AquFlow
Metering Pumps & Systems

The Legendary Brand in Metering Pumps
Offering the widest range of material selection as well as flow rates up to 1,750 GPH (Simplex), 3,500 GPH (Duplex)

Complies with API 675 Standards
Originally founded in 1972 as Hydroflo to manufacture premium chemical metering pumps, this company was acquired by Precision Flow in 2007 and relaunched as Aquflow. With continued development and refinement, we currently have the most extensive range of flow capacities, pressure and corrosion resistant materials of construction under one brand. Over the last 40 years we have gained a well-deserved reputation for making high quality pumps that outlast and outperform most competitive models.

The pumps are made in a state of the art facility in Irvine, California, USA. The manufacturing process we have in place emphasizes flexibility and agility to accommodate market requirements rapidly. Hence our fast deliveries delight customers who may have their process down for the lack of a pump. Aquflow test and qualification process ensures that our pumps comply with the highest standards of the industry such as API 675. Our location near major ports help us ship the products expeditiously and cost effectively throughout the world.

### HISTORY TIMELINE

- **1972**: Mr. John Klemboth launches HydroFlo with a revolutionary pump design at the time
- **1983**: Relocated to a much larger facility in Plumsteadville, PA
- **1996**: Penn Process Technology Acquires HydroFlo Corp
- **2001**: Nikkiso buys Hydroflo to use as a launch pad for its own products in USA
- **2007**: Precision Flow Technologies Inc acquires Hydroflo line. Relocates to California, Re-launches as Aquflow
- **2007**: AquFlow moves into a much larger facility

### WHO WE ARE

- **USA based midsized manufacturer**: Expect us to be lean, agile and flexible to survive
- **Privately owned company**: We answer to our customers, not shareholders
- **Industry veterans with a passion for pumps**: We take personal pride in every pump we build
- **40 years of handling the most difficult chemicals**: We have ready solutions for most problems

### WHAT WE MAKE

- **Extensive range of hydraulic diaphragm pumps**: All dosing pump sizes and pressures in one place
- **Efficiently designed hydraulic oil channels**: Quick start up, no air locking, accurate & dependable
- **Robust, durable design perfected over 4 decades**: Pumps that run for decades with minimal maintenance
- **Ability to adjust flow while pump is running**: Overall ease and simplicity of installation and operation
- **All replaceable and service parts located intuitively**: Quick & easy to maintain and service

### HOW IT BENEFITS OUR CUSTOMERS

- **Expect us to be lean, agile and flexible to survive**
- **We answer to our customers, not shareholders**
- **We take personal pride in every pump we build**
- **We have ready solutions for most problems**

### API - 675

This standard is written by the American Petroleum Institute for controlled volume (metering/dosing) pumps. It requires the hydraulically balanced diaphragm pumps to meet certain minimum requirements for life, uninterrupted operation, servicability, accuracy and repeatability among other things. All AquFlow hydraulic diaphragm pumps comply with these standards. Documentation and test reports in accordance with the standards can be furnished for an additional charge when requested in advance.
HYDRAULICALLY BALANCED DIAPHRAGM - MORE ACCURATE, LONGER LASTING, MINIMUM MAINTENANCE

There are several metering pump designs that are available today. A hydraulic diaphragm is the most evolved version which offers several advantages over other types. Following are some points to consider while choosing between different types based on your application.

**Piston Plunger**
- Metallic piston in contact with process fluid
- Piston/Plunger packing exposed to process fluid
- Contamination with grease/lubricant

**Solenoid Diaphragm**
- Unbalanced diaphragm stern failure
- Works only for light duty low pressure applications
- Low durability design

**Mechanical Diaphragm**
- Unbalanced diaphragm - frequent replacements
- Not suitable for high pressure
- Less accurate due to rolling diaphragm

**Other Hydraulic Diaphragm Advantages**
- Run by hydraulic oil which is non compressible
- Balanced pressure on both sides to increase life
- Virtually maintenance free for years
- Built in safety features - Internal relief valve

**FLOW CAPACITY RANGE - FROM VERY LOW TO VERY HIGH**

AquFlow Ultra - Low Capacity Pumps
MARKETS & APPLICATIONS

Water & Wastewater Treatment
AquFlow water treatment pumps are engineered for injecting disinfectant chemicals, acids, polymers, and other agents used in water treatment facilities. Wastewater treatment pumps are used for injecting chemicals for the removal of caustic and cyanide, pH control, and more.

**TYPICAL APPLICATIONS (WATER)**
- Sodium hypochlorite and Calcium hypochlorite for disinfection
- Sulfuric acid and sodium silicate
- Alum or sodium aluminate as a coagulant agent
- Slurries for filtration
- Phosphate for red water control
- Lime slurries in softening and pH control
- Potassium permanganate for manganese and iron removal
- Polymers for primary coagulation
- Metering activated carbon slurries for taste and odor control

Agriculture
Used for agricultural fertigation and chemigation, AquFlow agriculture pumps inject fertilizers and other chemicals into agricultural irrigation pipelines.

