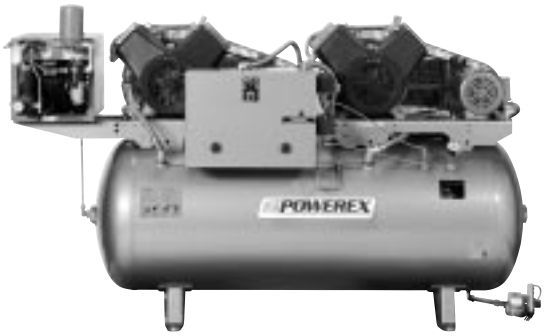


Figure 1 - OTD0303A4 3-HP Duplex Air Compressor, 80 Gallon, 460 V Deluxe Starter and Auto Drain

Specifications		
Product		OTD Series Powerex Duplex Air Compressors
Performance Specifications		See Table 1
Models & Options		See Table 2
Lubrication	3/4 Through 20 Hp Models	Sealed Bearings
Operating Voltages	1Ø	3/4 to 1 1/2 HP 115-208/230 Volt, 2 to 5 HP 208/230 Volt, 60 Hz
	3Ø	208-230/460 Volts, 60 Hz
Compression Cycle	3/4 Through 3 Hp and 20 HP	Single-Stage
	5 through 15 HP Models	Two-Stage
Motor Overload Protection	1Ø	Built-In Thermal Overload (Standard)
	3Ø	Magnetic Starter and Three Thermal Overload Switches (Optional)
Pressure Settings	Lead	Cut-In: Factory Set at Approximately 90 psig Cut-out: Factory Set at Approximately 120 psig
Overpressure Protection	Lag	Cut-In: Factory Set at Approximately 80 psig Cut-out: Factory Set at Approximately 110 psig
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		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.

TABLE 1: OILLESS TANKMOUNT DUPLEX - MODEL OTD

Model	HP	Phase	SCFM @100 psig	RPM	Voltage	Full Load AMP/Motor	Gallon Tank	Dimension LxWxH	Ship Weight (lbs.)
OTD107	3/4 (2)	1	5.6	490	115 / 208 / 230	11 / 5.4 / 5.5	30/80	42x21x35/64x22x39	260/420
OTD007	3/4 (2)	3	25.6	490	208 / 230 / 460	2.5 / 2.6 / 1.3	30/80	42x21x35/64x22x39	258/418
OTD110	1 (2)	1	7.2	620	115 / 208 / 230	13.4 / 7.4 / 6.7	30/80	42x21x35/64x22x39	272/432
OTD010	1 (2)	3	7.2	620	208 / 230 / 460	3.6 / 3.4 / 1.7	30/80	42x21x35/64x22x39	270/435
OTD115	1.5 (2)	1	10.6	980	11 / 208 / 230	24.8 / 15.1 / 12.4	80	65x23x41	439
OTD015	1.5 (2)	3	10.6	980	208 / 230 / 460	5.0 / 4.8 / 2.4	80	65x23x41	435
OTD120	2 (2)	1	13.0	680	115 / 208 / 230	28.4 / 16.7 / 14.2	80	65x23x41	504
OTD020	2 (2)	3	13.0	680	208 / 230 / 460	6.3 / 6.4 / 3.2	80	65x23x41	500
OTD130	3 (2)	1	20.2	970	208 / 230	23.3 / 20.1	80/120	65x23x41/71x26x44	658/788
OTD030	3 (2)	3	20.2	970	208 / 230 / 460	8.5 / 8.0 / 4.0	80/120	65x23x41/71x26x44	650/780
OTD151	5 (2)	1	35.8	850	208 / 230	29.0 / 26.4	120/200	79x26x49/821x30x56	941/1167
OTD050	5 (2)	3	35.8	850	208 / 230 / 460	14.8 / 14.0 / 7.0	120/200	79x26x49/821x30x56	930/1155
OTD075	7.5 (2)	3	52.2	840	208 / 230 / 460	23 / 22 / 11	240	86x51x69	1430
OTD100	10 (2)	3	70	1070	208 / 230 / 460	30 / 28 / 14	240	86x51x69	1510
OTD150	15 (2)	3	108.4	1250	208 / 230 / 460	43 / 41.4 / 20.7	240	86x51x69	1620
OTD200	20 (2)	3	129.2	1140	208 / 230 / 460	54.8 / 52 / 26	240	86x51x69	1710

for all units. All starters are furnished with properly sized overload heaters.

REFRIGERATED AIR DRYER

A factory mounted Model A4300 Series Refrigerated Air Dryer with automatic condensate drain trap assembly and bypass valve is available as an option on all 1/2 through 3 Hp Powerex Duplex Air Compressors. The air dryer is piped to the compressor at the factory; power wiring to the dryer is done in the field using the integral cord and plug which fits into a standard 120 volt receptacle.

AUTOMATIC TANK DRAIN

Powerex air compressors are ordered with either a manual, float or electric type automatic tank drain. This unit is furnished with a manual drain attachment and must be mounted to the compressor in the field.

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 and tested for air delivery, leakage and power consumption.

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

OPTIONAL: AUTO FLOAT DRAIN ASSEMBLY (See Figure 2)

NOTE: The automatic float drain is not assembled to tank. Follow instructions for proper assembly.

1. Install quick coupler into the open port on the auto drain using a pipe sealant to prevent leakage.
2. Attach female quick connect to male quick connect.
3. Turn swivel nut on female quick connect until tightly sealed.
4. Push 1/4" nylon line into 1/4" push-in fitting on auto float drain. Push firmly at least twice for secure connection.
5. Test connection by pulling on the nylon line. Connection is secure if line cannot be pulled out of push-in fitting.
6. Cut nylon line to proper length to reach 1/4" push-in fitting on manifold assembly.
7. Secure nylon line into fitting on manifold assembly and test connection.

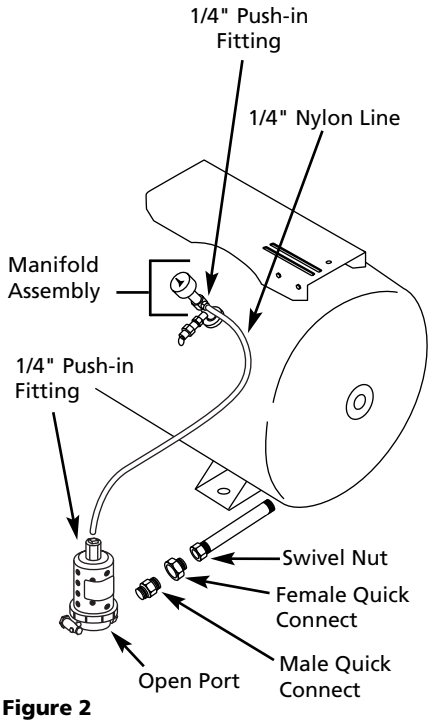
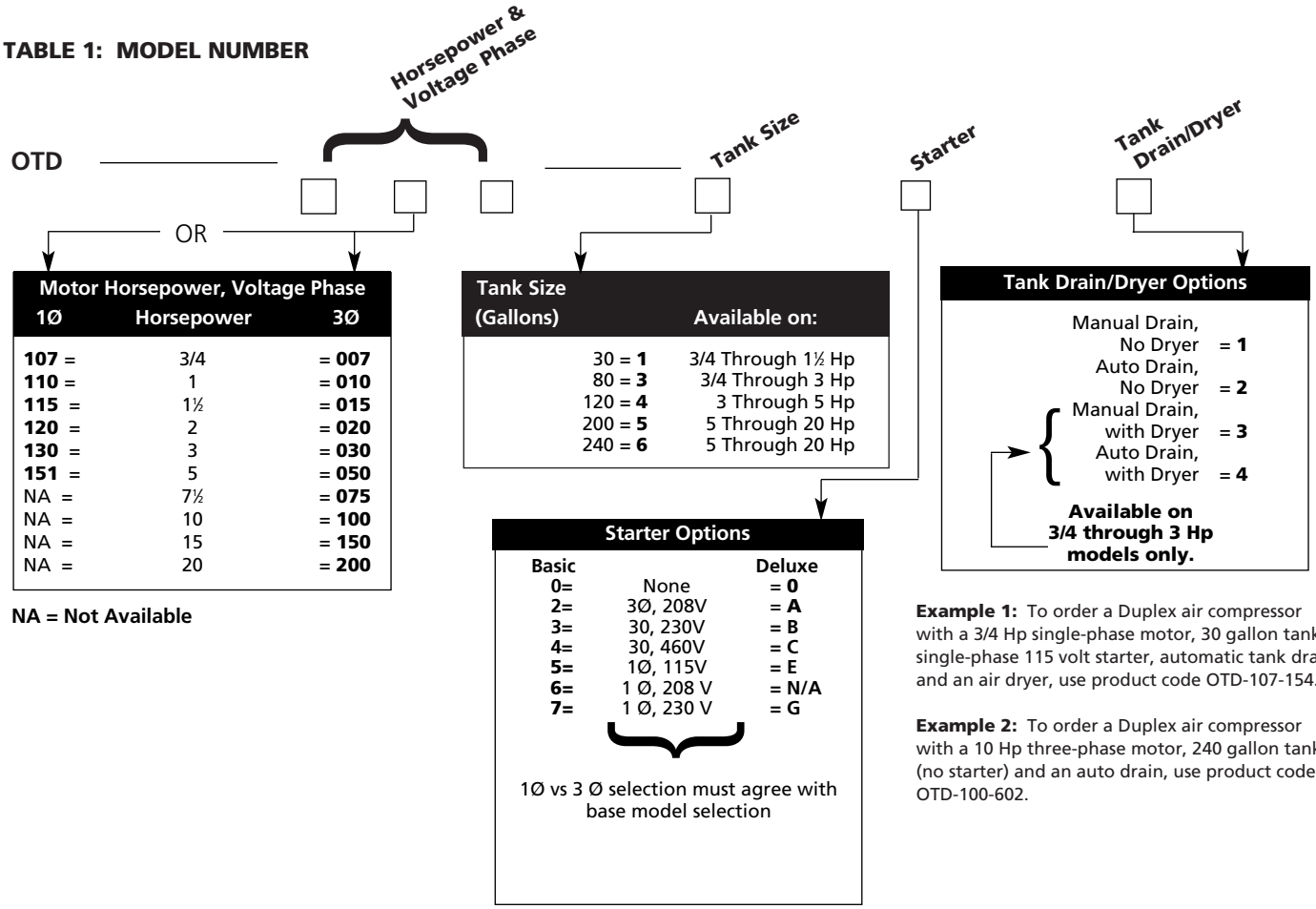


Figure 2

TABLE 1: MODEL NUMBER



NA = Not Available

Example 1: To order a Duplex air compressor with a 3/4 Hp single-phase motor, 30 gallon tank, single-phase 115 volt starter, automatic tank drain and an air dryer, use product code OTD-107-154.

