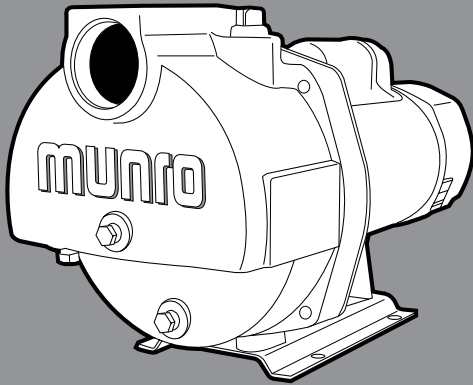
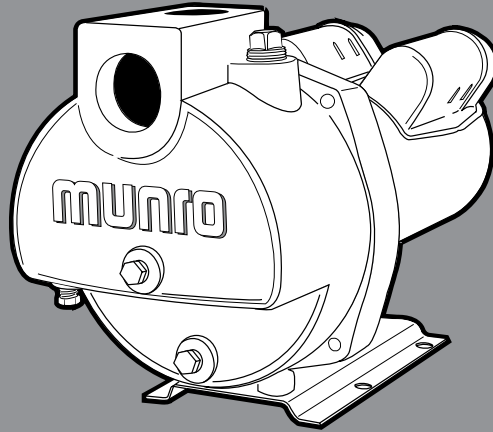


OWNER'S MANUAL

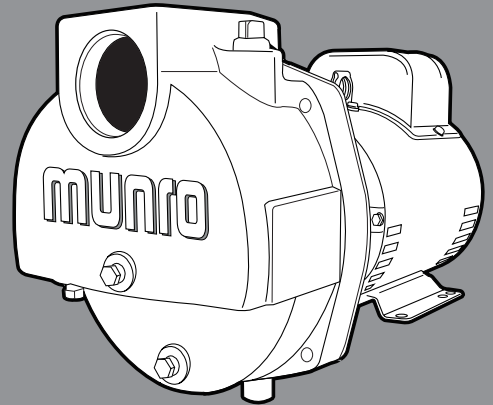
LP SERIES CENTRIFUGAL PUMPS



3/4 - 3 HP Series



1500 Series



3000 Series

Installation - Operation - Parts

1.800.942.4270
mpi@munropump.com
www.munropump.com

munro

READ AND FOLLOW SAFETY INSTRUCTIONS!

⚠ This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ DANGER warns about hazards that **WILL** cause serious personal injury, death or major property damage if ignored.

⚠ WARNING warns about hazards that **CAN** cause serious personal injury, death or major property damage if ignored.

⚠ CAUTION warns about hazards that **WILL** or **CAN** cause minor personal injury or property damage if ignored.

The label **NOTICE** indicates special instructions which are important but not related to hazards.

MOTOR AND ELECTRICAL:

Carefully read and follow all safety instructions in this manual and on pump.



Electric pump motors can be hazardous if not properly installed. Call a licensed electrician if unsure of any electrical connection.

GENERAL SAFETY – ELECTRICAL

1. **⚠ WARNING** Every time work is to be performed on a pump, the power supply should be terminated at the breaker box.
2. **⚠ WARNING** Follow all local electrical and safety codes, including the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
3. **⚠ WARNING** Replace damaged or worn cords immediately.
4. Ground motor before connecting to power supply.
5. **⚠ WARNING** Use extreme caution around an operating pump and motor – it may be hot enough to cause serious burns.

GENERAL OPERATION – ELECTRICAL

1. Refer to motor nameplate to verify that supply voltage and motor wiring is the same.
2. Verify motor phase against supply power phase.

GENERAL SAFETY – MOTOR

1. **⚠ WARNING** Disconnect the main power before handling the unit for ANY REASON.
2. **⚠ WARNING** An operating motor will run at a high temperature and will be too hot to touch.
3. Keep pump motor ventilated to reduce damage due to heat.
4. **⚠ DANGER** Motor is not waterproof and should never be submersed into any liquid.
5. Motor is designed to work with up to a 15 degree angle of water impact. Do not allow water to spray directly onto motor. External motor protection should be used to eliminate environmental concerns.

6. To reduce the risk of electric shock, the motor must be securely and adequately grounded. Refer to National Electric Code (NEC Article 250 – Grounding) for additional information.
7. When in doubt, call a licensed electrician. High voltage can shock, burn or cause death.

WIRING CONNECTION:

ROTATION

1. All Munro pumps run in a Counter-Clockwise (CCW) rotation only. (When facing the pump's suction tapping, all Munro pump motors are pre-wired to run in a Counter-Clockwise (CCW) rotation only. Rotation from the motor end perspective is Clockwise (CW) and is marked as such on the motor nameplate). Tampering with or reversing the rotation will damage your pump and void the warranty.

CHECK MOTOR ROTATION

1. A fractional second application of power should be applied to all 3-phase motors to verify CCW rotation of shaft (sometimes referred to as "bumping the motor").
2. Improper rotation can cause catastrophic pump failure and voids the warranty.
3. Reversing two of the three power wires makes the motor run in the opposite direction.

GENERAL WIRING INFORMATION

1. Refer to the connection diagram located on the nameplate of the motor.

GROUNDING

1. Grounding the motor can be achieved by securing the motor to a metal raceway system. Alternately a separate grounding wire connected to bare metal on the motor frame, or to the green grounding screw located inside the motor terminal box, or other suitable means is acceptable. (Refer to NEC Article 250 – Grounding for specifics.)
2. Verify motor grounding provision on the nameplate before connecting any wires to the motor.

MOTOR PROTECTION

1. Fuses and circuit breakers are used as a safety device for the wire circuit. They do NOT offer motor protection.
2. Consult local or national electric codes for proper fuse protection based on the motor data located on the motor nameplate.

THERMAL OVERLOAD

1. All motors must be thermally protected – either within the motor or externally.
2. The internal overload is usually automatic and resets itself once the temperature has dropped to a safe point.
3. Overload helps protect the motor from burnout from overload of low voltage, high voltage and other causes.
4. Frequent tripping of the overload indicates motor or power problems. Immediate professional attention is recommended.
5. **⚠ WARNING** NEVER examine, make wiring changes or touch the motor before disconnecting the electrical supply. Thermal overload protectors automatically reset and can close the electrical circuit without warning.
6. **⚠ WARNING** The overload should never be tampered with or removed.

