

General Description

Model 5710 metering pumps are of hydraulically actuated non-lost motion (amplitude modulated) diaphragm design. The unique method of actuation by means of a rotating plunger provides smoother, quieter operation. The design characteristics minimize back lash and shock loads to the process system.

5710 models are among the longest lasting pumps in the industry. These pumps will provide reliability in the heaviest workload environments, such as mining, nuclear plants, power plants and refineries/petroleum applications. These pumps meet API 675 standards.

Performance

The model 5710 offers maximum capacities from 2.5 gph (max. pressure of 4000 psig) to 37 gph (max. pressure of 875 psig). The stroking length can be manually or automatically adjusted from 0-100%. The pumps are available with up to five stroking speeds. All models may be duplexed.

While the pump is running or stopped, the stroke length may be manually adjusted from 0 to 100% by using the micrometer control. This moves an internal shift ring. The unique spring-loaded rotating plunger is always extending or compressing. It displaces hydraulic fluid through the hollow center of the drive shaft and flexes the diaphragm for a smooth reliable performance. Repetitive accuracy is $\pm 1\%$.

Oversized main bearings support the drive shaft across a very short span, maximizing mechanical efficiency and ensuring long pump life.

An independent speed reducer allows for two separate oil reservoirs to match the requirements for both the hydraulic system using low viscosity oil and the gear drive using lubricating gear oil.

Materials of Construction

Model 5710 can be supplied with Alloy 20, Hastelloy C, 316 Stainless Steel or Polypropylene (max. 150 psig) wetted ends. All diaphragms and seals are available in PTFE, suited for the most demanding chemical duty applications.

A rugged cast iron housing contains a high performance rotating plunger submersed in an oil reservoir. The plunger is the only reciprocating part in the entire hydraulic drive mechanism.



Features

- A micrometer stroke length adjustment allows for accurate capacity control of 0-100%
- Maximum operating pressure up to 4000 psig
- Power supply: 120 VAC single phase or 230/460 VAC 3-phase TE or XP motor
- Built-in pressure relief valve
- Compact design offers high capacity per square foot of space
- Double ball check valves
- High mechanical efficiency reduces power requirements

Options

- Double diaphragm system
- Electronic or pneumatic capacity control
- High suction lift head allows for up to 16 ft. suction lift

Applications

- Nuclear power
- Petro-chemical
- Paper mills
- Corrosives

Technical Data

| Model | | | 5710 | | | | | | | | |
|---|--|--------------|--|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Plunger diameter | in | | 19/32 | | | | 1-1/16 | | | | |
| Stroke frequency | SPM | | 58 | 88 | 117 | 175 | 233 | 58 | 88 | 117 | 175 |
| Capacity per head @ 100 psig | gph | | 4.1 | 6.2 | 8.3 | 12.5 | 16.5 | 13.3 | 20.0 | 26.7 | 40 |
| 1/4 Hp | Simplex: capacity at maximum pressure per head | gph@ psig | 3.3 2000 | 5.4 1460 | 7.4 1145 | 11.6 800 | 15.7 600 | 12.6 625 | 19.3 445 | 26.0 360 | 39.4 250 |
| | Duplex: capacity at maximum pressure per head | gph@ psig | 3.7 1000 | 5.8 730 | 7.9 570 | 12.1 400 | 16.2 300 | 13.0 315 | 19.7 230 | 26.5 180 | 39.9 125 |
| 1/2 Hp | Simplex: capacity at maximum pressure per head | gph@ psig | 2.5 4000 | 4.3 3210 | 6.3 2520 | 10.5 1700 | 14.5 1320 | 11.6 1380 | 18.2 1000 | 24.9 780 | 38.2 550 |
| | Duplex: capacity at maximum pressure per head | gph@ psig | 3.2 2200 | 5.3 1605 | 7.3 1265 | 11.5 880 | 15.6 660 | 12.5 690 | 19.2 500 | 25.9 395 | 39.3 275 |
| 1 Hp | Simplex: capacity at maximum pressure per head | gph@ psig | - | 3.8 4000 | 5.1 4000 | 8.1 3600 | 12.1 2765 | 10.1 2500 | 16.0 2100 | 22.6 1645 | 35.8 1150 |
| | Duplex: capacity at maximum pressure per head | gph@ psig | 2.5 4000 | 4.2 3360 | 6.3 2500 | 10.3 1840 | 14.4 1380 | 11.7 1280 | 18.1 1050 | 24.8 820 | 38.1 575 |
| 1-1/2 Hp | Simplex: capacity at maximum pressure per head | gph@ psig | - | - | - | 7.6 4000 | 11.7 3000 | - | 15.2 2500 | 20.3 2500 | 33.4 1750 |
| | Duplex: capacity at maximum pressure per head | gph@ psig | - | 4.1 3500 | 5.5 3500 | 9.1 2800 | 13.2 2100 | 10.9 1900 | 17.0 1625 | 23.6 1250 | 36.9 875 |
| Suction and discharge connections | in | | 1/2 M NPT | | | | 3/4 M NPT | | | | |
| Stroke length | in | | 1 | | | | | | | | |
| Suction lift | ft. H ₂ O | | 4 (16 with high suction head) | | | | | | | | |
| Motor frame | | | NEMA 56C | | | | | | | | |
| Max. temperature of process fluid | °F | | 316SS, Alloy 20, Hastelloy C: 180, PP: 120 | | | | | | | | |
| Weight (including motor) metal and PP models | Simplex | lbs. | 140 | | | | | | | | |
| | Duplex | lbs. | 190 | | | | | | | | |

Note: Polypropylene construction is limited to a maximum operating pressure of 150 psig. Check valves are single ball type.