Example 2: To order a Duplex air compressor with a 10 Hp three-phase motor, 240 gallon tank (no starter) and an auto drain, use product code OTD-100-602.

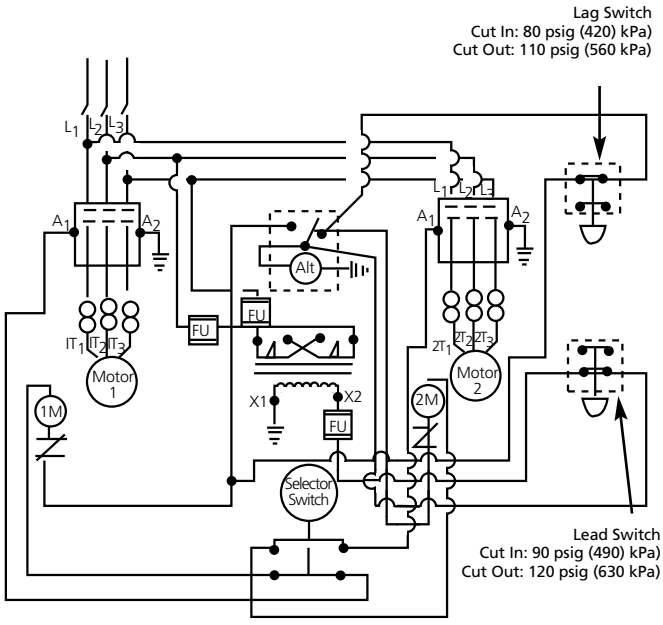


Figure 3 - Deluxe Alternator Package Wiring Diagram for Three-Phase Units

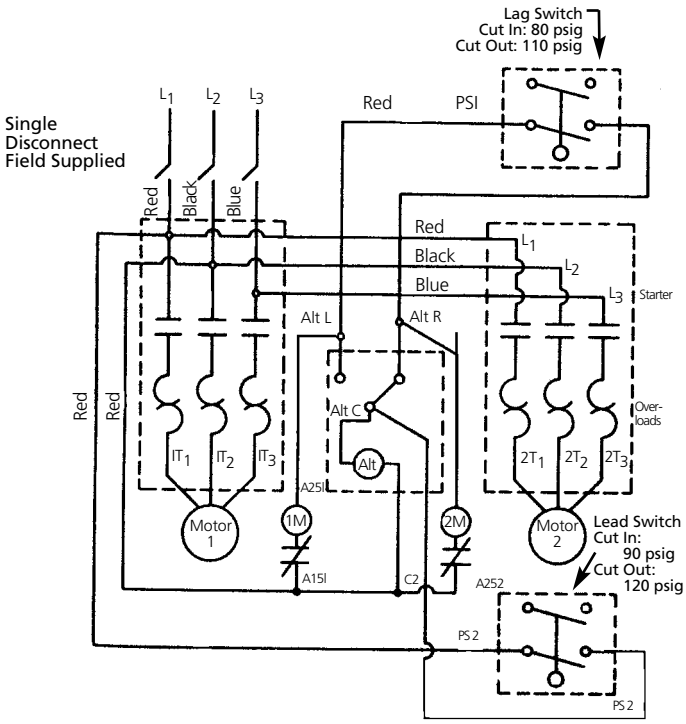
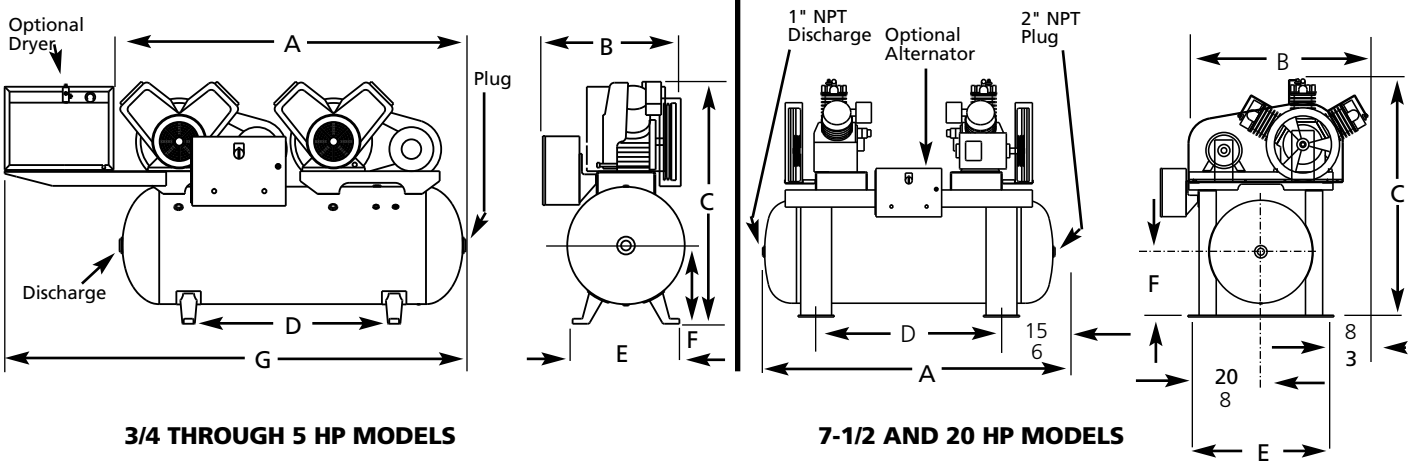


Figure 4 - Basic Alternator Package Wiring Diagram for Three-Phase Units



3/4 THROUGH 5 HP MODELS **7-1/2 AND 20 HP MODELS**

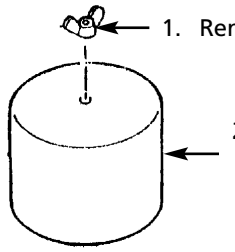
Figure 5 – Dimensions (in./cm)

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

Base Model	A	B with Alternator	B without Alternator	C	D	E	F	G	Shipping Weight** with Alternator	Shipping Weight** without Alternator
OTD-107-1XX OTD-007-1XX	41-1/2	21-1/4	17-3/4	36	18	15-3/4	12-1/4	68-1/2	260	240
OTD-107-3XX OTD-007-3XX	64-1/4	22-1/4	20	39	40	18-1/2	13	77-3/4	425	405
OTD-110-1XX OTD-010-1XX	41-1/2	21-1/4	17-3/4	36	18	15-3/4	12-1/4	68-1/2	270	250
OTD-110-3XX OTD-010-3XX	64-1/4	22-1/4	20	39	40	18-1/2	13	77-3/4	435	415
OTD-0151-1XX OTD-1151-1XX	41-1/2	21-1/4	17-3/4	36	18	15-3/4	12-1/4	68-1/2	270	250
OTD-0153-3XX OTD-1153-3XX	64-1/4	22-1/4	20	39	40	18-1/2	13	77-3/4	435	415
OTD-020-3XX OTD-120-3XX	65-1/4	23-1/4	20	41	40	18-1/2	13	90-3/4	500	480
OTD-030-3XX OTD-130-3XX	65-1/4	23-1/4	20	41	40	18-1/2	13	90-3/4	500	480
OTD-030-4XX OTD-130-4XX	70-3/4	25-3/4	24	44	42	22	15-3/4	96-1/4	780	760
OTD-050-4XX OTD-050-4XX	71-1/4	26-1/4	24	49-1/4	42	22	15-3/4	–	930	910
OTD-050-5XX OTD-151-5XX	81-1/2	30	30	55-1/2	42	22	18-3/4	–	1155	1135
OTD-075-6XX OTD-075-6XX	71-1/4	26-1/4	24	49-1/4	42	22	15-3/4	–	950	925
OTD-100-6XX	84	30	30	58	42	22	18-3/4	–	1440	1415
OTD-150-6XX	84	57	57	68-1/2	54	40	19	–	2828	2800
OTD-200-6XX	84	57	57	68-1/2	54	40	19	–	3008	2880

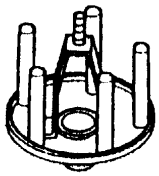
*Inches x 2.54 = Centimeters, Pounds x 0.454 = Kilograms
**Add 60.0 lbs. for units equipped with a factory mounted air dryer

Air Filter Replacement



1. Remove wing nut.
2. Remove canister and wipe inside clean with dry cloth.
3. Remove and discard filter cartridge.
4. Install new filter cartridge. **Do not attempt to clean and reuse filter cartridge.**

5. Wipe inside clean with dry cloth.



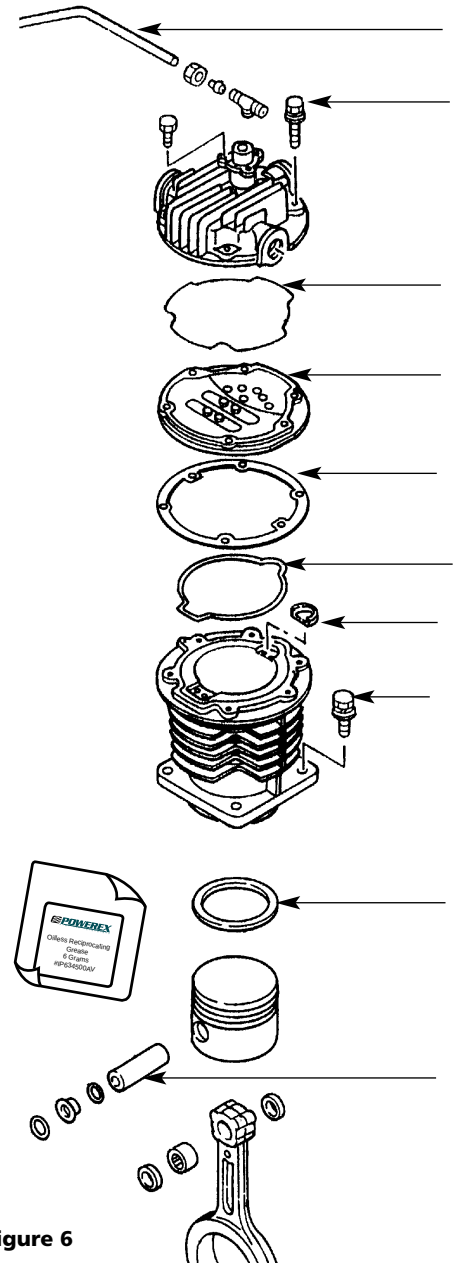
Ring and Piston Set Replacement 10,000 Hours

Cylinder Bolt Torque

OPS010 OPS030	OPT050, OPT150 OPT100, OPS200
156 in. lb.	295 in. lb.

