TRIPLEX

GENERAL PUMP *A member of the Interpump Group*

ESN Series

Triplex Plunger Pump, Solid Shaft, Nickel-Plated

FEATURES

- Triplex plunger pump
- Nickel-Plated manifold
- New plunger guide bushing (patent pending)
- Solid ceramic plungers with dual guide system
- New optimized outlet valves
- Exclusive protection chamber between crankcase and manifold
- New dual lip oil seal



SPECIFICATIONS

Pump Model	ESN2212S	ESN2213S	ESN1810S	ESN2010S	ESN2012S	ESN2013S
Max Volume	4.76 GPM	5.55 GPM	3.43 GPM	3.96 GPM	4.76 GPM	5.55 GPM
Max Discharge Pressure	3,045 PSI		4,000 PSI			3,625 PSI
Horsepower	9.8 EBHP	11.5 EBHP	9.4 EBHP	10.9 EBHP	13.0 EBHP	13.6 EBHP
Max Pump Speed	1450 RPM		1750 RPM			
Inlet Pressures	Flooded to 70 PSI					
Plunger Bore (in / mm)	.866 in./22 mm		.709 in./18 mm	.787 in./20 mm		
Plunger Stroke (in / mm)	.472 in./12 mm	.512 in./13 mm	.394 in./10 mm		.472 in./12 mm	.512 in./13 mm
Oil Capacity	22 oz. (.65 liters)					
Max Fluid Temperature	165° F					
Inlet Port Thread	1/2"-14 BSP-F					
Discharge Port Thread	3/8"-19 BSP-F					
Shaft Diameter	.945 in./24 mm					
Weight	21 lbs.					
Dimensions - Nominal	10.4” x 8.8” x 5.4”					

TRIPLEX

Instructions and Recommendations for the Installation of *ESN Series Pumps*

Maximum temperature of the water through the pump is 165ºF (73ºC).

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.**

Note: Contact General Pump's technical sales department for guidance when operating the pump outside of the related inlet specs.

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/mi)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.**

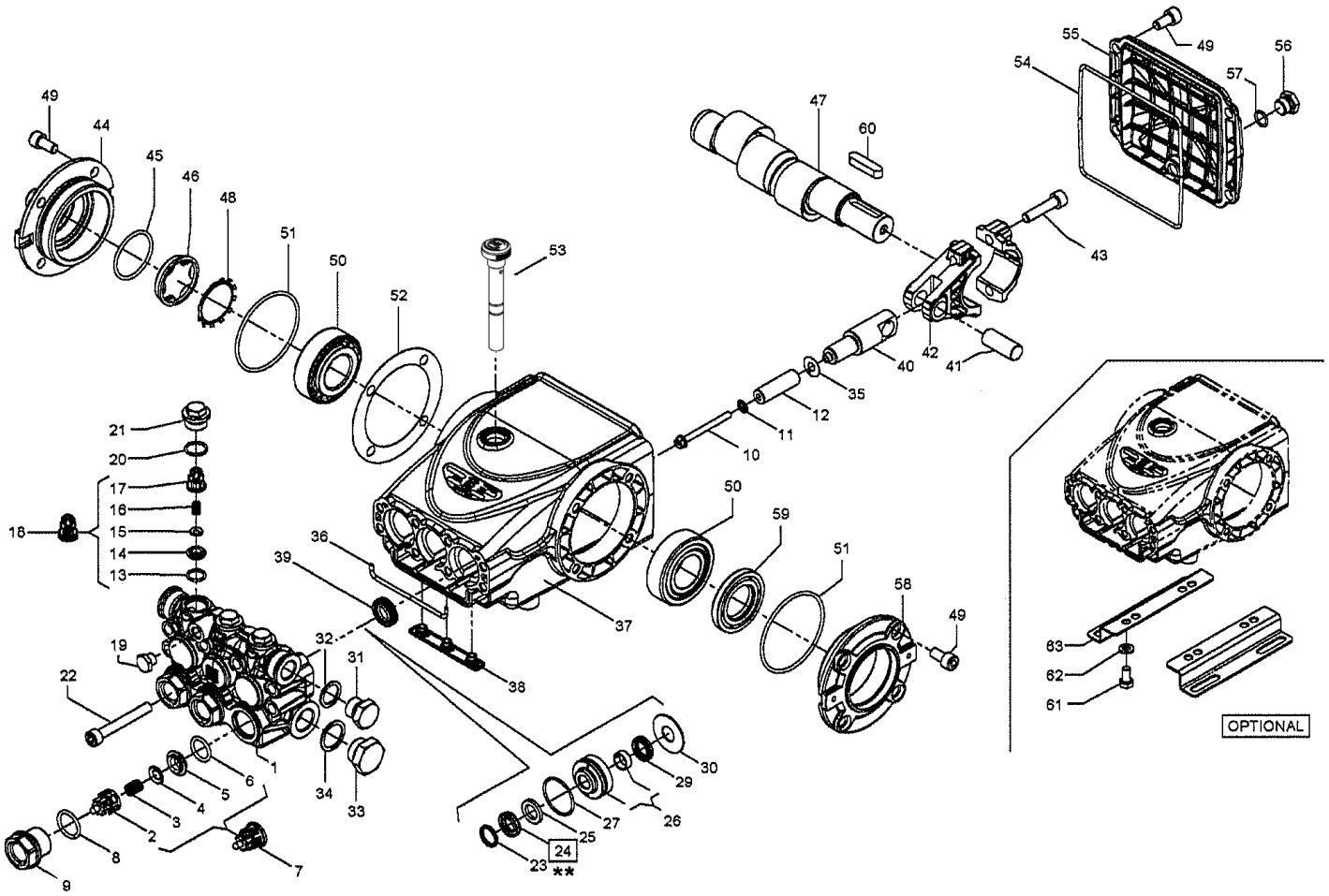
Please note: If the pump works in conditions with high humidity and with sharp temperature changes, it is possible that condensation will appear inside the crankcase, which mixing with the oil can change its properties. This is easy to see because the oil changes to a white, milky color.

