

PulsaFeeder® PULSAtron® A Plus Series Electronic Metering Pump

- Guided ball check system provides precise sealing and excellent suction-lift characteristics
- High-quality solenoid and heat dissipating enclosure ensure reliable performance even with continuous duty operation
- Straight flow path and ample clearance between the diaphragm and head enable the pump to handle chemicals with a viscosity up to 1000 cps
- Broad 1000:1 feed rate adjustment permits its use over a wide range of applications
- Water resistant so these pumps are excellent for outdoor and indoor use

Description

The PulsaFeeder PULSAtron A Plus Series pump (Figure 1) is an electronically operated diaphragm metering pump that is designed to meet a variety of municipal and light industrial pump requirements. All PULSAtron A Plus pumps include manual on/off control, stroke length adjustment, and frequency adjustment. The PULSAtron A Plus pump utilizes a high quality solenoid encapsulated in a separate fin-cooled enclosure that effectively dissipates heat. This design increases reliability and pressure handling capabilities. Advanced electronic circuitry enhances performance and helps protect against voltage spikes and current overloads. Highly reliable, the digital timing circuit is virtually unaffected by temperature, electromagnetic interference and other electrical disturbances. Corrosion-resistant materials of construction are used throughout for maximum strength and durability.

Included with each pump is an accessory kit consisting of an injection/back pressure valve assembly, a foot valve/strainer assembly, 4 feet of flexible suction tubing and 10 feet of discharge tubing. All pumps are supplied with a bleed valve for safe and easy priming.



Figure 1 — PULSAtron A Plus Metering Pump

To Order

Use the Nalco part number from Table 1 when ordering. To be sure this product is compatible with your process, contact your local Nalco representative.

Startup and installation assistance is available through Nalco. Call 1-800-323-8483 to schedule service or obtain additional information.

Support

Pulsatron pumps from Nalco will now contain a QR code! Scan the QR code with your smartphone and gain quick access to the following:



- Wet End Parts Lists
- Troubleshooting table
- Tech data sheet
- Product manual
- Help Desk contact information for rapid tech support and easy ordering

If you have any questions regarding this specification, please contact your Nalco representative. In North America, you can also contact the Equipment Solutions Help Desk at 800-323-8483.

Specifications

Delivery rate: See Table 1

Maximum pressure limits: See Table 1

Materials of construction:

Head: Polypropylene (PP) or Kynar (PVDF)

Fittings: Polypropylene or Kynar (PVDF)

Check valve balls: Ceramic

Check valve seats: PTFE

Check valve O-rings: PTFE

Diaphragm: PTFE-faced Hypalon® elastomer

Pump housing: Glass-reinforced polyester

Suction tubing: Clear PVC (4 ft)

Discharge tubing: White polypropylene (10 ft)

Required back pressure: 25 psig

Suction and discharge tubing: 1/4" I.D. x 3/8" O.D.

Injection/check valve assy: 1/2" MNPT connection

Power requirements: 115 VAC, 50/60 Hz, 1 phase

Peak input power: 130 watts

Average current draw: 0.60 amp @ 115 VAC

Viscosity limits: 1000 cps

Suction lift:

10 ft. max. @ 1 cps

5 ft. max. @ 1000 cps

Maximum Temperature:

Environment: 104°F (40°C), shaded from sun

Liquid: 140°F (60°C)

Stroke length adjustment: 10:1

Stroke frequency adjustment: 10:1

Reproducibility: +/- 3%

Shipping weight: 10 lb (4.5 kg)

Dimensions:

Width: 5.0"

Overall height: 9.8"

Overall length: 9.5"

Pump housing height: 6.5"

Bleed valve height: 8.5"

Agency approvals:

ETL, ETL-Canada, ETL-Sanitation, CE

Table 1 – Nalco Pump Part Numbers

Nalco Part Number	Liquid End Materials	Capacity (gpd/gph)	Max. psi	Turn down Ratio
121-PJ3010.88	PP/PTFE/CE	12 / 0.5	250	1000:1
121-PJ3011.88	PVDF/PTFE/CE	12 / 0.5	250	1000:1
121-PJ3012.88	PP/PTFE/CE	33 / 1.38	150	1000:1
121-PJ3013.88	PVDF/PTFE/CE	33 / 1.38	150	1000:1
121-PJ3014.88	PP/PTFE/CE	58 / 2.42	100	1000:1
121-PJ3015.88	PVDF/PTFE/CE	58 / 2.42	100	1000:1

Liquid End Materials: PP = Polypropylene, PVDF = Kynar, CE = Ceramic

Tubing Size = " ID x 3/8" OD, Strokes/Minute = 250.

Operation

PULSAtron diaphragm metering pumps are used to dispense chemicals or fluids (Figure 2). This is achieved by an electromagnetic drive mechanism (solenoid) that is connected to a diaphragm. When the solenoid is pulsed by the control circuit, it displaces the diaphragm that, through the use of check valves, moves the fluid out the discharge port under pressure. When the solenoid is de-energized, it returns the diaphragm, pulling more fluid into the pump head, and repeats the cycle.