Head Bolt Torque

OPS010, OPS030, OPT050, OPT100, OPT150, OPS200
156 in. lb.



1. Remove unloader line (Two-stage pumps only).
2. Remove cylinder head bolts on each cylinder.
3. Remove and discard form seal. Replace with new form seal.
4. Replace form seal.
5. Remove valve plate and clean with dry cloth.
6. Remove and discard spacer gasket. Replace with the new gasket.
7. Remove and discard cylinder seal. Replace with the new seal.
8. Remove and discard valve wear pad. Replace with new pad.
9. Remove cylinder bolts and cylinder. Note the cylinder orientation. Wipe cylinder with dry cloth.
10. Remove piston ring or rings.
11. Remove wrist pin and piston. Replace with new piston and wrist pin set.
12. Replace ring or rings.
13. Install cylinder. Be careful of orientation. Torque cylinder bolts to 300 in-lb.
14. Install valve set with new seals.
15. Install head and cylinder head bolts. Torque head bolts to 156 in-lb.
16. Reconnect unloader tubing.
17. Unit is ready for full operation. No break-in is required.

Figure 6

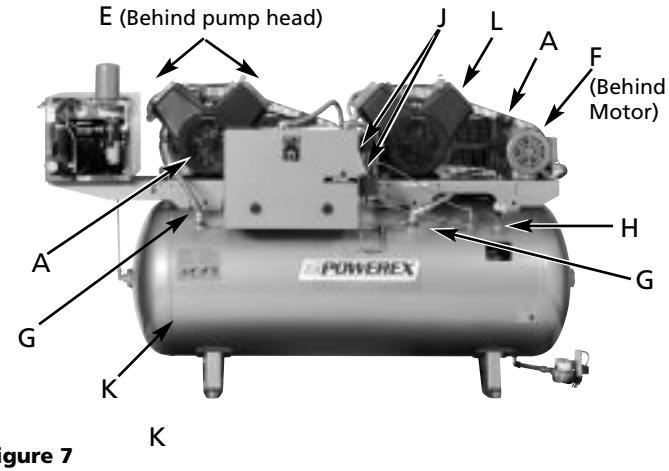
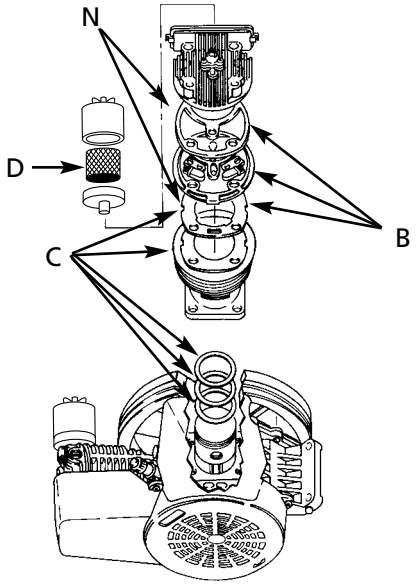


Figure 7



REPLACEMENT PARTS LIST

Item	Description		Quantity Required	Shipping Weight (lbs.)	Code Number
A	**PUMP AND FLYWHEEL:**				
	Motor Hp 3/4, 1, 1½		2	34.0	OPS010
	2, 3		2	65.0	OPS030
	5		2	95.0	OPT050
	7½, 10		2	134.0	OPT100
	15		2	137.0	OPT150
	20		2	137.0	OPS200
B	**VALVE KIT:** Includes valve plate and seals				
	Motor Hp 3/4, 1, 1½		2	0.5	91933640
	2, 3		4	0.7	91933640
	5 (High pressure)		2	1.0	91933681
	5 (Low pressure)		4	1.2	91934682
	7½, 10 (High pressure)		2	1.2	91934681
	7½, 10 (Low pressure)		4	1.2	91934691
	15 (High Pressure)		2	1.0	91934681
	15 (Low Pressure)		4	1.2	91933681
	20		6	1.2	91933681
C	**RING KIT:** Includes all compression rings, oil control ring(s)				
	Motor Hp 3/4, 1, 1½		2	0.1	91237640
	2, 3		4	0.1	91237640
	5 (High pressure)		2	0.1	91237681
	5 (Low pressure)		2	0.1	91236681
	7½,10 (High pressure)		2	0.1	91237681
	7½,10 (Low pressure)		4	0.1	91236671
	15 (High pressure)		2	0.1	91237681
	15 (Low pressure)		4	0.1	91236681
	20		6	0.1	91933681
D	**INTAKE FILTER ELEMENT:**				
	Motor Hp 3/4, 1, 1½		2	0.2	91348550
	2, 3		4	0.2	91353660
	5		2	0.3	91353660
	7½, 10		2	0.3	91353690
	15		2	0.3	91353690
	20		6	0.2	91353660
E	**BELT:**	**Motor Hp** **Size**			
	3/4	AX-38	2	0.3	BT021600AV
	1	AX-41	2	0.3	BT022300AV
	1½	A-45	2	0.3	BT009500AV
	2	A-62	2	0.4	BT009700AV
	3	BX-66	2	0.4	BT008500AV
	5 (120 gal tank)	B-69	4	1.6	BT006000AV
	5 (200 gal tank)	B-80	4	2.0	BT010400AV
	7½	B-84	4	2.0	BT011200AV
	10	B-87	4	2.4	BT009200AV
	15	B-92	4	4.0	BT010200AV
	20	B-92	4	4.0	BT010200AV

REPLACEMENT PARTS LIST *(Continued)*

Item	Description		Quantity Required	Shipping Weight (lbs.)	Code Number
F	**MOTOR PULLEY:**				
	Motor Hp	**Type**			
	3/4	1A-2.7" P.D., 5/8" Bore	2	3.9	PU002600AV
	1 (1 Ø)	1A-3.2" P.D., 5/8" Bore	2	3.2	PU009722AV
	1 (3 Ø)	1A-3.2" P.D., 7/8" Bore	2	3.2	PU009764AV
	1½	1A-5.5" P.D., 7/8" Bore	2	5.6	PU009725AV
	2(1Ø)	1A-6.4" P.D., 1.125" Bore	2	5.2	PU009787AV
	2(3Ø)	1A-6.4" P.D., 7/8" Bore	2	5.2	PU009778AV
	3	1B-8.4" P.D., 1⅛" Bore	2	6.3	PU009777AV
	5	2B-8.0" P.D., 1⅛" Bore	2	7.6	PU009747AV
	7½	2B-8.6" P.D., 1⅜" Bore	2	12.5	PU009775AV
	10	2B-11.0" P.D., 1⅜" Bore	2	13.5	PU009772AV
	15	2B-13.6" P.D., 1⅜" Bore	2	13.5	PU009758AV
	20	2B-12.4" P.D., 1⅜" Bore	2	16.0	PU009756AV
G	**IN-TANK CHECK VALVE:**				
	Motor Hp	**Size**			
	1/2 Through 3	1/2" MPT x 1/2" FPT	2	0.3	CV003204AV
	5 Through 15	3/4" MPT x 3/4" FPT	2	0.4	CV003205AV
	20	1¼" MPT x 1¼" FPT	2	1.1	CV003206AV
H	**SAFETY RELIEF VALVE:** Set at approximately 140 psig				
	1/2 Through 20 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
	Lag Switch: Set at approximately 80 psig cut-in and 110 psig cut-out		1	0.9	CW207559AV
K	**TANK:**				
	Motor Hp	**Tank Size**			
	3/4 Through 1½	30 gallon	1	134.0	AR0ZZ600AJ
	2 &3	80 gallon	1	243.0	AR0LL900AJ
	3	120 gallon	1	415.0	AR023600AJ
	5	120 gallon	1	415.0	AR022800AJ
	5	200 gallon	1	677.0	JQ000200AV
	7½ Through 20	240 gallon	1	810.0	JQ000100AV
L	**COOLING SHROUD:**				
	Motor Hp				
	2, 3		2	11.7	91134560
	5		2	1.7	91134660
	7½, 10		2	1.9	91134690
	15		2	1.9	91134690
	20		2	4.5	91134690
M	**BELT GUARD:**				
	Motor Hp				
	3/4 Through 1½(Whole Assembly - ZZ000605AJ)		2	2.4	BG012400AV
	2 & 3		2	12.5	BG012802AV
	5		2	12.5	BG012802AV
	7½, 10 (Whole Assembly - ZZ000620AJ)		2	18.5	BG218500AV
	15 (Whole Assembly - ZZ000620AJ)		2	26.5	BG218500AV
	20 (Whole Assembly - ZZ000620AJ)		2	26.5	BG218500AV
N	**GASKET SET:**				
	Motor Hp				
	3/4, 1, 1½		2	.1	91936640
	2, 3		3	.1	91936640
	5 (High pressure)		2	.1	91937681
	5 (Low pressure)		2	.1	91936680
	7½, 10 (High pressure)		2	.1	91937681
	7½, 10 (Low pressure)		4	.1	91936670
	15 (High pressure)		2	.1	91937681
	15 (Low pressure)		4	.1	91936680
	20		6	.1	91936680

Maintenance Schedule

Item	Action needed	500	2500	Operating Hours 5000	10,000	15,000	20,000	Remarks
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)*				
Bearings	Replace				●	●	▲	
Compression Rings	Replace			●	▲	●	▲	
Wrist pin Bearing	Regrease			▲	▲	▲	▲	
Piston Set	Inspect				●		●	
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 the initial stage and inspected every 1,500 hours afterwards. Proper belt tension for 3/4 to 3 HP units is 2-3 lbs./.5" deflection; for 5 to 20 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.

