

Oiless 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

The Powerex oiless reciprocating air compressor has advanced compressor technology through the development of a completely oiless unit. 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 oiless compressor assures 99% of particulate free air is admitted to the unit. Change every 2500 hours or more often in dirty locations.

PISTON AND PISTON RINGS

The Powerex oiless 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. PTFE rings reduce wear and provide self lubrication. Piston and piston rings should be replaced every 10,000 hours of operation.

Installation

INSTALLATION SITE

1. The oiless 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.
4. Clearance must allow for safe, effective inspection and maintenance.
5. If necessary, use metal shims or leveling pads to level the compressor. Never use wood to shim the com-

▲ 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.

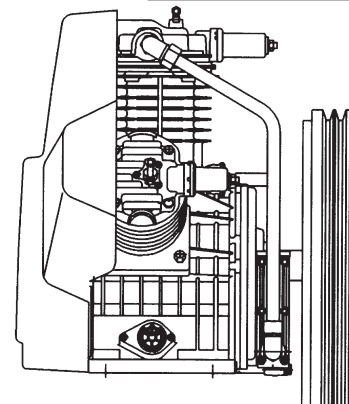
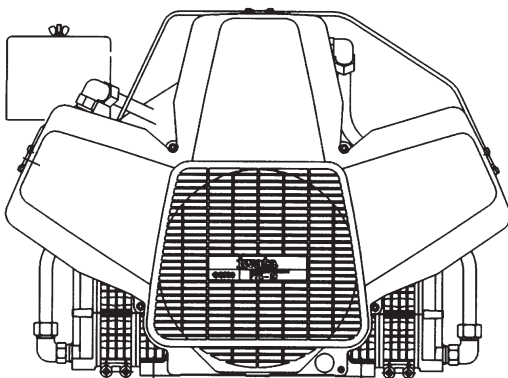


Figure 1 - Models OPT100 and OPT150

Oilless Reciprocating Air Compressor Pumps

pressor.

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 gener-

Minimum Clearances

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

ating units may be pulled into the unit.

WIRING

Refer to the general product manual. All electrical hook-ups must be performed by a qualified electrician. Installations must be in accordance with local and national electrical codes. Use solderless terminals to connect the electric power source.

PIPING

Refer to the general product manual.

1. Make sure the piping is lined up without being strained or twisted when assembling the piping for the scroll compressor.
2. Appropriate expansion loops or bends should be installed at the compressor to avoid stresses caused by changes in hot and cold conditions.
3. Piping supports should be anchored separately from the compressor to reduce noise and vibration.
4. Never use any piping smaller than the compressor connection.
5. Use flexible hose to connect the outlet of the compressor to the piping so that the vibration of the compressor does not transfer to the piping.

SAFETY VALVES

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

Operation

Powerex oilless single stage compressors operate at a maximum pressure of 125 PSIG. Two stage compressors operate at a maximum of 150 PSIG and are equipped for continuous duty. 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

Two stage units are equipped with head unloaders for continuous operation.

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Dimensions

Model No.	HP	A	B	C	D	E	F	ø G	H O.D. (Flywheel)	Shipping Weight
OPS 010	3/4 - 1 1/2	6.7	3.2	11.9	16.2	11.0	4.3	.38	Ø11.0 Ax1	34
OPS 030	2 - 3	8.3	3.7	13.4	17.8	18.9	6.0	.43	Ø13.8 Bx1	65
OPS 075	5 - 7 1/2	11.4	5.3	18.0	21.8	26.0	7.6	.43	Ø16.9 Bx2	95
OPT 100	7 1/2 - 10	12.2	6.3	20.0	21.7	29.7	8.0	.55	Ø18.3 Bx2	134
OPT 150	15	12.2	6.3	20.0	21.7	29.7	8.0	.55	Ø19.7 Bx2	137
OPS 200	20	12.2	6.3	20.0	25.0	29.7	8.0	.55	Ø19.7 Bx3	137