PUMP:

GENERAL SAFETY – PUMP

1. **⚠ WARNING** An operating pump, with a blocked discharge, will heat the water and pump housing. Allow pumps to cool before handling.
2. High temperature sensors can help protect plastic plumbing from disfiguring and/or expanding.
3. Running a pump without water may cause damage to the seal.

GENERAL OPERATION – PUMP

1. Locate the pump as close to the water source as is practical.
2. Total suction lift (vertical lift plus any friction loss in suction line) should not exceed 10' for optimal performance. Suction lift of 15' is attainable depending on elevation, water temperature, and atmospheric condition. Pump performance is affected when suction lift exceeds 15'.
3. Fill the pump case and suction pipe with water to expel as much air as possible prior to start-up. Running a pump dry may cause damage to the seal and void warranty.
4. Pump and pipe must be drained if there is any danger of freezing.

PIPE CONNECTION

1. Plastic or galvanized steel pipe are most commonly used. Support pipe as needed.
2. Keep suction and discharge lines as large as possible. Pipe should not be smaller than the corresponding suction and discharge holes.
3. Avoid excess fittings when possible. Use straight runs when possible.
4. All joints and connections should have pipe-specific sealing compound applied and be completely tightened.
5. Isolation valves or unions on suction and discharge allow for easy pump removal with multi-pump or positive inlet pressure applications.
6. Suction pipe should never have a higher elevation than the pump.

OPERATION:

INITIAL PRIMING

1. Remove one priming plug from pump housing and fill the pump body and suction line completely with water.
2. Normal system start-up will take a few minutes for air to expel from system and water to begin to cycle – depending on suction lift. If no water is flowing after a few minutes, turn the pump off and refer to troubleshooting guide (p.8). Do NOT run pump dry for any period of time.
3. Unit must be full of liquid before operating. Never run dry. Running a pump dry may cause damage to the seal and void the warranty.
4. Do not run against a closed discharge for more than a few minutes.

ROTATION

1. Single phase motors are pre-wired for CCW and should never be reversed.
2. Three phase motors must be phased at job site.

MAINTENANCE – LUBRICATION

1. No lubrication is required. The ball bearings are permanently lubricated and sealed at the factory.

MAINTENANCE – FREEZING

1. Drain the entire system if there is a danger of freezing.
2. Drain valves are provided in both upper and lower pump case chambers.
3. Closing the drain valves and filling the pump case with

non-toxic Munro Freeze Defeat will reduce the oxidation in the case over the winter. Before spring start-up, drain the Munro Freeze Defeat from the case.

RECOMMENDED OPTIONAL EQUIPMENT:

1. Strainer – Use of strainers prevent large debris from entering pump system through suction line.
2. Pressure Gauge – Use of a pressure gauge helps to troubleshoot and identify a pump or system issue.
3. Discharge Valve – Use of a gate or ball valve on the discharge side of a pump allows pump isolation for removal.
4. Foot Valve – Use of a foot valve (or check valve) can aide the priming of a centrifugal pump. If suction lines are kept full, the pump does not have to evacuate the air before pumping water.

ROTARY SEAL ASSEMBLY REPLACEMENT:

⚠ CAUTION Make certain the power supply is disconnected before attempting to service the unit!

SEAL REMOVAL

1. Remove the case bolts and pump body from motor assembly.
2. Remove diffuser bolts and diffuser from motor assembly.
3. Insert an open-end 9/16" (LP075B, LP100B, LP150B, LP200B, LP300B) or a 5/8" (LP1502B) wrench into the side of the mounting ring, slowly turning the impeller until the wrench seats itself onto the flats of the shaft. Once properly seated, the wrench will keep the shaft from turning. LP3005B model uses keyed shaft and sleeve. Removal of these impellers may require high heat to remove the shaft sleeves.
4. Expose the seal assembly by spinning the impeller counter-clockwise to unthread it from the motor shaft.
5. The seal spring will release as the impeller is removed.
6. Being careful not to damage the motor shaft, remove the seal head, seat and rubber from the seal pocket. The use of a screwdriver or similar tool may be necessary.
7. Should the seal be difficult to remove, the mounting ring can be completely removed for easier access by taking out the mount ring bolts.
8. Once the seal is removed, clean the pocket removing all debris.

⚠ CAUTION The rotary seal assembly must be handled carefully to avoid damaging the precision lapped faces of the sealing components.

SEAL INSTALLATION

NOTICE: *It is recommended to only install new seals. Do not install used or dirty seals.*

NOTICE: *Application of a light coat of multi-purpose chassis grease to the outer diameter of the rubber gasket may make installation easier. Be certain the seat is kept clean and free of dirt and/or grease at all times.*

1. Insert the seal seat rubber gasket into the recessed area of the mount ring.
2. Slip the seal head assembly onto the motor shaft.
3. Using uniform pressure, be sure the seal's seat or mounting ring has completely bottomed-out in recessed area.
4. After placing the spring, install the impeller and bolt the diffuser onto the motor assembly.
5. Replace and bolt the pump body to the motor assembly.

Call Munro technical support for any questions relating to start-up or operation of this pump.