The pump output rate is controlled through adjustment of the stroke length and stroke frequency settings (10–100%). The mechanical stroke length of the pump is controlled by the *Percent Stroke* knob. The pump stroke rate (frequency) is controlled by an internal circuit. It is adjusted by turning the *Stroke Rate %* knob.

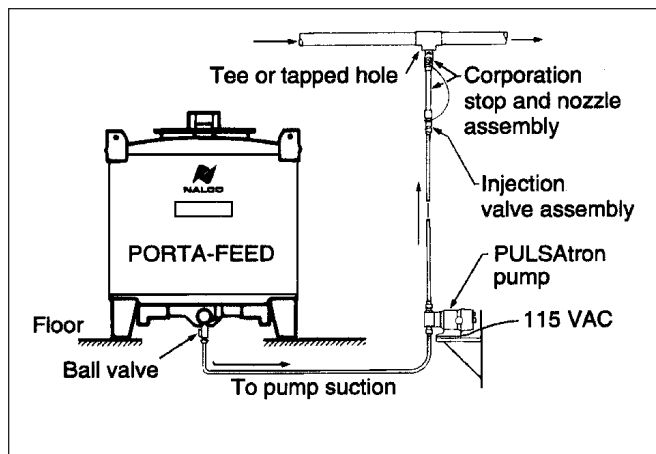


Figure 2 – Typical installation

Installation

1. The metering pump should be located in an area that allows convenient connections to both the chemical storage tank and the point of injection. Even though the pump has a corrosion-resistant housing and efficient cooling ribs, avoid continuous temperatures in excess of 40°C (104°F) and 90% relative humidity. The pump should be shielded from direct sunlight. **Do not** operate immersed.
2. Location of the injection check valve is important. Always inject chemical into the bottom 120° of a horizontal pipe. For vertical pipes, inject only into an upward flow. Install the corporation stop angled upward not less than 45° from the horizontal.
3. Adequate back pressure is required for reliable operation of the pump. When the back pressure is less than 25 psig, the anti-siphon/back pressure valve **must** be installed. Failure to do so could result in excessive pump output flow (siphoning).
4. Do not use PTFE tape on the check valve threads. The checks need only be hand tightened into the head to seal properly without leaks.
5. Do not run long lengths of plastic tubing. Terminate a short length of tubing and run pipe the rest of the way. Do not allow tubing to flex, as flexing will cause fatigue and possible failure. Standard polyethylene (or polypropylene) tubing will deteriorate when exposed to ultraviolet light (sunlight).
6. To prevent clogging or check valve malfunction, always install a strainer assembly to the end of the suction tubing. This foot valve/strainer assembly should always be installed 2 to 3 inches above the bottom of the chemical tank. An in-line strainer should be installed between the pump and Nalco PORTA-FEED™ containers.

Replacement Parts

KOP Kits ensure that you “Keep On Pumping”. Downtime is often costly and can be detrimental to your operation. Having a KOP Kit and replacement valves on-site will ensure quick liquid end repair. Select KOP kits and replacement valves from Table 2.

Table 2 – Nalco KOP Kit and Replacement Valve Part Numbers

KOP Kit Model	Nalco Part Number	Description and Liquid End Material	Replacement Valves	Nalco Part Number
K2PTCJ	121-PJ3110.88	KOP Kit, 12 gpd, K2PTCJ, PP/PTFE/CE	Bleed, Valve, Assembly, PP/TFE, 0.38T	121-PJ3120.88
K2KTCJ	121-PJ3111.88	KOP Kit, 12 gpd, K2KTCJ, PVDF/PTFE/CE	Bleed, Valve, Assembly, PVDF/TFE/CE, 0.38T	121-PJ3121.88
K3PTCJ	121-PJ3112.88	KOP Kit, 33 gpd, K3PTCJ, PP/PTFE/CE	Foot, Valve, Assembly, PP/TFE/C, 0.38T	121-PJ3122.88
K3KTCJ	121-PJ3113.88	KOP Kit, 33 gpd, K3KTCJ, PVDF/PTFE/CE	Foot, Valve, Assembly, PVDF/TFE/C, 0.38T	121-PJ3123.88
K4PTC1	121-PJ3114.88	KOP Kit, 58 gpd, K4PTC1, PP/PTFE/CE	Injection, Check, Valve, PP/TFE/C, 0.38T	121-PJ3124.88
K4KTC1	121-PJ3115.88	KOP Kit, 58 gpd, K4KTC1, PVDF/PTFE/CE	Injection, Check, Valve, PVDF/TFE/C, 0.38T	121-PJ3125.88

*KOP kits include: Diaphragm, Seals, Head, Suction/Discharge Check valves, & Hardware

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