**TYPICAL APPLICATIONS**
- Fertigation - injecting fertilizers and other chemicals in the irrigation water pipelines.
- Chemigation - Injecting pesticides and insecticides to protect crops
- Acid Pumping for pH adjustment
- Chlorine Pumping for disinfecting water

Oil & Gas
AquFlow oil and gas industry pump systems are specially engineered to handle industrial oil and gas requirements for injecting corrosion inhibitors, pH adjustment agents for corrosion control, chemical desalting of crude oil, introducing lubricants for gas lines, etc.

**TYPICAL APPLICATIONS**
- Injecting Corrosion Inhibitors
- Pumping chemicals to adjust pH of sour gas or crude oil to reduce corrosion
- Injecting sludge inhibitors for fuel oils
- Pumping additives for bacteria control of water for well flooding
- Caustic soda to crude oils or sour gasoline for rerun through cracking stills
- Sampling feed stock, jet fuels, gasolines, and intermediates for analysis

Chemical Processing
Used in a wide variety of chemical processing pump applications, AquFlow chemical processing pumps are commonly used to introduce aromatics, ethanolamines, ethylene glycols, and other chemicals required in industrial manufacturing and processing environments.

**TYPICAL CHEMICALS**
- Ethers, Aromatics (Toluene, Paraxylene, Benzene, and Orthoxylene)
- Ethylene Glycols for manufacturing plastics, textiles, latex paints, adhesives, etc.
- Propylene Oxide, Vinyl Monomers, Deionized water, Methanol, Sodium Tetraborate (Borax) solutions, Tetrahydrofuran, Alumina catalyst solutions
Food Processing
Food grade pumps that are used in food and beverage manufacturing plants for pumping compounds, ingredients, candy coating and flavors.

**TYPICAL APPLICATIONS (BREWERIES, DISTILLERIES)**
- Water Conditioning for the product
- Metering acid during mashing for pH control of brewing water
- Handling filter aids (diatomaceous earth)
- Aging chemicals dispensing
- Froth inhibitor at bottle filling machine
- Pumping Sulfuric Acid

**TYPICAL APPLICATIONS (FOOD & DAIRY)**
- Mixing ingredients in manufacture of mustard, mayonnaise and salad dressings
- Coatings and flavoring to dry cereals
- Oil addition to peanuts
- Adding preservatives
- Addition of flavoring oils to flour, cake, and pie mixes
- Metering vitamins to many food products, including milk
- Metering ingredients and vitamins to both pet and cattle feed stock
- Pumping hormones to animal feed

Paints & Dyes
AquFlow pumps can be used for water and solvent-based paints, ink, varnish, glue, adhesives and solvents.

**TYPICAL APPLICATIONS**
- Addition of measured quantities of pigments
- Automatic filling of containers
- Metering inks and various pigments for printing
- Mixing ingredients for inks

Pulp & Paper
Pulp & Paper industry pumps for addition of sulfuric acid or alum for pH control, adding colorants, kolin slurries, titanium dioxide, etc.

**TYPICAL APPLICATIONS**
- Addition of sulfuric acid or alum for pH control of pulp
- Adding colorants
- Metering coagulants
- Adding kolin slurries as paper filler
- Introducing titanium dioxide to pulp for opacity control in thin papers

Miscellaneous
Other pumps can be used in applications such as mining, fireproofing, chemical spraying, boiler feed applications, car washes, laundry facilities, and more.

**TYPICAL APPLICATIONS (MINING)**
- Additives to pH adjustment of the ore
- Handling liquified metals
- Dust control spraying
- Metering depressing agents
- Pumping caustic soda (sodium hydroxide) for neutralizing
- Metering various leaching chemicals – solvent extraction
- Flotation control
**Series 1000 Performance Table**

<table>
<thead>
<tr>
<th>AquFlow Model Number</th>
<th>Capacity GPH (LPH)</th>
<th>Pressure PSIG (bars)</th>
<th>Speed (SPM)</th>
<th>Plunger Diameter</th>
<th>Connection (Metallic - NPT)</th>
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<td>61.8 (233.5)</td>
<td></td>
<td>170</td>
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</tbody>
</table>

**Features**

- Flow capacities up to 123 GPH (Duplex)
- Pressure Up to 4,000 PSI
- Unibody Design – Less Parts
- Metering accuracy +/- 1%
- Easy capacity controls – Manual/Auto
- Built in safety – Internal relief valve
- Available in duplex to double flow capacity
- Ability to handle difficult liquids like slurries, off-gassing, and high viscosity liquids

**Specifications**

**Flow capacity adjustment:** 0-100%

While the pump is running or stopped

**Turndown Ratio**

Stroke length – 10:1

Stroke frequency – 10:1

Combined – 100:1

**Maximum process fluid temperature**

Custom engineered metallic liquid end: 500°F

Metallic liquid end/PTFE diaphragm: 250°F(121°C)