Toll Free: 1.800.942.4270

PUMP PERFORMANCE

LP Series 3/4 HP - 3 HP

HP	Capacity - U.S. Gallons per Minute Discharge Pressure (PSI) at 5' Suction Lift											Shut Off Pressure PSI	Suction Pipe Tap	Discharge Pipe Tap	Max ▲ Suction Lift
	20	25	30	35	40	45	50	55	60	65	70				
3/4	63	53	43	33	25							45	2"	1-1/2"	15 Ft.
1	73	65	57	47	35	18						47	2"	1-1/2"	15 Ft.
1-1/2	75	70	68	60	48	35						49	2"	1-1/2"	15 Ft.
2	102	98	92	82	74	61	52	40				60	2"	1-1/2"	15 Ft.
3	115	114	112	105	100	88	72	56	30			61	2"	1-1/2"	15 Ft.
▲ Suction lift varies, depending upon elevation (altitude) and water temperatures. MAXIMUM CASE PRESSURE --- 150 PSI															

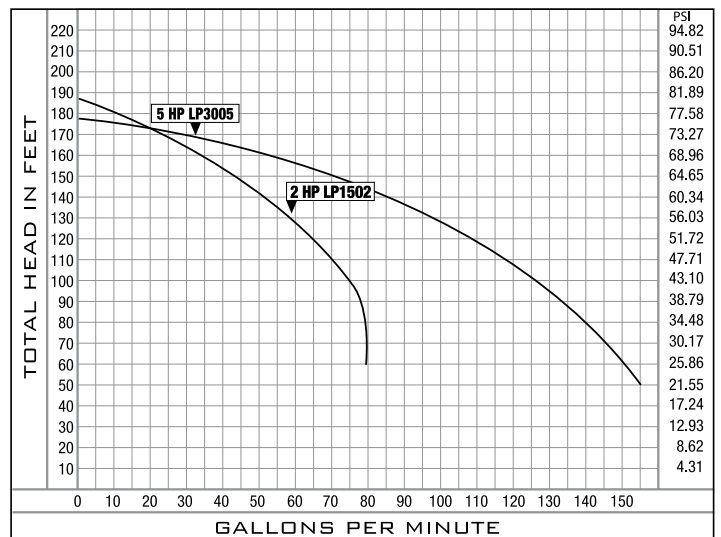
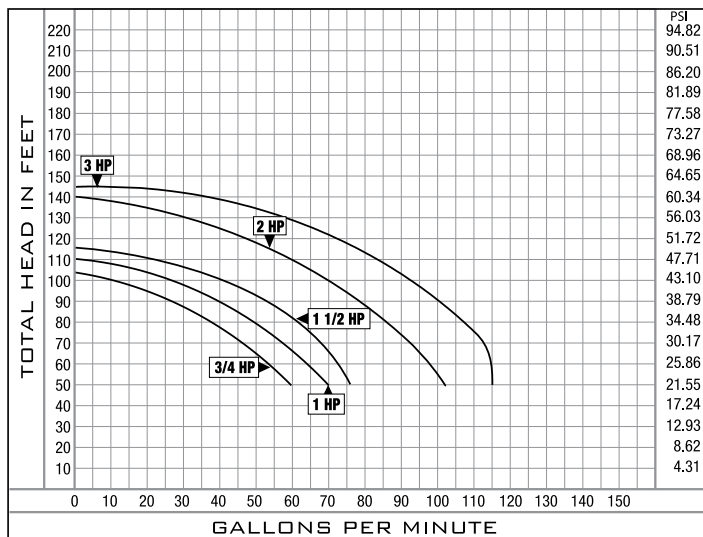
LP1502

HP	Capacity - U.S. Gallons per Minute Discharge Pressure (PSI) at 5' Suction Lift								Shut Off Pressure PSI	Suction Pipe Tap	Discharge Pipe Tap	Max ▲ Suction Lift
	20	30	40	50	60	70	80	90				
2.5	--	--	75	67	56	38	0	0	80	2"	1-1/2"	15 Ft.
▲ Suction lift varies, depending upon elevation (altitude) and water temperatures. MAXIMUM CASE PRESSURE --- 125PSI												

LP3005

HP	Capacity - U.S. Gallons per Minute Discharge Pressure (PSI) at 5' Suction Lift											Shut Off Pressure PSI	Suction Pipe Tap	Discharge Pipe Tap	Max ▲ Suction Lift	Model Number
	20	25	30	35	40	45	50	55	60	65	70					
5	--	--	145	137	132	123	110	98	85	67	47	75	3"	3"	15 Ft.	LP3005B
5	--	--	--	--	--	120	110	98	85	67	47	75	3"	3"	15 Ft.	LP3005B3
5	--	160	154	145	135	130	116	107	95	84	63	78	3"	3"	15 Ft.	LP3005B3B
▲ Suction lift varies, depending upon elevation (altitude) and water temperatures. MAXIMUM CASE PRESSURE --- 150 PSI																

PUMP CURVES



PUMP SPECIFICATIONS

LP Series 3/4 HP - 3 HP

HP	Type	Volts/Amps	Hz	RPM	Motor Voltage (Factory) Connected	Service Factor Motor Amps						Max Liquid Temperature
						Single Phase			Three Phase			
						115V	208V	230V	208V	230V	460V	
3/4	Single Phase	115/208-230	60	3450	230V	11.6	5.8	5.8				180°F
1						16.6	8.5	8.3				
1-1/2						23	12.5	11.5				
2						--	13	12				
3		230				--	18	17				
3/4	Three Phase	208-230/460	60	3450	230V	--	--	--	2.6	2.8	1.4	180°F
1									--	3.6	1.8	
1-1/2									5.4	5.2	2.6	
2									6.8	6.6	3.3	
3									--	9.2	4.6	
Motor info subject to change without notice, please consult motor nameplate.												

Motor info subject to change without notice, please consult motor nameplate.

LP1502

HP	Type	Volts/Amps	Hz	RPM	Motor Voltage (Factory) Connected	Service Factor Motor Amps						Max Liquid Temperature
						Single Phase			Three Phase			
						115V	208V	230V	208V	230V	460V	
2.5	Single Phase	230	60	3450	208/230V	--	15.7	16	--	--	--	180°F
2.5	Three Phase		60	3450					--	5.6	2.8	180°F
Motor info subject to change without notice, please consult motor nameplate.												

Motor info subject to change without notice, please consult motor nameplate.