POWEREX
PURE AIR TECHNOLOGY

Oilless Reciprocating Air Compressor Pumps

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.

Descriptions

GENERAL

Powerex utilizes cutting-edge compressor technology to provide the most advanced oilless reciprocating air compressor in the industry. The Powerex reciprocating compressor is available in single and two stage models. Continuously lubricated, sealed bearings provide oil-free compressed air and long compressor life. The onboard fan, finned flywheel and temperature reducing composite piston create lower operating temperatures.

DRY TYPE INLET FILTER

The inlet filter on the oilless compressor assures 99% of particulate free air, down to 10 micron, is admitted to the unit. Change every 2500 hours or more often in dirty locations (See Figure 5).

PISTON AND PISTON RINGS

The Powerex oilless reciprocating compressor pistons are made of a high-strength, self-lubricating composite using the most advanced technology available. These heat reducing pistons eliminate the effect of excessive grease leakage at the wrist pin bearing. Teflon® rings reduce wear and provide self lubrication. Piston rings should be replaced every 10,000 hours of operation (See Figure 12).

BEARING REGREASE

The wrist pin bearings of the OPS and OPT oilless compressors are needle bearings protected by two outer lip seals. This needle bearing becomes impacted and requires regreasing at 5,000 hours (See Figure 15).

BEARING SEALS

The wrist pin bearing lip seals prevent the lubricating grease from leaking from the bearing area. The two lip seals on each connecting rod require replacement every 10,000 hours (See Figure 16-22 or page 9).

Installation

INSTALLATION SITE

1. The oilless 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 and moisture.
3. Never install the compressor where the ambient temperature is higher than 105° F or where humidity is high.

⚠ 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 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, and/or Canadian Standards Associations (CSA).

DISCLAIMER OF WARRANTIES
In the event the compressor/pump 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.

Specifications

Model	HP	Max. PSIG	SCFM @ 100 PSIG	RPM	No. of Cyl.	Bore	Stroke	Flywheel O.D.	Drive	Weight (lbs.)
OPS 010	1 1.5	145	3.6 5.3	625 885	1	2.56	2.56	11.2	1 GR-A	28
OPS 030	2 3	145	6.6 10.1	845 1115	2	2.56	2.36	13.8	1 GR-B	53
OPT 050	5	145	17.2	860	2	4.31 x 2.95	3.35	16.9	2 GR-B	110
OPT 100	7.5 10	145	27.5 35.0	855 1090	3	3.54 x 2.95	3.35	18.3	2 GR-B	165
OPT 150	15	145	47.0	1140	3	4.13 x 2.95	3.35	19.6	2 GR-B	170

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

Minimum Clearances	
Above	24"
Drive belt side	12"
Other sides	20"

5. If necessary, use metal shims or leveling pads to level the compressor. Never use wood to shim the compressor.

VENTILATION

1. If the oilless 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 safety guidelines manual. All electrical hook-ups must be performed by a qualified electrician. Installations must be in accordance with local and national electrical codes.

Use solderless terminals to connect the electric power source.

PIPING

Refer to the general safety guidelines 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 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. Make sure the flexible hose is rated for proper pressure and temperature before installing.

SAFETY VALVES

Tank mounted compressors are shipped from the factory with safety valves installed in the tank 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 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. 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.

HOURMETER

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

CONDENSATE DRAIN VALVE

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

NOTICE ***Drain liquid from tank daily.***

Operation

Powerex oilless single stage compressors operate at a maximum pressure of 125 PSIG. Two stage compressors operate at a maximum of 145 PSIG and are equipped for continuous run operation. Compressor RPM's are established by Powerex based on horsepower and operating pressure.

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. Visually check the rotation of the compressor pump. If the rotation is incorrect, have a qualified electrician correct the motor wiring.

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. Check the discharge pressure. Also make sure the air pressure rises to the designated pressure setting by checking the discharge pressure gauge.
7. Check the operation of the pressure switch or the pilot valve for continuous run units by opening the stop valve and confirming the compressor starts or reloads as pressure drops.

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

NOTICE ***These units are equipped with head unloaders for continuous run operation.***

Dimensions (inches)

Model No.	HP	A	B	C	D	E	F	G (Diameter)	H (O.D. Flywheel)
OPS 010	1 - 1½	6.7	3.2	11.7	16.2	7.5	4.2	.38	Ø11.2 Ax1
OPS 030	2 - 3	8.3	3.7	13.4	17.8	18.9	6.4	.43	Ø13.8 Bx1
OPT 050	5	11.4	5.3	18.3	21.9	25.9	7.9	.43	Ø16.9 Bx2
OPT 100	7½ - 10	12.2	6.3	20.0	21.6	29.7	8.4	.55	Ø18.3 Bx2
OPT 150	15	12.2	6.3	20.0	21.6	29.7	8.4	.55	Ø19.6 Bx2

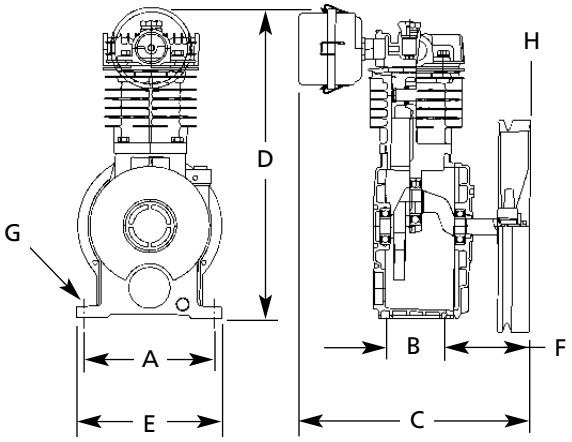


Figure 1 - Model OPS 010

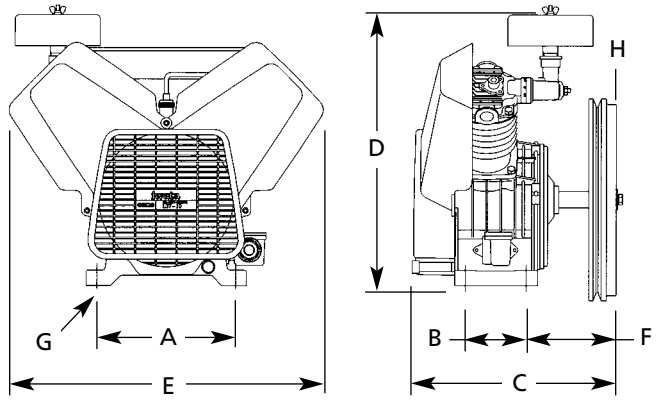


Figure 2 - Model OPS 030

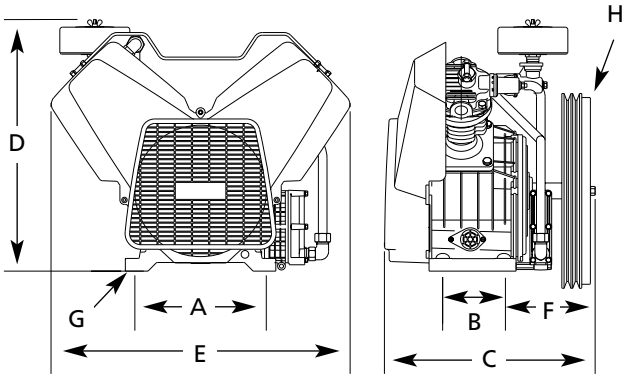


Figure 3 - Model OPT050

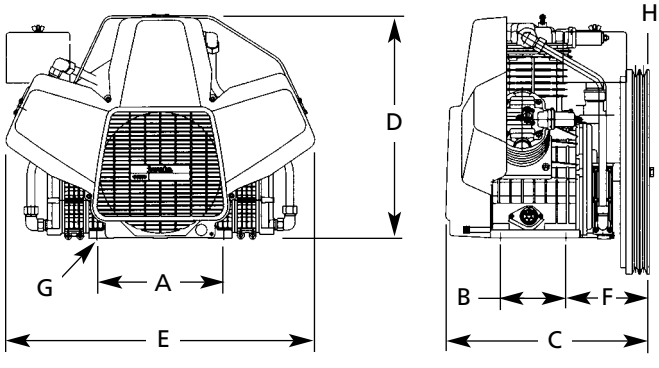


Figure 4 - Models OPT 100 and OPT 150

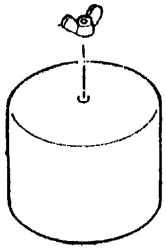
Maintenance Schedule

Item	Action needed	Operating Hours 500	2500	5000	10,000	15,000	20,000	Remarks
Tank	Drain moisture	Daily						Drain tank daily
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)*				
Bearings	Replace				●		▲	
Compression Rings	Replace			●	▲	●	▲	
Wrist Pin Bearing	Regrease	*Note 4		▲	▲	▲	▲	
Piston Set	Replace				▲		▲	
Cylinder	Inspect			●	●	●	●	
Unloader Set	Replace			●	▲	●	▲	
Gasket Set	Replace				▲		▲	
Bearing Seal Wrist Pin	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 the initial stage (500H) and inspected every 2,500 hours afterwards. Proper belt tension for 1 to 3 HP units is 2-3 lbs./.5" deflection; for 5 to 15 HP units, 4-6 lbs./.5" deflection.
4. See page 8.

Air Filter Replacement

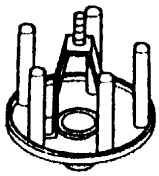


← 1. Remove wing nut or spring clips

← 2. Remove canister and wipe inside clean with dry cloth.

← 3. Remove and discard filter cartridge.

4. Install new filter cartridge. **Do not attempt to clean and reuse filter cartridge.**



← 5. Wipe inside clean with dry cloth.

Figure 5 - Air Filter Replacement

Valve Inspection/ Replacement (Inspect Every 5,000 Hours)

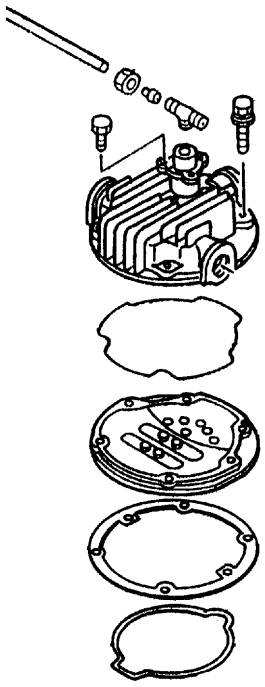


Figure 6

INSPECT VALVE SET

1. Remove head bolts from cylinder head. Head bolts for some models are used also as cylinder bolts, which penetrates crankcase (See Figure 7).
2. Remove cylinder head and valve set. If it is difficult to remove by hand, insert screwdriver between cylinder and valve set and remove.

