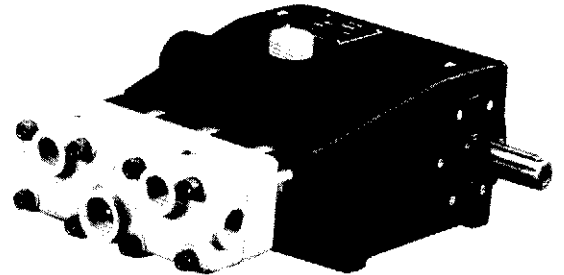


**APPLICATIONS**

EKN Series pumps are designed to pump water and aggressive liquids in a wide variety of industrial applications which include portable and stationary high pressure cleaning systems, hydrostatic test units, sewer and pipe cleaning equipment, reverse osmosis and water reclamation systems.

**FEATURES**

- Heavy cast iron crankcase
- Stainless steel manifold
- Shaft bearings with forged roller rims
- Double projection, gas-nitride, hardened steel crankshaft
- Forged steel connecting rods with anti-friction bearings
- Stainless steel valves
- Ceramic-coated plungers



**PERFORMANCE DATA**

RPM	EKN 18	EKN 20	EKN 22	EKN 25	EKN 30	EKN 32	FLOW
500	3.9	4.9	5.8	7.8	10.8	12.3	GPM
600	4.6	5.7	7.0	9.3	13.0	14.8	GPM
750	5.8	7.1	8.7	11.6	16.3	18.5	GPM
1000	7.9	9.8	11.9	15.6	N/A	N/A	GPM
MAX PSI	4350	3600	3050	2300	2150	1850	
HORSEPOWER FORMULA				RPM FORMULA			
$\frac{\text{GPM} \times \text{PSI}}{1460} = \text{REQUIRED BRAKE H.P.}$				$\frac{\text{RATED RPM} \times \text{DESIRED GPM}}{\text{RATED GPM}} = \text{PUMP RPM}$			

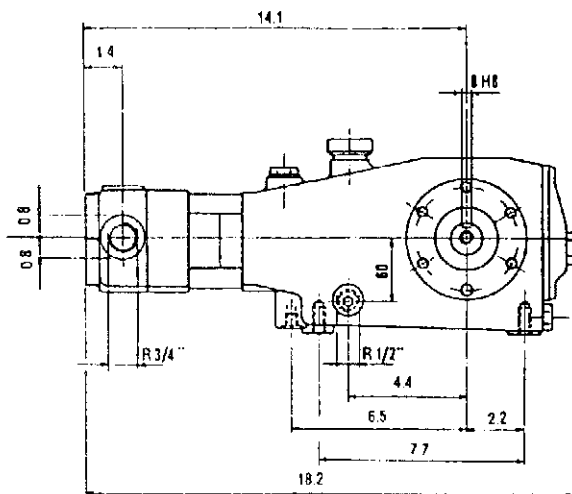
Performance data stated at 100% volumetric efficiency. Based on inlet water conditions, pump volumetric efficiency is 95% or greater.

**SPECIFICATIONS**

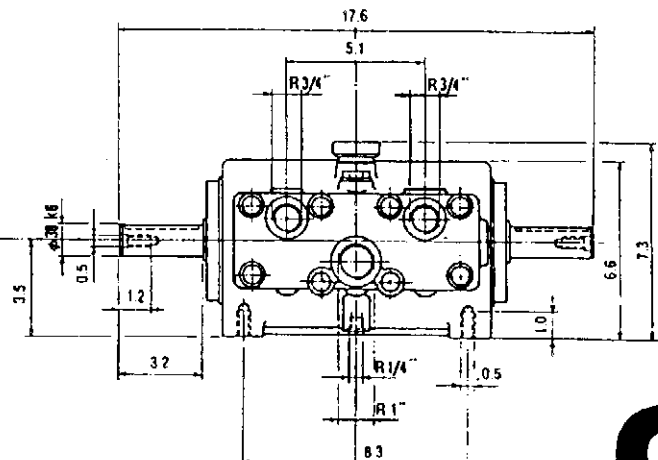
Volumes	7.9 to 18.5 GPM
Discharge Pressure	4350 PSI Max.
Max. Inlet Pressure	Flooded to 45 PSI Max.
Fluid Temperature	150°F Max.*
Crankcase Capacity	64 oz.
Inlet Fitting	1 in. NPT F
Discharge Port	3/4 in. BSPP
Discharge Fitting	3/4 in. NPT F
Shaft Diameter	35 mm
Weight	120 lbs.
Dimensions	18.1 in. L x 17.5 in. W x 7.2 in. H

