

PULSAR[®]

**Hydraulic & Mechanical
Metering Pumps**

Pulsafeeder Expertise

Pulsafeeder represents the chemical metering pump and control technology standard by which all other manufacturers in the industry gauge their performance. Pulsafeeder's high precision metering pump and controller technology has provided successful installation solutions for over seventy years. Pulsafeeder delivers world class and leading edge chemical feed accuracy with the ability to monitor and regulate pump system operation while continuously striving for global customer satisfaction.

Pulsar Metering Pumps

Pulsar Metering Pumps and controls represent a generation leap in chemical feed technology combining optimum features and maximum benefits in an effort to simplify the customer pump and control selection process. The Pulsar Pump Product delivers long-term value and outstanding performance.

Materials of Construction

Product Specifications

- Flows from .018 gph-170 gph (.068 lph to 643 lph)
- Pressures to 4,000 psig (275 bar)
- Temperatures up to 230°F (110°C)
- Viscosities to and beyond 3000 cPs
- Turndown capacity adjustable up to 1000:1:
 - 10:1 Manual
 - 10:1 ECA
 - 10:1 DLC
 - 50:1 DLCM
 - 1000:1 MPC
- Accuracies to +/-0.5% of set point

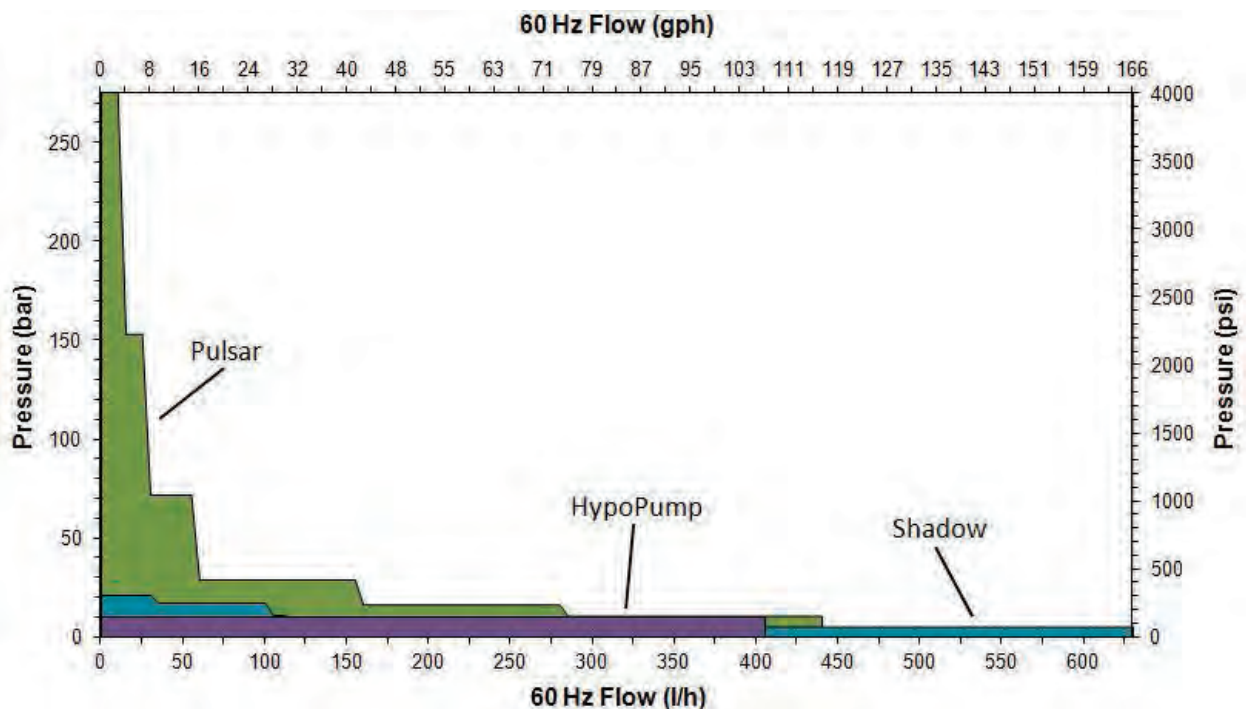
Materials of Construction

- 316SS
- Alloy 20
- Hastelloy C
- Hastelloy B
- Titanium
- Monel
- PVC
- PVDF
- Many More