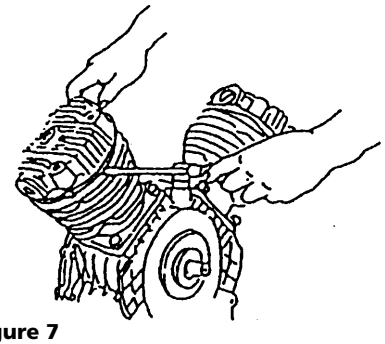


Figure 7

INSPECTION AND MAINTENANCE

1. Check if exhaust valve (A) sticks to seat or is damaged (See Figure 8).
2. Check if there is breakage, gouge or damage to appearance of intake valve (B).
3. Lift intake valve by 10 mm and check if there is peeling and wear on coating surface of valve spacer (C).

⚠CAUTION ***Lifting intake valve too much can cause damage to intake valve.***

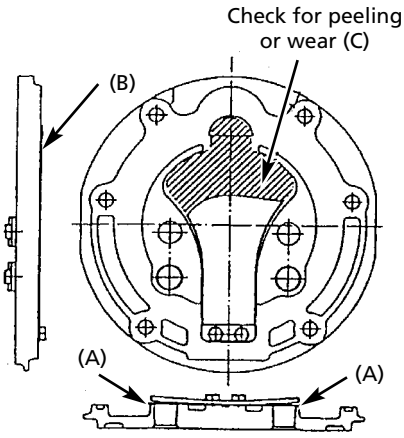


Figure 8

4. Replace with intake valve if valve plate and valve spacer are worn or wear is over 0.5 mm in depth. If exhaust valve rises upwards, clean seat surface if foreign matter sticks.
5. Clean the whole valve set taking care not to damage, seat surface and remove dust.
6. If viton seals (upper and lower) reach inspection time, replace them. Even if its not time to inspect, be sure to replace if they do not protrude from groove for seal or seal has hardened or been damaged.
7. Be sure to replace plastic seat in cylinder.
8. Fit valve set while paying attention to black plastic seat of intake valve fitted to cylinder (so that you do not drop seat or insert tip of valve under seat).
9. Fit cylinder cover and tighten fitting bolt with designated torque.

NOTES:

• When using valve set again, replace upper and lower viton seals.

• When replacing valve set, replace with upper and lower viton seals (valve set with packing set). You cannot reuse disassembled valve set.

We are not responsible for any problems caused by reuse of disassembled valve set.

REASSEMBLY

Assemble in reverse order of disassembling. Tighten each section with designated tightening torque (See Chart on page 6).

Cylinder Inspection/Replacement

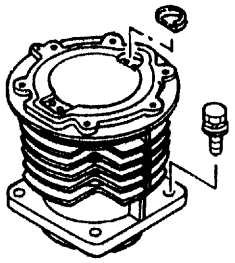


Figure 9

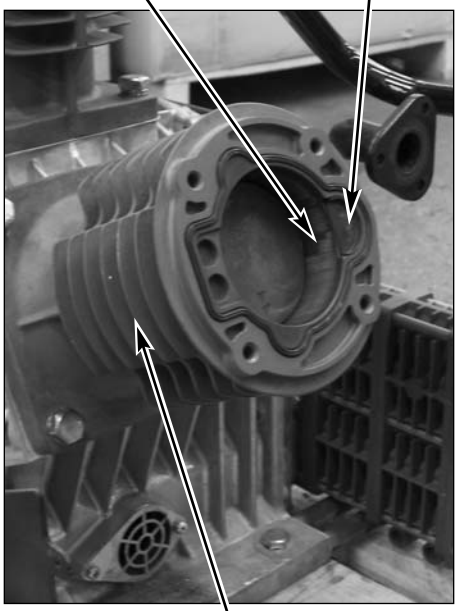


Figure 10

1. Remove cylinder head and valve set. Pay attention not to lose semicircular (black plastic) seat inserted at top surface of cylinder.

INSPECTION

1. Surface treated layer is worn and metal is exposed. Replace worn piston and piston ring.
2. Scuffing (damage) due to foreign matter. Replace if it is swollen by scuffing the aluminum cylinder.
3. Replace if several vertical scratches are side by side at a narrow distance.

NOTE: Blackish streaks you can feel with your nail or finger are not damage but sliding marks of piston and piston ring. You do not need to replace the piston set or cylinder even if there are several marks on the whole diameter of the cylinder.

REASSEMBLY

1. Assemble in reverse order of disassembling cylinder.
2. Direction of cylinder is set so that semicircular spot facing, to which seat (black plastic) is inserted, faces toward flywheel side.
3. Tighten cylinder bolt with designated torque (refer to chart below).

Cylinder Bolt Torque

OPS010 OPS030	OPT050, OPT150 OPT100
156 in. lb.	295 in. lb.

Head Bolt Torque

OPS010, OPS030, OPT050, OPT100, OPT150
156 in. lb.

INSPECT PISTON AND PISTON RING (INSPECT EVERY 5,000 HOURS)

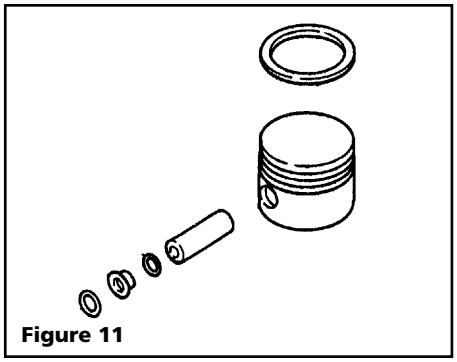


Figure 11

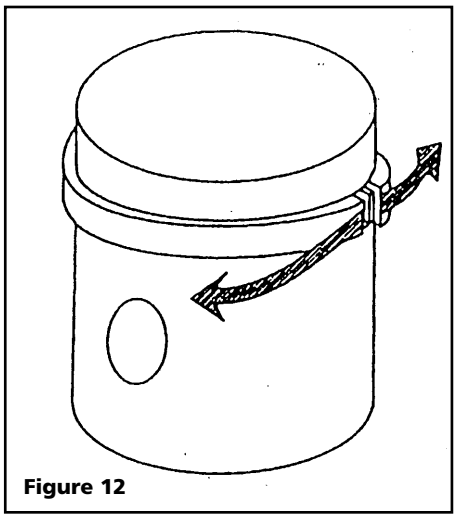


Figure 12

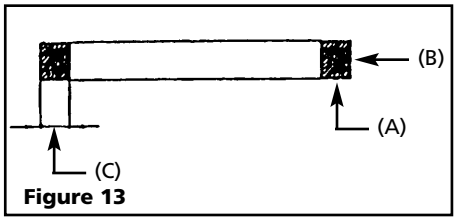


Figure 13

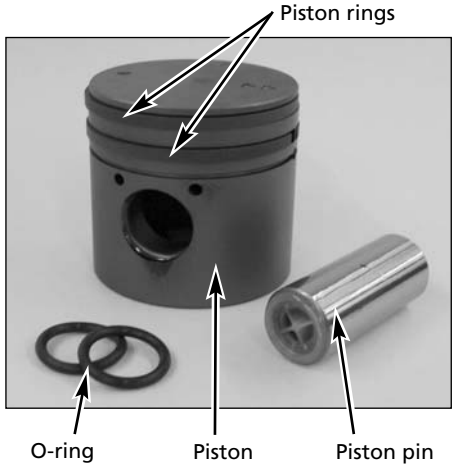


Figure 14

1. Remove cylinder head and cylinder.
2. Do not use tool to remove the ring.

NOTE: Expanding ring too much and deforming can cause wear and leakage. (See Figure 12). Mark upper surface (not lower surface) of removed ring for easy distinction.

3. Inspect lower surface (A) and outer side surface (B) of ring (See Figure 13). Measure thickness (C) of ring with calipers. Replace if foreign matter enters (A, B) or deep damage is found or (C) dimension is less than 2.5 mm at any point around the rings circumference.

NOTE: Clean the whole ring and ring groove with soft clean cloth.

⚠CAUTION ***Ring and piston dust build up in the ring groove can cause knocking. This is sometimes mistaken for bad valve or bearing.***

REASSEMBLE: Pay attention to the fit of the piston and wrist pin fit. There should be no axial play or looseness in the wrist pin area.

NOTE: Do not separate piston from connecting rod when inspecting piston or ring. If you remove piston from connecting rod, you may damage oil seal of connecting rod and needle bearing.

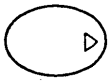
PISTON REPLACEMENT

1. Inspect for appearance if there is deep damage or crack on top of piston or at pin boss.
2. Remove piston ring and inspect for breakage or droop of ring land.
3. Remove o-rings on both sides of piston pin.
4. Push piston pin to one side.

NOTE: Install bearing retention sleeve in grease kit/piston set. The retention sleeve is to prevent the needle bearing from falling out of the bearing area. On the HP cylinder only.

5. Remove piston pin.

PISTON ORIENTATION CHART FOR OILLESS OPS/OPT SERIES

Pump Compressor Model	Bore	No. Cylinders	No. of Piston Rings per Piston	Mark on Top of Piston
OPS010	65 mm	1	1	Flywheel side  Fan side
OPS030	65 mm	1	1	Flywheel side  Fan side
OPT050	LP 105 mm	1	1	Flywheel side  Fan side
	HP 75 mm	1	2	
OPT100	LP 90 mm	2	1	Flywheel side  Fan side
	HP 75 mm	1	2	
OPT150	LP105	2	1	Flywheel side  Fan side
	HP75	1	2	

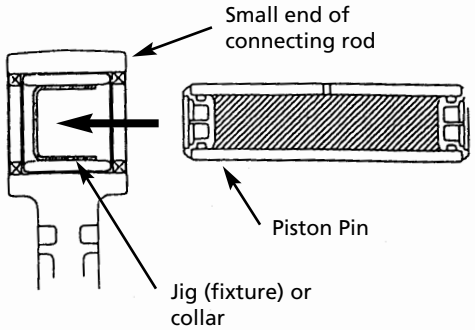


Figure 15

NOTE: The orientation in which the pistons are reinstalled is very important. Improper placement will cause premature wear of the ring and piston.