\*See Fluid Temperature Section

**SIDE VIEW**



**END VIEW**





## **DESIGN CRITERIA**

General Industrial EKN Series Triplex Plunger Pumps are designed and manufactured to pump water and other liquids of similar viscosity compatible with the construction materials used in the pump.

Durable by design, EKN Series Pumps are ideal for a wide variety of high-pressure applications including intermittent or continuous duty high-pressure cleaning and water sandblasting.

Optimum pump performance can only be achieved if the entire fluid system is designed and built using properly sized plumbing and accessories. General EKN Industrial Pumps are positive displacement pumps and require the use of a properly designed pressure relief mechanism in the discharge plumbing of any system using these pumps. **Failure to install a relief mechanism could result in personal injury or damage to the system.**

**General Pump, Inc. does not assume any liability or responsibility for the design and operation of a customer's high-pressure system.**

## **PUMP SELECTION - NORMAL DUTY**

The General Industrial EKN Series offers a wide range of flow, pressure and drive options. Pump performances indicated for the EKN Series (RPM, GPM, PSI, fluid temperature) are the designed maximum for pumps operated on a **normal intermittent duty cycle.**

## **PUMP SELECTION - CONTINUOUS DUTY**

Most EKN Pumps can be re-rated for continuous duty by reducing the pump RPM by 25% minimum and by installing a feed pump capable of delivering two times the operating flow rate at 45 PSI maximum. In selecting a pump for continuous duty, optimal performance is accomplished by using the largest plunger diameter practical and reducing the RPM to deliver the desired flow. **Do not exceed the maximum rated discharge pressure of this pump.**

**Example:** Customer requirement is 5.8 GPM @ 1160 PSI. According to the catalogue, the EKN 18 operated at 750 RPM would be the proper pump for intermittent duty. For continuous duty select the EKN Series pump that allows for the most reduction in crankshaft speed. The EKN 22 operated at 500 rpm will deliver the desired performance on a continuous duty basis. The EKN 22 was selected instead of the EKN 25, because the EKN 25 would have to be operated at 375 RPM to produce the desired flow (too slow for proper lubrication).

**Proper splash lubrication requires a 500 RPM minimum internal crankshaft speed.**

## **PUMP INSTALLATION**

When designing a system, **keep the inlet plumbing as simple as possible using a minimum amount of fittings or elbows with no elbows within 12" of pump inlet.**

Pump life is considerably influenced by the condition of the fluid supplied to the inlet of the pump. **Inlet plumbing should be flexible reinforced hose, 1.5 to 2 times larger than the specified inlet port size.** Inlet and discharge fittings are furnished with each pump.