LP3005

HP	Type	Volts/Amps	Hz	RPM	Motor Voltage (Factory) Connected	Service Factor Motor Amps						Max Liquid Temperature
						Single Phase			Three Phase			
						115V	208V	230V	208V	230V	460V	
5	Single Phase	230	60	3450	230V	--	27	24.5	--	--	--	180°F
5	Three Phase	208-230/460	60	3450	230V	--	--	--	--	14	7	180°F
*5	Three Phase	230/460	60	3450	230/460V	--	--	--	--	17.2	8.6	180°F
Motor info subject to change without notice, please consult motor nameplate. * Phase Conversion Compatible												

Motor info subject to change without notice, please consult motor nameplate. * Phase Conversion Compatible

WIRING SIZE CHART

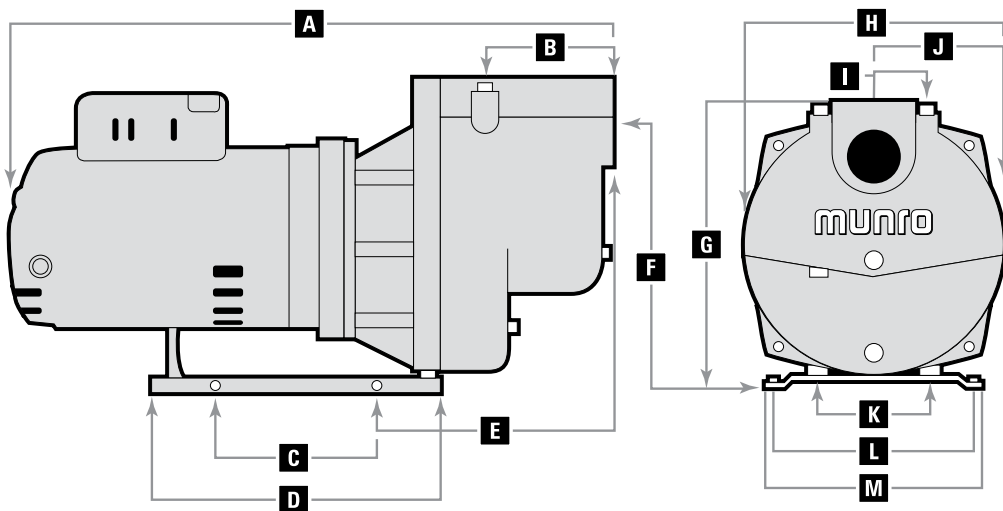
Motor Rating			Circuit Size	Fuse Size	Full Load Amps	Copper Wire Size						
Volts	HP	Phase				KW	12	10	8	6	4	2
120 (1Ø)	1/4	1	20	10	5.8	0.186	291	464	692	1171	1863	2350
	1/3	1	20	10	7.2	0.246	230	365	546	924	1471	2338
	1/2	1	20	15	9.8	0.373	171	272	407	689	1096	1742
	3/4	1	20	15	13.8	0.559	130	207	310	524	834	1326
	1	1	20	20	16	0.746	99	157	236	399	635	1009
	1-1/2	1	30	25	20	1.12		128	192	325	515	822
240 (1Ø)	1/4	1	20	5	2.9	0.186	1166	1853	2769	4685	7453	11850
	1/3	1	20	5	3.6	0.246	920	1462	2186	3699	5884	9355
	1/2	1	20	8	4.9	0.373	685	1090	1629	2756	4384	6970
	3/4	1	20	8	6.9	0.559	522	829	1240	2098	3337	5305
	1	1	20	10	8	0.746	397	631	944	1597	2540	4039
	1-1/2	1	20	15	10	1.12	269	427	639	1081	1720	2734
	2	1	20	20	12	1.49	259	411	615	1041	1656	2633
	2-1/2	1	30	20	11.6	1.9	220	344	522	885	1407	2238
	3	1	30	25	17	2.24	184	292	437	739	1176	1871
	5	1	40	30	28	3.73		198	296	502	798	1269

Motor Rating			Circuit Size	Fuse Size	Full Load Amps	Copper Wire Size						
Volts	HP	Phase				KW	12	10	8	6	4	2
208 (3Ø)	1-1/2	3	20	10	6.6	1.12	530	843	1340	2131	3389	5385
	2	3	20	15	7.5	1.49	407	648	1031	1639	2607	4145
	2-1/2	3	20	15	9.0	1.9	346	551	876	1393	2216	3523
	3	3	20	15	10.6	2.24	289	459	731	1162	1849	2939
	5	3	30	25	16.7	3.73	181	289	459	730	1162	1847
240 (3Ø)	1-1/2	3	20	10	6	1.12	641	1019	1522	2576	4098	6516
	2	3	20	10	6.8	1.49	492	783	1170	1979	3148	5006
	2-1/2	3	20	15	8.2	1.9	418	666	995	1682	2676	4255
	3	3	20	15	9.6	2.24	354	563	841	1423	2264	3600
	5	3	30	20	15.2	3.73	243	386	577	977	1555	2472
480 (3Ø)	1-1/2	3	20	5	3	1.12	2693	4280	6396			
	2	3	20	5	3.4	1.49	2019	3210	4797	8116		
	2-1/2	3	20	10	4.0	1.9	1716	2729	4077	6899		
	3	3	20	10	4.8	2.24	1615	2568	3837	6492	10328	
	5	3	20	10	7.6	3.73	973	1547	2311	3911	6221	9891

Values are for estimating purposes only and may not meet NEC code. Design should be verified.