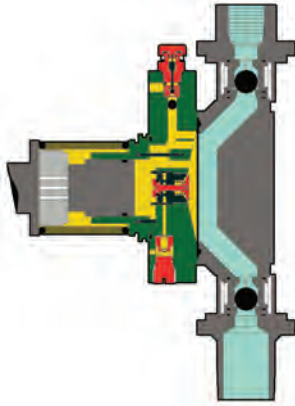
Typical Applications

- Bleaches
- Caustics
- Acids
- Solvents
- Polymer
- Plating Solutions
- Lime Slurries
- Molten Metals
- Heavy Water
- Liquid Gas
- Petroleum Products
- Chemical Fertilizers
- Many more

Pulsar Family Flows & Pressures



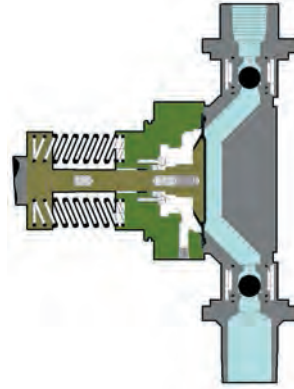
Pulsar Metering Pump Technology



Hydraulically Actuated Diaphragm Technology (Pulsar 25, 55)

Pulsar's diaphragm is hydraulically balanced between the process fluid and hydraulic fluid. The piston reciprocates through a precisely sized cylinder resulting in positive displacement of controlled volume of hydraulic fluid. This action causes the diaphragm to reciprocate and precisely dose process fluid through the suction and discharge valve mechanism. The benefits of this include:

- Hydraulically balanced diaphragm does no work
- Pump and diaphragm's life is maximized
- Optimum accuracy and performance
- Maximized pressure capabilities



Mechanically Actuated Diaphragm Technology (Shadow)

Pulsar's mechanically actuated diaphragm is mechanically attached to the reciprocating piston. The reciprocating diaphragm displaces a controlled volume of process fluid through the suction and discharge valve mechanism. The benefits of this include:

- Eliminates hydraulic fluid
- Simplifies commissioning and maintenance
- Minimizes power requirements
- Economical

PULSAR Configurations

Multiplex units also available. These units can be configured with up to eight reagent heads. Threaded or Flange options are also available.



Pulsar 25HJ
Pulsar 25HL

Pulsar 55H
Pulsar 55HL

Pulsar
Shadow

Pulsar
HypoPump₂

Pulsar Shadow
HypoPump₂

Features and Benefits



Patented Hydraulic Diagnostics

- Immediate visual indication of pump performance
- Simple to monitor
- Instantaneous auditing of system overpressurization, entrained air in hydraulic oil, diaphragm integrity and proper oil level



Push to Purge Valve

- External spring-loaded button allows hydraulic fluid priming
- Releases entrained air trapped in the oil
- Visual indication of air bleed through diagnostic window



Hydraulic Bypass Valve

- Provides protection for pump overpressurization
- Externally adjustable
- Continuous visual inspection



Hydraulic Performance Valve

- Threads directly into pump head for a secure, leak-free attachment
- Provides resiliency to system upsets
- Replenishes hydraulic oil on suction stroke only
- Eliminates the need for process side dish plate
- Lowers NPSH requirement to 3 psi



Hydraulically Balanced Diaphragm Design

- Diaphragm is “sandwiched” between process fluid and hydraulic oil
- No stress on diaphragm contributes to a longer life
- Assists in providing a precise, metered dose every time
- Integral O-ring eliminates leaks



Four Bolt Tie Bar

- Provides stability and resistance to pipe stress
- Helps to promote leak free operation
- Contributes to quick removal of check valves without removing piping