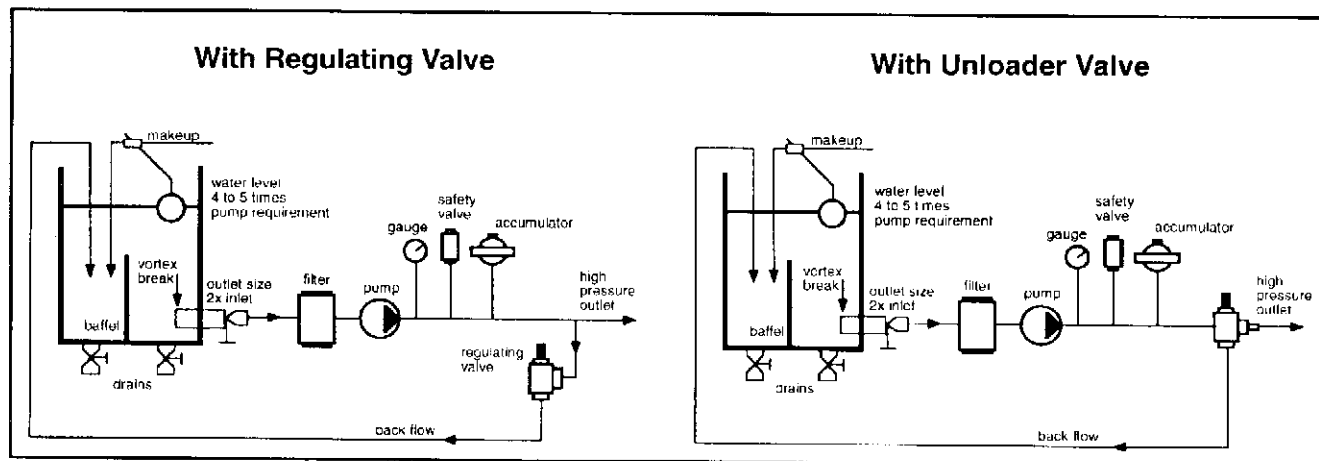
It is critical to provide airtight inlet plumbing sized to deliver an adequate volume of settled fluid to the pump **(minimum 2 times the operating flow rate).** This is best accomplished with a pressurized feed at 30-45 PSI or a flooded inlet.

**Do not let pump self prime.**

When using an inlet holding tank (float tank), size it according to the maximum rated output of the pump. Provide a **minimum of 5 times the operating flow rate (a 10 GPM pump requires a 50 GPM tank).** The feed tank should contain sufficient baffling to eliminate air bubbles and turbulence. Feed tanks should be mounted so the water level in the tank is always higher than the feed lines and the inlet port of the pump (flooded inlet). Diffusers should be installed on all return lines to the tank.



Typical Installation diagram:



## FLUID TEMPERATURE

EKN Series Pumps are rated for 150°F maximum fluid temperature. However, **when operating with fluid temperatures exceeding 110°F, a pressurized inlet is required.** Install a feed pump capable of delivering two times the operating flow rate at 45 PSI maximum, and follow continuous duty parameters.

## FILTERS

Install an inlet filter on all systems. The filter should be positioned as close as possible to the inlet of the pump. **The inlet filter capacity must be a minimum of three times the rated output of the pump.** Filter media of 50 to 80 microns is recommended for most systems.

## PUMP MOUNTING

The pump must be mounted in a horizontal position on a rigid base in a manner to permit drainage of crankcase oil. The pump should be flat with no more than a 5 degree incline. Pumps can be operated using pulley or direct drive. **Observe the specified pump rotation indicated by the arrows on the crankcase.** General Industrial Pumps are splash lubricated. By observing the proper rotation and crankshaft speed (500 RPM minimum), the crank mechanism puts oil in circulation through internal crankcase grooves so the connecting rods, bearings, piston guides and other surfaces requiring lubrication receive proper coverage.

Crankcase oil (Pennzoil RO 220 or equivalent) should be checked frequently and changed as follows: Initial oil change between the first 50 and 100 hours of operation; then after each successive 500 hours of operation.