PUMP DIMENSIONS

LP Series 3/4 HP - 3 HP

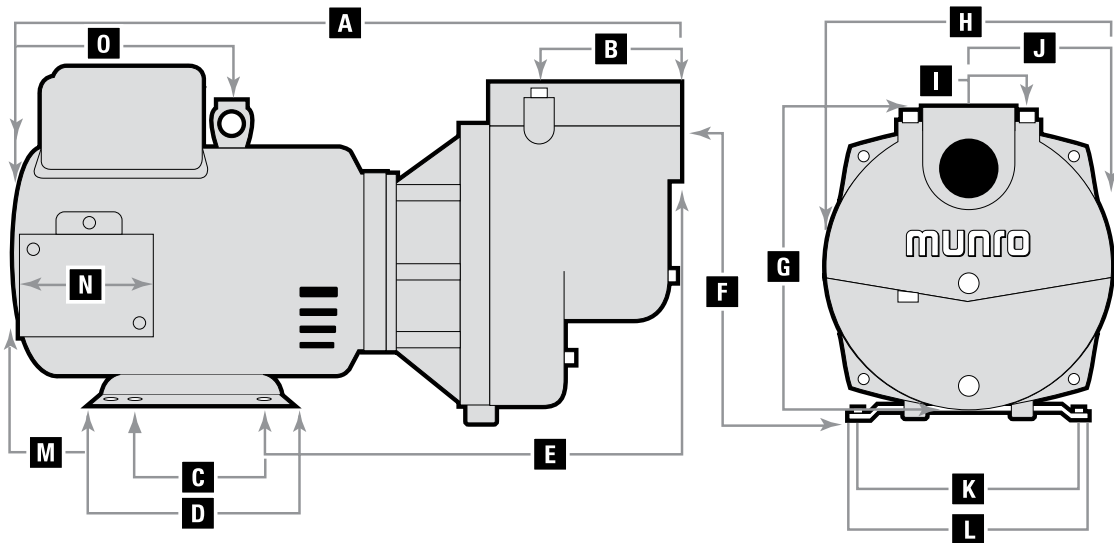


HP	Discharge	Suction	A	B	C	D	E	F	G	H	I	J	K	L	M
3/4	1 1/2"	2"	19 3/4"	3 5/8"	4 1/4"	8 1/2"	7 1/2"	9 1/2"	10 7/8"	9 1/2"	2 3/8"	4 3/4"	2 5/8"	5 1/4"	6"
1	1 1/2"	2"	19 3/4"	3 5/8"	4 1/4"	8 1/2"	7 1/2"	9 1/2"	10 7/8"	9 1/2"	2 3/8"	4 3/4"	2 5/8"	5 1/4"	6"
1 1/2	1 1/2"	2"	19 3/4"	3 5/8"	4 1/4"	8 1/2"	7 1/2"	9 1/2"	10 7/8"	9 1/2"	2 3/8"	4 3/4"	2 5/8"	5 1/4"	6"
2	1 1/2"	2"	18 3/4"	3 5/8"	4 1/4"	8 1/2"	7 1/2"	9 1/2"	10 7/8"	9 1/2"	2 3/8"	4 3/4"	2 5/8"	5 1/4"	6"
3	1 1/2"	2"	20 1/2"	3 5/8"	4 1/4"	8 1/2"	7 1/2"	9 1/2"	10 7/8"	9 1/2"	2 3/8"	4 3/4"	2 5/8"	5 1/4"	6"

1502

HP	Discharge	Suction	A	B	C	D	E	F	G	H	I	J	K	L	M
2.5	1 1/2"	2"	20"	4 1/4"	7.95"	14"	9 1/4"	11 1/4"	13 1/2"	11 1/2"	3"	5 3/4"	4"	7"	8"

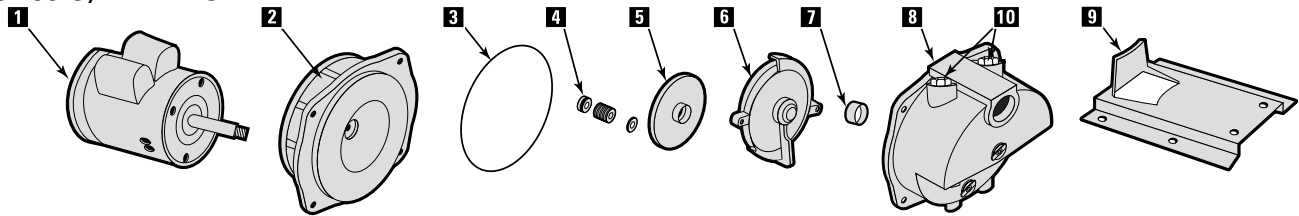
LP3005



HP	Discharge	Suction	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	3"	3"	21 3/4"	4"	4 1/2"	6 1/2"	13 1/2"	9 1/2"	12 5/8"	11"	3 1/8"	5 5/8"	7 1/2"	8 1/2"	2 1/2"	4 1/4"	7 1/2"

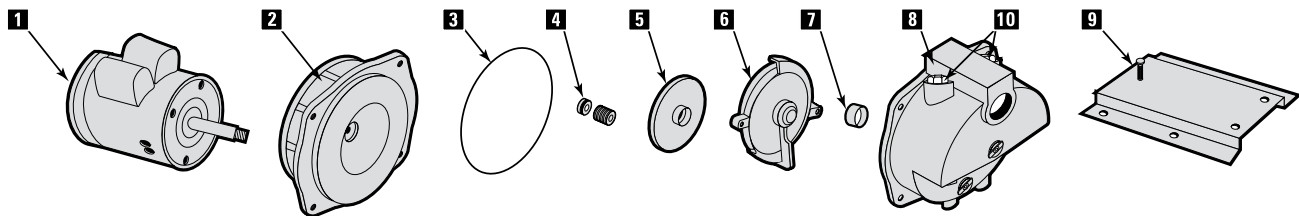
PARTS BREAKDOWN

LP Series 3/4 HP - 3 HP



ITEM	SINGLE PHASE	HORSEPOWER	3/4	1	1 1/2	2	3
		MODEL NO.	LP075B	LP100B	LP150B	LP200B	LP300B
	DESCRIPTION	PART NO.					
1 ▲	Motor, Nema J - 1 Phase Motor Access Cover Screw, Access Cover		MLP119370	MLP119399	MLP119219	MLP26452	MLP26453
2 ▲ 3 4	Mounting Ring Hex hd. cap screws 3/8 x 3/4" Square Cut Gasket Seal, Rotary w/Spring	MLP1300 MLPB909 MLPG001 SCC800	1 4 1 1	1 4 1 1	1 4 1 1	1 4 1 1	1 4 1 1
5 6 ▲ 7	Impeller, Brass "B" Models Diffuser Hex HD. Cap Screws 1/4 x 1 1/4" Rubber Diffuser Gasket	MLP1201 MLPB903 MLPG002	MLP1407 1 2 1	MLP1410 1 2 1	MLP1415 1 2 1	MLP1420 1 2 1	MLP1430 1 2 1
8 ▲	Pump Body Hex HD. Cap Screws 7/16 x 1"	MLP1100 MLPB912	1 4	1 4	1 4	1 4	1 4
9 ▲ ▲ ▲ 10 ▲	Base - 48 Y-Frame Motor Base - 56 J-Frame Motor Hex HD. Cap Screws 3/8 x 1/2" Drain Valve 1/4" NPT 3/4" Priming Plug 1/4" Sensor Port	MLP1548 MLP1556 MLPB907 MLP913 • •	-- 1 2 2 2 1	1 -- 2 2 2 1	1 -- 2 2 2 1	-- 1 2 2 2 1	-- 1 1 2 2 1
(•) Standard hardware Item ---- (▲) Not Shown							