Plastic Head: 140°F (60°C)

**Hydraulic Oil**

Oil capacity: 2 qt. (simplex)

3 qt. (Duplex)

**Plunger Stroke**

Stroke length: 3/4”

X = 4 for 316 SS, 5 for ALLOY 20, 6 for HAST. C, 8 for PVC, A for PVDF

**Liquid End Material Options**

316 SS, Alloy 20, Hastelloy C, PVC, PVDF and PTFE
DIMENSIONS
(Shown: Typical Series 1000 Model with Metallic Liquid End and 3/8” NPTM Discharge/Suction Connections)

<table>
<thead>
<tr>
<th>Component</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (NPT)</th>
<th>F (NPT)</th>
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<tbody>
<tr>
<td>Metallic</td>
<td>1-3/4”</td>
<td>5-1/2”</td>
<td>6-1/3”</td>
<td>13”</td>
<td>3/8” M</td>
<td>3/8” M</td>
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<tr>
<td>Plastic**</td>
<td>1”</td>
<td>4-3/4”</td>
<td>7”</td>
<td>14”</td>
<td>3/4” F</td>
<td>1/2” F</td>
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<tr>
<td>Plastic on 3-1/4” Base</td>
<td>4-1/4”</td>
<td>8”</td>
<td>7”</td>
<td>--</td>
<td>3/4” F</td>
<td>1/2” F</td>
</tr>
</tbody>
</table>

*Standard motor. Subject to change depending on motor specs.
**Plastic liquid end material pump always supplied w/ base.
***Standard weight is 70 lbs. Varies depending on material and configuration.
Series 2000 Performance Table

### Features

- Flow capacities up to 180 GPH (Duplex)
- Pressure Up to 1,800 PSI
- Modular design in aluminum housing
- Metering accuracy +/- 1%
- Easy capacity controls – Manual/Auto
- Built in safety – Internal relief valve
- Available in duplex to double flow capacity
- Ability to handle difficult liquids like slurries, off-gassing, and high viscosity liquids

### Specifications

**Flow capacity adjustment:** 0-100%

While the pump is running or stopped

**Turndown Ratio**

Stroke length – 20:1
Stroke frequency – 20:1
Combined – 200:1

**Metering accuracy**

Steady state: +/- 1%
Linearity: +/- 1%
Combined: +/- 1%

**Maximum process fluid temperature**

Custom engineered metallic liquid end: 500°F (260°C)
Metallic liquid end/PTFE diaphragm: 250°F(121°C)
Plastic Head: 140°F (60°C)

**Hydraulic Oil**

Oil capacity: 4 qt. (Simplex & Duplex)

**Plunger Stroke**

Stroke length: 1-1/2"

**Displacement per stroke – by plunger size**

3/4" - 0.6976 cu. in. (11.43 ml)
1" - 1.1334 cu. in. (18.57 ml)
1-1/4" - 1.8757 cu. in. (30.77 ml)
1-1/2" - 2.0797 cu. in. (34.08 ml)

**Liquid End Material Options**

316 SS, Alloy 20, Hastelloy C, PVC, PVDF and PTFE

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### SERIES 2000 PERFORMANCE TABLE

<table>
<thead>
<tr>
<th>AquFlow Model Number</th>
<th>Capacity GPH (LPH)</th>
<th>Pressure PSIG (bars)</th>
<th>Speed (SPM)</th>
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<th>Connection (Metallic - NPT)</th>
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<td>3/8&quot;</td>
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<td>3/4&quot;</td>
<td>3/8&quot;</td>
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<tr>
<td>CD3T 1014-0X018</td>
<td>61.18 (227.1)</td>
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<td>140</td>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
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<td>360 (25)</td>
<td>191</td>
<td>1-1/4&quot;</td>
<td>3/8&quot; M</td>
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<tr>
<td>CD3T 1229-0X014</td>
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<td>5/8&quot;</td>
<td>3/8&quot;</td>
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<td>CD3T 1258-0X015</td>
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<td>5/8&quot;</td>
<td>3/8&quot;</td>
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<tr>
<td>CD3T 1297-0X018</td>
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<td>3/8&quot;</td>
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<td>CD3T 1212-0X018</td>
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<td>3/4&quot;</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>CD3T 1214-0X018</td>
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<td>3/4&quot;</td>
<td>3/8&quot;</td>
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<tr>
<td>CD3T 1219-0X018</td>
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<td>1-1/2&quot;</td>
<td>1/2&quot; F</td>
</tr>
</tbody>
</table>

