

GKE25 LEAKAGE DETECT DEVICE
STAINLESS STEEL ELECTRIC
DIAPHRAGM PUMP DETAILS

PRODUCT SPECIFICATIONS



Technical Specifications	
Max. Output Pressure	0.6Mpa
Max Flow Rate	2.5m3/h
Suction Lift	3m
Motor Power	1.5KW in standard
Motor Speed	1450r/min
Inlet & Outlet	1" Threaded or Flange

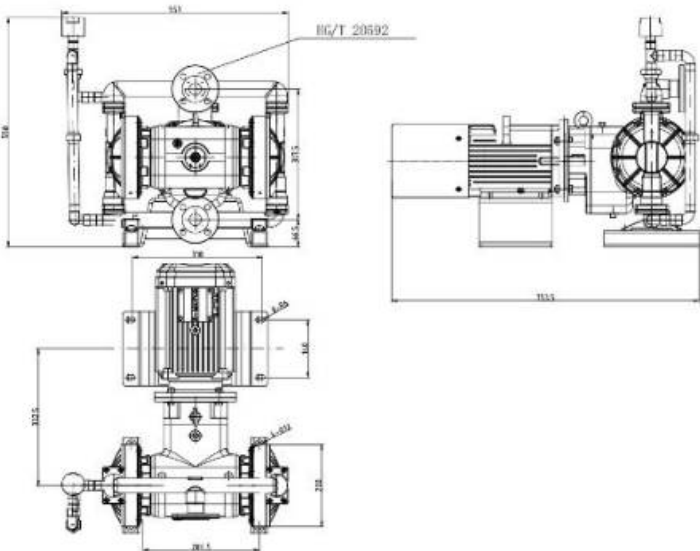
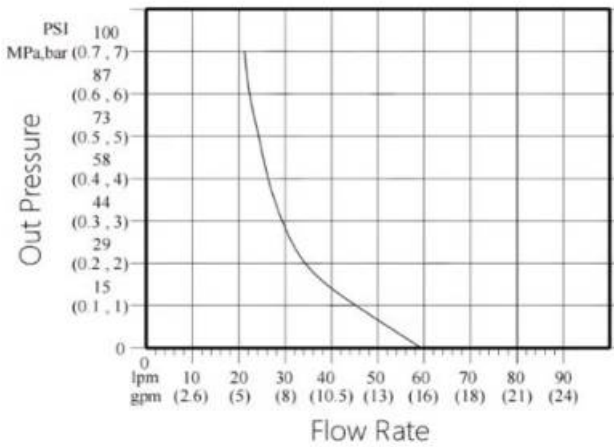
Product Overview

Ginkai Stainless Steel Series

Ginkai Stainless Steel Diaphragm Pump advantages:

- Premium Durability:
 - Constructed with 304/316/316L stainless steel for exceptional corrosion resistance.
 - Withstands high-temperature processes (up to 120°C) and high-pressure environments.
- Hygienic Excellence:
 - Ideal for FDA-regulated food, pharma, and biotech applications.
- Versatile Performance:
 - Efficiently transfers corrosive chemicals, viscous slurries, or abrasive media with suspended particles.
 - Zero contamination risk for ultra-clean processes like dairy filling or sterile pharmaceutical transfers.

GKE25 Technical Curve



I. GENERAL INFORMATION

The pneumatic diaphragm pump produced by our company with leakage alarm and shutdown device can prevent the leakage of transported fluid in the work. The advantage is that it can detect and stop working in time when the rubber diaphragm in the pneumatic diaphragm pump breaks.

The leak detection system integrates a leak cup, magnetic float ball, and magnetic reed switch mounted on the cup via stainless steel tubing. Each chamber of the pneumatic diaphragm pump contains two diaphragms with a central cavity. When the outer diaphragm (the liquid-pressure-bearing component) ruptures during prolonged operation, liquid flows into the leak cup. A permanent magnet in the cup lifts the cylindrical float ball, triggering the upper reed switch via its magnetic trigger mechanism. This triggers an alarm and shutdown, effectively preventing external leaks and internal component damage caused by liquid flow into the intermediate chamber after diaphragm failure. The system enables precise equipment localization, safeguarding personnel, enterprises, and environmental interests. Compared to non-equipped devices, this innovation delivers unparalleled advantages for businesses, society, and the environment, demonstrating significant practical value in real-world applications.

The pneumatic diaphragm pump with external leakage alarms and shutdown devices is available in four specifications, featuring inlet/outlet diameters of 1 ", 1.5", 2 ", and 3" respectively. The fluid components are made of stainless steel or plastic. Diaphragms are available in various materials including nitrile rubber, chloroprene rubber, polyethylene, three-way rubber, polyether rubber, fluororubber, PTFE, and PTFE, ensuring compatibility with different liquid media requirements.

