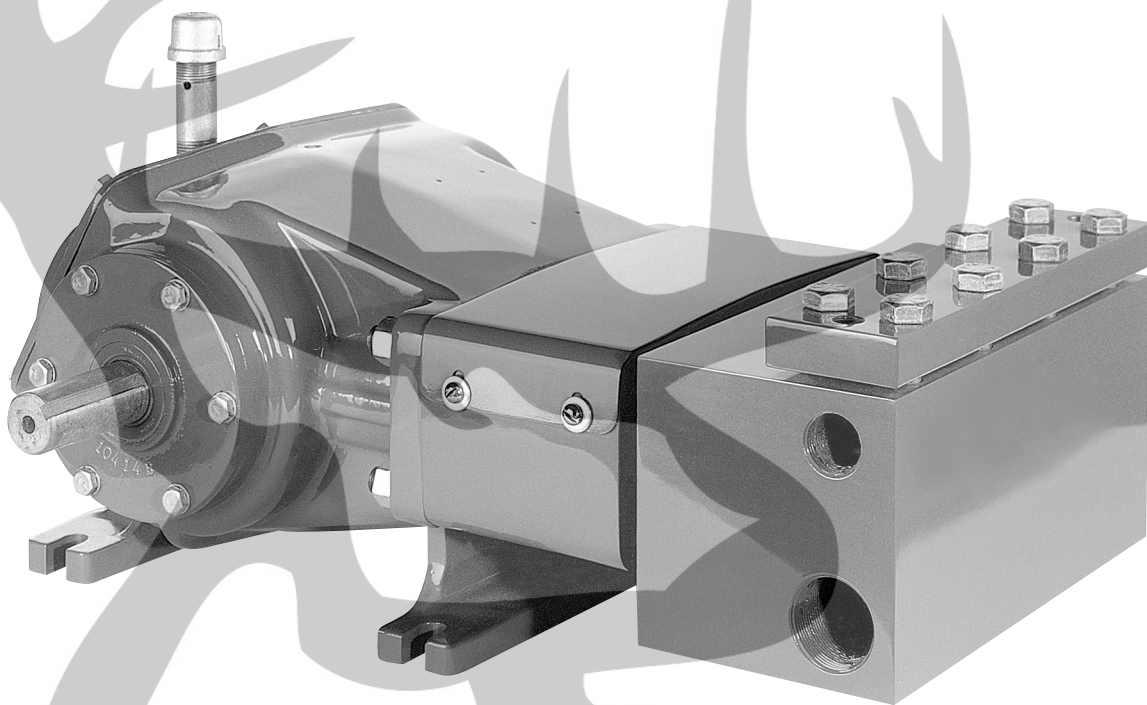




MYERS®



MODELS CPM18-40 AND CPM24-30

CPM SERIES INDUSTRIAL PUMPS

INSTALLATION AND SERVICE MANUAL

NOTE! To the installer: Please make sure you provide this manual to the owner of the equipment or to the responsible party who maintains the system.

INSTRUCTIONS

CAUTION: Positive displacement pumps must have a proper size and operable type of pressure regulating valve or pressure relief valve piped into the discharge line. This is mandatory to prevent damage to pump and piping or possible injury to personnel. Do not install any valves or shut-off devices in the bypass line from pressure regulator tank or supply.

CAUTION: All pumps should be installed level. For mobile applications the maximum angle of intermittent operation should be no more than 5° in any one direction.

CALIFORNIA PROPOSITION 65 WARNING:

▲ WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

It is recommended to install a pulsation dampener in the discharge line to smooth out pressure pulse. This can protect pump parts and piping for longer life and quieter operation.

BELT DRIVE

With belt drives the pulley on both the engines and pump should be located as close as possible to bearing to reduce bearing and shaft bending loads. Make sure that all bolts, nuts, set screws, and keys are properly tightened. On multiple V-belt drives, a complete set of new belts should be installed when making a replacement.

STARTING PUMP

Fill pump crankcase with recommended oil (SAE) to the level mark on oil saber. Replace all drain plugs in pump and piping. Inspect tank to be sure that no foreign material is in tank or suction line. Fill the tank at least half full or connect suction to water supply. Open valve (if present) in suction line. Avoid prolonged dry operation which may cause excessive wear on plunger packing. Be sure that an operating pressure gauge is located in the discharge line. Use heavy duty, liquid filled, pulsation free pressure gauge. Make sure all valves, including spray gun or nozzles, are open in discharge line. Spray gun may be anchored to discharge back into tank. Completely back off the pressure adjusting device on pressure regulating valve. Check pressure rating for pulsation dampener, pressure regulator and pipe fitting to make sure working pressure is not over maximum pressure rating.

After starting, close discharge valve or spray gun slowly while watching pressure gauge to make sure relief valve or unloader is operating properly. Adjust relief valve or unloader to desired pressure. Cycle

nozzles, or gun on and off to be sure that pressure adjustment and regulator operation are satisfactory. Nozzle capacity should not exceed 90% of pump capacity for satisfactory regulator operation. Avoid freezing by draining all water from pump and system in cold weather. There is a 3/8 NPT drain plug for each cylinder chamber.