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

ESN Series
Solid Shaft, Nickel-Plated Manifold



PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1.	59121241	Manifold, Ø 18	1
	59121341	Manifold, Ø 20	1
	59121441	Manifold, Ø 22	1
2.	36202551	Valve Cage	3
3.	94767600	Spring, Ø 9.4x14.8	3
4.	36200176	Valve, Spherical	3
5.	36200366	Valve Seat, Inlet	3
6.	701115	O-ring, Ø17.13v2.62	3
7.	36711501	Valve Assembly	3
8.	701002	O-ring, Ø20.24x2.62	3
9.	98222500	Valve Cap, M24x1.5x16.7	3
10.	99169000	Plunger Bolt, M5x55	3
11.	96690500	Washer, Ø 5x11.5x0.4	3
12.	58040209	Plunger, Ø 18x42	3
	59040009	Plunger, Ø 20x42	3
	59040109	Plunger, Ø 22x42	3
13.	701014	O-ring, Ø 12.42x1.78	3
14.	36211366	Outlet Valve Seat	3
15.	36211276	Outlet Valve Poppet	3
16.	94733300	Spring, Ø 6.2x10.4	3
17.	36211151	Outlet Valve Cage Guide	3
18.	36719301	Complete Outlet Valve	3
19.	98196700	Plug, Nickel	3
20.	701016	O-ring, Ø 15.6x1.78	3
21.	98213750	Valve Cap, M18x1.5x10	3
22.	99317500	Screw, M8x60	8
23.	66100751	Head Ring, Ø 20	3
	66100951	Head Ring, Ø 22	3
	63101051	Head Ring, Ø 18	3

ITEM	PART NO.	DESCRIPTION	QTY
24.	90269100	Packing, Ø 20, HP	3
	90271600	Packing, Ø 22, HP	3
	90265350	Packing, Ø 18, HP	3
25.	90511150	Anti-ext. Ring, Ø 18	3
	90513400	Anti-ext. Ring, Ø 20	3
	90514850	Anti-ext. Ring, Ø 22	3
26.	59606001	Intermed. Ring, Ø 18	3
	59606101	Intermed. Ring, Ø 20	3
	59606201	Intermed. Ring, Ø 22	3
27.	90361200	O-ring, 31.47x1.78	3
29.	90269000	Seal, Ø 20, LP	3
	90271500	Seal, Ø 22, LP	3
	90265000	Seal, Ø 18 LP	3
30.	59210770	Support Ring, Ø 18	3
	59210870	Support Ring, Ø 20	3
	59210970	Support Ring, Ø 22	3
31.	98209900	Plug, 3/8”x13, Nickel	1
32.	96738000	Gasket, 17.5x23x1.5	1
33.	98217900	Plug, 1/2” BSPx10, Nickel	1
34.	96751400	Gasket, Ø 21.5x27x1.5	1
35.	96699000	Washer, Ø 7.5x23x0.5	3
36.	59211082	Gasket, Ø 3x103	1
37.	59010022	Crankcase	1
38.	58210451	Drip Cover	1
39.	90156550	Oil Seal, Ø 15x24x5.7	3
40.	59050066	Piston Guide	3
41.	97739900	Piston Pin, Ø 14x34	3
42.	59030001	Connecting Rod	3
43.	99309900	Connecting Rod Screw	6

