

FEATURES

- SAE B 2/4 bolt mount flange
- 7/8" Hollow keyed shaft
- Tach sensor port & pickup ring included
- Tach sensor optional
- Solid ceramic plungers with dual guide system
- Optimized outlet valves
- Exclusive protection chamber between crankcase and manifold
- Dual lip oil seal

**SPECIFICATIONS**

Pump Model	ES2012HYD	ES2013HYD
Max Volume	4.76 GPM	5.55 GPM
Max Discharge Pressure	4,000 PSI	3,600 PSI
Horsepower (Hydraulic)	11.1 HHP	11.7 HHP
Max Pump Speed	1,750	
Max Inlet Pressure	125 PSI	
Plunger Bore (in/mm)	.787 in/20 mm	
Plunger Stroke (in/mm)	.472 in/12 mm	.512 in/13 mm
Oil Capacity	22 oz. (.65 liters)	
Max Fluid Temp	165° F	
Inlet Port Thread	1/2"-14 BSP-F	
Discharge Port Thread	3/8"-19 BSP-F	
Shaft Diameter	7/8" Hollow Keyed Shaft SAE B	
Weight	21 lbs.	
Dimensions	10.4" x 8.8" x 5.4"	

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General Pump
is a member of
the Interpump Group



Ref 310168 Rev.A
04-19



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

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

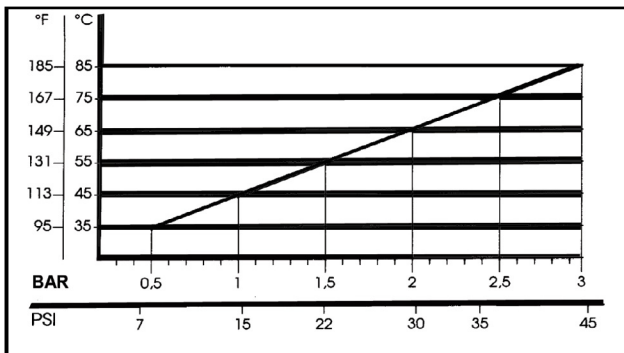
In order to obtain maximum performance in terms of duration of seals and valves, it is necessary to respect a few simple rules, as follows:

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**.

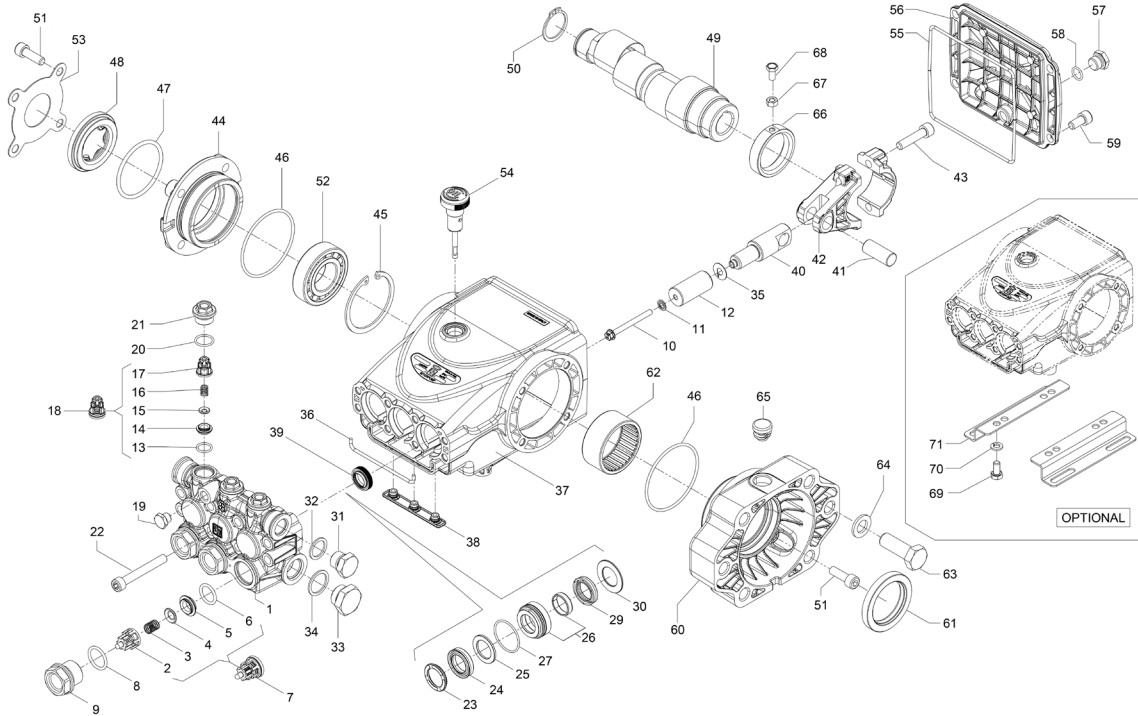
This change is not recommended because the oil has lost its properties, but rather to eliminate the impurities that have gotten into the oil during the break-in phase. If these impurities are not removed, but are allowed to remain in the oil, they *may cause premature wear* to the moving parts and the 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 SAE15W40	
General Pump	Series 100
BP	VISCO 2000
CASTROL	CWX
MOBIL	SUPER
SHELL	HELIX SUPER
TOTAL	QUARTZ 4000-5000