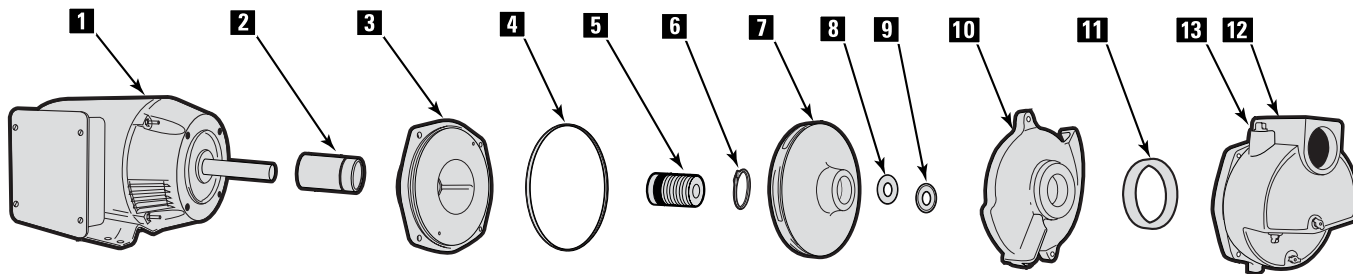
LP1502



Items	SINGLE PHASE	HORSEPOWER	2
		MODEL NO.	LP1502B
	DESCRIPTION	PART NO.	
1 ▲	Motor, Nema J - 1 Phase Motor Access Cover Screw, Access Cover	MLP33344	1
2 ▲ 3 4 5	Mounting Ring Hex HD. Cap Screws 3/8 x 3/4" Gasket, Square Cut Seal, Rotary W/Spring Impeller, Brass "B" Models	MLP2300 MLPB909 MLPG003 PACSC309 MLP2402	1 4 1 1 1
6 ▲ 7 8	Diffuser Hex HD. Cap Screws 1/4 x 1 1/4" Diffuser Gasket Pump Body	MLP2200 MLPB903 MLPG004 MLP2100	1 2 1 1
▲ 9	Hex HD. Cap Screws 7/16 x 1" Base	MLPB912 MLP2500	4 1
▲ ▲ 10 ▲	Hex HD. Cap Screws 3/8 x 1/2" Drain Valve 1/4" NPT 3/4" Priming Plug 1/4" Sensor Port	MLPB907 MLP913 • •	2 2 2 1
(•) Standard hardware Item ---- (▲) Not Shown			

PARTS BREAKDOWN

LP3005



ITEM	SINGLE PHASE	HORSEPOWER	5
		MODEL NO.	LP3005B
	DESCRIPTION	PART NO.	
1	Motor, NEMAJ - 1 Phase	MLP131641	1
▲ 2 3 ▲ 4 5 6	Slinger, Washer Shaft Sleeve Mount Ring Hex HD Cap Screws 3/8" x 3/4" Gasket, Square Cut Seal, Rotary W/Spring Retaining Clip	MLPG005 MLP60010 MLP3300 MLPB909 MLPG003 PACSC185 MLP30001	1 1 1 4 1 1 1
7 8 9 ▲ 10 ▲	Impeller, Brass "B" model Flat Impeller Washer Beveled Impeller Washer Impeller Bolt - Hex HD Cap Screw 1/4" x 1" Diffuser Diffuser Bolt - Hex HD Cap Screws 5/16" x 1 1/2"	MLP3405 MLP3WASH MLP3CONE MLPB906 MLP3200 MLPB910	1 1 1 1 1 2
11 12 ▲ 13 ▲	Gasket, Diffuser Pump Body 1/4" Drain Valve 3/4" Priming Plug 1/4" Sensor Port Plug	MLPG004 MLP3100 MLP913 • •	1 1 2 2 1
(•) Standard hardware Item ---- (▲) Not Shown ---- (*)3 Phase Only			

TERMS & CONDITIONS

GOVERNING LAW: It is understood and agreed that these Terms and Conditions of Sale shall be interpreted under and pursuant to the laws of the State of Colorado; you agree that any action at law or suit which is related to any contact of sale brought against us shall be filed in a federal or state court located in the State of Colorado.

LIMITED WARRANTY: Munro Pump Inc. hereby warrants, in accordance with and subject to the provisions herein contained, your unit against defects in materials and workmanship under normal use and service when properly connected for a period of 12 months or 1000 hours of operation (which ever occurs first), from the date of purchase. In the event of a breakdown or failure of your unit or part thereof, within the period of 12 months or 1000 hours of operation which prevents normal function, Munro will repair the breakdown or failure and replace any defective part or the whole unit at the Company's discretion. Freight charges will be the User's responsibility.