SUGGESTED MAINTENANCE SCHEDULE

Check oil level – Daily

Drain & change oil – 300 hrs.

Drain at operating temperature to prevent contamination from settling.

Inspect piston packing and spacer rings – 500 hrs.

Inspect frequently for leakage; piston packing is allowed to drip in order to cool and lubricate packing.

Inspect valves and springs – 500 hrs.

Replace if cracks and heavy wear are present.

Inspect connecting link bearing inserts – 1000 hrs.

Replace at first signs of fatigue or wear to prevent damage to crankshaft.

Inspect crankshaft tapered roller bearings and piston stud – 2000 hrs.

Replace if there is any pitting on the seal surface or if the surface is rough.

LUBRICATION

Pump – Fill crankcase with 2 quarts of oil. Maintain oil level between the high and the low level marks on bayonet oil gauge inserted through crankcase cover. Add extra quart for crankcase speeds under 300 rpm.

Drain oil from crankcase after first 30 hours of operation. Refill with proper oil. Check oil levels regularly. Change oil immediately if water droplets are found on bayonet gauge.

SERVICE

Disconnect electrical leads to motor or remove spark plug leads on engine before proceeding.

PLUNGER SEAL SERVICE

Remove the three seal lubricating lines and nuts holding the fluid end and slide head. Rotate crankshaft until plunger is flush with seal housing. Slide seal housing forward to clear plunger and remove. Remove seals and clean seal housing. Install new seal. Lubricate with waterproof grease and repeat steps to install plunger seal.

VALVE SERVICE

When servicing valves always replace O-rings. Remove bolts and valve clamp. Remove valve cover on top of fluid access to valve components. Suction and discharge valve will show a wear pattern on seating surface but need not be replaced unless extreme wear, cracks or erosion is present on valve. All valves and seats are interchangeable but it is recommended to put them back in the same order as taken out if not renewing the components. To replace valve components, clean bores to remove corrosion or burrs, and lubricate and replace O-rings in bottom of bore. Lubricate valve seat and replace O-ring. On the valve, make sure the spring is inserted squarely before putting assembly into fluid end. Repeat for the discharge valve, insert valve cover and secure.

REPLACING PISTON ROD SEALS

The rod seal assembly contains two seals, and two oil seals with lips facing power end. The fluid end must be removed before the oil seal can be replaced. Unscrew Allen screws and place into the other two tapped holes. Gradually screw them in to push oil seal housing off the retainer. Assemble new seals in oil seal housing. An assembly thimble should be used on end of crosshead rod for sliding oil seal housing back into retainer. Check gasket replace if damaged.

An assembly thimble should be used on small end of the piston rod to expand sealing edge as it is pushed on. The thimble should be machined from high carbon steel and polished on the exterior to reduce possibility of seal lip damage.

SERVICING CRANKCASE PARTS

To remove the crankcase you do not need to remove the cylinder body from the crankcase. Remove the connecting link caps from the connecting links and push the free links toward the cylinder end as far as possible. Take off the bearing caps and pull the crankshaft through the bearing opening.

REPLACING CRANKSHAFT AND SHIMMING BEARINGS

Remove bolts from both bearing caps. Carefully remove bearing cap, shims and O-rings and discard shims and O-rings. Inspect and clean shim surfaces on both bearing caps and crankcase.

Slide crankshaft into the crankcase and rest bearings on the sides of the crankcase. Place .045" shim on the drive side bearing cap and place 4.38" O.D. O-ring onto the bearing cap.

Cover key-way slot and slide the bearing cap with oil seal over the drive shaft. Tighten the cap screws. Install the non-drive side cap without shims or O-ring. Secure with cap screws and tighten alternately so the crankshaft can be fully rotated by hand to seat the tapered roller bearings.

Measure the shim gap adjacent to each of the screws by inserting a flat feeler gauge in the gap until it bottoms out. The required shim thickness for this cap is equal to the average of the two gap measurements, plus .005" constant.

Remove the two bolts and cap and place the correct shim thickness on this cap. If the required shim thickness does not match an .003" increment of a green shim, round up or down to the nearest .003" shim increment.

Remove non-drive side bearing cap and place the 4.38" O.D. O-ring on the cap and reinstall. Tighten the screws as the crankshaft is fully rotated by hand to seat the bearings and so no significant binding results.

SERVICING CONNECTING LINKS

When the connecting link bearings are worn standard replacement bearing inserts can be installed in the connecting links. These bearings should not be tampered with or changed in size at the time of assembly. Do not change the size of the link by filing or grinding the faces. When reinstalling the links on the crankshaft be sure to place the oil holes upward for proper lubrication.

When installing new bushings for the wrist pin, these bushings should be reamed to proper size after pressing into the link. Do not ream "D" bushings.

RECOMMENDED TORQUE (foot-pounds)
FASTENER LOCATION
Link Bearing Caps - 25
Crankshaft End Caps - 20
Capscrew Holding Piston - 20
Packing Assembly to Piston Rod - 20
Valve and Cylinder Cover Clamps - 80
Capscrew (Fluid End to Crankcase) - 1/2"-50, 5/8"-85

CROSSHEAD AND PISTON RODS

Repair parts for the crosshead and piston rod are supplied as a complete unit. If either of these parts becomes worn it is necessary to replace both the crosshead and piston rod. Under normal conditions a crosshead will not wear nor will the bore of the crankcase wear to the extent that replacement will be required. A clearance of .002" to .004" is standard for the crosshead.

