



## SINGLE - DIAPHRAGM PLUNGER PUMP & DOUBLE - DIAPHRAGM PLUNGER PUMP

INDUSTRIAL PUMPS

PS



### WORKING PRINCIPLE

#### SINGLE - DIAPHRAGM PLUNGER PUMP

- (1) By the eccentric wheel (no. 1) rotates, three plungers (no.2) are alternately pushed.
- (2) The plungers push three diaphragm by turns (no.3).
- (3) The diaphragms exert pressure to the liquid.
- (4) The valve sheets and valve seats (no.4 and no.5) of the pump make same function as one-way valve, making open-close working condition, and make liquid finish enter, press and discharge from pump.





**WORKING PRINCIPLE**

**DOUBLE - DIAPHRAGM PLUNGER PUMP**

- (1) Laser diffuse reflector is installed between the two diaphragms, and sensor will output NPN signals after receive reflected laser in red color.
- (2) If first diaphragm broken, material seep into space between two diaphragms, laser in red color is blocked by the material, sensor cannot receive reflected laser, then sensor output reversed PNP signals.
- (3) After receiving PNP signals, automatic system will compel the pump to stop, buzzing and alarm constantly, all series of actions will be finished within 0.01 second. This is upgrade mechatronics technology based on mechanical pump.

**G10**



**G25**



**G50**



**G35**



**ADVANTAGE**

- TRANSFER 50% EACH OF THE SOLID & LIQUID MIXTURE MATERIALS BY HIGH PRESSURE (SOLID MATERIALS < 1.5MM)
- MAXIMIZE BEST PERFORMANCE BY SPECIAL TRANSMISSION AND SEALING STRUCTURE

PRODUCT TYPE \ PRODUCT PERFORMANCE	Double diaphragm plunger pump	Single diaphragm plunger pump	Plunger pump	Diaphragm pump
Solid & liquid mixture materials transported by high pressure Pressure : 0-80 kg (0-8Mpa)	✓	✓	✗	✗
Liquid material transported by high pressure Pressure : 20 kg - 2000 kg (2-200Mpa)	✓	✓	✓	✗
Solid material transported by low pressure Pressure : <6 kg (0.6Mpa)	✓	✓	✗	✓
If diaphragm broken, the sensor send stop-signal and avoid materials entering into transmission assembly.	✓	✗	✗	✗



## CHARACTERISTIC



Wearing parts contains valve plate, seat and diaphragm, which can be replaced quickly



Avoid oil leaking when dismantle valve plate for replacing valve sheet and valve seat, no oil seeping, no air leakage



Improving size and material of plunger spring, which wedged into plunger inner wall, avoid spring broken frequently



Single-diaphragm pump can be upgraded as double-diaphragm plunger pump, equipped with automatic diaphragm broken detector and automatic alarm device

Double-diaphragm structure protects transmission system, especially second diaphragm prevent material leaking into transmission system even if first diaphragm broken



To change flow or pressure by adjusting rotated speed of motor  
keeping flow unchanged, the pressure can be modified separately by adjusting the outlet valve



FIELD OF APPLICATION

**Spray Drying Tower Equipment**

To pump and spray the liquid & solid solvent at the top of drying equipment, being dried during falling down by heat wind, and get average powder or granular at bottom of tower. Widely used on powder equipment and granulator equipment in dyestuff and pigment, chemical, pharmaceutical, pesticide, milk powder, washing powder, kaolin mineral industries, etc. Normally, 40 - 60 kgs.



**Seawater Desalination Treatment**

The pump delivers water to membranes of the reverse osmosis unit, provides pressure required by RO membranes, and widely used in sea water desalination and water treatment.



**High Pressure Machine Tool Cooling**

The pump improves utilization of recycled coolant on machine-tool, it pumps coolant fluids which are contaminated by particles from machining, and eliminates filtering process required by displacement, centrifugal, screw or piston pumps.



Single-diaphragm  
plunger pump  
Double-diaphragm  
plunger pump



**Natural Gas and Power Plant**

The pump can deliver solvent with 50% of solid content of iron oxyhydroxides, increase the wet-desulfuration efficiency, but normal pump only delivers 3-5% iron oxyhydroxides solvent.



**Plunger Metering Pump,**

**High-Pressure Diaphragm Metering Pump**

equipped with flow-meter reducer, the pump quantitatively & impulse-free convey material, cost lower than plunger metering pump or high-pressure diaphragm metering pump.

The pump are widely used in general industrial, dyestuff, chemical, petrochemical, machine tool coolant, marine, oil & gas, painting & coating, paper & pulp, pharmaceutical, food & drink, environmental control, polyurethane foam, power generation, reverse osmosis, spray drying, steam generation, steel industry, vehicle washing, water and waste treatment.