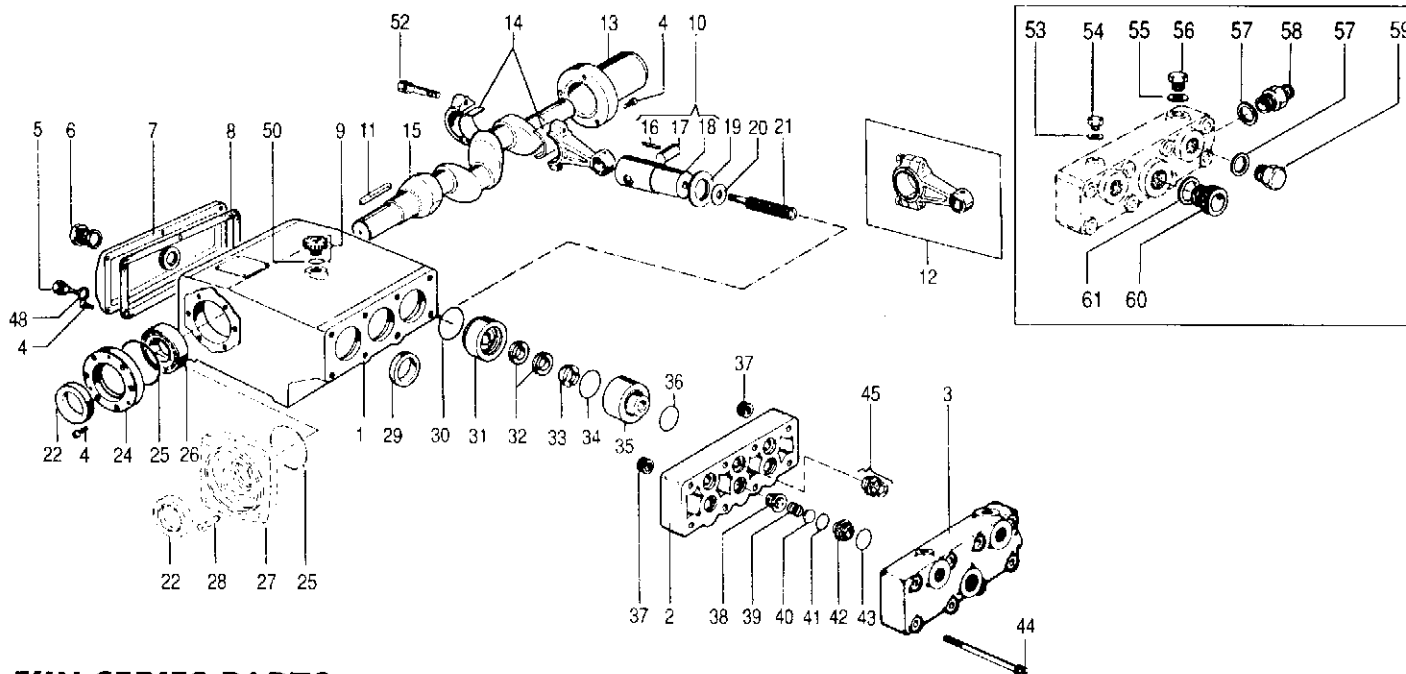
EKN Series Pumps are equipped with grease fittings (Position 29). Greasing should be done prior to initial start-up and after every 100 hours of operation. Using a hand grease gun, apply a high grade silicon grease with a penetration coefficient of 290. **Caution — Do Not Overlubricate — Stop At The First Sign Of Back Pressure To Avoid Damage To Packings.**

## START-UP

Check oil prior to start-up, and open all inlet and discharge valves. **Always start the pump in a zero pressure condition. Never let pump run dry.**

### WARRANTY

General Pump products are warranted by the manufacturer to be free from defects in material and workmanship. Period of warranty shall be 1 year from date product is received by original buyer. Liability of manufacturer under the foregoing warranty is limited to **repair or replacement** at the option of manufacturer of that product which according to the manufacturer's investigation was deemed defective at time of shipment. Damage resulting from neglect, abuse, tampering or misapplication voids the warranty. This warranty is in lieu of all other warranties, expressed or implied, including any warranty of merchantability and or any and all other obligations or liabilities on the part of the manufacturer.



