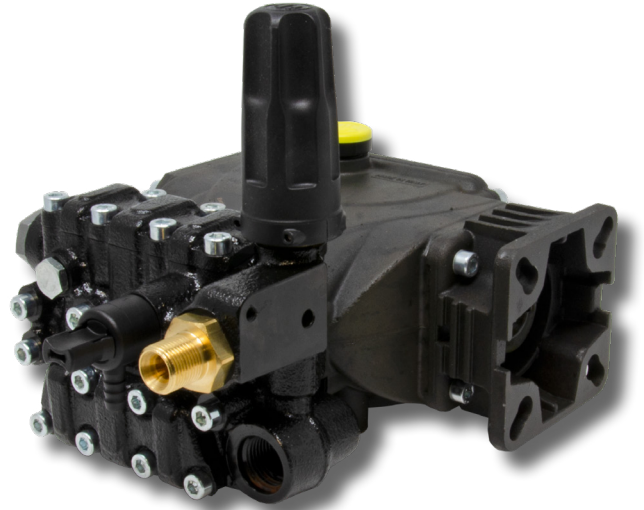


**FEATURES**

- "HR" anti-corrosion surface treatment on manifold
- New generation seal package
- Dust protection chamber
- Solid ceramic plungers
- Oversized plunger guide
- Optimized inlet and outlet valves
- Oversized crankcase
- Hollow shaft, flanged for direct couple to gasoline engines (SAE J609A)
- Features built-in unloader (U) or unloader and fixed injector (UI)

**SPECIFICATIONS**

Pump Model	ET1308G6U/I	ET1506G6U/I
Maximum Volume	2.4 GPM	2.9 GPM
Maximum Discharge Pressure	4,450 PSI	2,610 PSI
Maximum Pump Speed	3400 RPM	
Maximum Inlet Pressure	125 PSI	
Max. Inlet Vacuum	Flooded	
Plunger Bore (in / mm)	.512 in./13 mm	.591 in./15 mm
Plunger Stroke (in / mm)	.315 in./8 mm	.256 in./6.5 mm
Oil Capacity	8.5 oz.	
Maximum Fluid Temperature	165° F	
Inlet Port Thread	1/2"-14 BSP-F	
Discharge Port Thread	3/8"-19 BSP-M	
Shaft Diameter	Hollow, 3/4"/19.05 mm	
Weight	11.0 lbs.	
Dimensions - Nominal	9.45" x 7.24" x 7.8"	



# Instructions and Recommendations for the Installation of *ET Series Pumps*

Maximum temperature of the water through the pump is 165°F (73°C).

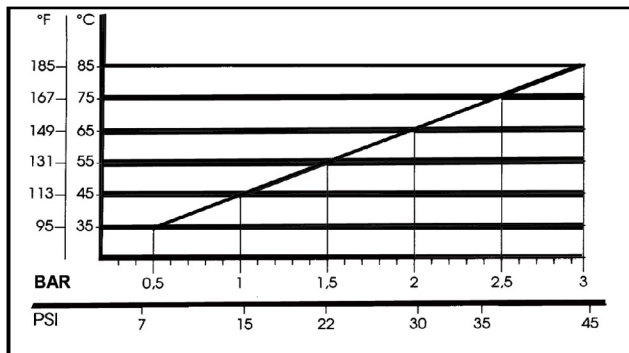
In order to obtain maximum performance in terms of duration of seals and valves, it is necessary to respect a few simple rules, as follows:

1) **In order to avoid damage caused by cavitation, the pump must be pressure fed.**

The higher the inlet pressure, the longer the life of the wet end of the pump.

When working at 165°F (73°C), the minimum feed pressure - measured directly in the inlet port of the pump when it is working - is 45 psi (3 bar).

The minimum feed pressure according to the different temperatures are:



Naturally, if the application allows for feeding the pump with 45 psi (3 bar) even at low temperatures (for example: 115°F/45°C the life of the wet end of the pump will be even longer.