Features and Benefits



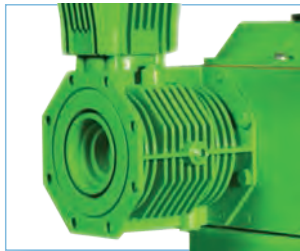
Manual Stroke Adjustment

- Large easy-grip hand wheel
- Easy to read dial with large numbers
- Adjustable from 0%-100% stroke length
- Resolution of +/-0.5% for accurate control
- Automatic stroke lock mechanism to maintain the desired setting



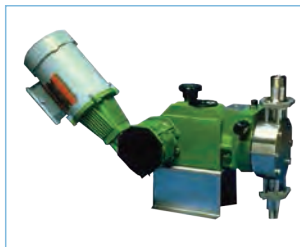
Precision Ball Valve Design

- Knife edge seats
- Accurate, efficient, flow transfer
- Simple three component design
- 4-point flute guided



Non-Vented Gear Box Design

- Designed with fins for strength and heat dissipation
- Double rotary lip seals protect against contaminants
- Can be mounted on either side of the eccentric box
- Modular design for easy removal



Three Motor Mounting Arrangements

- Three motor mounting arrangements provide options for placement in existing footprints
- Vertical, Horizontal and 45 degree inclines
- Sturdy, safe and secure.



5 Year Drive-Train Warranty

- 5 year warranty on gearbox
- 1 year warranty on all wetend replacement items
- Extended warranty also available



Close-Coupled Mounting

- Eliminates the potential for damage due to misalignment
- Helps to eliminate replacement costs due to wear and tear from misalignment
- Motor rotation does not affect pump performance

Control Options

Pulsafeeder offers a wide variety of control options from the simplistic ECA to the state-of-the-art MPC. Microprocessor controlled DLC, DLCM, and ECA provide system diagnostics and recover unparalleled by any other manufacturer. System health monitoring such as PULSAlarm leak detection systems respond to diaphragm rupture. Combining PULSAlarm leak detection with exclusive Pulsar digital logic controllers provides the industry's only system monitoring and automatic reaction to process variations and system fluctuations.



MPC

Metering Pump Controller

- Up to 1000:1 turndown within +/-2% accuracy on set point
- Security Code to lock out unauthorized users
- Detachable handheld keypad with 4.5ft (1.3cm) of cable (Handheld keypad can be mounted up to 1000 ft (304 m) away from pump)
- UL, CSA and CE approved
- Displays pump output in units of flow (GPH or LPH)
- NEMA 4X (IP56) rating on both pump mounted and handheld keypad enclosures (requires different rated motor)



PULSAR[®] DLCM

DIGITAL STROKE LENGTH & MOTOR SPEED CONTROLLER

PULSAR[®] DLC

DIGITAL STROKE LENGTH CONTROLLER

- Up to 50:1 turndown within 0.5% accuracy on setpoint
- Exclusive On-Board Flow and Signal Calibration
- Local and Remote motor start and stop control
- Standard NEMA 4X, IP66 Class 1, Division II, Groups C&D
- Optional NEMA 7, EEx D IIB T6 Explosion Proof and Flameproof Design (DLC only)
- PULSAlarm leak detection system interface
- Monitors and reacts to process variations such as loss of power or signal
- Modular design is easy to retrofit to an existing manually controlled pump
- PULSAnet MODBUS network communication protocol
- Daisy chain up to 32 units



ECA

Electronic Control Actuator

- Simple automatic stroke length controller
- NEMA 4X
- NEMA 7, EEx d IIB T6 Explosion Proof and Flameproof Design
- Simple 4-20 mA analog input and output calibration



Cruise Control

Variable Speed Drives

Custom Control Panels

- Modular design and field expandable
- Choice of DC-SCR, AC Inverter, or AC Vector control
- Interfaces with all Pulsar controllers and PULSAlarm leak detection systems
- Designed to ANSI, NFPA, and UL standards
- NEMA 4X design in FRP or 316SS enclosures
- Analog input signal controls pump stroking speed
- Custom engineered designs available to meet specific requirements