## EKN SERIES PARTS

Pos. Code	Description	Qty.	Pos. Code	Description	Qty.	Pos. Code	Description	Qty.
1	F060100030	1	26	F811101006	2	F062200420	Cylinder EKN30	3
2	F064200010	1	29	F881081002	3	F062200430	Cylinder EKN32	3
3	F064200030	1	30	F881010012	3	36	F881010211	O-Ring
4	F871115603	6	31	F022300460	3	37	F043500000	Rubber Screw Protector
5	F801057011	1	F022300680	Packing Support EKN20	3	38	F021200010	Valve Guide
6	F801053003	1	F022300690	Packing Support EKN22	3	39	F090200160	Valve Spring
7	F063400770	1	F022300700	Packing Support EKN25	3	40	F082200000	Valve Disc
8	F080600000	1	F022300710	Packing Support EKN30	3	41	F881010113	O-Ring
9	F801054002	1	F022300720	Packing Support EKN32	3	42	F081200000	Valve Seat
10	F250001000	3	32	F881020000	6	43	F881011900	O-Ring
11	F071000010	1	F881020001	Packing EKN20	6	44	F871131723	Cap Screw
12	F250000060	3	F881020003	Packing EKN22	6	45	F208005640	Suction/Discharge Valve Assembly
13	F040400020	1	F881020005	Packing EKN25	6	48	F030300000	Aluminum Washer
14	F023300040	3	F881020006	Packing EKN30	6	50	F881011173	O-Ring
15	F050000010	1	F881020019	Packing EKN32	6	52	F871350002	Connecting Rod Screw
16	F872138010	3	33	F031200380	3	53	F030300080	Washer
17	F071000000	3	F031200390	Packing Ring EKN20	3	54	F084200150	Plug
18	F020000010	3	F031200400	Packing Ring EKN22	3	55	F084200140	Plug
19	F041200000	3	F031200410	Packing Ring EKN25	3	56	F030300010	Washer
20	F010200000	3	F031200420	Packing Ring EKN30	3	57	F030300020	Washer
21	F124200120	3	F031200430	Packing Ring EKN32	3	58	F084200170	Nipple
F124200130	Plunger EKN20	3	F881010119	O-Ring EKN18	3	59	F084200130	Plug
F124200140	Plunger EKN22	3	F881010121	O-Ring EKN20-22	3	60	F821013002	Reducer
F124200150	Plunger EKN25	3	F881010123	O-Ring EKN25-30	3	61	F872043008	Aluminum Washer
F124200160	Plunger EKN30	3	F881010012	O-Ring EKN32	3			
F124200170	Plunger EKN32	3	35	F062200380	3			
22	F881080014	2	F062200390	Cylinder EKN20	3			
24	F063400780	2	F062200400	Cylinder EKN22	3			
25	F881013100	2	F062200410	Cylinder EKN25	3			

## REPAIR KITS

POSITIONS INCLUDED	N.PCS.	EKN 18	EKN 20	EKN 22	EKN 25	EKN 30	EKN 32
32, 34	3-6	KIT 400	KIT 401	KIT 402	KIT 403	KIT 404	KIT 405
30, 31	3	KIT 546	KIT 547	KIT 548	KIT 549	KIT 550	KIT 551
33	3	KIT 552	KIT 553	KIT 554	KIT 555	KIT 556	KIT 557
30, 31, 32, 33, 34	1-2	KIT 558	KIT 559	KIT 560	KIT 561	KIT 562	KIT 563
38, 39, 40, 41, 42, 43, (45)	1			KIT 564			
29	3			KIT 425			
22	2			KIT 426			
25, 30, 36, 41, 43, 48, 50	3-20			KIT 565			

## TORQUE SPECS

Position	Ft./lbs.
21	36
44	144
52	18

## GENERAL PUMP INCORPORATED

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