

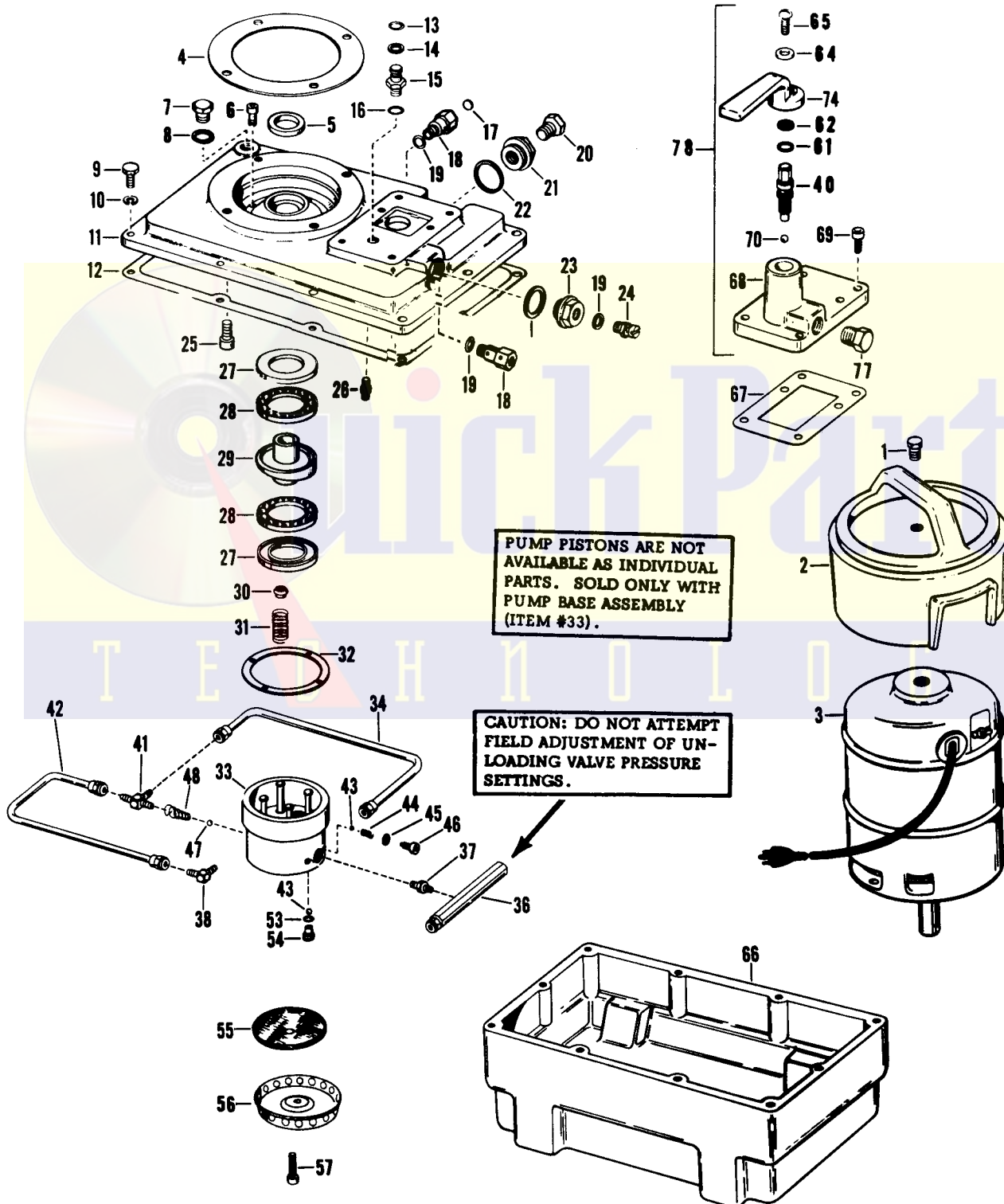
BLACKHAWK®

repair parts

MODELS P-449-2, -3, -4
P-460-2, -3, -4

PORTO-POWER
ELECTRIC PUMP

Capacity 10,000 p.s.i. - Intermittent
5,000 p.s.i. - Continuous



(SEE OPERATING INSTRUCTIONS ON BACK PAGE)