PULSAlarm[®]

Pressure Leak Detection



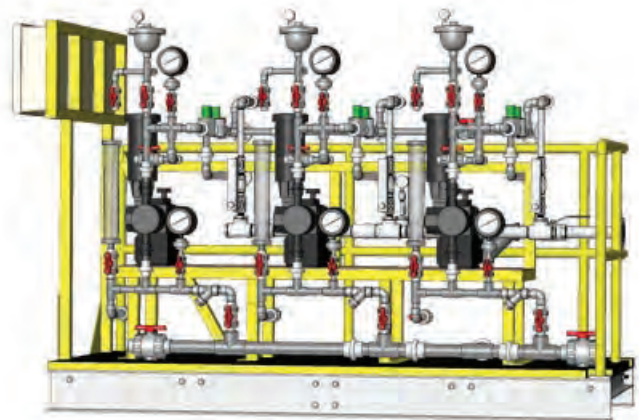
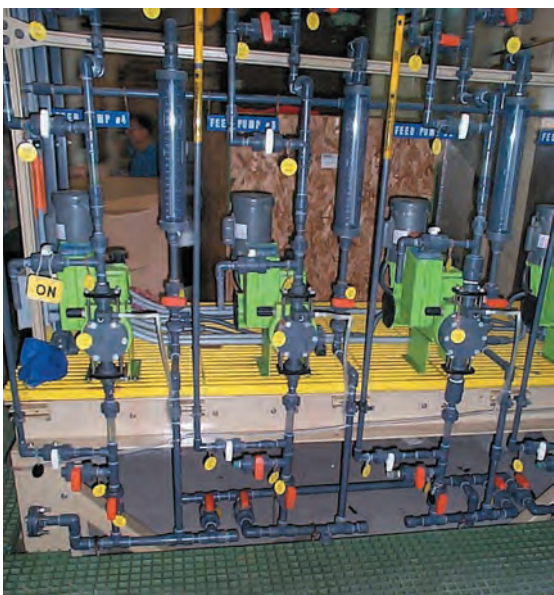
- Activates an alarm or stops the pump at the first sign of leakage
- Designed to contain full rated pressure up to 3000 psig (207 bar)
- Supplied with a dual Teflon diaphragm
- Can be directly interfaced with ECA, DLC and DLCM
- Available for both metallic and non-metallic reagent heads
- Rated NEMA 7, EEMAC7 Class 1, Division 2, Groups C&D, Class 1, Zone 1, Groups 11A and 11B, IP56
- Meets UL, UL for Canada, Demko for CENELEC, Standard Eex d 11B T5



Pulsafeeder Engineered Solutions

Pulsafeeder has installations in thousands of plants worldwide. Apply our expertise to your next project by contacting one of our trained, knowledgeable application engineers to help you construct your next Pulsafeeder skid system. Pulsafeeder application engineers are adept in developing skid systems to handle a wide range of chemicals and viscosities. With thousands of installs under their belt, they can recommend the most appropriate controllers, dampeners and other accessories necessary to provide you the best overall value.

Skid systems come out of the box ready to be attached to your existing piping. They are built with an intuitive layout for easy maintenance and require no specialized tools to install or maintain. All skid systems arrive with a complete one year warranty on workmanship and materials.





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.



MPC Vector
 A state of the art multi-functional controller that utilizes a state of the art sensorless vector type drive.

Pressure Relief Valves

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



Back Pressure Valves provide positive back pressure for systems with less than the minimum required pressure difference between the discharge and suction side of the metering pump to assure best metering performance.



Y-Strainers arrest out debris in pipelines, protecting equipment and processes. They prevent premature wear of the rotating components within a pump.



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.



Pulsation Dampeners are used as an energy storage device. They provide a constant velocity stream to or from the pump. They can also be used as a system shock suppressor and thermal expansion compensator.

pulsafeeder.com