PARTS LIST

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	59120341	Manifold, Ø 20	1	24	90269100	Packing, Ø20, HP	3	49	59021265	Crankshaft, Ø12	
2	36202551	Valve Cage	3	25	90513400	Anti-ext. Ring, Ø20	3		59021365	Crankshaft, Ø13	
3	94767600	Spring, Ø 9.4 x 14.8	3	26	59606101	Intermed. Ring, Ø 18	3	50	90066700	Snap Ring, Ø30	
4	36200176	Valve, Poppet, Inlet	3	27	90361200	O-ring, 31.47 x 1.78	3	51	99306900	Screw, M8 x 25	8
5	36200366	Valve Seat, Inlet	3	29	90069000	Seal, Ø 20, LP	3	52	91837600	Tappers Roller Bearing	2
6	701115	O-ring, Ø 17.13 x 2.62	3	30	59210870	Support Ring, Ø 20	3	53	66150274	Bearing Cover	1
7	36711501	Valve Assembly	3	31	98210000	Plug, 3/8" x 13	1	54	98210500	Oil Dipstick	1
8	701002	O-ring, Ø 20.24 x 2.62	3	32	96738000	Gasket, 17.5 x 23 x 1.5	1	55	90392200	O-ring, Ø 133.02 x 2.62	1
9	98222600	Valve Cap, M24x1.5x16.7	3	33	98217600	Plug, 1/2" BSPx10	1	56	59160022	Rear Cover	1
10	99169000	Plunger Bolt, M5 x 55	3	34	96751400	Gasket, Ø 21.5 x 27 x 1.5	1	57	98204250	Plug, 1/4" x 9	1
11	96690500	Washer, Ø 5 x 11.5 x 0.4	3	35	96699000	Washer, Ø 7.5 x 23 x 1.5	1	58	701013	O-ring, Ø 10.82 x 1.78	1
12	59040009	Plunger, Ø 20 x 42	3	36	59211082	Gasket, Ø 7.5 x 23 x 0.5	3	59	99303900	Screw, M8 x 16	12
13	701014	O-ring, Ø 12.42 x 1.78	3	37	59010022	Crankcase	1	60	10087122	Hydraulic Flange, SAE B	1
14	36211366	Outlet Valve Seat	3	38	58210451	Drip Cover	1	61	90169000	Ring, Ø .45 x 62 x 8	1
15	36211276	Outlet Valve Poppet	3	39	90156550	Oil Seal, Ø 15 x 24 x 5.7	3	62	91858500	Roller Bushing, 50x58x25	1
16	94733300	Spring, Ø 6.2 x 10.4	3	40	59050066	Piston Guide	3	63	99484800	Screw, M14 x 40	2
17	36211151	Outlet Valve Cage Guide	3	41	97739900	Piston Pin, Ø 14 x 34	3	64	96728200	Washer, 14 x 24 x 2.5	2
18	36719301	Complete Outlet Valve	3	42	59030001	Connecting Rod	3	65	90206500	Plug, Ø17	1
19	98196600	Plug	3	43	99309900	Connecting Rod Screw	6	66	71228971	Ring, Ø 40	1
20	701016	O-ring, Ø 15.6 x 1.78	3	44	59150022	Crank Case, Side Cover	1	67	92202500	Nut, M6 x 5	1
21	98213700	Outlet Valve Cap, M81&x.15x10	3	45	90085000	Snap Ring, Ø 62	1	68	70227034	Bolt, M6 x 12	1
22	99317500	Screw, M8 x 60	8	46	90391300	O-ring, Ø 67.95 x 2.62	2	69	99303700	Screw, M8 x 16	4
23	66100751	Head Ring, Ø 20	3	47	90409700	O-ring, Ø 55.56 x 3.53	1	70	96701600	Washer, Ø 8.4	4
				48	44211801	Sight Glass	1	71	50200074	Pump Foot	2

