



**PULSA Series**<sup>®</sup>  
**Hydraulic Diaphragm Metering Pump**

# Pulsafeeder Expertise

Since 1936, Pulsafeeder has been the global leader in fluid handling technology and innovation in chemical dosing. Pulsafeeder has built a foundation of success with thousands of installations in fluid handling applications. Our extensive product breadth enables us to provide the convenience and efficiency of single-source solutions across various industries.

## PULSA Series® Pumps

Well known for its rugged design and history of long service, the PULSA Series positive displacement, reciprocating metering pump has remained a customer favorite for over seventy years. PULSA Series pumps combine the high efficiency of a plunger pump with the sturdiness of a diaphragm seal to eliminate leakage. Available in a range of materials, PULSA Series pumps can handle most chemicals. The PULSA Series pump is the “go to” pump for reliability and success.

### Product Specifications

- Flows to 3,318 gph (12,560 lph)
- Pressures to 5,000 psi (345 bar)
- Standard fluid temperatures from 40°F (4.4°C) to 180°F (82°C) for metal or 150°F (62°C) plastic reagent head. Extended temperatures available with special construction.
- Viscosities up to 1,000 cPs standard or 5,000 cPs with special construction
- 10:1 turndown
- Accuracy +/-1% rating

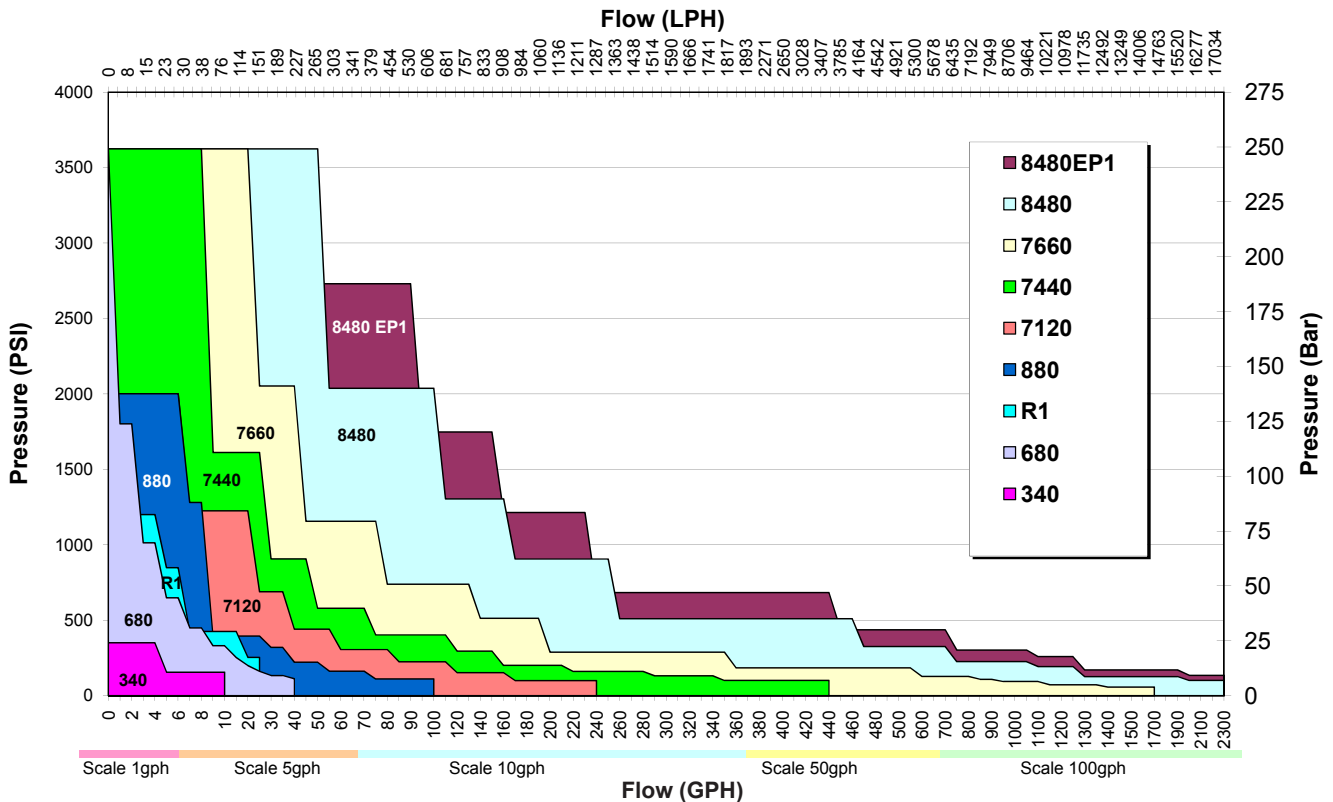
### Materials of Construction

- Wetend Materials: 316SS, 316SSL, Alloy C, Monel, Nickel, PVC, PTFE, Polypropylene and more
- Diaphragm Materials: PTFE, PFA and metallic
- Hydratube: FKM, CSM, PFA
- Hydracone: FKM and CSM