NOTE: When removing HP piston on two-stage pumps, remove piston and then insert retention sleeve having the same diameter of piston pin or piston to small end of connecting rod. If not, you may drop or lose needles from the bearing, as HP needle bearing does not have support.

⚠CAUTION ***Fit piston by referring to Δ marking on the top of the piston surface and list on above chart.***

NOTE: Gradually insert piston pin while turning it. Inserting with force can damage oil seal of needle bearing.

Powerex Oilless Reciprocating Grease 6 Grams #IP634500AV

*** FOR LOW PRESSURE PISTON ONLY**

WRIST PIN BEARING SEAL REPLACEMENT (REPLACE EVERY 10,000 HOURS)

Replacing Oil Seal

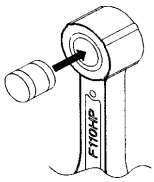


Figure 16

1. Insert the plastic retention sleeve which protects the needle bearing from dropping out.

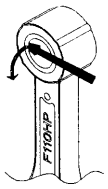


Figure 17

2. Remove the two oil seals by using a screwdriver.

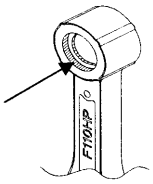


Figure 18

3. Clean both surfaces where oil seals are removed.

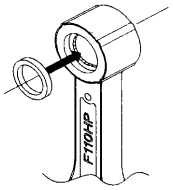


Figure 19

4. Push the oil seal into the small bearing end horizontally.

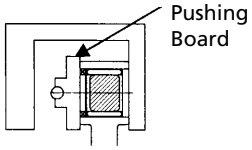


Figure 20

5. Press the oil seal with a C-clamp into the small bearing end.

6. Repeat on opposite side.

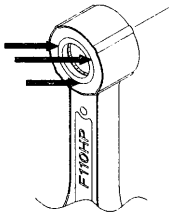


Figure 21

7. Apply a small volume of adhesive at several points.

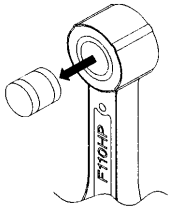


Figure 22

8. Remove the retention sleeve inserted at the first step.

NOTE: You may use a "C" clamp or two large washers and bolt with nut through the bearing. Then apply pressure to install the seals. This makes it easy to replace the seals without removing the crankshaft.

Inspect Connecting Rod, Wrist Pin and Crankshaft

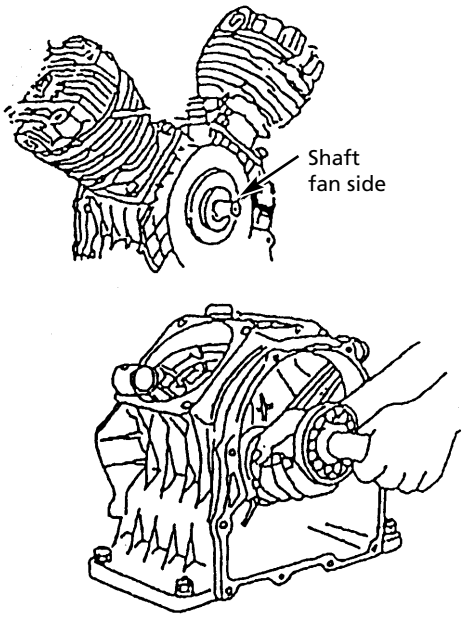


Figure 23

REPLACE CONNECTING ROD SET AND CRANKSHAFT AS A SET

Pressing bearing into connecting rod and connecting rod set into crankshaft requires special fixtures. Without such fixtures, the squareness and parallelism of each part will be affected.

DISASSEMBLE AND REMOVE CYLINDER COVER, CYLINDER AND PISTON IN THIS ORDER

1. Bearing at large end of connecting rod: Replace if it does not move or feels stuck holding and moving small end of connecting rod.
2. Bearing of crankshaft: Replace if you feel some resistance when slowly turning shaft.
3. Bearing at wrist pin: Check for breakage of needle bearing and damage of cage.

DISASSEMBLING: CRANKSHAFT SET

1. Disassemble cylinder head, cylinder and piston.
2. Remove bolts from bearing cap and remove bearing cap.
3. Lightly tap shaft fan side with non-shock hammer (avoid metal hammer) and remove crankshaft. After bearing leaves the crankcase bore, pull connecting rod out as illustrated and remove it from crankcase (See Figure 23).

REASSEMBLY

1. Heat bearing housing of crankcase with industrial dryer or simple burner just the same as disassembling.
2. Insert crankshaft set into crankcase in reverse order of disassembling and insert bearing into housing.
3. Tap shaft from pulley side with non-shock hammer and insert it inwards.
4. Fit bearing case. Grease bearing housing of bearing case.

Notes

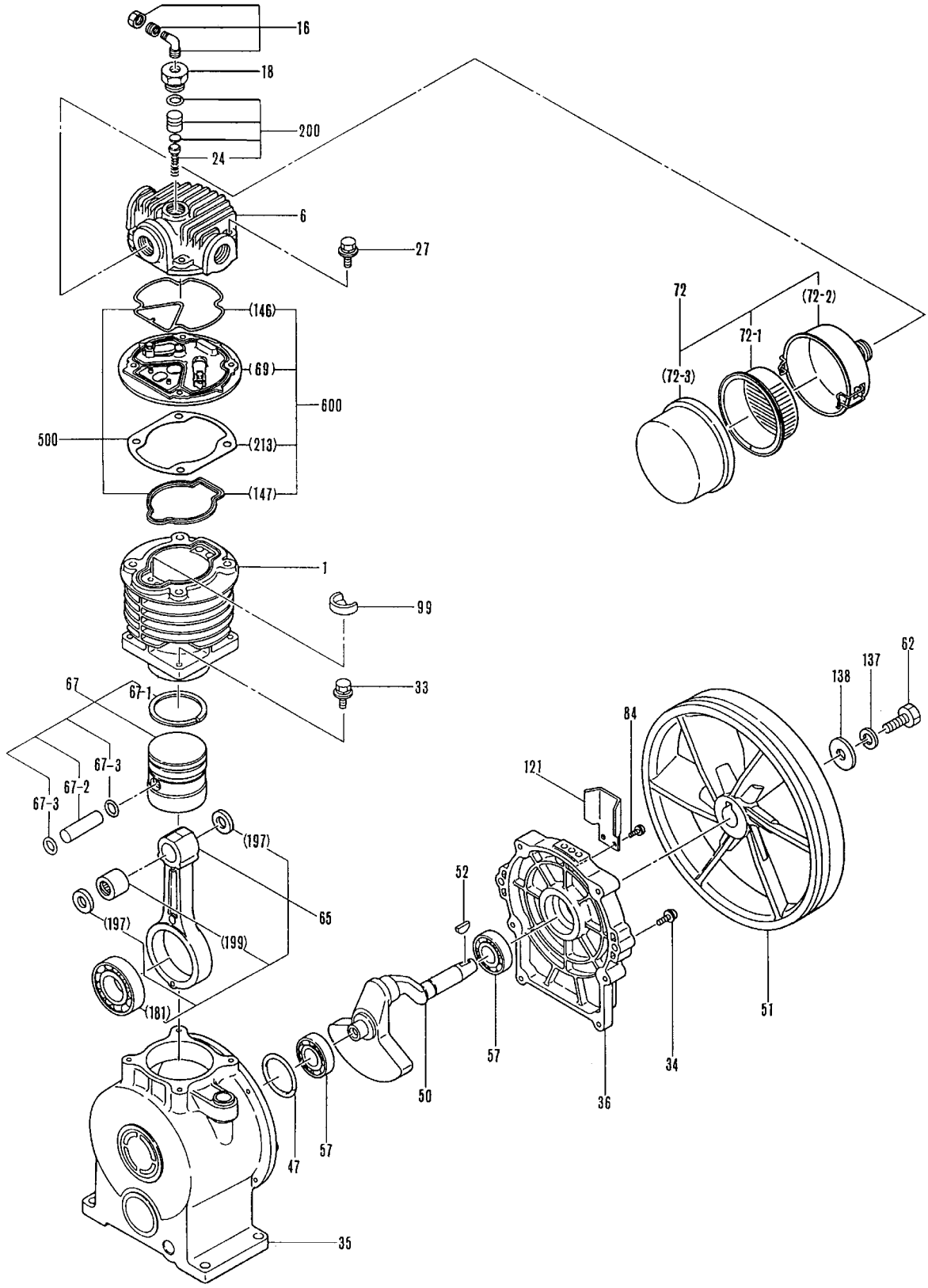


Figure 24 - Replacement Parts Illustration for OPS010

Ref. No.	Description	Part Number for model OPS010	Qty
1	Cylinder	91000560	1
6	Cylinder head	91002630	1
16	Elbow (Unloader)	06800261	1
18	Unloader cap	01052041	1
24	Spring guide set	91932560	1
27	Bolt (cylinder head)	06137835	4
33	Bolt (cylinder)	06137825	8
34	Bolt (bearing cap)	06137620	8
35	Crankcase	91100630	1
36	Bearing cap	91101630	1
47	O-ring	01146550	1
50	Crank shaft	▲	1
51	Flywheel pulley	91201551	1
52	Parallel pin	01271550	1
57	Ball bearing (bearing cap)	▲	2
62	Hex blot (fan, flywheel)	06992857	1
65	Connecting rod w/bearings	▲	1
67	Piston set	91903640	1
67-1	Piston ring	91237640	1
72	Intake filter set	91906630	1
72-1	Intake filter	91348550	1
84	Screw (dust cover)	06131508	2
99	Seat (intake valve)	01301560	1
121	Dust cover	91383630	1
197	Lip seals wrist pin	97191000	2
200	Unloader set	91931560	1
500	Gasket set	91936640	1
600	Valve set with gasket	91933640	1
▲	Crank shaft set (Includes 50, 57 and 65)	91918630	1