ITEM	PART NO.	DESCRIPTION	QTY
44.	47151222	Crankcase Cover, Side	1
45.	90387700	O-ring, Ø 39.34x2.62	1
46.	70211801	Sight Glass	1
47.	59020135	Crankshaft	1
		(ESN2013S, ESN2213S)	
	59020235	Crankshaft	1
		(ESN2012S, ESN2212S)	
	59020335	Crankshaft,	1
		(ESN1810S, ESN2010S)	
48.	90075600	Retaining Clip	2
49.	99303900	Screw, M8x16	12
50.	640047	Tapered Roller Bearing	2
51.	90391300	O-ring, Ø 67.95x2.62	2
52.	97568000	Shim, 0.3 mm	1
	97597800	Shim, 0.1 mm	1
53.	98211300	Oil Dipstick	1
54	90392200	O-ring, Ø133.02x2.62	1
55.	59160022	Rear Cover	1
56.	98204250	Plug, 1/4”x9	1
57.	701013	O-ring, Ø 10.82x1.78	1
58.	47151022	Side Cover	1
59.	90164800	Oil Seal, Ø 30x55x7	1
60.	91489200	Key	1
61.	99303700	Screw, M8x16	4
62.	96701600	Washer, Ø 8.4	4
63.	50200074	Pump Foot	2

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REPAIR KITS

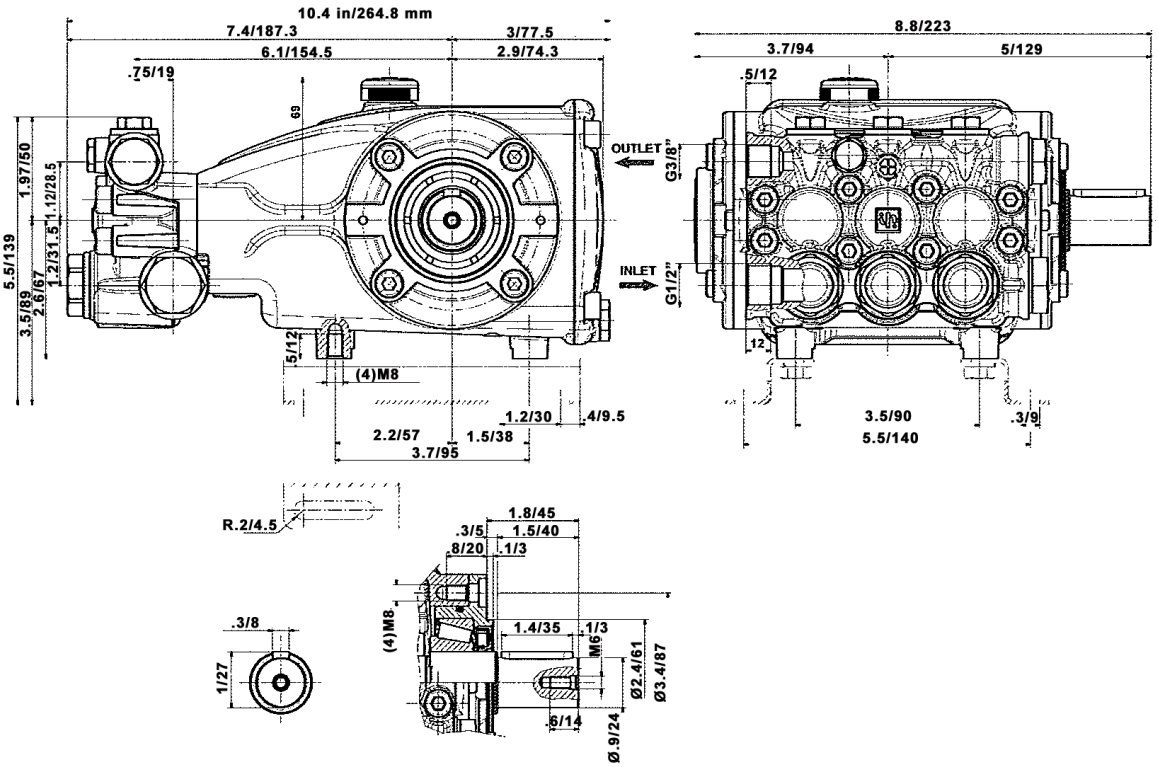
KIT NO.	K269	K270	K271	Ø 18		Ø 20		Ø 22	
				K284	K289	K285	K290	K286	K291
ITEM NO'S INCLUDED IN KIT	2, 3, 4, 5, 6, 13, 14, 15, 16, 17, (7), (18)	8, 9, 20, 21	39	23, 24, 25, 27, 29	23, 24, 25, 26, 27, 29, 30	23, 24, 25, 27, 29	23, 24, 25, 26, 27, 29, 30	23, 24, 25, 27, 29	23, 24, 25, 26, 27, 29, 30
NUMBER OF ASSY'S IN KIT	6	6	3	3	1	3	1	3	1
NO. OF CYLINDERS KIT SERVICES	3	3	3	3	1	3	1	3	1

TORQUE SPECS*

Position	Ft.-Lbs.	Nm.
9	96	130
10	4.5	6
19*	9.6	13
21	44.3	60
22	14.8	20
31	30	40
33	30	40
43	14.8	20
49	14.8	20
56	14.8	20
61	14.8	20

*Use Loctite 542 Red

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 know to the state of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

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