PARTS LIST FOR MODELS

P-

ITEM NO.	PART NAME	No. Req.	MODEL NO. P-449-2	MODEL NO.		MODEL NO.	
				P-449-3 P-449-4	MODEL NO. P-460-2	P-460-3 P-460-4	
1	Bolt	1	C8.247	C8.247	C8.247	C8.247	
2	Motor Cover	1	C11.162	C11.162	C11.162	C11.162	
(A) 3	Motor	1	C619.259	C619.259	C346.259	C346.259	
* 4	Motor Gasket	1	C550.357	C550.357	C550.357	C550.357	
* 5	Oil Seal	1	P181.394-1	P181.394-1	P181.394-1	P181.394-1	
6	Capscrew	4	P181.128	P181.128	P181.128	P181.128	
7	Filler Plug	1	P182.22	P182.22	P182.22	P182.22	
* 8	Filler Gasket	1	P182.167	P182.167	P182.167	P182.167	
9	Capscrew	10	B569.173	B569.173	B569.173	B569.173	
10	Lockwasher	10	J66	J66	J66	J66	
11	Reservoir Cover	1	C290.020	C650.020	C290.020	C650.020	
* 12	Reservoir Gasket	1	C298.161	C298.161	C298.161	C298.161	
* 13	"O" Ring	1	B710.503	B710.503	B710.503	B710.503	
* 14	Back Up Washer	1	W358.562	W358.562	W358.562	W358.562	
15	Connector	1	C339.270	C649.270	C339.270	C649.270	
* 16	Gasket	1	B180.167	S15.167	B180.167	S15.167	
17	Plug	1	B161.272	B161.272	B161.272	B161.272	
18	By Pass Valve	2	P182.190-2	P182.190-2	P182.190-2	P182.190-2	
* 19	Gasket	3	B159.167	B159.167	B159.167	B159.167	
20	Pipe Plug	1	R515.245	R515.245	R515.245	R515.245	
21	Valve Cover Plug	1	P182.272-1	P182.272-1	P182.272-1	P182.272-1	
* 22	Gasket	2	P182.47	P182.47	P182.47	P182.47	
23	Valve Adaptor Plug	1	P182.150-1	P182.150-1	P182.150-1	P182.150-1	
24	Air Vent Screw Assembly	1	B171.900	B171.900	B171.900	B171.900	
25	Motor Screw	4	C297.128	C297.128	C297.128	C297.128	
26	Elbow	1	B202.291	C322.291	B202.291	C322.291	
27	Retainer	2	P181.392	P181.392	P181.392	P181.392	
28	Bearing	2	P181.160	P181.160	P181.160	P181.160	
(B) 29	Tumbler Disc	1	C731.900	C731.900	C731.900	C731.900	
* 30	Spring Plate	4	P181.418	P181.418	P268.418	P181.418	
* 31	Plunger Spring	4	P181.170	P181.170	P181.170	P181.170	
* 32	Gasket	1	P181.37	P181.37	P181.37	P181.37	
(C) 33	Pump Base Assem. (includes pump body & fitted pistons only)	1	C612.900-1	C612.900-1	C613.900-1	C613.900-1	
34	Outlet Tube	1	C201.268	C201.268	C201.268	C201.268	
36	Unloading Valve	1				C620.900	
36A	Relief Valve	1			C22.900		
37	Connector	1				C642.395	
38	Elbow	1				C332.291	
40	Valve Stem	1	----- Order complete Valve Assembly -- Item #78 -----				
41	Connector	1	B202.291	B202.291	B202.291	C653.291	
42	Tube	1				C652.268	
* 43	Ball	6	P181.16	P181.16			
* 43	Ball	8			P181.16	P181.16	
* 44	Spring	4	P181.183	P181.183	P181.183	P181.183	
* 45	Gasket	4	W222.37	W222.37	W222.37	W222.37	
46	Outlet Plug	4	P181.185	P181.185	P181.185	P181.185	
* 47	Ball	1				E14.16	
* 48	Spring	1				C21.183	
* 53	Intake Gasket	4	P181.167	P181.167	P181.167	P181.167	
* 54	Intake Plug	4	P181.15	P181.15	P181.15	P181.15	
55	Screen	1	P181.18	P181.18	P181.18	P181.18	
56	Cover	1	P181.162	P181.162	P181.162	P181.162	
57	Screw	1	P181.138	P181.138	P181.138	P181.138	
* 61	"O" Ring	1	C348.503	C348.503	C348.503	C348.503	
* 62	Back Up Washer	1	C69.562	C69.562	C69.562	C69.562	
64	Washer	1	A644.052	A644.052	A644.052	A644.052	
65	Screw	1	C302.128	C302.128	C302.128	C302.128	
66	Reservoir	1	C288.025	C288.025	C288.025	C288.025	
* 67	Gasket	1	C336.161	C336.161	C336.161	C366.161	
68	Valve Block	1	----- Order complete Valve Assembly Item #78 -----				
69	Screw	6	C299.128	C299.128	C299.128	C299.128	
* 70	Ball	1	S1.16	S1.16	S1.16	S1.16	
74	Handle	1	C303.070	C303.070	C303.070	C303.070	
77	Pipe Plug	1	R515.245	R515.245	R515.245	R515.245	
78	2-Way Valve-Man.	1	VM-2	VM-2	VM-2	VM-2	
(E) **	Caster	4	FZ1631	FZ1631	FZ1631	FZ1631	
**	Decal	1	P75.26-1	P75.26-1	P75.26-1	P75.26-1	
**	Nameplate	1	D759.026	D759.026	D760.026	D760.026	
**	Patent Decal	1	Z435-4	Z435-4	Z435-4	Z435-4	
	Jack/Saver Kit (includes (*) items)		P550K-3	P550K-3	P550K-3	P550K-3	