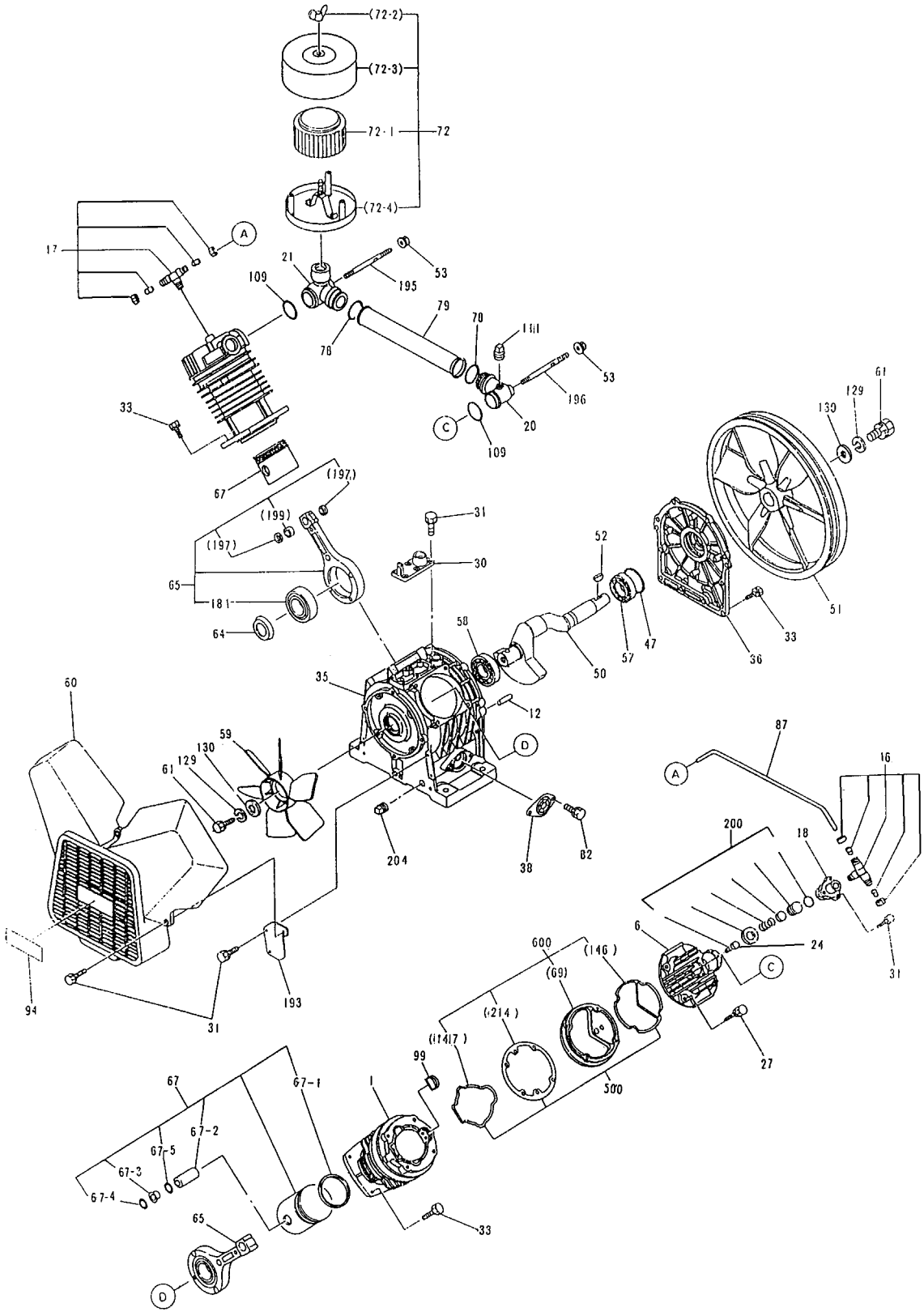


Figure 25 - Replacement Parts Illustration for OPS030

Oilless Reciprocating Air Compressor Pumps

Ref. No.	Description	Part Number for model OPS030	Qty
1	Cylinder	91000560	2
6	Cylinder head	91002640	2
16	Elbow (unloader)	06800261	1
17	Tee union assembly	06803261	1
20	Intake joint (1)	91345561	1
21	Intake joint (2)	91346571	1
24	Spring guide set	91932560	2
27	Bolt (cylinder head)	06137835	8
30	Flange (breather)	91176660	1
31	Bolt	06995831	20
33	Bolt (cylinder)	06137825	8
34	Bolt (bearing cap)	06137620	8
35	Crank case	91100640	1
36	Bearing cap	91101560	1
38	Filter (crank case)	91348690	1
47	O-ring	01146560	1
50	Crank shaft	▲	1
51	Flywheel pulley	91202560	1
52	Woodruff key	06600013	1
53	Hex nut	06994016	2
57	Ball bearing (bearing cap)	▲	1
58	Ball bearing (crank case)	▲	1
59	Fan	91220560	1
60	Cover (fan)	91134560	1
61	Hex bolt (fan, flywheel)	06992857	2
64	Liner (connecting rod)	01480640	1
65	Connecting rod w/bearing	▲	2
67	Piston set	91903640	2
67-1	Piston ring	91237640	2
72	Intake filter set	91907570	1
72-1	Intake filter	91353660	1
78	O-ring	06630032	2
79	Intake pipe	91407560	1
82	Screw (filter)	06131508	2
87	Tube	01909400	1
99	Seat (intake valve)	01301560	2
109	O-ring (intake joint)	06639906	2
193	Fan guard	91135560	2
195	Bolt (intake joint 1)	01095570	1
196	Bolt (intake joint 2)	01095560	1
197	Lip seals wrist pin	97191000	4
200	Unloader set	91931560	2
500	Gasket set	91936640	2
600	Valve set with gasket	91933640	2
▲	Crankshaft set (includes part #'s 50, 57, 58 and 65)	91918640	1