RECONDITIONING CRANKSHAFTS

When crank pins are slightly damaged, they can sometimes be reconditioned for further use. This can be done with emery cloth and polishing until all ridges are completely removed. The final polishing operation should be performed by using a very fine emery cloth.

This procedure can be followed only where the amount of sanding does not reduce the normal diameter of the crank pin.

Worn or corroded crank pins can be ground and polished down to .030" under the size when the crank was new. The undersize bearing halves are made especially for turned down crankshafts.

If the surface is badly damaged, the crankshaft can often be salvaged by metalizing the crank pins, regrinding and polishing to the original diameter.

When assembling bearings on the crankshaft, an oil seal expander thimble should be used at the end of the shaft. A thimble of this type will cause the lip of the oil seal to gradually expand up to the shaft diameter allowing it to slip onto the shaft without turning or damaging the seal in any way. A slight nick or cut in the lip can damage a seal enough that it will not retain the oil properly.



BUCKHORN
PUMPS, INC.

THE PUMP MUST BE INSTALLED WITH A PRESSURE RELIEF VALVE IN DISCHARGE LINE

TROUBLESHOOTING

Pump fails to build pressure with discharge closed						
Failure to hold pressure with discharge open						
Pump is noisy						
Pump gets hot						
Pressure gauge shows abnormal fluctuation						
Regulator chatter						
POSSIBLE CAUSE OF PROBLEM						
1. Pump not primed						X
2. Valve closed in suction line				X		X
3. Suction line or sediment chamber clogged				X	X	X
4. Air leak in suction line				X	X	X
5. Pressure regulator valve badly worn or not properly adjusted					X	X
6. Pump packing or valves badly worn		X		X	X	
7. Pump cylinder body cracked				X	X	X
8. Holes in discs are too large					X	
9. Need suction surge arrester				X		
10. Water in crankcase			X			
11. Worn connecting link bearings			X	X		
12. Lack of oil in crankcase			X	X		
13. Foaming mixture		X		X	X	
14. Regulator plunger sticking		X				
15. Unloader stuffing box nut too tight		X				
16. Foreign matter under pump valve		X		X	X	
17. Discharge surge arrester inoperative	X	X				
18. Loose piston rod				X		
19. Improper preload of crankshaft bearings			X	X		