X = 4 for 316 SS, 5 for ALLOY 20, 6 for HAST. C, 8 for PVC, A for PVDF

### PERFORMANCE CURVE - TYPICAL

- 5/8" Plunger
- 3/4" Plunger
- 1" Plunger
- 1-1/4" Plunger
- 1-1/2" Plunger
DIMENSIONS
(Shown: Typical Series 2000 Model with Metallic Liquid End and 1/2" NPTF Discharge/Suction Connections)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (NPT)</th>
<th>F (NPT)</th>
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<tbody>
<tr>
<td>Metallic</td>
<td>2&quot;</td>
<td>7-3/4&quot;</td>
<td>14&quot;</td>
<td>15-3/4&quot;</td>
<td>1/2&quot; M</td>
<td>1/2&quot; M</td>
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<tr>
<td>Plastic</td>
<td>2&quot;</td>
<td>6-5/8&quot;</td>
<td>13&quot;</td>
<td>17&quot;</td>
<td>3/4&quot; F</td>
<td>1&quot; F</td>
</tr>
</tbody>
</table>

*Standard weight is 85 lbs. Varies depending on material and configuration.
Features

- Flow capacities up to 920 GPH (Duplex)
- Pressure Up to 700 PSI
- Modular design in aluminum housing
- Metering accuracy +/- 1%
- Easy capacity controls – Manual/Auto
- Built in safety – Internal relief valve
- Available in duplex to double flow capacity
- Ability to handle difficult liquids like slurries, off-gassing, and high viscosity liquids

Specifications

Flow capacity adjustment: 0-100%
While the pump is running or stopped

Turndown Ratio
Stroke length – 36:1
Stoke frequency – 36:1
Combined – 360:1

Maximum process fluid temperature
Custom engineered metallic liquid end: 500°F
Metallic liquid end/PTFE diaphragm: 250°F (121°C)
Plastic Head: 140°F (60°C)

Hydraulic Oil
Oil capacity: 12 qt.

Displacement per stroke – by plunger size
1" - 2.3569 cu. in. (38.46 ml)
1-1/4" - 3.6738 cu. in. (60.20 ml)
1-1/2" - 5.2906 cu. in. (86.70 ml)
1-3/4" - 7.2063 cu. in. (118.09 ml)
2" - 9.4102 cu. in. (154.21 ml)
2-1/4" - 11.9023 cu. in. (195.04 ml)
2-1/2" - 14.1561 cu. in. (231.98 ml)

Liquid End Material Options
316 SS, Alloy 20, Hastelloy C, PVC, PVDF and PTFE

<table>
<thead>
<tr>
<th>AquiFlow Model Number</th>
<th>Capacity GPH (LPH)</th>
<th>Pressure PSIG (bars)</th>
<th>Speed (SPM)</th>
<th>Plunger Diameter</th>
<th>Connection (Metallic - NPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNIT 0829-0X018</td>
<td>24.1 (60.2)</td>
<td>700 (48)</td>
<td>44</td>
<td>1&quot;</td>
<td>1/2&quot;</td>
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<tr>
<td>CNIT 0858-0X018</td>
<td>31.9 (120.7)</td>
<td>88</td>
<td>58</td>
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<tr>
<td>CNIT 0888-0X018</td>
<td>48.0 (161.7)</td>
<td>(48)</td>
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<tr>
<td>CNIT 0912-0X018</td>
<td>64.0 (242.3)</td>
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<tr>
<td>CNIT 0914-0X018</td>
<td>76.0 (287.7)</td>
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<tr>
<td>CNIT 1029-0X018</td>
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<td>1/2&quot;</td>
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<tr>
<td>CNIT 1058-0X018</td>
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<tr>
<td>CNIT 1088-0X018</td>
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<tr>
<td>CNIT 1012-0X018</td>
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</tr>
<tr>
<td>CNIT 1014-0X018</td>
<td>120.0 (454.2)</td>
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<tr>
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<td>1-1/2&quot;</td>
<td>1/2&quot;</td>
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<tr>
<td>CNIT 1258-0X018</td>
<td>71.8 (271.8)</td>
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<tr>
<td>CNIT 1288-0X018</td>
<td>109.0 (412.6)</td>
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<tr>
<td>CNIT 1212-0X018</td>
<td>145.0 (548.9)</td>
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<tr>
<td>CNIT 1214-0X01A</td>
<td>173.0 (654.9)</td>
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<tr>
<td>CNIT 1429-0X018</td>
<td>74.0 (185.1)</td>
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<td>1/2&quot;</td>
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<tr>
<td>CNIT 1458-0X018</td>
<td>97.8 (370.2)</td>
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<tr>
<td>CNIT 1488-0X018</td>
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<tr>
<td>CNIT 1412-0X01A</td>
<td>197.0 (745.7)</td>
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<tr>
<td>CNIT 1414-0X01A</td>
<td>236.0 (933.4)</td>
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<tr>
<td>CNIT 1629-0X01B</td>
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<td>CNIT 1658-0X01B</td>
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<tr>
<td>CNIT 1688-0X01A</td>
<td>194.0 (724.4)</td>
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<td>CNIT 1612-0X01B</td>
<td>258.0 (976.6)</td>
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<tr>
<td>CNIT 1614-0X01B</td>
<td>308.0 (1,169.9)</td>
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<td>CNIT 1829-0X01B</td>
<td>122.4 (305.9)</td>
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<td>44</td>
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<tr>
<td>CNIT 1858-0X01B</td>
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<td>CNIT 1888-0X01A</td>
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<td>CNIT 1812-0X01B</td>
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<tr>
<td>CNIT 2058-0X01A</td>
<td>191.0 (757.1)</td>
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<tr>
<td>CNIT 2088-0X01B</td>
<td>291.0 (1,135.6)</td>
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<td>CNIT 2012-0X01C</td>
<td>387.0 (1,514.2)</td>
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<td>CNIT 2014-0X01C</td>
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<tr>
<td>CNIT 2229-0X01B</td>
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<td>44</td>
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<tr>
<td>CNIT 2258-0X01B</td>
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<td>CNIT 2288-0X01B</td>
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<td>CNIT 2212-0X01B</td>
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<tr>
<td>CNIT 2214-0X01B</td>
<td>433.0 (1,109.2)</td>
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</tr>
</tbody>
</table>