P-449-2, -3, -4; P-460-2, -3, -4

- (A) Part numbers shown is for standard 110/220 volt 50/60, cycle, single phase motors.
- (B) Tumbler disc, C731.900 is interchangeable with tumbler disc, P181.283 used in early model pumps.
- (C) Pumps with Tumbler Disc, P181.283 which had a lower pilot shaft for use with P181.05 base can be converted to latest model by ordering pump base, item #33 and tumbler disc item #29.
- (D) **SERIAL CODES —**
P460-2, (Serial numbers beginning with "C")
P460-3, (Serial numbers beginning with "D")
P460-4, (Serial numbers beginning with "E")
P449-2, (Serial numbers beginning with "F")
P449-3, (Serial numbers beginning with "H")
P449-4, (Serial numbers beginning with "J")
- (E) Sold as optional equipment — Not included on new pumps

- * For Economy Repair Use Jack Saver Kit P550K-3
- ** Items Not Shown

NOTE: Orders for parts cannot be filled unless both model and serial number with prefix imprinted on nameplate are given.

FRANCHISED SERVICE DEPOTS



For quality workmanship with genuine Blackhawk parts select a Franchised Blackhawk Service Depot for your repair work. Only repairs performed by a Franchised Service Depot displaying this official sign are backed with full factory guarantee. The Classified Section in your Phone Book lists your nearest Franchised Service Depot.

GUARANTEE

Blackhawk guarantees its Products against defects in workmanship and materials for 90 days from date of delivery to the user. Only exception is chain, which follows the trade custom of its manufacturers and cannot be guaranteed. When question of warranty arises, the user should send his unit to the nearest Blackhawk Franchised Service Depot for inspection, transportation to be prepaid and evidence of purchased date furnished. If the difficulty comes under the terms of our guarantee, the Franchised Service Depot will repair or replace parts affected and return prepaid. Our guarantee does not cover ordinary wear and tear, abuse, misuse, overloading, altered products or use of improper fluid.