Explanation of the Service Chart

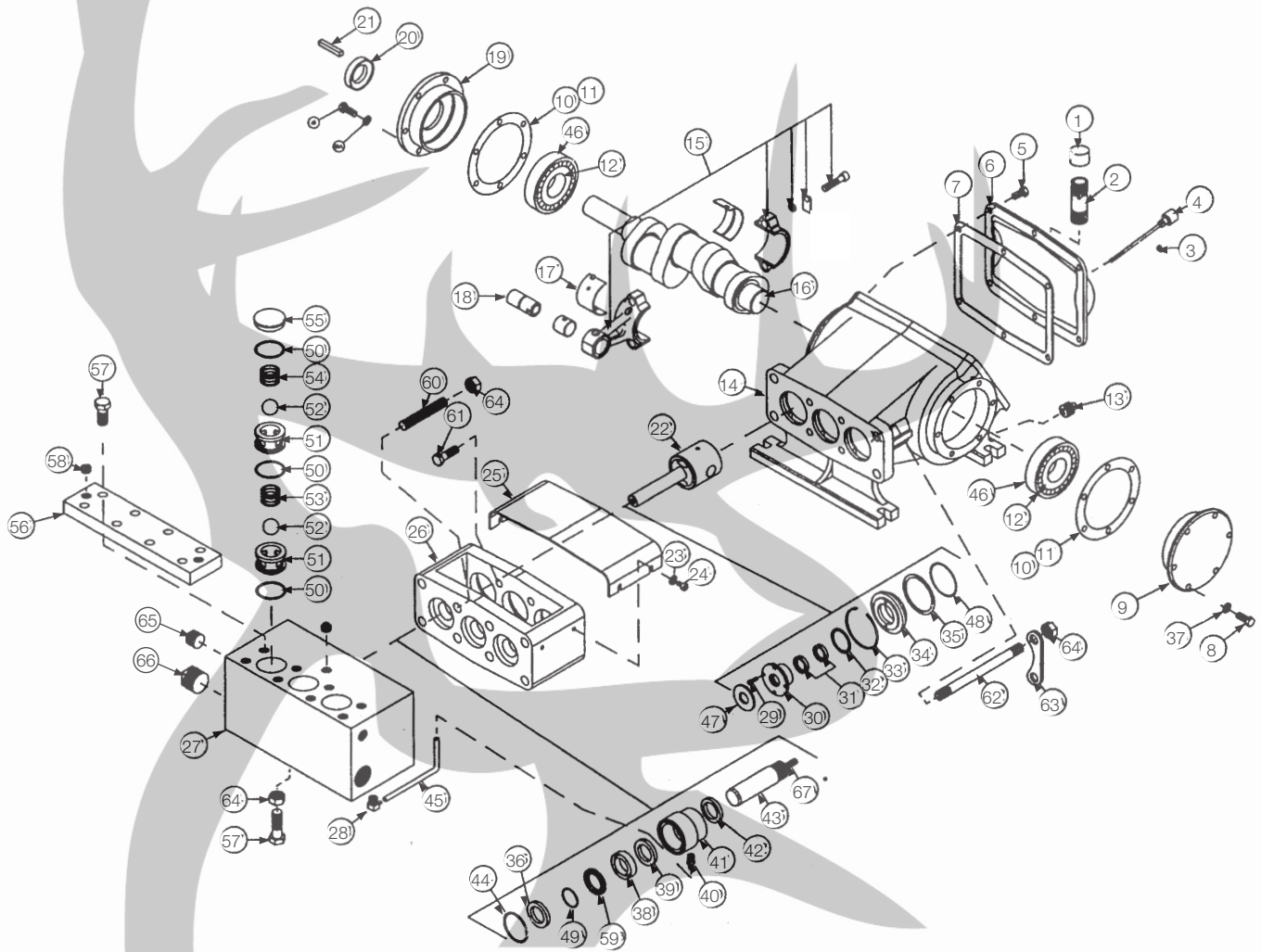
1. Pump priming is usually not necessary when the pump is installed correctly. However, there are certain conditions which may make it necessary to prime the pump to get the pumping action started. Priming will be required when it is impossible for the plunger to displace the air in the pump and replace it with water. This can be caused by a high suction lift, the valves being stuck on the seat or by valves sticking due to extreme corrosion. A pump will not prime readily if someone has tampered with the valve springs causing them to exert undue pressure of the valve plates against the valve seats.
2. A gate valve is sometimes installed in the suction line between a tank or pressure line and the pump sediment chamber. It will shut off the supply source in order to clean the sediment chamber or to perform pump repairs. If this valve is partially or fully closed, it will interfere with the flow of water to the pump suction. This may cause severe knocking and vibration of the pump because the water cannot flow into the cylinder cavities fast enough.
3. A sediment chamber should be installed in the suction line between the gate valve and the pump suction. The strainers in the sediment chambers are sufficient to allow a free flow of liquid to the pump. If the strainers become severely clogged, they will completely stop the flow of liquid to the pump.
4. Any plunger pump operating at a high pressure will not perform properly nor quietly if a mixture of air and water is allowed to enter the pump suction. A small air leak in the suction line will cause the pump to knock and vibrate excessively by allowing the pump to draw a certain amount of water mixed with air on each stroke of the piston. A large air leak will cause the pump to lose prime after which it cannot be reprimed until the air leak is stopped. Air leaks may occur at the joints of the suction line piping, at the gate valve in the suction line, at the gasket sealing the cap on the sediment chamber, by a crack in the suction wall of the cylinder body, or by air drawing past the packing on the suction stroke if the packing is badly worn.

5. If the pressure regulator internal bypass valve is worn, it will allow too much of the pump capacity to be bypassed and recirculated back to the tank. By examining the flow from this valve with the discharge turned on, it can be determined whether or not the valve is worn. If a heavy flow continues when the discharge is turned on, it is usually a good indication of a worn valve and should be replaced.
6. Worn plunger cups, valves or valve seats will cause a severe drop in pump capacity pressure. Worn plunger cups are detected by water leakage past the cups and should be replaced immediately. Water getting into the pump crankcase will cause severe corrosion of the bearings. Worn valves can only be detected by visual examination of each valve assembly. Abrasive liquid will cause wire cuts which begin as a very small groove, but increase rapidly once the valve starts to leak through this groove. If the valve plates are replaced as soon as they start to show this cutting action, it will prevent the valve seat from becoming cut in a similar manner.
7. Pump cylinder bodies withstand an extreme amount of shock and pulsation while in operation, but if the pump is allowed to freeze, by not being drained, the freezing may crack the cylinder body walls in almost any location. If the crack occurs on the suction valve or cylinder portion of the body, it may allow a small amount of air to enter on the suction stroke and cause noisy operation or a decrease in pumping capacity. If the crack develops in the walls between the cylinder cavities or discharge valve cavity, it may allow the water to flow from one cavity to the adjacent cavity and cause uneven displacement.
8. The holes in the gun or nozzle discs are continually subject to wear because of the high velocity of the liquid through the holes. If the holes become worn, they may allow a higher rate of discharge than the pump is able to provide, then a drop in pressure will be noticed. This can quickly be checked by reducing the number of nozzles or guns while watching the amount of overflow from the pressure regulator. If there is considerable overflow, it is an indication that the regulator valve is worn rather than the gun or nozzle disc.
9. Suction surge arresters should be installed on the suction line of reciprocating pumps, 1-1/2" or 2" can be used. A standing height of 12"-15" will be sufficient with the top end closed by an ordinary pipe cap.
10. Water may accumulate in the pump crankcase from two sources; leakage of the plunger cups or an accumulation of condensation/moisture inside the crankcase due to changes in weather or the repeated heating and cooling of the pump. Pumps used consistently, running for a considerable period of time to heat the oil and other working parts, will not normally accumulate water by condensation. Replace the plunger cups as soon as they start to leak.
11. Worn connecting link bearings are caused by unusual or adverse operating conditions and are seriously affected by corrosion if water is present in the crankcase. They will wear out from overheating if adequate oil is not provided in the crankcase. It is recommended to drain, clean and refill with new oil prior to any storage period. Replace bearings as soon as any damage is discovered to avoid possible damage to crankshaft.
12. Low oil in the crankcase can quickly cause failure of the pump's power end and result in extensive repairs. Oil level should be checked periodically during normal operation and during all maintenance work.
13. A foaming mixture will sometimes have the same effect as a small air leak in the suction line. This is because various quantities of the foam are drawn through the suction line into the pump disrupting the normal flow of water.
14. Pressure regulators and unloading valves may become sluggish in action due to the plunger sticking or fitting too tightly in its cylinder. This may happen by an accumulation of chemicals collecting in and around the plunger or due to excessive corrosion of the plunger parts. To check this condition, remove and clean the plunger and cover the parts with a waterproof grease before assembling.
15. The stuffing box nut on the unloading valve lifting post should not be tightened to severely grip or bind the packing on the post. Tighten this nut just enough to prevent leakage and chatter. The pressure regulator and unloading valves may chatter or vibrate excessively due to an unstable operation from nozzling in the high or low capacity range of the regulator or unloader. The range should be at least 50% to 90% of pump capacity. With unloader valves, nozzle capacity should be at least 20% and not exceed 90% of pump capacity.
16. If foreign matter becomes lodged between the pump valve and valve seat, a drastic drop in capacity and considerable surge or pulsation will occur in the discharge line. Examine each valve if this occurs.
17. When a pump is used for a long period of time, a waterlogged discharge surge could cause pulsation at the discharge. The suction should be opened to the atmosphere to allow air to be drawn through the pump to recharge the surge arrester. Do this with the pressure release valve open so the pump operates at no pressure.