X = 4 for 316 SS, 5 for ALLOY 20, 6 for HAST. C, 8 for PVC, A for PVDF

PERFORMANCE CURVE - TYPICAL

Series 3000 Performance Table

1 Plunger
1-1/2" Plunger
2" Plunger
## DIMENSIONS
(Shown: Typical Series 3000 Model with Metallic Liquid End and 1-1/2" NPTM Discharge/Suction Connections)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G (NPT)</th>
<th>H (NPT)</th>
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<tbody>
<tr>
<td>Metallic</td>
<td>4-1/6&quot;</td>
<td>12&quot;</td>
<td>20-3/8&quot;</td>
<td>3-3/4&quot;</td>
<td>12&quot;</td>
<td>23-3/16&quot;</td>
<td>1-1/2&quot; M</td>
<td>1-1/2&quot; M</td>
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<tr>
<td>Plastic</td>
<td>4-5/8&quot;</td>
<td>15-7/8&quot;</td>
<td>18-5/8&quot;</td>
<td>--</td>
<td>--</td>
<td>24&quot;</td>
<td>1-1/4&quot; F</td>
<td>1-1/4&quot; F</td>
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</tbody>
</table>

*Standard motor. Subject to change depending on motor specs.
**Standard weight is 250 lbs. Varies depending on material and configuration.

**Continued from page 10**

![Graph](image-url)
### SERIES 4000 PERFORMANCE TABLE

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Capacity GPH</th>
<th>Pressure PSIG (bars)</th>
<th>Speed (SPM)</th>
<th>Plunger Diameter</th>
<th>Connection (Metallic - NPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNIT 0744-BC01A</td>
<td>22.6 (85.5)</td>
<td>3,500 (141)</td>
<td>44</td>
<td>7/8”</td>
<td>1-1/4”</td>
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<tr>
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<td>36.0 (136.3)</td>
<td>6,750 (272)</td>
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<tr>
<td>GNIT 0788-BC01A</td>
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<tr>
<td>GNIT 0714-BC01A</td>
<td>72.0 (272.5)</td>
<td>7,000 (286)</td>
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<tr>
<td>GNIT 0944-BC01A</td>
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<td>1,000 (43)</td>
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<td>1-9/16”</td>
<td>2-1/2”</td>
</tr>
<tr>
<td>GNIT 0970-BC01A</td>
<td>61.5 (232.8)</td>
<td>3,000 (129)</td>
<td>70</td>
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</tr>
<tr>
<td>GNIT 0988-BC01A</td>
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<td>8,000 (338)</td>
<td>88</td>
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<td>GNIT 0914-BC01A</td>
<td>123 (461.7)</td>
<td>11,000 (463)</td>
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<tr>
<td>GNIT 1344-BC01F</td>
<td>79.5 (300.9)</td>
<td>1,000 (43)</td>
<td>44</td>
<td>1-9/16”</td>
<td>2-1/2”</td>
</tr>
<tr>
<td>GNIT 1370-BC01F</td>
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<td>3,000 (129)</td>
<td>70</td>
<td>16</td>
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</tr>
<tr>
<td>GNIT 1388-BC01F</td>
<td>159.0 (601.9)</td>
<td>8,000 (338)</td>
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<tr>
<td>GNIT 1314-BC01F</td>
<td>253.0 (957.7)</td>
<td>11,000 (463)</td>
<td>140</td>
<td>24</td>
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</tr>
<tr>
<td>GNIT 2044-BC01F</td>
<td>210.0 (794.9)</td>
<td>1,000 (43)</td>
<td>44</td>
<td>1-9/16”</td>
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</tr>
<tr>
<td>GNIT 2070-BC01F</td>
<td>335.0 (1,298)</td>
<td>3,000 (129)</td>
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</tr>
<tr>
<td>GNIT 2088-BC01F</td>
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<td>8,000 (338)</td>
<td>88</td>
<td>20</td>
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<tr>
<td>GNIT 2014-BC01F</td>
<td>671.0 (2,540)</td>
<td>11,000 (463)</td>
<td>140</td>
<td>24</td>
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<tr>
<td>GNIT 2444-BC01H</td>
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<td>1,000 (43)</td>
<td>44</td>
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<td>4”</td>
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<td>3,000 (129)</td>
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<td>16</td>
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</tr>
<tr>
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<td>8,000 (338)</td>
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<td>20</td>
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<tr>
<td>GNIT 2414-BC01H</td>
<td>970.0 (3,671)</td>
<td>11,000 (463)</td>
<td>140</td>
<td>24</td>
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<tr>
<td>GNIT 3244-BC01H</td>
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<td>1,000 (43)</td>
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<td>4”</td>
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<td>8,000 (338)</td>
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<tr>
<td>GNIT 3214-BC01H</td>
<td>1,765.0 (6,681.2)</td>
<td>11,000 (463)</td>
<td>140</td>
<td>24</td>
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</tr>
</tbody>
</table>