### Typical Applications

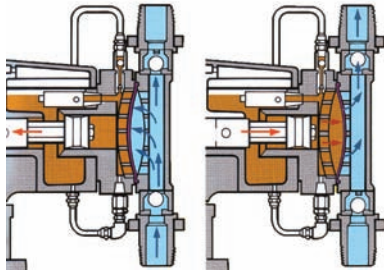
- Acids
- Caustics
- Polymers
- Bleaches
- pH Control
- Solvents
- Dyes/Inks
- Catalysts
- Cleaning Agents
- Slurries
- Many more

Pulsa Flows and Pressures (PTFE diaphragm)



# Diaphragm Technology

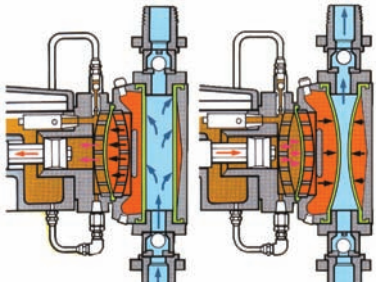
Suction Stroke Discharge Stroke



## Flat Diaphragm (TFE & Metal) TFE Shown

The popular flat diaphragm reagent head is available in a variety of materials and can handle a wide range of chemicals. The dish plates prevent over deflection of the diaphragm. There is no contact with moving parts. With typical diaphragm thicknesses of .060" (1.52mm), this is one durable diaphragm.

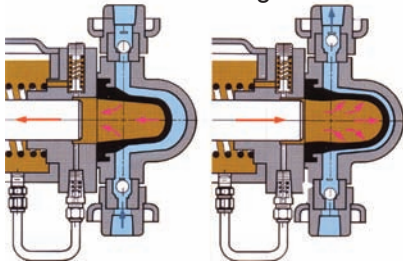
Suction Stroke Discharge Stroke



## Hydratube®

The Hydratube is the choice for high viscosity slurries. Its straight, large, flow through design eliminates clogging and flow restrictions. Available in FKM, CSM or PFA, it can be utilized with the most corrosive or acidic chemicals.

Suction Stroke Discharge Stroke



## Hydracone®

The Hydracone's self-priming head features a conical elastomer diaphragm. It is particularly well suited for high-lift conditions, high viscosities, and low density slurries. The Hydracone is available in a choice of high performance fluorocarbon elastomers such as FKM and chlorosulfonated polyethylene (CSM).

## PULSA Series® Configurations

PULSA Series pumps are available in several configurations to meet any pumping challenge.



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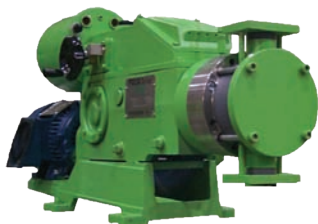
Hydracone R1



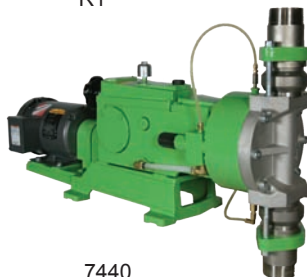
680 with NEMA 7 ELMA® Stroke Control



880 NEMA 4x with ELMA® Stroke Control



7120 with NEMA 4x Pulsamatic® Stroke Control



7440



7660



8480 NEMA 7 Pulsamatic® Stroke Control

# Features & Benefits



## Consistent, Durable and Reliable

- Constant delivery independent of pressure changes
- High efficiency, low horsepower requirements
- Positive displacement pump, measured amount displaced with each revolution
- Accurate, repeatable, linear



## Manual Stroke Adjustment Mechanism

- Metering accuracy to +/-1%
- 10:1 turndown
- Control range of 0-100%
- Stroke length control ready



## Engineered Systems Configurations

- Easily integrated to any skid system
- Offers a multitude of multiplexing opportunities
- Engineered systems offer easy, out of the box ready installation