18. Noisy pump operation can be caused by a loose plunger rod in the crosshead. This noise usually has a regular cadence timed with each stroke of the plunger. When this occurs, always replace both the rod and the crosshead.
19. Increased preload to the crankshaft bearings will reduce bearing life, require more power and generate more heat, while insufficient preload may cause a knock, timed with the crankshaft rotation. Check for loose bolts on the crankshaft end caps or adjust shims to obtain proper bearing preload.



CPM 18-40 AND CPM 24-30



BUCKHORN PUMPS, INC.

CPM18-40 PLUNGER PUMP PARTS LIST (25905F000 STEEL) RIGHT-HAND
CPM 18-40L PLUNGER PUMP PARTS LIST (25905F010 STEEL) LEFT-HAND
CPM 24-30 PLUNGER PUMP PARTS LIST (25905F012) RIGHT-HAND

Item	Eng. No.	Description	Qty.
1	05737A021	OIL FILL CAP	1
2	17995A001	OIL FILL NIPPLE	1
3	110-000110-201	O-RING	1
4	17360A014	OIL GAUGE	1
5	19101A008	SCREW, HEX 3/8 x 7/8	6
6	06077C000	LID	1
7	06089B000	GASKET	1
8	19101A013	SCREW, HEX 3/8 x 1	12
9	10414B001	CAP, BEARING CLOSED	1
10	05011A027	GASKET, SHIM .003" GREEN	6
11	05011A028	GASKET, SHIM .015" PINK	4
12	05674A019	BEARING CONE	2
13	17481A001	PLUG, MAGNETIC 1/2	1
14	06076D000	CASE, GEAR	1
15	27300B000	LINK	3
16	06074D011	CRANKSHAFT	1
17	06109A010K	BEARING, PAIR 2-3/8	3
18	06116A000	PIN, CRK & WR	3
19	10414B002	CAP, BEARING OPEN	1
20	05710A004	SEAL, OIL	1
21	05818A077	WASHER, 1/4	4
22	17515B001	CROSSHEAD & PISTON ROD	3
23	05030A020	WASHER, 1/4	4
24	05028A002	SCREW	4
25	25927C000	COVER	1
26	25937E000	ADAPTER	1
27	25934E000	BODY, CYLINDER, 1018 STEEL	1
	25934E002	BODY, CYLINDER, 1018 STEEL (FOR CPM-24-30)	1
28	23188A002	FITTING	3
29	06106A034	SCREW, SKT. HD #10 & 1/2	6
30	24959A002	HOUSING	3
31	22835A004	CUP, U METRIC 22	6
32	05059A435	GASKET	3
33	06120A000	SPRING	3
34	24958A001	RETAINER	3
35	05059A052	GASKET	3
36	24894A007	WASHER (FOR CPM 24-30)	3
	24894A003	WASHER	3