II. Working Principle:

Working Principle of Pneumatic Diaphragm Pump: Within the two symmetrical working chambers of the pump, elastic diaphragms are installed. A connecting rod integrates these diaphragms into a single unit. Compressed air enters through the intake port and pushes the diaphragms in both chambers, driving synchronized movement of the connected rods. Simultaneously, gas from the other chamber is expelled through the diaphragm's rear side. When the piston reaches its end position, the valve mechanism automatically redirects compressed air to the opposite chamber, initiating reverse motion that creates synchronized reciprocating movement between the diaphragms. Each chamber contains two check ball valves. The reciprocating diaphragm motion alters chamber volume, forcing these valves to alternately open and close, thereby enabling continuous liquid intake and discharge.

The most distinctive feature distinguishing pneumatic diaphragm pumps from other types lies in their valve design. Unlike conventional models with O-ring and cylindrical structures, pneumatic pumps employ a three-way pilot valve system that eliminates valve dead points and pump shutdowns. This innovation delivers precise directional signals to prevent operational interruptions while enabling faster directional changes, resulting in higher flow rates. The optimized performance ensures reduced pulsation and more stable fluid movement.

The pneumatic diaphragm pump features a simple yet highly reliable air directional valve design, ensuring uninterrupted operation and avoiding costly downtime. All air valve components can be replaced without disassembling the fluid system. The aluminum parts undergo special treatment to resist corrosion from contaminated air. The plastic sliding block in the directional valve is robust and durable, requiring no lubrication to maintain unobstructed airflow and ensure smooth directional switching.

Advantages of our Electric Diaphragm Pumps

The GKE series electric diaphragm pumps produced by our company also have the following performance characteristics

1. When designing and manufacturing the electric diaphragms of our company, we fully consider the particularity of the new energy production field. All parts are manufactured without harmful materials such as zinc, copper, and lead, including the reducer parts, which do not contain zinc and copper, thereby ensuring the safety and reliability of the materials.
2. In the design and manufacturing of our company, the reducer and the drive shaft are designed as an integrated design, which occupies a small area and is beautiful. The parts in the intermediate body are immersed in lubricating oil, which can ensure that the entire box can be used normally for two years without unpacking and maintenance. In addition, a leakage alarm device is installed between the air chamber and the reduction drive box to ensure the safe and stable operation of the equipment.
3. The reciprocating motion mechanism and the reduction mechanism of the diaphragm pump are installed in the same box; the output shaft of the reduction mechanism is also the input shaft of the reciprocating motion, which saves the coupling and is more compact in structure;

GKE Series electric diaphragm pumps:



Others brand electric diaphragm pumps:





4. The design diameter of the diaphragm-connected transmission shaft is 60mm, which will not cause the shaft to break. The surface is hardened

and wear-resistant.

GKE Series electric diaphragm pump's diaphragm connected to transmission shaft:



Others brand electric diaphragm pump's diaphragm connected to transmission shaft,prone to wear and breakage.



5. The shell cavity is large, which is convenient for storing more lubricating oil and conducive to heat dissipation;
6. The reciprocating motion mechanism uses linear bearings as support, which has low friction resistance and is easy to replace;

GKE Series electric diaphragm pump's bearing,the bearing diameter is 160mm and the width is 28mm.



Others brand electric diaphragm pump's bearing,small size bearings are prone to cracking.



Additional functions (optional)

1. Buffering function: The outlet can be installed with a pulse buffer and used with accessories such as a pressure gauge. Through the change of the air chamber pressure, the pipeline pulsation caused by the volume of the diaphragm pump and the water hammer phenomenon of the system can be smoothed. Effectively reduce the system pulse of the diaphragm pump.
2. Detection function: The leak detection device is installed on the leak detection cup by a leak detection cup, a magnetic float and a magnetic reed switch, which are connected by a stainless steel pipe. When the diaphragm ruptures, the liquid flows into the leak detection cup through the pipeline, the float floats, triggers the magnetic reed switch, and the power is turned on to realize the alarm or shutdown. It eliminates the possibility of equipment leakage and liquid flowing to the intermediate body after the diaphragm is damaged, causing damage to internal accessories.
3. Back-washing: The inlet and outlet are equipped with a three-way T-type ball valve to realize the back-washing function and solve the problem of medium precipitation and blockage. When the pump is in normal use, the material is straight through and the pump conveys the material normally; when the pump stops running, the material inlet is closed, the flushing port is opened, and the back-washing starts.
4. Flow regulation: multiple flow regulation. Other manufacturers can only achieve flow changes through variable frequency motors. We can also adjust the flow by installing valves at the outlet. Even if the outlet flow is adjusted to zero, the pump will not be over-pressured, ensuring safety.