REPAIR KITS

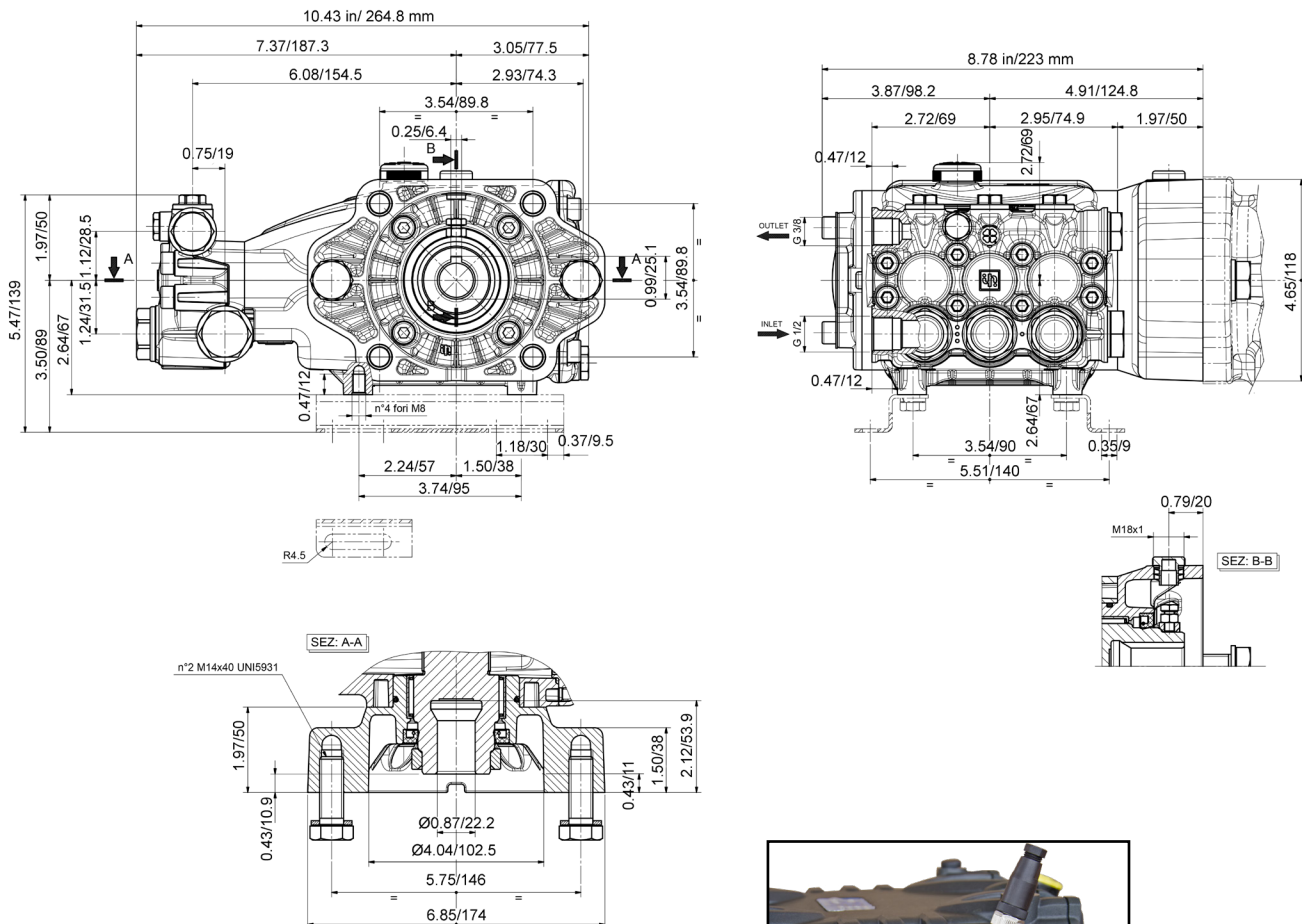
KIT NO.	K269	K270	K271	Ø 20	
				K285	K290
ITEM NO'S INCLUDED IN KIT	2, 3, 4, 5, 6, 13, 14, 15, 16, 17, (7), (18)	8, 9, 20, 21	39	23, 24, 25, 27, 29	23, 24, 25, 26, 27, 29, 30
NUMBER OF ASSY'S IN KIT	6	6	3	3	1
NO. OF CYLINDERS KIT SERVICES	3	3	3	3	1

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

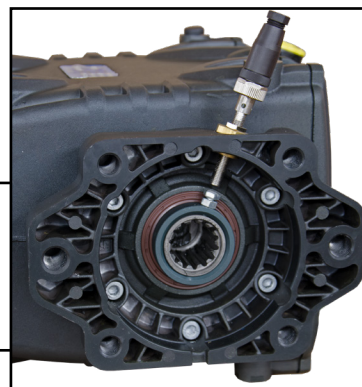
*Use Loctite 542 Red

DIMENSIONS



Optional: ZRPM1 RPM Counter

Inductive proximity sensor, c/w female connector M12 4 pin, IP67, field attachable, ring nut reduction M18 x 1. Power Supply: 12/24 VDC



WARNINGS



A suitably-calibrated over pressure valve must be installed, as well as the pressure regulating valve, must be installed on the high-pressure line.

The high-pressure pipes must be correctly sized for the system's maximum working pressure and used exclusively within the working pressure range indicated by the pipe manufacture and marked on the pipe itself.



The ends of the high-pressure pipes must be sheathed and secured to a solid structure, so as to avoid the risk of whiplash if the connections burst or break.

The pump transmission systems (joints, pulleys, belts, rotary shafts), must be suitably covered by a protective case.

If in doubt, do not hesitate to call the Interpump Group / General Pump Customer Service.