## 3 Hydraulic Valves

- Automatic Air Bleed automatically releases any air in the hydraulic system
- Hydraulic Make-Up Valve replenishes any oil lost during normal operation
- Hydraulic Bypass Valve releases excessive hydraulic pressure



## Stroke Control Option

- 4-20 mA, 1-5 VDC, 1-5 mA, 10-50 mA input signal standard
- 4-20 mA output standard
- 0-15 psi input signal optional
- Manual override provision
- NEMA 4x or UL listed NEMA 7 enclosure design
- Pneumatic stroke length control is also available



## Durable Flat Diaphragm

- Durable construction
- Material choices include PTFE, CSM, FKM and metallic construction
- Integral O-ring seal design assures solid seal with no leakage
- Hydraulically balanced, no wear point on diaphragm

# Features & Benefits



## Hydratube® Diaphragm Option

- Inherent double diaphragm assures no leakage
- Provides straight flow through path for slurries
- Leak detection adaptable
- Good for high viscosity fluids



## Hydracone® Diaphragm Option

- Cone design enables high suction lifts
- Flow-through path enables a straight flow through path for slurries
- Good for high viscosity fluids



## Precision Check Valves

- Ball type valves are manufactured to the highest degree of sphericity for precise seating and metering accuracy
- Four-point guiding to assure precise valve action and valve seat life
- Easily replaced without disconnecting piping
- “Knife edged” seating design to maintain top-notch accuracy



## Disk Valves

- Disc design maintains pump accuracy at high flows (375 gph)
- Easily replaced without disconnecting piping
- Metallic and plastic construction
- Standard and slurry seats
- Available in a range of materials



## Warranty

- 5 year on gear train
- 1 year on wear parts
- Extended warranty also available

# Control Options

Pulsafeeder offers a wide variety of control options to provide superior flow control and system diagnostics. Accurate, durable, and versatile, PULSA's controllers offer a range of input options and can handle a variety of environments. They feature fast response, are easy to install and operate and are easily adjustable.



**MPC  
VECTOR**  
Automatic Flow Controller



**PULSA<sup>®</sup>matic**  
Automatic Control

- Available for PULSA 680, 880, 7120, 7440, 7660, and 8480 up to 5 HP
- Up to 20:1 turndown within +/-2% accuracy on set point
- Security Code to lock out unauthorized users
- Detachable handheld keypad with 4.5ft (1.3cm) of cable
- CE approved
- Displays pump output in units of flow (gph or lph)
- NEMA 4X (IP56) rating

- Available for PULSA 7120, 7440, 7660, and 8480
- Low power consumption (23 watts max)
- Pump output is displayed by a mechanical digital stroke-length indicator (calibrated 0-100%)
- Manual control through mechanical hand wheel override
- NEMA 4 or NEMA 7 option for protection in most hazardous environments
- All control circuitry is self-contained
- Wide selection of control options and external operator stations
- Easy to install, field retrofit kit



**Pneumatic  
Control**



**ELMA Control**

- Available for PULSA 680, 880, 7120, 7440, 7660, and 8480
- 0%-100% signal (optional on 680 and 880)
- Fully enclosed operating mechanism
- 3-15 psi instrument signal standard
- Alternative psi signal standards available, including split ranging
- Ideal for stringent XP areas
- Designs for natural gas operations available
- Transducer options available for converting mA signal to pneumatic signal

- Available for PULSA 680 and 880
- Four standard analog inputs (4-20 mA, 1-5 VDC, 1-5 mA, 10-50 mA)
- Fast response time (0-100% in 15 seconds)
- NEMA 4 or NEMA 7 option for protection in most hazardous environments
- Easy installation and start up
- Simplified service
- Low power consumption (60 watt max)
- Easy to install, field retrofit kit

