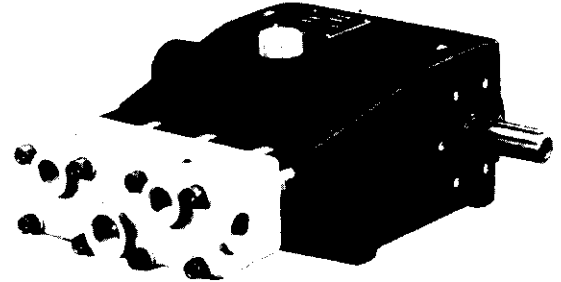


APPLICATIONS

EK Series pumps are designed for a wide variety of industrial applications which include portable and stationary high-pressure cleaning systems, hydrostatic test units, sewer and pipe cleaning equipment and water reclamation systems.

FEATURES

- Heavy cast iron crankcase
- Nickel-treated nodular cast iron manifold
- Optional 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	EK 18	EK 20	EK 22	EK 25	EK 30	EK 32	FLOW
500	4.0	4.9	6.0	7.8	10.8	12.3	GPM
600	4.7	5.9	7.1	9.4	13.0	14.8	GPM
750	5.9	7.4	8.9	11.7	16.3	18.5	GPM
1000	7.9	9.8	11.9	15.6	NA	NA	GPM
MAX PSI	4350	3600	3050	2300	2150	1850	
HORSEPOWER FORMULA			RPM FORMULA				
$\frac{\text{GPM} \times \text{PSI}}{1460} = \text{REQUIRED BRAKE H.P.}$			$\frac{\text{RATED RPM} \times \text{DESIRED GPM}}{\text{RATED GPM}} = \text{PUMP RPM}$				

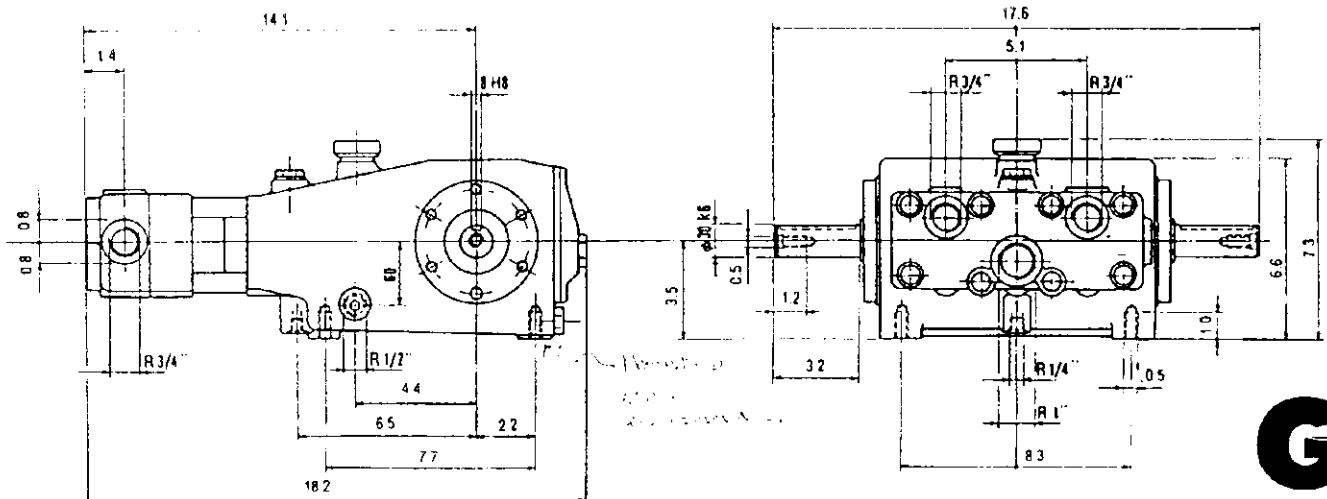
- Volumes 7.9 - 18.5 GPM
- Discharge Pressure 1850 - 4350 PSI
- Max. Inlet Pressure Flooded to 45 PSI Max
- Fluid Temperature 150°F Max.*
- Crankcase Capacity 64 oz.
- Inlet Fitting 1 in. NPT F
- DischargePort 3/4 in. BGT
- Discharge Fitting 3/4 in. NPT M
- Shaft Diameter 30 mm
- Weight 120 lbs.
- Dimensions 18.2 in. L x 17.6 in. W x 7.3 in. H

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

*See Fluid Temperature Section

SIDE VIEW

END VIEW





DESIGN CRITERIA

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

PUMP SELECTION - CONTINUOUS DUTY

Most EK 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 9.8 GPM @ 2300 PSI. According to the catalogue, the EK 20 operated at 1000 RPM would be the proper pump for intermittent duty. For continuous duty select the EK Series pump that allows for the most reduction in crankshaft speed. The EK 25 operated at 630 rpm will deliver the desired performance on a continuous duty basis. The EK 25 was selected instead of the EK 32, because the EK 32 would have to be operated at 384 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 fittings or 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.

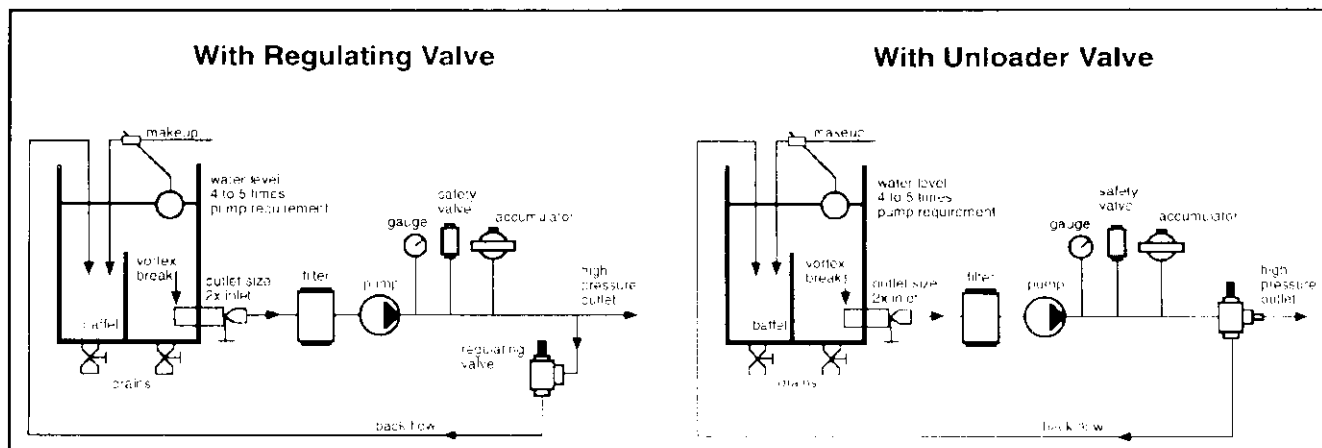
It is critical to provide airtight inlet plumbing sized to deliver an adequate volume of settled fluid to the pump **(minimum 2 times the operating flow rate)**. This is best accomplished with a pressurized feed at 30-45 PSI or a flooded inlet.

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

EK 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 lead 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.

START-UP

Check oil prior to start-up. Make sure water supply is turned on. **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.