Item	Eng. No.	Description	Qty.
37	14946A003	WASHER, SEAL 3/8	12
38	18922A009	PACKING, V-RING & NITRILE (FOR CPM 24-30)	3
	25929A000	PACKING, NITRILE & KEVLAR®	3
39	24794A005	RING, BOTTOM ADAPTER (FOR CPM 24-30)	3
	25935A000	RING, BOTTOM ADAPTER	3
40	10519A002	FITTING	3
41	25928B004	PLATE (FOR CPM 24-30)	3
	25928B000	PLATE	3
42	24899A002	SEAL (FOR CPM 24-30)	3
	24899A004	SEAL	3
43	25926B211	PLUNGER, 1-1/4" DIA. (FOR CPM 24-30)	3
	25926B200	PLUNGER, 1-1/4" DIA	3
44	05876A158	O-RING	3
45	23265161275	TUBE - # OF FT. (FOR CPM 18-40L)	2
	10649A132	TUBE - # OF FT. (FOR CPM 18-40)	3
46	05675A018	BEARING CUP	2
47	05059A418	WASHER GASKET	3
48	05876A224	O-RING	3
49	05876A029	O-RING (FOR CPM 24-30)	3
	05876A159	O-RING	3
50	05876A204	O-RING	9
51	25931A000	SEAT, VALVE	6
52	25936A000	VALVE	6
53	25930A000	SPRING, SUCTION VALVE	3
54	25930A001	SPRING, DISCHARGE VALVE	3
55	25932A000	CAP	3
56	25933B000	CLAMP	1
57	19105A042	SCREW, HEX 5/8 x 1-3/4	9
58	25938A001	SET SCREW, SKT. DRV. 5/8-18	2
59	24793A006	MALE ADAPTER (FOR CPM 24-30)	3
	24793A005	MALE ADAPTER	3
60	05659A125	STUD, 5/8-18 x 3-1/4	4
61	19103A008	SCREW, HEX 1/2 x 1-3/4	4
62	05659A120	STUD, 5/8-18 x 8-1/2	4
63	26709A000	WASHER, WEDGE	2
64	19109A047	NUT	9
65	05022A043	PLUG, PIPE, 1" NPT	1
66	05022A016	PLUG, PIPE, 1-1/2" NPT	1
67	05659A133	STUD, PLUNGER	3

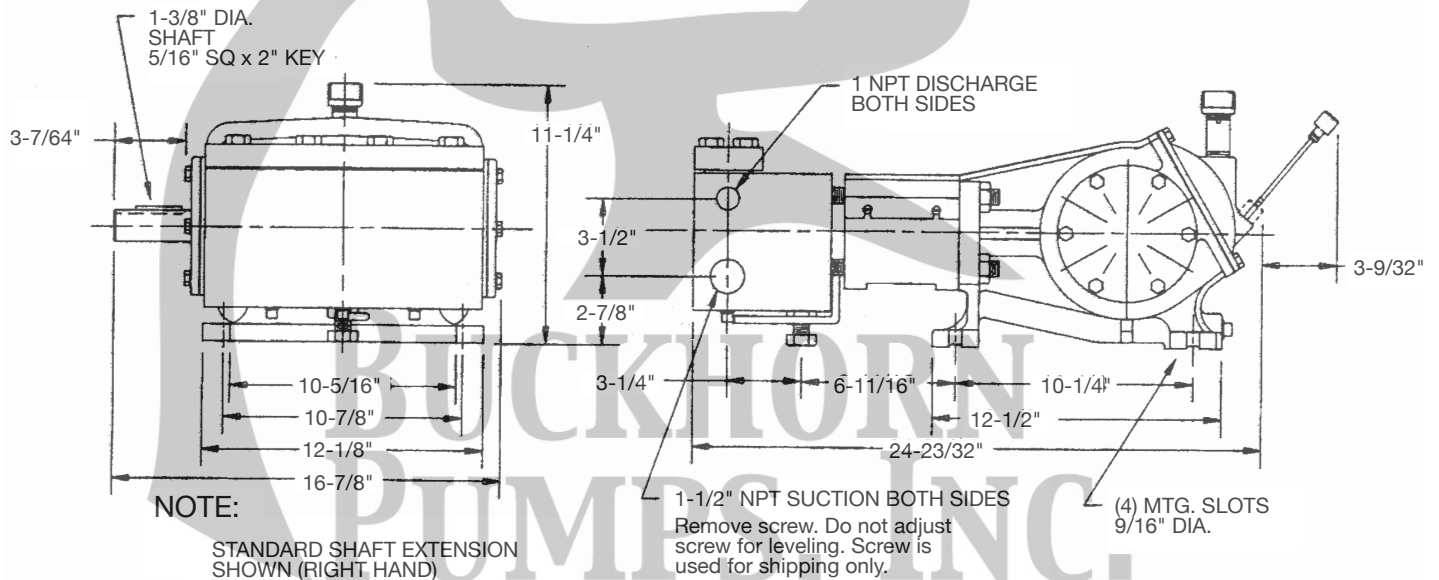
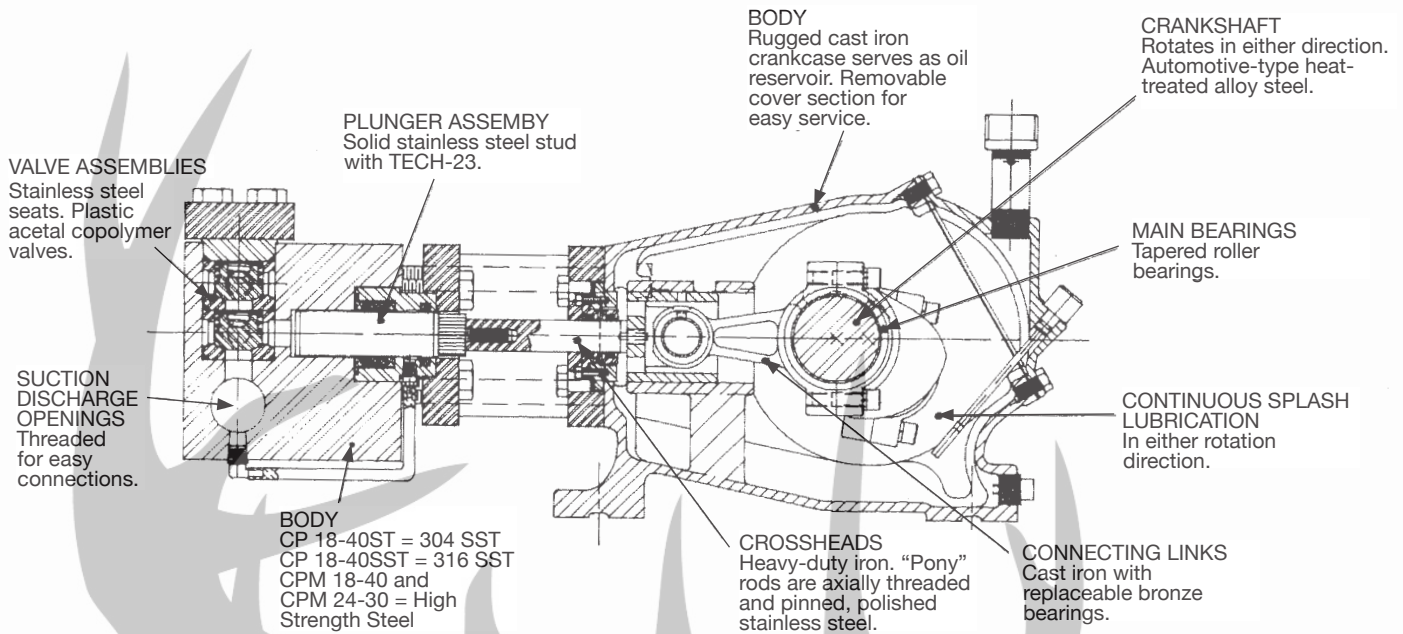
BUCKHORN
PUMPS, INC.