2) **The plumbing which feeds the pump must be of a diameter at least equal to the inlet port.**

Also, follow the suggestions below:

a) Make the plumbing as short and straight as possible, preferably in an upward direction to facilitate the expulsion of eventual air bubbles naturally if compatible with the requirements of the system.

b) It is always useful to put a filter at the inlet with capacity of 4 to 5 times the flow of

the pump, for example for a 4 gpm (15 l/min) pump, put a filter from 16 to 20 gpm (60-75 l/min). The mesh size suitable for this application is 0.016" (.4 mm).

c) It is extremely important to put a pressure switch on the suction port of the pump, and in any case downstream from the filter, so that it can stop the pump should the feed pressure drop by 20% due to the filter clogging or failure of the feed pump, etc.

3) **Change of oil**

We recommend the **first oil change after the first 50 hours**, with the **pump stopped** and the **oil still warm**.

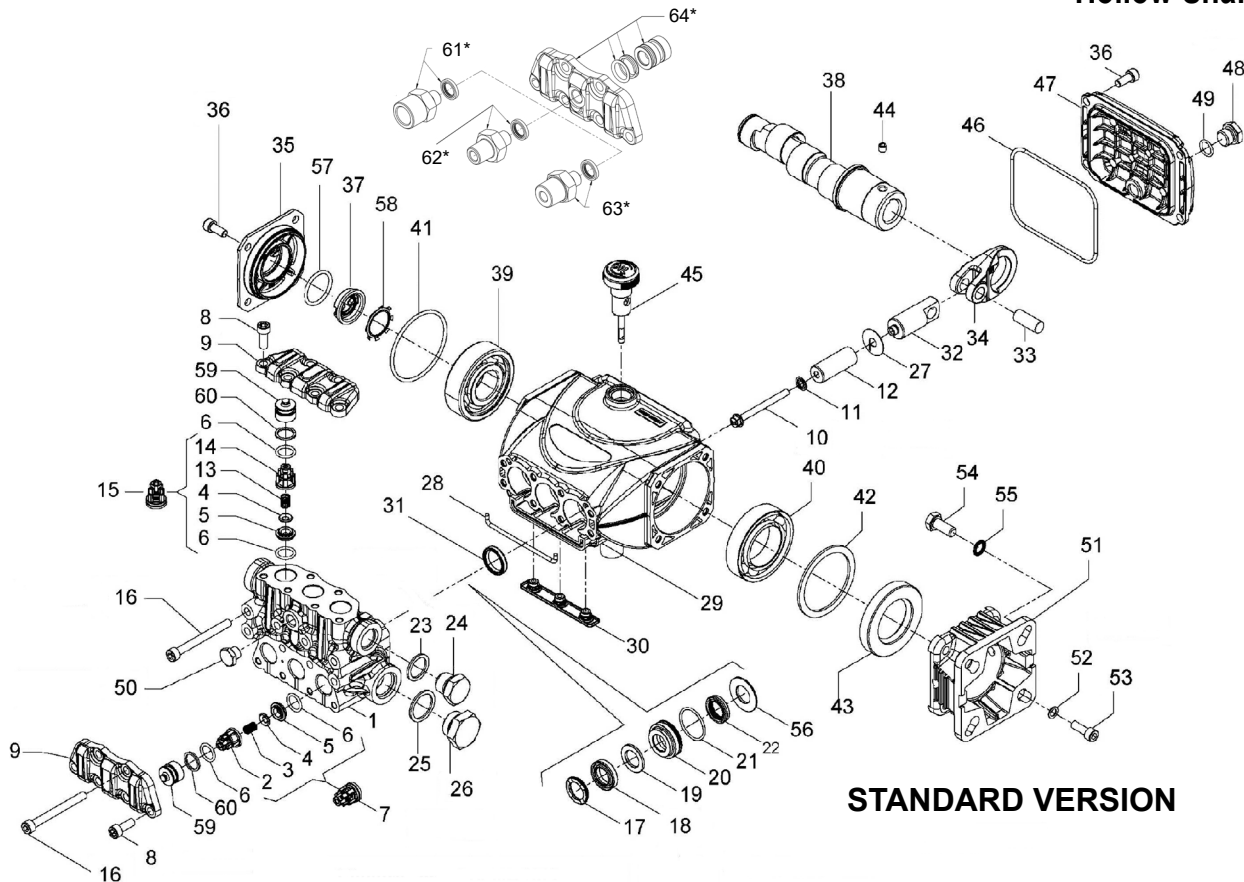
This change is not recommended because the oil has lost its properties, but rather to eliminate the impurities that have gotten into the oil during the running-in phase. If these impurities are not removed, but are allowed to remain in the oil, they *may cause premature wear* to the moving parts and the oil seals. **After this initial change, the oil can then be changed every three months or 300 hours of operation thereafter.**

Please note: If the pump works in conditions with high humidity and with sharp temperature changes, it is possible that condensation will appear inside the crankcase, which mixing with the oil can change its properties. This is easy to see because the oil changes to a white, milky color.