X = 4 for 316 SS, 5 for ALLOY 20, 6 for HAST. C, 8 for PVC, A for PVDF

### Features

- Flow capacities up to 3530 GPH (Duplex)
- Pressure Up to 3,500 PSI
- Modular design in aluminum housing
- Metering accuracy +/- 1%
- Easy capacity controls – Manual/Auto
- Built in safety – Internal relief valve
- Available in duplex to double flow capacity
- Ability to handle difficult liquids like slurries, off-gassing, and high viscosity liquids

### Specifications

**Flow capacity adjustment:** 0-100%

While the pump is **running** or **stopped**

**Turndown Ratio**
- Stroke length: 48:1
- Stroke frequency: 48:1
- Combined: 480:1

**Maximum process fluid temperature**
- Custom engineered metallic liquid end: 500°F
- Metallic liquid end/PTFE diaphragm: 250°F (121°C)
- Plastic Head: 140°F (60°C)

**Hydraulic Oil**
- Oil capacity: 52 qt.

**Plunger Stroke**
- Stroke length: 4”

**Displacement per stroke – by plunger size**
- 7/8” - 2.2698 cu. in. (37.19 ml)
- 1-1/8” - 3.8013 cu. in. (62.29 ml)
- 1-9/16” - 7.6453 cu. in. (125.29 ml)
- 2-1/2” - 19.63 cu. in. (321.77 ml)
- 3” - 28.1989 cu. in. (462.12 ml)
- 4” - 50.34 cu. in. (824.99 ml)

**Liquid End Material Options**
- 316 SS, Alloy 20, Hastelloy C, PVC, PVDF and PTFE

**Metering accuracy**
- Steady state: +/- 1%
- Linearity: +/- 1%
- Combined: +/- 1%

**Performance Curve - Typical**
Standard Model

- Motor
- Worm Shaft
- Cross Head & Cam
- Plunger
- IRV
- Contour Plate
- Diaphragm Head
- Back Up Plate
- Diaphragm

Liquid End (Metallic)

- Check Valve
- Contour Plate
- Diaphragm Head

DIMENSIONS

(Shown: Typical Series 4000 Model with Metallic Liquid End and 2-1/2" NPTM Discharge/Suction Connections)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E (NPT)</th>
<th>F (NPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallic</td>
<td>5-3/4&quot;</td>
<td>19-1/8&quot;</td>
<td>29-1/2&quot;</td>
<td>37-1/2&quot;</td>
<td>1-1/2&quot; to 4&quot; M</td>
<td>1-1/2&quot; to 4&quot; M</td>
</tr>
<tr>
<td>Plastic</td>
<td>4-1/8&quot;</td>
<td>24-5/8&quot;</td>
<td>34&quot;</td>
<td>47-5/8&quot;</td>
<td>2-1/2&quot; M</td>
<td>2-1/2&quot; M</td>
</tr>
</tbody>
</table>

*Standard weight is 250 lbs. Varies depending on material and configuration.
Features

- Flow capacities up to 6.5 GPH (Duplex)
- Pressure Up to 3000 PSI
- Modular design in aluminum housing
- Metering accuracy +/- 1%
- Easy capacity controls – Manual/Auto
- Built in safety – Internal relief valve
- Available in duplex to double flow capacity

Specifications

Flow capacity adjustment: 0-100%
While the pump is running or stopped

Turndown Ratio
Stroke length – 10:1
Stroke frequency – 10:1
Combined – 100:1

Metering accuracy
Steady state: +/- 1%
Linearity: +/- 1%
Combined: +/- 1%

Maximum process fluid temperature
Custom engineered metallic liquid end: 500°F
Metallic liquid end/PTFE diaphragm: 250°F (121°C)
Plastic Head: 140°F (60°C)

Oil Capacity
Hydraulic oil: 1 qt.
ATF: 1 qt.