Further, we warrant to our immediate customer and to the ultimate consumer that products of our manufacture will be free of defects in material and workmanship under normal use and service for the following time periods, when installed and maintained in accordance with our instructions. Pump Products: One (1) year from date of installation or (18) eighteen months from date of shipment, whichever occurs first. As used herein, "the ultimate consumer" is defined as the purchaser who first uses the product after its initial installation or, in the case of product designed for non-permanent installation, the first owner who used the product. It is the purchaser's or any sub-vender's obligation to make known to the ultimate consumer the terms and conditions of this warranty. This warranty gives you specific legal rights, and there may also be other rights which vary from state to state. In the event the product is covered by the Federal Consumer Product Warranties Law (1) the duration of any implied warranties associated with the product by virtue of said law is limited to the same duration as stated herein, (2) this warranty is a LIMITED WARRANTY, and (3) no claims of any nature whatsoever shall be made against us, until the ultimate consumer, his successor, or assigns, notifies us in writing of the defect, and delivers the product and/or defective part(s) freight prepaid to our factory or nearest authorized service station. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply. **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY AND ALL WARRANTIES WITH RESPECT TO ANY PRODUCT SHALL BE TO REPLACE OR REPAIR AT OUR ELECTION, F.O.B. POINT OF MANUFACTURER OR AUTHORIZED REPAIR STATION, SUCH PRODUCTS AND/OR PARTS AS PROVEN DEFECTIVE. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE.** Unless expressly stated otherwise, guarantees in the nature of performance specifications furnished in addition to the foregoing material and workmanship warranties on product manufactured by us, if any, are subject to laboratory tests corrected for field performance. Any additional guarantees, in the nature of performance specifications must be in writing and such writing must be signed by our authorized representative. Due to inaccuracies in field testing if a conflict arises between the results of field testing conducted by or for user, and laboratory tests corrected for field performance, the latter shall control. Components or accessories supplied by us but manufactured by others are warranted only to the extent of and by the terms and conditions of the original manufacturer's warranty.

RECOMMENDATIONS FOR SPECIAL APPLICATIONS OR THOSE RESULTING FROM SYSTEMS ANALYSIS AND EVALUATIONS WE CONDUCT WILL BE BASED ON OUR BEST AVAILABLE EXPERIENCE AND PUBLISHED INDUSTRY INFORMATION. SUCH RECOMMENDATIONS DO NOT CONSTITUTE A WARRANTY OF SATISFACTORY PERFORMANCE AND NO SUCH WARRANTY IS GIVEN.

This warranty shall not apply when damage is caused by (a) improper installation, mechanical or electrical, (b) improper power (i.e., voltage, etc.) (c) lightning (d) sand or other abrasive material (e) scale or corrosion build-up due to excessive chemical content (f) This warranty does not extend to or cover the unit or any part of it which, in the opinion of the Company, has worn by reasonable wear and tear, abraded or corroded by fluid pumped, run in a dry condition, operated at high temperatures or outside the technical specifications of the unit. Any modification of the original equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective parts. Neither will we accept charges incurred by others without our prior written approval.

This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and/or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product.

UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL AND/OR WORKMANSHIP AND/OR DAMAGE OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

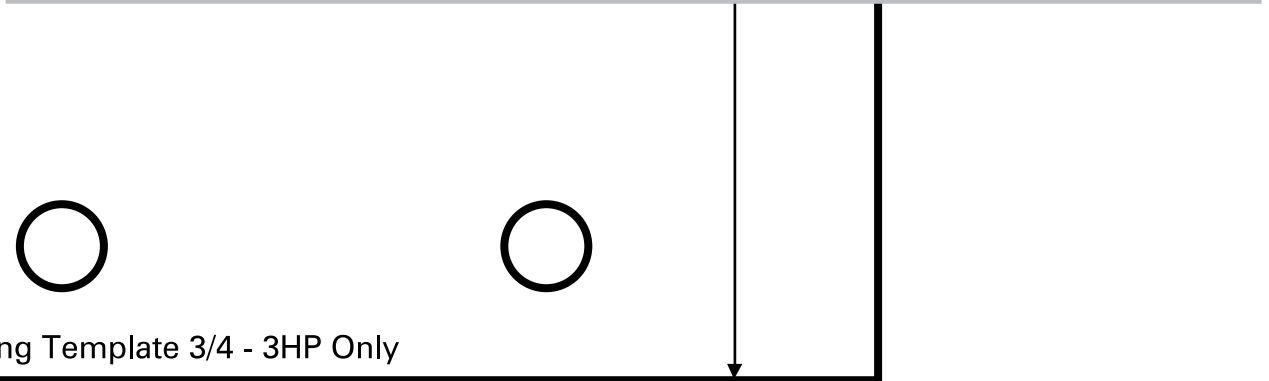
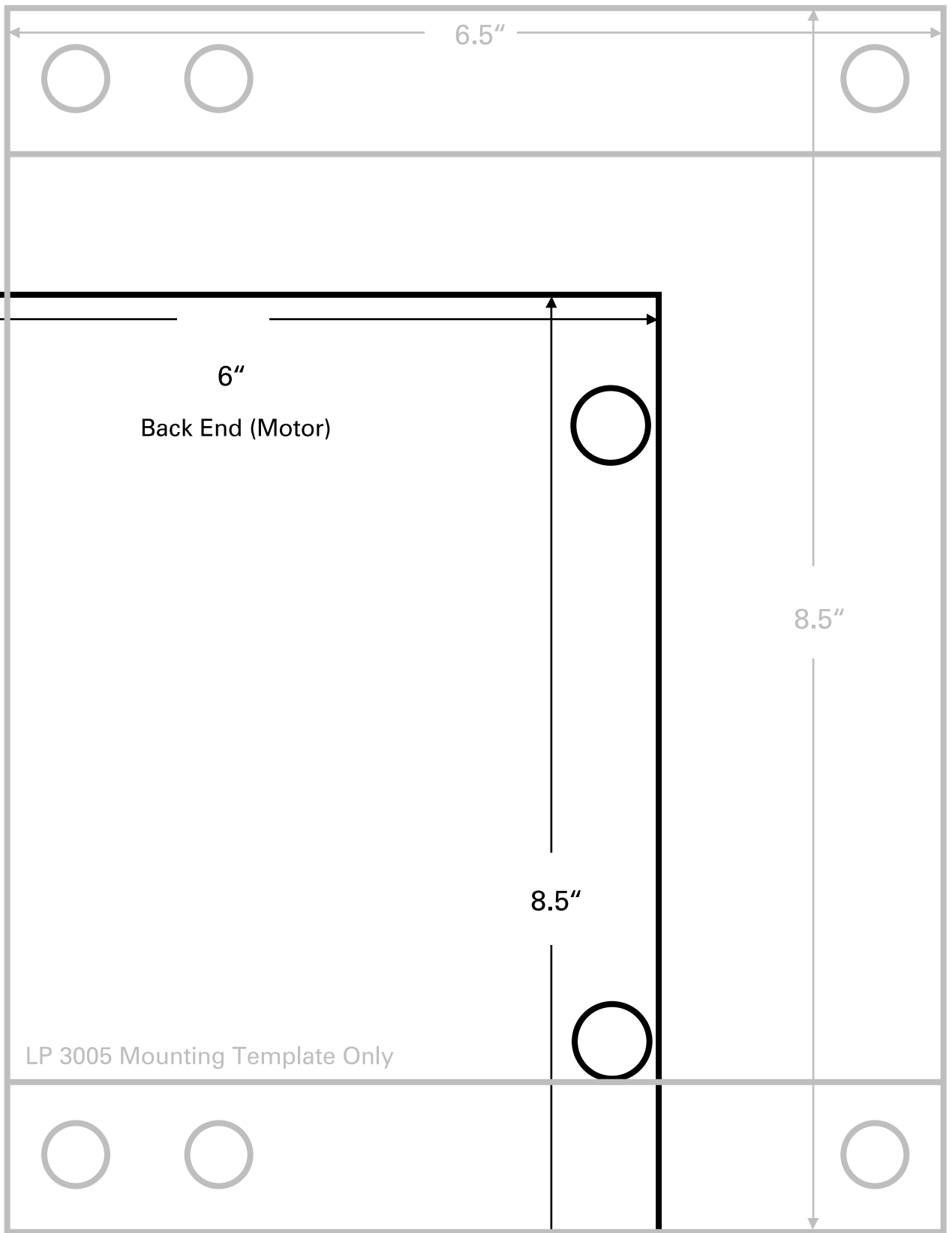
No rights extended under this warranty shall be assigned to any other person, whether by operation of law or otherwise, without our prior written approval.