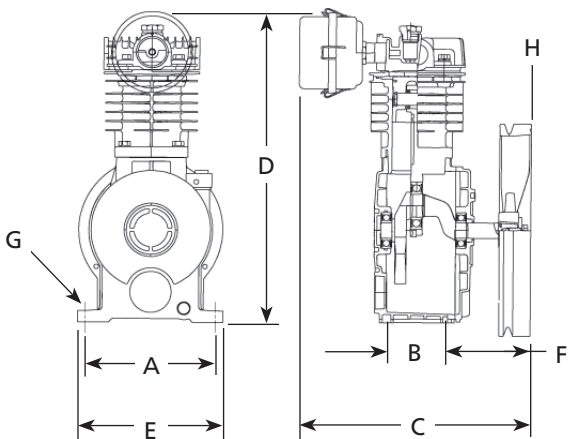


Figure 2 - Model OPS 010

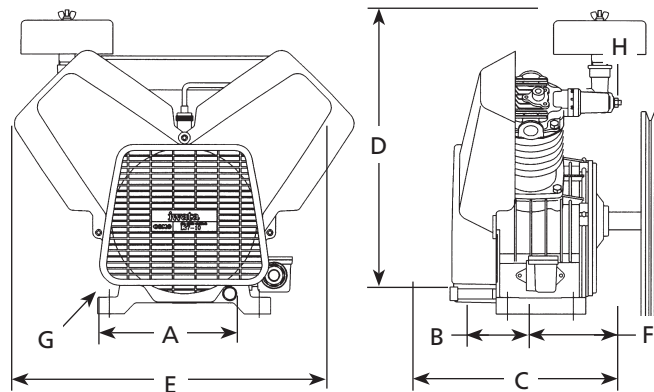


Figure 3 - Models OPS 030 and OPS 075

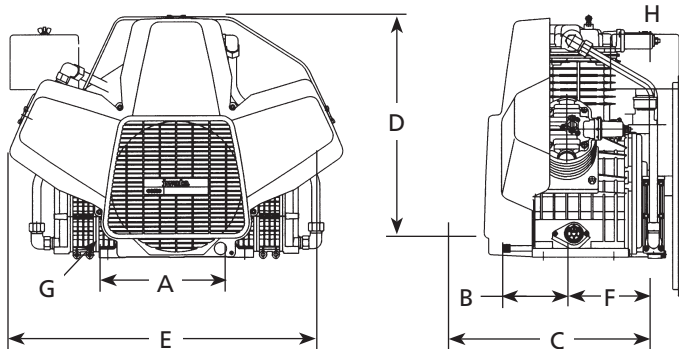


Figure 4 - Models OPT 100 and OPT 150

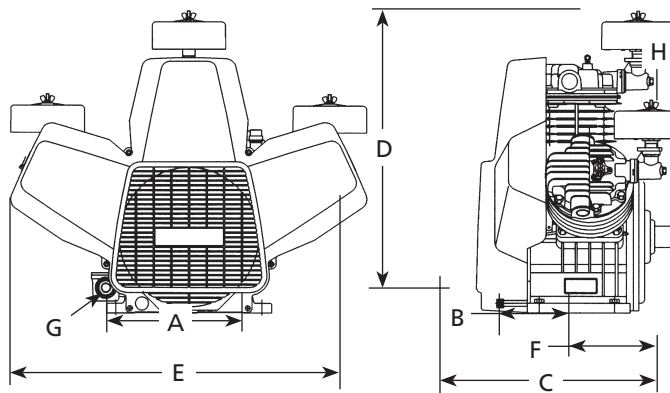


Figure 5 - Model OPS 200

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Maintenance Schedule

Item	Action needed	500	2500	Operating Hours				Remarks
				5000	10,000	15,000	20,000	
Tank	Drain moisture	Daily	2500					
Inlet air filter	Replace	●	▲	<i>(Every 2,500 hrs or less)</i>				
Blower fan	Clean			●	●	●	●	
Fan Duct	Clean			●	●	●	●	
Compressor Fins	Clean		●	<i>(Every 2,500 hrs or less)</i>				
Bearings	Replace				●	●	▲	
Compression rings	Replace				▲		▲	
Wrist pin bearing	Regrease				▲		▲	
Piston set	Replace				▲		▲	
V-belt	Inspect, replace	*Note 3	●	▲	▲	▲	▲	
Pressure Switch	Confirm operation				●		●	
Magnetic starter	Inspect				●		●	Replace if contact points deteriorated
Safety valve	Confirm operation		●	<i>(Every 2,500 hrs or less)</i>				
Pressure gauge	Inspect		●	<i>(Every 2,500 hrs or less)</i>				

● 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./1.5" deflection; for 5 to 20 HP units, 4-6 lbs./1.5" deflection.