Plunger Stroke
Stroke length: 3/4”

Displacement per stroke – by plunger size
3/16” - 0.0207 cu. in. (0.33 ml)
1/4” - 0.0368 cu. in. (0.60 ml)
3/8” - 0.0828 cu. in. (1.35 ml)

Liquid End Material Options
316 SS, Alloy 20, Hastelloy C, PVC, PVDF and PTFE

Series 900 PERFORMANCE TABLE

<table>
<thead>
<tr>
<th>AquFlow Model Number</th>
<th>Capacity GPH (LPH)</th>
<th>Pressure PSIG (bars)</th>
<th>Speed (SPM)</th>
<th>Plunger Diameter</th>
<th>Connection (Metallic - NPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM3T 1929-0X013</td>
<td>0.14 (0.53)</td>
<td>3,000 (200)</td>
<td>29</td>
<td>3/16”</td>
<td>1/4”</td>
</tr>
<tr>
<td>DM3T 1958-0X013</td>
<td>0.28 (1.06)</td>
<td>3,000 (200)</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 1997-0X013</td>
<td>0.47 (1.78)</td>
<td>3,000 (200)</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 1912-0X013</td>
<td>0.56 (2.20)</td>
<td>0</td>
<td>117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 1914-0X013</td>
<td>0.67 (2.54)</td>
<td>0</td>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 1917-0X013</td>
<td>0.82 (3.10)</td>
<td>0</td>
<td>170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 2529-0X013</td>
<td>0.24 (0.91)</td>
<td>0</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 2558-0X013</td>
<td>0.49 (1.85)</td>
<td>0</td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 2597-0X013</td>
<td>0.82 (3.10)</td>
<td>0</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 2512-0X013</td>
<td>1.00 (3.79)</td>
<td>3,000 (200)</td>
<td>117</td>
<td>1/4”</td>
<td>1/4”</td>
</tr>
<tr>
<td>DM3T 2514-0X013</td>
<td>1.19 (4.50)</td>
<td>0</td>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 2517-0X013</td>
<td>1.44 (5.45)</td>
<td>0</td>
<td>170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 3829-0X013</td>
<td>0.55 (2.08)</td>
<td>3,000 (200)</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 3858-0X013</td>
<td>1.11 (4.20)</td>
<td>3,000 (200)</td>
<td>58</td>
<td></td>
<td></td>
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<tr>
<td>DM3T 3897-0X013</td>
<td>1.86 (7.04)</td>
<td>0</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 3812-0X013</td>
<td>2.24 (8.48)</td>
<td>0</td>
<td>117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 3814-0X013</td>
<td>2.69 (10.18)</td>
<td>0</td>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DM3T 3817-0X013</td>
<td>3.25 (12.30)</td>
<td>0</td>
<td>170</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

X = 4 for 316 SS, 5 for ALLOY 20, 6 for HAST. C, 8 for PVC, A for PVDF

PERFORMANCE CURVE - TYPICAL

ULTRA LOW FLOW SERIES
Designed Specifically for Low Flow Applications
IN Oil & Gas, Pharma, Cosmetics, Food & Other Industrial Applications.
**CROSS SECTION**

**Standard Model**

**Liquid End (Metallic)**

---

**DIMENSIONS**

(Shown: Typical Series 900 Model with Plastic Liquid End and 1/4" NPTM Discharge/Suction Connections)

**Series 900, Duplex**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D (NPT)</th>
<th>E (NPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metallic</td>
<td>1/2”</td>
<td>7-3/8”</td>
<td>17-1/2”</td>
<td>1/4” M</td>
<td>1/4” M</td>
</tr>
<tr>
<td>Plastic</td>
<td>1/2”</td>
<td>7-3/8”</td>
<td>18-1/2”</td>
<td>1/2” M</td>
<td>1/2” M</td>
</tr>
</tbody>
</table>

*Standard weight is 75 lbs. Varies depending on material and configuration.*
Capacity Control Options

The capacity of these pumps can be adjusted by adjusting the stroke length and stroke speed.

Capacity Control Options: All AquFlow pumps come with manual stroke length controls.

Stroke Length Controls: Manual - Standard on all pumps
Electric – Electric stepper motor. Capable of 4-20mA input
Pneumatic – Runs on 30 PSI air for hazardous environment

Stroke Speed Controls: Variable Frequency Drive – AC/DC

Leak Detection Options

Leak Detection: There are two types of leak detection options available with AquFlow pumps.

Conductive: Conductivity probe between 2 diaphragms to sense any break/rupture.

Vacuum: Uses a vacuum switch between 2 diaphragms to sense rupture/ failure.

Liquid Handling Options

AquFlow pumps are used with many kinds of liquids, some of which may need special configurations.

Tubular: For liquids with suspended solids/slurries that may clog. Perfect fit for high viscosity liquids.

Degassing Valve: Some challenging liquids can cause air locking due to off gassing. Our pump head with degassing valve ensures accurate and consistent pumping by expelling gas bubbles from the pump head.

Double Ball Check Valve: To ensure you have positive valve shut off.