If the pump does not have excessive water leaking from the packings, and the oil becomes milky, the oil has to be changed more frequently. The percentage of water in the oil must not exceed 20%.

Use oil per the following chart:

CHART OF COMPATIBLE OILS	
General Pump	Series 100
BP	VISCO 2000
CASTROL	CWX
MOBIL	SUPER
SHELL	HELIX SUPER
TOTAL	QUARTZ 4000-5000

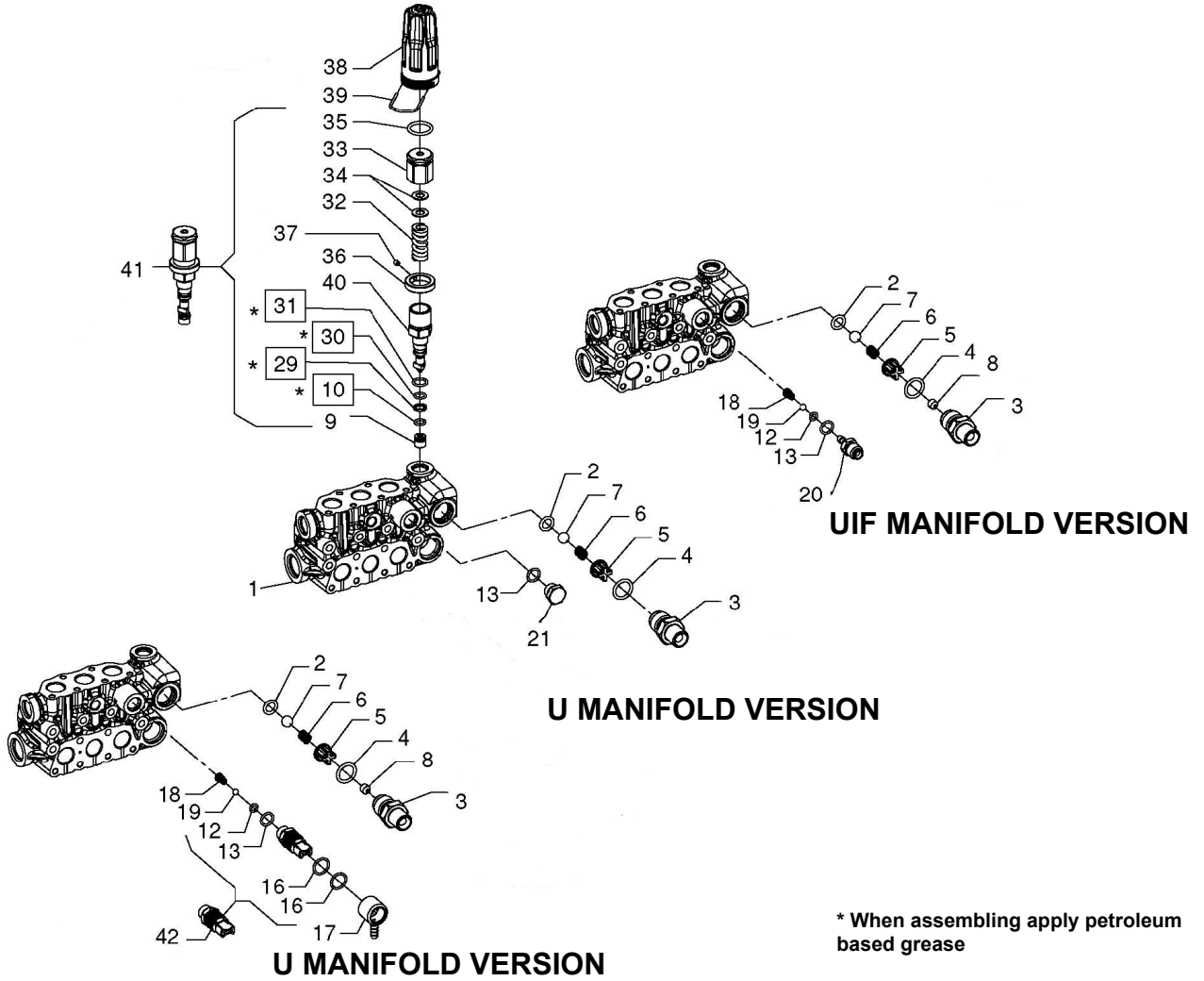


**PARTS LIST**

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	53122015	Manifold, Ø 13	1	21.	90360400	O-ring, 25.12x1.78	3	42.	60210186	Spacer	1
	53122115	Manifold, Ø 15	1	22.	90260100	Packing, Ø 13, LP	3	43.	90167500	Ring, Ø 35.0x62.0x10.0	1
2.	36211951	Inlet Valve Guide	3	23.	93738000	Washer, Ø17.5x23x1.5	1	44.	99179000	Screw, M6x6	1
3.	94732600	Spring, Ø 6x12	3	24.	98210050	Plug, 3/8"x13	1	45.	98210800	Dipstick	1
4.	36211276	Valve, Spherical	6	25.	96751400	Washer, Ø	1	46.	90391700	O-ring, Ø 88.57x2.62	1
5.	36211366	Valve Seat	6	26.	98218700	Plug, 1/2" BSPx10	1	47.	53160022	Rear Cover	1
6.	90367400	O-ring, Ø 12x2	12	27.	96699000	Gasket, Ø 7.5x23x0.5	3	48.	98204250	Plug, G1/4"x9	1
7.	36722401	Valve Assembly	3	28.	53210382	Gasket, Ø3x85	1	49.	90358500	O-ring, Ø 10.82x1.78	1
8.	99185400	Screw, M6x16	10	29.	53010022	Crankcase	1	50.	98196800	Plug, G1/8"x8	1
9.	53211815	Valve Cover	2	30.	58210451	Drip Cover	1	51.	10065222	Flange For Gas Engine	1
10.	99169000	Plunger Bolt, M5x55	3	31.	90159300	Oil Seal, Ø 18x24x4.4	3	52.	96693800	Washer, Ø 6.4x10.0x0.7	4