**CPM 18-40ST PLUNGER PUMP PARTS LIST (25905F004 304 SST) RIGHT-HAND
 CPM 18-40STL PLUNGER PUMP PARTS LIST (25905F014 304 SST) LEFT-HAND
 CPM18-40SST PLUNGER PUMP PARTS LIST (25905F001 316 SST) RIGHT-HAND
 CPM 18-40SSTL PLUNGER PUMP PARTS LIST (25905F011 316 SST) LEFT-HAND**

Item	Eng. No.	Description	Qty.
1	05737A021	OIL FILL CAP	1
2	17995A001	OIL FILL NIPPLE	1
3	110-000110-201	O-RING	1
4	17360A014	OIL GAUGE	1
5	19101A008	SCREW, HEX 3/8 x 7/8	6
6	06077C000	LID	1
7	06089B000	GASKET	1
8	19101A013	SCREW, HEX 3/8 x 1	12
9	10414B001	CAP, BEARING CLOSED	1
10	05011A027	GASKET, SHIM .003" GREEN	6
11	05011A028	GASKET, SHIM .015" PINK	4
12	05674A019	BEARING CONE	2
13	17481A001	PLUG, MAGNETIC 1/2	1
14	06076D000	CASE, GEAR	1
15	27300B000	LINK	3
16	06074D011	CRANKSHAFT	1
17	06109A010K	BEARING, PAIR 2-3/8	3
18	06116A000	PIN, CRK & WR	3
19	10414B002	CAP, BEARING OPEN	1
20	05710A004	SEAL, OIL	1
21	05818A077	WASHER, 1/4	4
22	17515B001	CROSSHEAD & PISTON ROD	3
23	05030A020	WASHER, 1/4	4
24	05028A002	SCREW	4
25	25927C000	COVER	1
26	25937E000	ADAPTER	1
27	25934E004	BODY, CYLINDER, 304 SST (FOR CPM 18-40ST AND CPM 18-40STL)	1
	25934E001	BODY, CYLINDER	1
28	23188A002	FITTING	3
29	06106A034	SCREW, SKT. HD #10 & 1/2	6
30	24959A002	HOUSING	3
31	22835A004	CUP, U METRIC 22	6
32	05059A435	GASKET	3
33	06120A000	SPRING	3
34	24958A001	RETAINER	3
35	05059A052	GASKET	3
36	24894A003	WASHER	3