If any litigation is commenced between the parties hereto for the enforcement of any rights hereunder, the successful party in subject litigation shall be entitled to receive from the unsuccessful party all costs incurred in connection therewith, including a reasonable amount for attorney's fees.

YOUR ACCEPTANCE OF ANY GOODS SUPPLIED BY US, OR ON OUR BEHALF, SHALL, WITHOUT LIMITATION CONSTITUTE ACCEPTANCE OF ALL TERMS, AND CONDITIONS STATED ABOVE

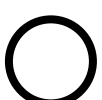
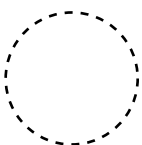
TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Little or no discharge	<ol style="list-style-type: none"> 1. Casing not initially filled with water to prime pump 2. Total head too high 3. Suction lift too high, or too long 4. Impeller plugged 5. Hole or air leak in suction line 6. Foot valve too small 7. Impeller damaged 8. Foot valve or suction line not submerged deep enough in water 9. Insufficient inlet pressure or suction head 10. Suction piping too small 11. Motor wired incorrectly 12. Casing gasket leaking 13. Suction or discharge line valves closed 	<ol style="list-style-type: none"> 1. Fill pump casing 2. Shorten suction lift and/or change head 3. Lower suction lift, install foot valve and prime or shorten length of suction line 4. Clean impeller 5. Repair or replace suction line, use pipe sealing compound. 6. Match foot valve to piping or install one size larger foot valve 7. Replace impeller 8. Submerge lower in water 9. Increase inlet pressure by adding more water to tank or increasing back pressure 10. Increase to pump inlet size or one size larger 11. Check wiring diagram for correct wiring 12. Replace Gasket 13. Open suction and/or discharge lines
Pump will not deliver water or develop pressure	<ol style="list-style-type: none"> 1. No priming water in casing 2. Mechanical seal is leaking 3. Leak in suction line 4. Discharge line is closed and priming air has no where to go 5. Suction line (or valve) is closed 6. Poor pump performance 7. Foot valve is leaking 8. Suction screen is clogged 	<ol style="list-style-type: none"> 1. Fill pump casing 2. Replace seal (See Rotary Seal Replacement on p.2) 3. Repair or replace 4. Open discharge line 5. Open suction line or valve 6. Replace worn parts 7. Replace foot valve 8. Clean or replace screen
Loss of suction	<ol style="list-style-type: none"> 1. Air leak in suction line 2. Suction lift is too high 3. Insufficient inlet pressure or suction head in booster system 4. Clogged foot valve or strainer 	<ol style="list-style-type: none"> 1. Repair or replace suction line 2. Lower suction lift, install foot valve and prime 3. Increase inlet pressure by adding more water to tank or increasing back pressure 4. Unclog
Pump vibrates and/or makes excessive noise	<ol style="list-style-type: none"> 1. Mounting plate or foundation not rigid enough 2. Foreign material in pump 3. Impeller damaged 4. Worn motor bearings 5. Suction lift too high 	<ol style="list-style-type: none"> 1. Reinforce 2. Disassemble pump and clean 3. Replace impeller 4. Replace bearings 5. Lower suction lift, install foot valve and prime
Pump will not start or run	<ol style="list-style-type: none"> 1. Improper wiring 2. Blown fuse or open circuit breaker 3. Loose or broken wiring 4. Stone or foreign object lodged in impeller 5. Motor shorted out 6. Thermal overload has opened circuit 	<ol style="list-style-type: none"> 1. Check wiring diagram on motor 2. Replace fuse or close circuit breaker 3. Tighten connections, replace broken wiring 4. Disassemble pump and remove foreign object 5. Replace motor 6. Allow unit to cool, restart after reason for over load has been determined
Pump leaks at shaft	<ol style="list-style-type: none"> 1. Worn mechanical shaft seal 	<ol style="list-style-type: none"> 1. Replace rotary seal (See Rotary Seal Replacement on p.2)

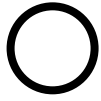
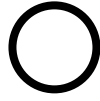
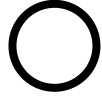
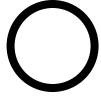




Cut and Join with Right Side of Template



LP 1502 Mounting Template Only



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