11.	96690500	Washer, Ø 5x11.5x0.4	3	32.	53050066	Piston Guide	3	53.	99186700	Screw, M6x18	4
12.	63040609	Plunger, Ø 13x38.5	3	33.	97733800	Piston Pin, Ø 10x26.5	3	54.	99273000	Screw, 5/16"x24"	4
	53040009	Plunger, Ø 15x38.5	3	34.	53030022	Connecting Rod	3	55.	96701400	Washer, Ø 8.4x13.0x0.7	4
13.	94733300	Spring, Ø 6.2x10.4	3	35.	53150022	Crankcase Side Cover	1	56.	53210470	Seal, Ø 13	3
14.	36211151	Outlet Valve Cage Guide	3	36.	99183700	Screw, M6x14	8		53210670	Seal, Ø 15	3
15.	36719301	Complete Outlet Valve	3	37.	53210851	Oil Sight Glass	1	57.	90385900	O-ring, Ø 25.07x2.62	1
16.	99199600	Screw, M6x70	8	38.	60027565	Crankshaft, 8 mm (ET1308)	1	58.	90067100	Stop Ring	1
17.	44100251	Head Ring, Ø 13	3		60027165	Crankshaft, 6.5mm (ET1506G6)	1	59.	36217851	Inlet/Outlet Valve Cap	6
	63101051	Head Ring, Ø 15	3	39.	91832800	Bearing, Ø 15	1	60.	90509300	Anti-ext. Ring, Ø 16.4x13.2x1.3	6
18.	90260200	Packing, Ø 13, HP	3	40.	91846400	Bearing	1	61.*	101162	Kit, ADTR, 1/4"-F, SS, W/Seal	1
	90260200	Packing, Ø 15, HP	3	41.	90389800	O-ring, Ø 56.82x2.62	1	62.*	101157	Kit, ADTR, 1/4"-M, SS, W/Seal	1
	710031	Packing, Ø 15, HP (K312H, K313H)	3					63.*	101158	Kit, ADTR, 3/8"-K, SS, W/Seal	1
19.	90507650	Anti-ext. Ring, Ø 13x21x3	3					64.*	K423	Kit, Tapped Valve Plate W/ Valve Spacer & Seals	1
	90508990	Anti-ext. Ring, Ø 15x22x2	3								
20.	53210470	Support Ring, Ø 13	3								