PARTS, SERVICE INFORMATION AND THE ADMINISTRATION OF FRANCHISED SERVICE DEPOTS FOR BLACKHAWK PRODUCTS IS PROVIDED BY —

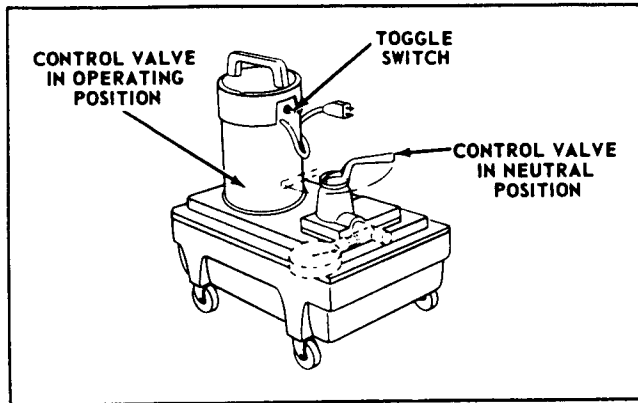
BLACKHAWK SERVICE

MILWAUKEE, WISCONSIN 53246

DIVISION OF APPLIED POWER INDUSTRIES, INC.

Please direct all Service Correspondence to BLACKHAWK SERVICE

OPERATING INSTRUCTIONS



PUMP OPERATION

1. Turn air vent screw (item #24) counter-clockwise one turn.
2. Turn operating valve handle (item #74) to maximum counter-clockwise position (neutral) before starting motor.
3. Push motor toggle switch to "on" position.
4. Let pump idle for a few minutes.
5. To extend cylinder plunger, slowly turn operating valve handle (clockwise).
6. Extend and retract plunger several times to flush air trapped in system.
Pump is now ready for operation.
WARNING! DO NOT EXCEED RATED CYLINDER CAPACITY OR PLUNGER STROKE.
7. To stop pump, turn operating valve handle to maximum counter-clockwise position (neutral) and push toggle switch to "off".

PRELIMINARY PROCEDURE

1. Remove oil refill plug (item #7).
2. Reservoir should be filled to bottom of filler stand pipe (with all cylinders retracted).
3. If necessary, add Blackhawk LX22 oil.
CAUTION: The use of other fluids may cause extensive damage to the pump. Such damage is not covered by the Warranty.
4. Replace oil refill plug.

ELECTRICAL HOOK-UP

1. Check motor voltage on motor nameplate (located on side of motor housing). When shipped from factory, single phase 110/220 volt, 60 cycle motors are wired for 110 volts. Three phase 208/220/440, 60 cycle motors have accessible motor leads.
2. Plug cord into proper electrical outlet or provide wiring as required. To rewire single phase motors for 220 volts or three phase motors for 440 volts, see diagram on motor nameplate.

INSTALLING GAGE

1. Remove pipe plug (item #77).
2. Screw the P- 6.99 (or HP-2344) gage adaptor into port (3/8" NPT).
NOTE: HP-2344 gage adaptor used with GF-813S only.
3. Screw gage into side port of gage adaptor.

HOSE CONNECTION

1. Screw 3/8" NPT hose end into gage adaptor.
2. Connect hose half of Spee-D-Coupler® to ram half of coupler.
3. Tighten both connections.
NOTE: Make sure couplers are wiped clean when making or breaking a connection. Spee-D-Coupler® halves seal themselves against oil leakage when disconnected. Dust caps should be attached to prevent dirt from entering exposed ends of Spee-D-Coupler®.

ADJUSTING RELIEF VALVE

1. Gage adaptor and gage must be installed.
2. Use pipe plug (item #77) to block off oil flow from gage adaptor.
3. Remove valve adaptor plug (item #23) for access to relief valve.
4. Start motor with operating valve handle (item #74) in neutral.
5. Turn operating valve handle to operating position and read pressure (or load) on gage.
6. Insert 7/32" Allen wrench through hole into adjusting screw (inside item #18)
7. Turn adjusting screw to obtain desired pressure (or load) reading on gage; counter-clockwise to reduce gage reading, clockwise to increase gage reading.
8. Return operating valve handle to neutral.
9. Check valve setting, by turning operating valve handle from neutral to operating position. Repeat several times. Maximum gage reading should remain constant.
10. Return operating valve handle to neutral position.
11. Turn off motor.

NOTE: To replace relief valve assembly (item #18) unscrew entire valve assembly using 9/16" socket wrench.

CLEANING OIL FILTER SCREEN

1. Remove 10 cap screws (item #9).
2. Lift pump unit and cover off reservoir. Be careful not to damage gasket (item #12).
3. Remove screen retainer screw on bottom of pump unit (item #57).
4. Remove cap (item #56) and screen (item #55).
5. Flush screen with clean kerosene or similar cleaning agent.