Air Filter Replacement

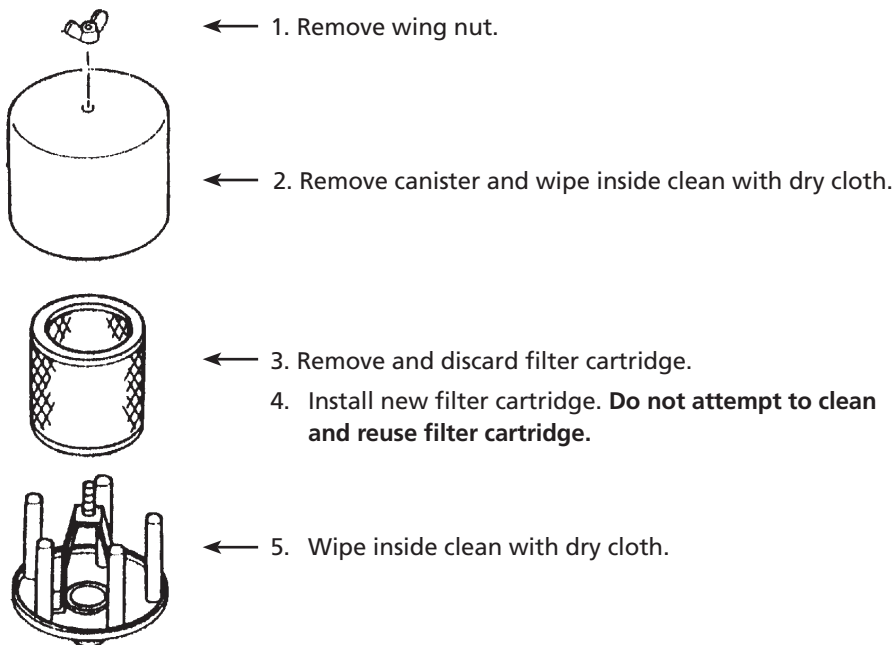


Figure 6 - Air Filter Replacement

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Ring and Piston Set Replacement 10,000 Hours