\* Optional Parts

\*\* 53150001 Oil Level Indicator Assembled W/O Screws and O-ring



**PARTS LIST**

ITEM	PART NO.	DESCRIPTION	QTY	13.	90358500	O-ring, Ø10.82x1.78	1	35.	90384500	O-ring, Ø 17.72x2.62	1
1.	53122615	Manifold, Ø 13	1	16.	90359100	O-ring, Ø14.0x1.78	2	36.	36347770	Pressure Ring	1
	53122715	Manifold, Ø 15	1	17.	36023551	Hose Barb	1	37.	99126700	Screw, M4x5	1
2.	90382300	O-ring, Ø 9.92x2.62	1	18.	94821700	Spring, Ø 4.3/7.3x11.0	1	38.	36351751	Adjustable Knob	1
3.	36348770	Nipple, 3/8" NPT-M	1	19.	97478200	Ball, Ø 7/32"	1	39.	10084666	Collar, Adjustment Knob	1
4.	90383900	O-ring, Ø 15.88x2.62	1	20.	36349270	Hose Barb	1	40.	36606301	Valve Body	1
5.	36310451	Valve Guide	1	21.	98204100	Plug, G 1/4"x9	1	41.	36605401	Valve	1
6.	94735500	Spring, Ø 8.5x12.0	1	29.	90503800	Anti-Ext. Ring Ø9x12x1.5	1	42.	36606201	Chem. Injector	1
7.	97483800	Ball, Ø 13/32"	1	30.	90358100	O-ring, Ø 8.37x1.78	1				
8.	10079566	Injector Nozzle	1	31.	90358700	O-ring, Ø 11.1x1.78	1				
9.	36348366	Valve Seat	1	32.	94739500	Spring, Ø 11.3x34.5	1				
10.	90357800	O-ring, Ø 7.66x1.78	1	33.	36348170	Pressure Adjust Nut	1				
12.	90357300	O-ring, Ø 5.28x1.78	1	34.	36348651	Washer	2				

**TORQUE SPECS**

Position	Ft.-Lbs.	Nm.
3	32.45	44
8	5.90	12
20	14.75	20
21	14.75	20
37	0.44	0.6
41	10.33	14
42	3.37	15

**REPAIR KITS**

KIT NO.	K278	K280	K348
ITEM NO'S INCLUDED IN KIT	2, 4, 5, 6, 7, 41	12, 13, 18, 19, 20	17, 18, 19, 42
NUMBER OF PIECES	1	1	1

**REPAIR KITS**

**TORQUE SPECS\***

KIT NO.	Valves K309	Oil Seal K311	Packing Kits Ø 13		Packing Kits Ø 15			
			K318	K319	K312	K312H'	K313	K312H'
ITEM NO'S INCLUDED IN KIT	2, 3, 4, 5, 6, 13, 13, (7), (15)	31	17, 18, 19, 21, 22	17, 18, 19, 20, 21, 22, 56	17, 18, 19, 21, 22	17, 18, 19, 21, 22	17, 18, 19, 20, 21, 22, 56	17, 18, 19, 20, 21, 22, 56
NUMBER OF ASSY'S IN KIT	6	3	3	1	3	3	1	3
NO. OF CYLINDERS KIT SERVICES	3	3	3	1	3	3	1	3