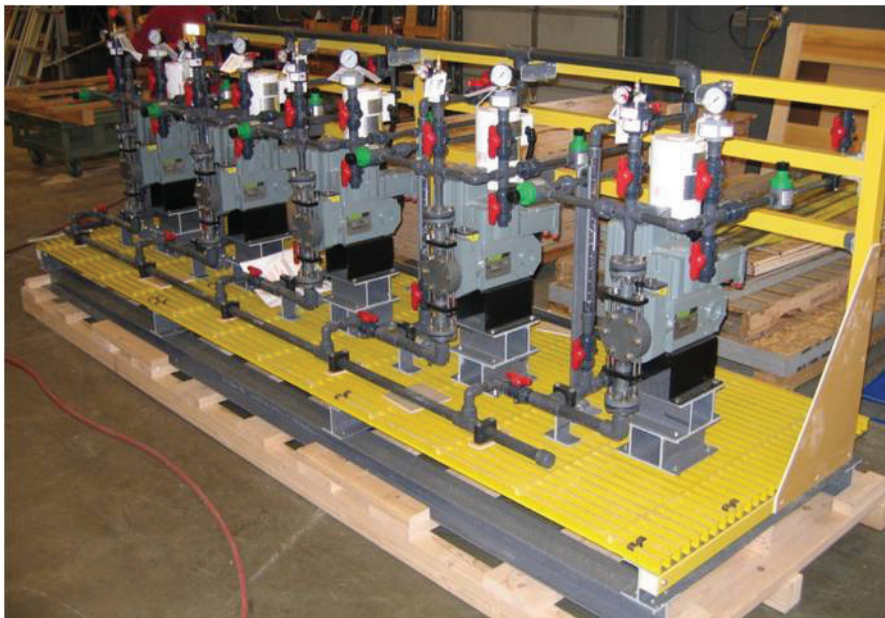
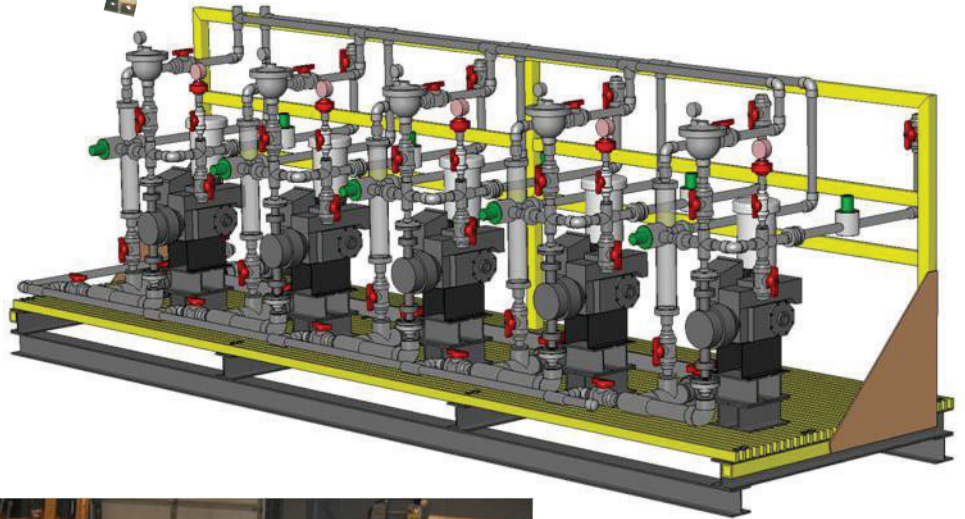
# Pulsafeeder Engineered Solutions



Pulsafeeder Engineered Solutions provide out of the box, ready to connect to your piping convenience. Packaged solutions arrive as complete systems with all ordered controllers and accessories. They are piped, valved, wired, tested, and ready to perform.

Our skid systems are built with an intuitive layout for easy maintenance and requires no specialized tooling. We factory warranty all skid systems for one full year. Each system undergoes a complete system performance test prior to leaving the factory.

For assistance in developing your next Pulsafeeder skid system, please contact our system application engineers at (585) 292-8000.





A **KOPkit® (Keep On Pumping)** can help you cut downtime and put you back in business fast. Use KOPkits for preventive maintenance and to ensure continuous high performance from your Pulsafeeder metering pump.

### Pressure Relief Valves

prevent an overpressurization situation from ever damaging your pumps or pumping system. Overpressurization can occur when a valve is closed or a blockage occurs. They are always recommended equipment for any pump or skid system.



Pulsafeeder's **Pulsation Dampeners** improve pump system efficiency by removing pulsating flows from positive displacement pumps.



### Leak Detection

Sensor technology sandwiched between double diaphragms alert you at the first sign of leakage to prevent a small leak from becoming a large one.



### Calibration Columns

These columns are constructed of clear PVC tubes with PVC end caps or an option for Borosilicate glass with Teflon end caps and should be sized for a 30-second draw down.



**Pressure Gauges** are relied on to measure pressure in the system. Proper pressure is necessary to insure flow. Pulsafeeder Pressure Gauges are accurate and reliable.



**Back Pressure Valves** provide positive back pressure for systems with less than the minimum required discharge to assure optimum metering performance.