Item	Eng. No.	Description	Qty.
37	14946A003	WASHER, SEAL 3/8	12
38	25929A000	PACKING, NITRILE & KEVLAR® (FOR CPM 18-40ST AND CPM 18-40STL)	3
	25929A001	PACKING, VITON®	3
39	25935A000	RING, BOTTOM ADAPTER	3
40	10519A002	FITTING	3
41	25928B000	PLATE (FOR CPM 18-40ST AND CPM 18-40STL)	3
	25928B001	PLATE	3
42	24899A004	SEAL (FOR CPM 18-40ST AND CPM 18-40STL)	3
	24899A008	SEAL	3
43	25926B200	PLUNGER, 1-1/4" DIA.	3
44	05876A158	O-RING (FOR CPM 18-40ST AND CPM 18-40STL)	3
	05876A205	O-RING	3
45	10649A132	TUBE -- # OF FT. (FOR CPM 18-40ST AND CPM 18-40STL)	1.5
	23265161275	TUBE # OF FT.	1.5
46	05675A018	BEARING CUP	2
47	05059A418	WASHER GASKET	3
48	05876A224	O-RING	3
49	05876A159	O-RING	3
50	05876A204	O-RING (FOR CPM 18-40ST AND CPM 18-40STL)	9
	05876A206	O-RING	9
51	25931A000	SEAT, VALVE	6
52	25936A000	VALVE	6
53	25930A000	SPRING, SUCTION VALVE	3
54	25930A001	SPRING, DISCHARGE VALVE	3
55	25932A000	CAP (FOR CPM 18-40ST AND CPM 18-40STL)	3
	25932A001	CAP	3
56	25933B000	CLAMP	1
57	19105A042	SCREW, HEX 5/8 x 1-3/4	9
58	25938A001	SET SCREW, SKT. DRV. 5/8-18	2
59	24793A005	MALE ADAPTER	3
60	05659A125	STUD, 5/8-18 x 3-1/4	4
61	19103A008	SCREW, HEX 1/2 x 1-3/4	4
62	05659A120	STUD, 5/8-18 x 8-1/2	4
63	26709A000	WASHER, WEDGE	2
64	19109A047	NUT	9
65	05022A043	PLUG, PIPE, 1" NPT	1
66	05022A012	PLUG, PIPE, 1-1/2" NPT (FOR CPM 18-40ST AND CPM 18-40STL)	1
	05022A016	PLUG, PIPE, 1-1/2" NPT	1
67	05659A133	STUD, PLUNGER	3

CPM 18-40 AND CPM 24-30



STANDARD LIMITED WARRANTY CENTRIFUGAL & RECIPROCATING PUMPS

Pentair Myers® warrants its products against defects in material and workmanship for a period of 12 months from the date of shipment from Pentair Myers or 18 months from the manufacturing date, whichever occurs first – provided that such products are used in compliance with the requirements of the Pentair Myers catalog and technical manuals.

During the warranty period and subject to the conditions set forth, Pentair Myers, at its discretion, will repair or replace to the original user, the parts that prove defective in materials and workmanship. Pentair Myers reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for prior sold and/or shipped units.

Seals, piston cups, packing, plungers, liners and valves used for handling clear, fresh, nonaerated water at a temperature not exceeding 120°F are warranted for ninety days from date of shipment. All other applications are subject to a thirty day warranty. Accessories such as motors, engines and auxiliary equipment are warranted by the respective manufacturer and are excluded in this standard warranty. Under no circumstance will Pentair Myers be responsible for the cost of field labor, travel expenses, rented equipment, removal/reinstallation costs or freight expenses to and from the factory or an authorized Pentair Myers service facility.

This limited warranty will not apply: (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with the printed instructions provided; (b) to failures resulting from abuse, accident or negligence; (c) to normal maintenance services and parts used in connection with such service; (d) to units that are not installed in accordance with applicable local codes, ordinances and good trade practices; (e) if the unit is moved from its original installation location; (f) if unit is used for purposes other than for what it is designed and manufactured; (g) to any unit that has been repaired or altered by anyone other than Pentair Myers or an authorized Pentair Myers service provider; (h) to any unit that has been repaired using non factory specified/OEM parts.

Warranty Exclusions: PENTAIR MYERS MAKES NO EXPRESS OR IMPLIED WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. PENTAIR MYERS SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE.

Liability Limitation: IN NO EVENT SHALL PENTAIR MYERS BE LIABLE OR RESPONSIBLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES RESULTING FROM OR RELATED IN ANY MANNER TO ANY PENTAIR MYERS PRODUCT OR PARTS THEREOF. PERSONAL INJURY AND/OR PROPERTY DAMAGE MAY RESULT FROM IMPROPER INSTALLATION. PENTAIR MYERS DISCLAIMS ALL LIABILITY, INCLUDING LIABILITY UNDER THIS WARRANTY, FOR IMPROPER INSTALLATION. PENTAIR MYERS RECOMMENDS INSTALLATION BY PROFESSIONALS.

Some states do not permit some or all of the above warranty limitations or the exclusion or limitation of incidental or consequential damages and therefore such limitations may not apply to you. No warranties or representations at any time made by any representatives of Pentair Myers shall vary or expand the provision hereof.



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Warranty Rev. 12/13

**BUCKHORN
PUMPS, INC.**