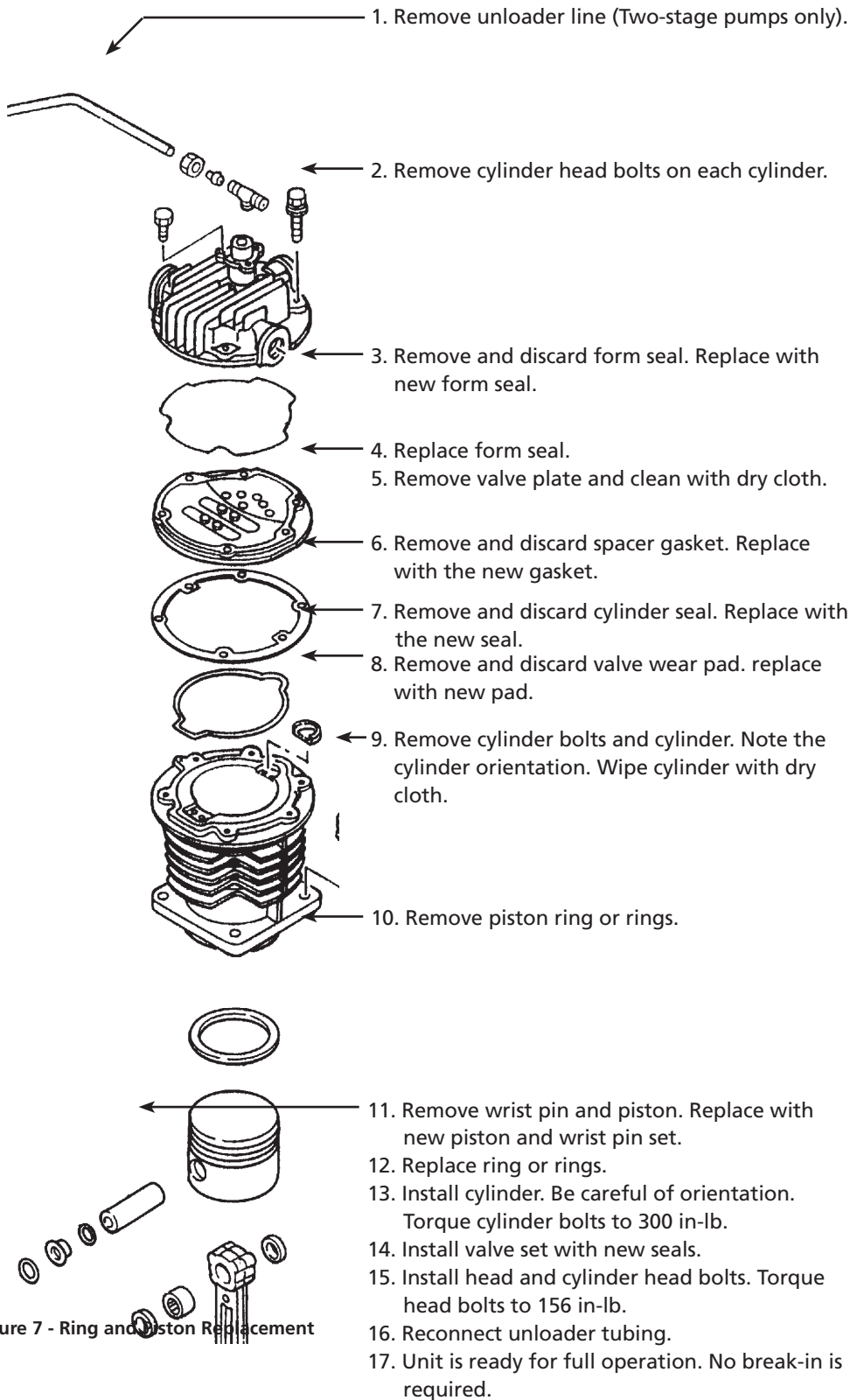


Figure 7 - Ring and Piston Replacement

Oilless Reciprocating Air Compressor Pumps

Ref.		Part Number For Models		
1	Cylinder (LP)	91000670	91000680	2
2	Cylinder (HP)	91001680	91001680	1
6	Cylinder head (LP)	91002670	91002690	2
7	Cylinder head (HP)	91002680	91002680	1
14	Elbow (Intercooler)	01415690	01415690	4
17	Tee union assembly	06803261	06803261	3
18	Unloader cap	01052451	01052451	3
20	Intake joint (1)	01345690	01345690	1
21	Intake joint (2)	01346690	01346690	1
24	Spring guide set	91949691	91949691	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	Rubber seal (Bearing cap)	01146690	01146690	1
50	● Crank shaft	91200690	91200690	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)	01145830	01145830	1
58	● Ball bearing (Crank case)	91132691	91132691	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 bolt (Intake joint)	06382086	06382086	1
65	● Connecting rod (LP)	91900690	91900690	2
66	● Connecting rod (HP)	91900680	91900680	1
67	Piston set (LP)	91903670	91903680	2
67-1	Piston ring (LP)	91236671	91236681	2
68	Piston set (HP)	91904680	91904680	1
68-1	Piston ring (HP)	91237681	91237681	2
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	01301690	01301690	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
129	Lock washer (Fan)	06501006	06501006	1
130	Washer (Fan)	01270690	01270690	1
131	Cover Bracket	01413690	01413690	2
137	Lock Washer (Flywheel)	06501206	06501206	1
138	Washer (Flywheel)	01342690	01342690	1

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Ref.		Part Number For Models		
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
200	Unloader Set	91932680	91932680	3
500	Valve Gasket Set (LP)	91936670	91936680	2
550	Valve Gasket Set (HP)	91937680	91937680	1
600	Valve Set with Gasket (LP)	91934690	91933680	2
650	Valve Set with Gasket (HP)	91934680	91934680	1
●	Crank shaft set (Includes 50, 52, 57, 58, 65 & 66)	91917680	91917680	1

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.

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