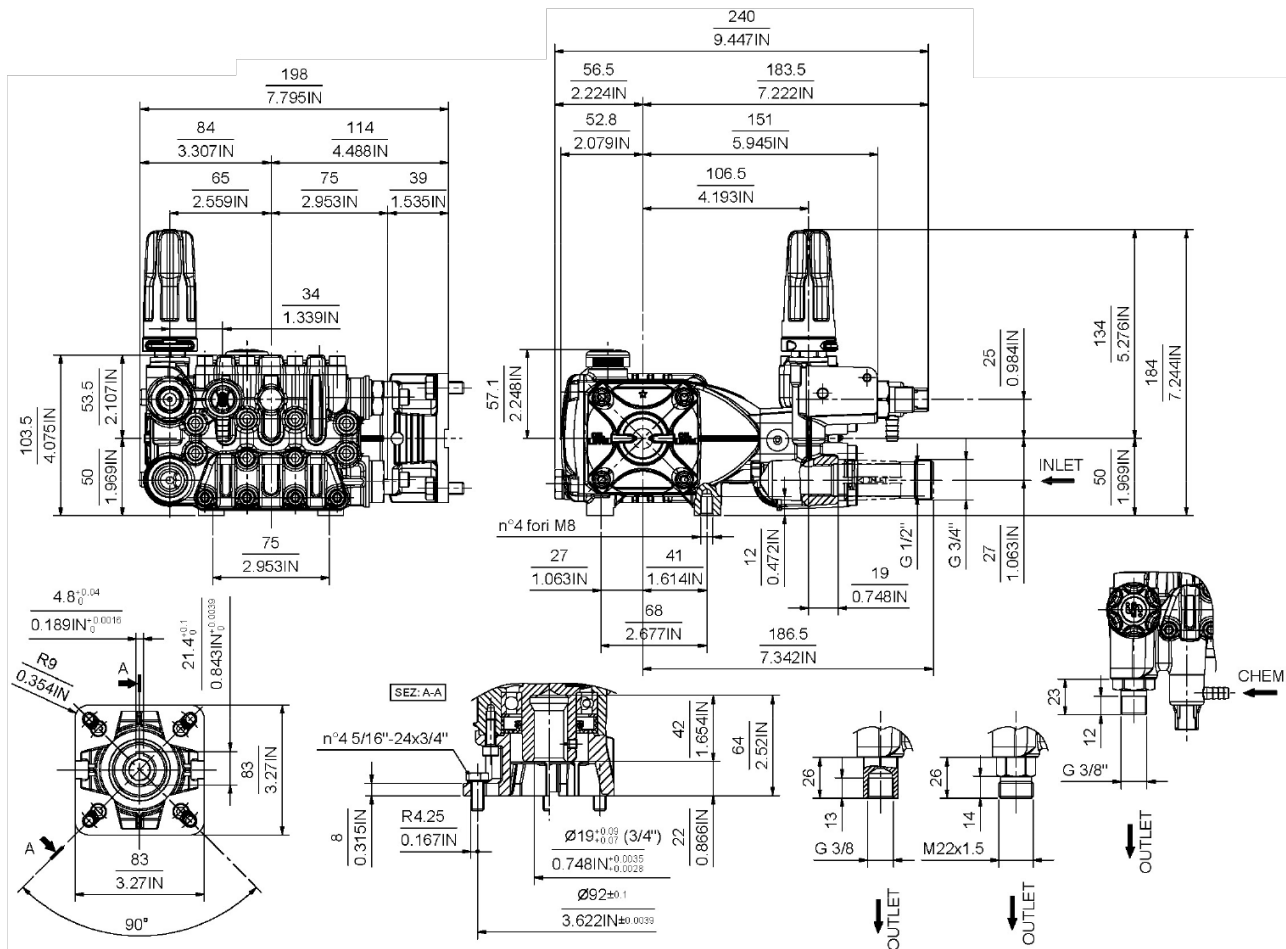
Position	Ft.-Lbs.	Nm.
8	8.9	12
10	4.4	6
16	8.9	12
24**	30	40
26	30	40
36	32.5	10
48	14.8	20
50**	9.6	13
53	7.4	10

\*Decrease torque by 20% if threads are lubricated.

\*\*Use Loctite 542 Red

\*Note: Seal tools included

**DIMENSIONS**



**WARNING: High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices properly could result in personal injury or damage to pump or property. GP does not assume any liability or responsibility for the operation of the user's high pressure system.**

**WARNING:** This product can expose you to chemicals including lead, which is known to the state of California to cause cancer and birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