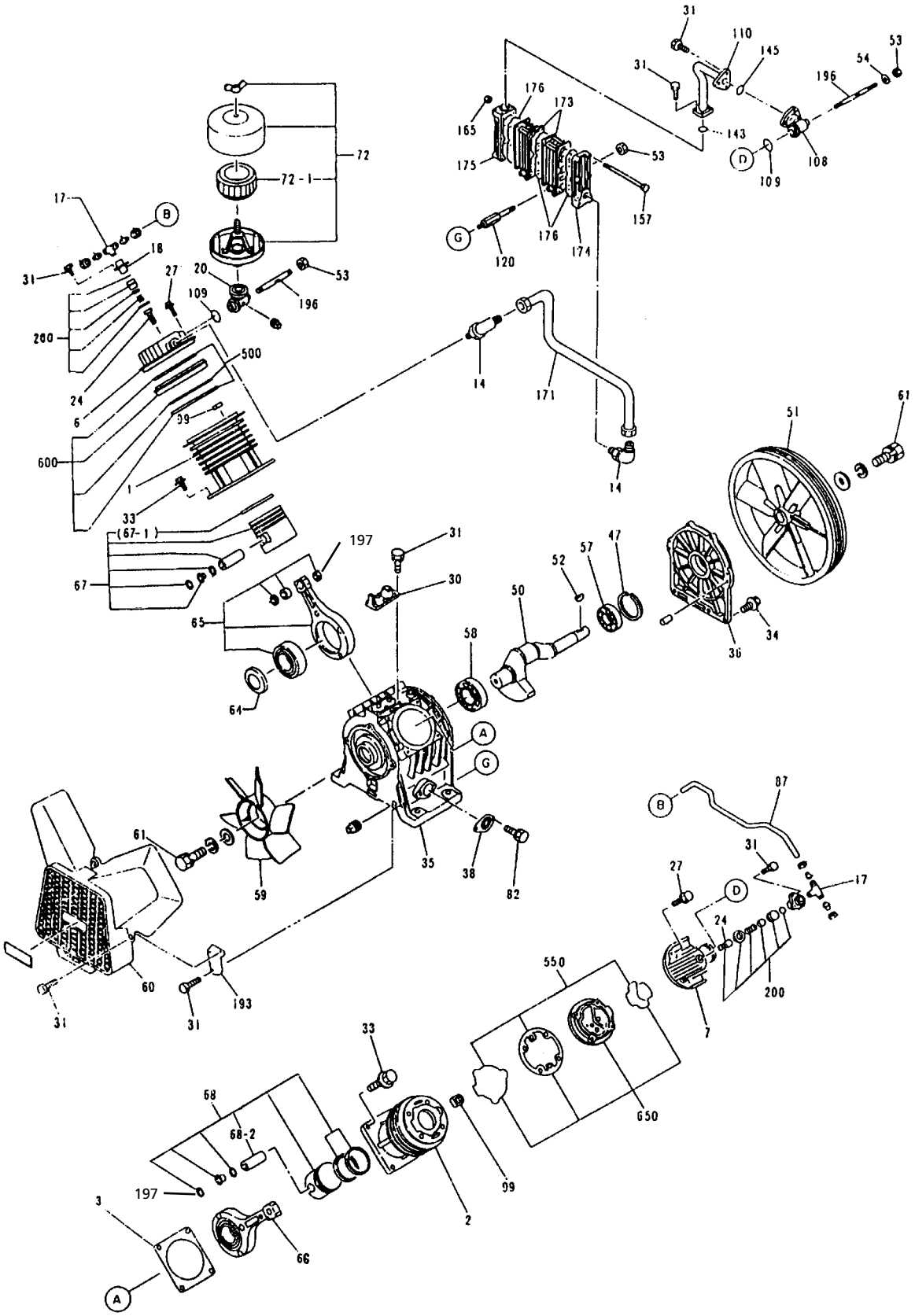


Figure 26 - Replacement Parts Illustration for OPT050

Oilless Reciprocating Air Compressor Pumps

Ref. No.	Description	Part Number for model OPT050	Qty
1	Cylinder (LP)	91000680	1
2	Cylinder (HP)	91947680	1
3	Liner	91177680	2
6	Cylinder Head (LP)	91002691	1
7	Cylinder Head (HP)	91002680	1
14	Elbow (Intercooler)	01415690	2
17	Tee Union Ass'y	06803261	2
18	Unloader Cap	01052451	2
20	Intake Joint	91345660	1
24	Spring Guide Set	91949694	2
27	Bolt (Cylinder Head)	06137850	10
30	Flange (Breather)	91176660	1
31	Bolt (Unloader Cap)	06995831	26
33	Bolt (Cylinder)	06137130	8
34	Bolt (Bearing Cap)	06137830	10
35	Crank Case	91100660	1
36	Bearing Cap	91101580	1
38	Filter (Crank Case)	91348690	1
47	O-ring	01146430	1
50	Crank Shaft	▲	1
51	Flywheel Pulley	91201660	1
52	Woodruff Key	06600016	1
53	Hex Nut	06994016	4
54	Washer	06991512	1
57	Ball Bearing (Brg. Cap)	▲	1
58	Ball Bearing (Crank Case)	▲	1
59	Fan	91220690	1
60	Cover (Fan)	91134660	1
61	Hex Bolt (Fan, Flywheel)	06992817	2
64	Liner (Connecting Rod)	91472690	1
65	Connecting Rod Set	▲	1
66	Connecting Rod Set	▲	1
67	Piston Set (LP)	91903680	1
67-1	Piston Ring (LP)	91236681	1
68	Piston Set (HP)	91910670	1
68-1	Piston Ring (HP)	91930680	2
68-2	Wrist Pin (Prepacked)	91924680	1
72	Intake Filter Set	91907660	1
72-1	Intake Filter	91353660	1
82	Screw (Filter)	06235304	2
87	Unloader Tube	91420660	1
99	Seat (Intake Valve)	01301691	2
108	Intercooler Flange	91403690	1
109	O-ring (Intake joint)	06639906	2
110	Connecting Pipe	91400660	1
120	Bolt (Intercooler)	01435692	2
143	O-Ring (Connecting Pipe)	06632825	1
145	O-Ring (Connecting Pipe)	06632835	1
157	Hex. Bolt (Intercooler)	06996460	6
165	Nut (Intercooler)	06994015	6
171	Connecting Pipe Set	91914661	1
173	Intercooler	91404690	2
174	Intercooler Flange (1)	91405690	1
175	Intercooler Flange (2)	91406690	1
176	Gasket (Intercooler)	01432690	3
193	Fan Guard	91144660	2
196	Bolt (Intake Joint)	01344690	2
197	Lip seals wrist pin	97191000	4
200	Unloader Set	91932681	2
500	Gasket Set (LP)	91936680	1
550	Gasket Set (HP)	91937681	1
600	Valve Set with Gasket (LP)	91933681	1
650	Valve Set with Gasket (HP)	91934683	1
▲	Crank Shaft Set (50, 57, 58, 65, 66)	91918660	1

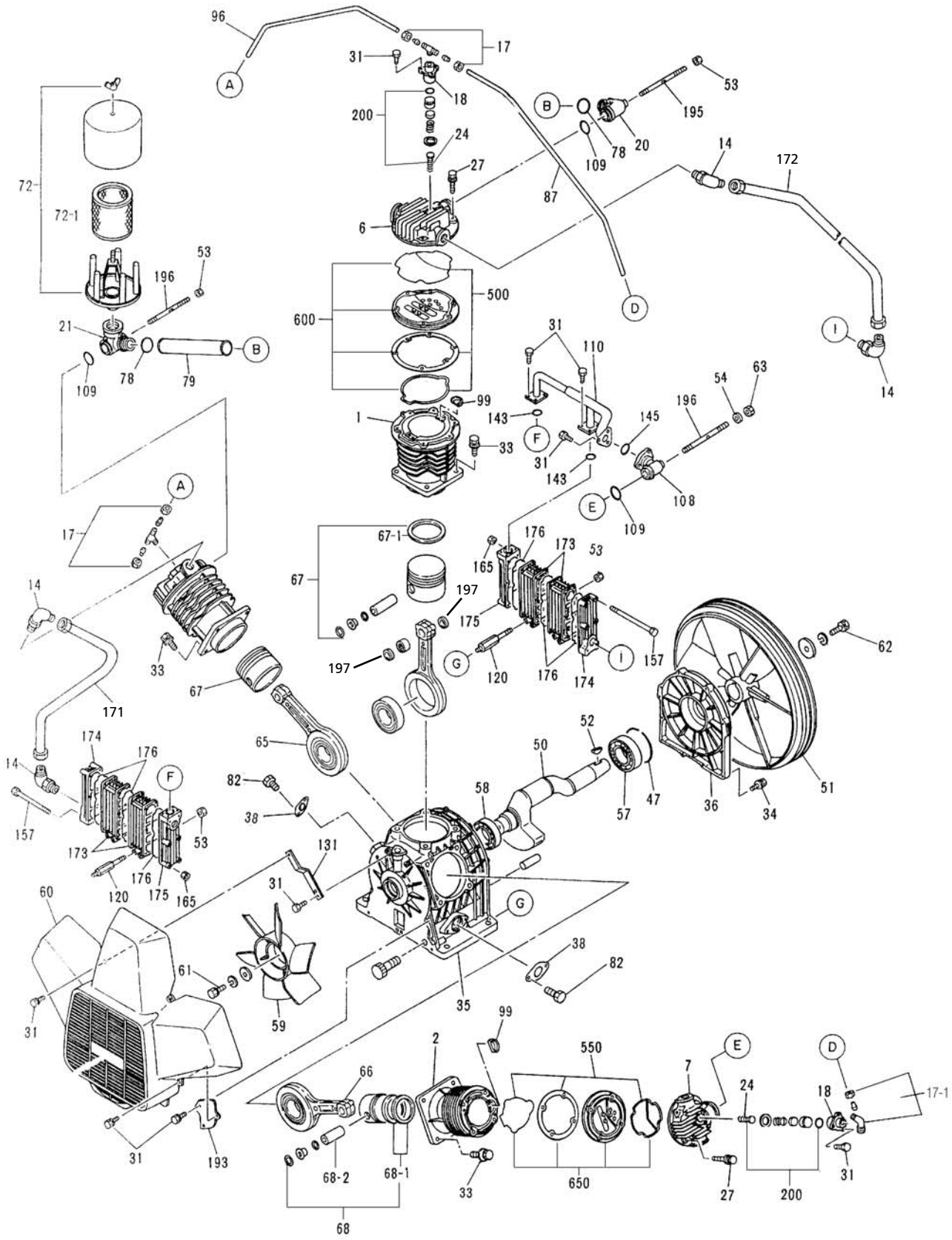


Figure 27 - Replacement Parts Illustration for OPT100 and OPT150

Oilless Reciprocating Air Compressor Pumps

Ref. No.	Description	Part Numbers For Models OPT100	OPT150	Qty
1	Cylinder (LP)	91000670	91000680	2
2	Cylinder (HP)	91947680	91947680	1
6	Cylinder head (LP)	91002691	91002691	2
7	Cylinder head (HP)	91002680	91002680	1
14	Elbow (Intercooler)	01415690	01415690	4
17	Tee union assembly	IP010400AV	IP010400AV	2
17-1	Elbow union assembly	96800261	96800261	1
18	Unloader cap	01052451	01052451	3
20	Intake joint (1)	01345691	01345691	1
21	Intake joint (2)	01346690	01346690	1
24	Spring guide set	91949694	91949694	3
27	Bolt (Cylinder head)	06137850	06137850	16
31	Bolt (Unloader cap)	06995831	06995831	30
33	Bolt (Cylinder)	06137130	06137130	12
34	Bolt (Bearing cap)	06137830	06137830	10
35	Crank case	91100680	91100680	1
36	Bearing cap	91101690	91101690	1
38	Filter (Crank case)	91348690	91348690	1
47	O-ring (Bearing cap)	01146690	01146690	1
50	Crank shaft	▲	▲	1
51	Flywheel pulley	01201590	91201690	1
52	Woodruff key	06600016	06600016	1
53	Hex nut	06994016	06994016	6
54	Washer (Intercooler)	06991512	06991512	1
57	Ball bearing (Bearing cap)	▲	▲	1
58	Ball bearing (Crank case)	▲	▲	1
59	Fan	91220690	91220690	1
60	Fan cover	91134690	91134690	1
61	Hexagon bolt (Fan)	06992817	06992817	1
62	Hexagon bolt (Flywheel)	06992833	06992833	1
63	Hexagon nut (Intake joint)	06382086	06382086	1
65	Connecting rod (LP)	▲	▲	2
66	Connecting rod (HP)	▲	▲	1
67	Piston set (LP)	91903670	91903680	2
67-1	Piston ring (LP)	91236671	91236681	2
68	Piston set (HP)	91910670	91910670	1
68-1	Piston ring (HP)	91930680	91930680	2
68-2	Wrist pin set (prepacked)	91924680	91924680	1
72	Intake filter set	91907590	91907690	1
72-1	Intake filter	91353690	91353690	1
78	O-ring (Intake pipe)	06630032	06630032	2
79	Inlet pipe	01407690	01407690	1
82	Bolt (Crankcase filter)	06131508	06131508	4
87	Unloader tube	01420690	01420690	1
96	Unloader tube	01419600	01419600	1
99	Wear pad, valve	01301691	01301691	3
108	Intercooler Joint	91403690	91403690	1
109	O-ring (Intercooler Joint)	06639906	06639906	3
110	Connecting Pipe	91402680	91402680	1
120	Bolt (Intercooler)	01435692	01435692	4
131	Cover Bracket	01413690	01413690	2
143	O-ring (Connecting Pipe)	06632825	06632825	2
145	O-ring (Connecting Pipe)	06632835	06632835	1
157	Hex bolt (Intercooler)	06996460	06996460	6
165	Nut (Intercooler)	06994015	06994015	6
171	Connecting Pipe Set (1)	01914590	01914690	1
172	Connecting Pipe Set (2)	01915590	01915690	1
173	Intercooler	91404690	91404690	4
174	Intercooler Flange (1)	91405690	91405690	2
175	Intercooler Flange (2)	91406690	91406690	2
176	Gasket (Intercooler)	01432690	01432690	6
193	Fan Guard	01135690	01135690	2
195	Bolt (Intake Joint 1)	01343690	01343690	1
196	Bolt (Intake Joint 2)	01344690	01344690	2
197	Lip seals wrist pin	97191000	97191000	6
200	Unloader Set	91932681	91932681	3
500	Gasket Set (LP)	91936670	91936680	2
550	Gasket Set (HP)	91937681	91937681	1
600	Valve Set with Gasket (LP)	91934691	91933681	2
650	Valve Set with Gasket (HP)	91934683	91934683	1
▲	Crank shaft set (Includes 50, 57, 58, 65 & 66)	91917680	91917680	1

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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.

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