Tungsten Carbide Valve Balls: For abrasive liquids.

Other Options

Liquid Connections – NPT / FLANGE/ TRICLAMP

Motor Options: Enclosure: TEFC, TENV, Explosion Proof, Washdown
Power Supply: ACV 115V, 230V, 380V, 460V, DC-12, 24, 90, 180, Single Phase, 3-Phase.
ADJUSTING STROKE LENGTH

MANUAL CONTROL

Our standard hydraulic diaphragm metering pump's volume (capacity) can be adjusted from 100% down to 10% by changing the stroke length without compromising the accuracy. Our pumps are factory set at 100% of the maximum pump capacity and can be adjusted by turning the manual knob to the preferred percentage. The stroke length of AquFlow pumps can be adjusted while the pump is running. This makes achieving the exact amount of flow quick and easy.

ELECTRONIC CAPACITY CONTROL ADJUSTER

AquFlow’s Electronic Capacity Control Adjuster (ECCA™) permits the automatic control of pump capacity by changing the stroke length. Replacing the standard manual micrometer knob and mounting directly on the pump, the ECCA uses miniaturized, state-of-the-art electronic technology built around an AC synchronous motor. This permits precise actuator travel, without hunting or overshoot.

INTELLIGENT VERIFICATION AND CONTROL SYSTEM (IVAX)

Controlling an AquFlow chemical metering pump can be done by regulating the capacity of the pump via the electrical capacity control actuator (ECCA), the speed of AC motors via the Variable Frequency Drive (VFD) or DC motors via SCR. The ECCA and the VFD have a 4-20 mA signal input and feedback output. The major components of the IVAX are the HMI/PLC, the Magmeter, the ECCA, and the VFD. Customers can choose to control the pump via the VFD, the ECCA or both.

PNEUMATIC CAPACITY CONTROL

AquFlow’s Pneumatic Capacity Control (PACO™) permits the automatic adjustment of pump capacity. Replacing the standard manual micrometer knob and mounting directly on the pump, the PACO permits remote capacity adjustment from a manual loading station and/or a response to an instrument air signal from a process controller.

ADJUSTING STROKE SPEED

VARIABLE FREQUENCY DRIVE

The HydroDrive™ AC Variable Frequency Drive is a variable speed control in a NEMA 4X (IP-65) washdown, watertight enclosure. It is designed to operate 208-230 Volt 3-Phase AC induction motors through 3.6 Amps RMS. The sine wave coded Pulse Width Modulated (PWM) output operates at a frequency of 16Hz which provides high torque and efficiency at a low noise level.

VARIABLE SPEED DRIVE

Specifically designed for use with metering pumps, the AquFlowt HydroDrive™ DC SCR Variable Speed Drive is a NEMA 4X (IP-65) variable speed motor control for shunt wound or permanent magnet motors. Its rugged, die cast aluminum housing is protected with an acrylic coating for maximum corrosion resistance, making it suitable for application requiring washdown, watertight integrity. All switches are sealed with rubber boots and the manual speed adjustment potentiometer incorporates a shaft seal.

DUAL AXIS PUMP CONTROL

By combining both stroke length and speed we get control and fine resolution. Use either the manual or automatic stroke length adjuster with the VFD to control pump speed.
TYPICAL AQUFLOW PUMP INSTALLATION

**Calibration Columns:**
- Help calibrate the pump accurately
- Should be based on the flow rate and chemical compatibility to the fluid
- Available as 0-10 liters in PVC, Stainless Steel etc.

**Back Pressure Valves:**
- Maintain steady shut off pressure for valves
- Allow for repeatability of a constant fluid discharge per stroke
- Available as 3/8” to 2” in PVC, Stainless Steel, Alloy 20, PVDF, Hast. C

**Safety Relief Valves:**
- For additional layer of safety from over pressurization
- Used when pumps are capable of higher pressure than the discharge line pressure
- Available as 3/8” to 2” in PVC, Stainless Steel, Alloy 20, PVDF, Hast. C

**Pressure Gauge with Isolator:**
- To visually see the functionality of the pump
- Isolator separates internal components from chemicals
- Available in PVC, Stainless Steel, Alloy 20, PVDF, Hast. C

**Pulsation Dampeners:**
- To get a pulse-less, steady flow
- Removes a high degree of pulsing and surging in the line
- Available as 0-10 liters in PVC, Stainless Steel, Alloy 20, PVDF, Hast. C

**Flow Meters:**
- Detect low flow rate as low as 1.8 GPH
- Compatible with most chemicals

**Strainers:** To keep the debris away from check valves

AQUFLOW PUMPS WORK BEST WITH AQUFLOW ACCESSORIES
CUSTOMIZED RELIABILITY - COMPLETE CHEMICAL FEED SYSTEMS

EVERYTHING YOU NEED FOR ACCURATE CHEMICAL DELIVERY IN YOUR PROCESS

- Tell us your chemical dispensing requirements. We will build a customized system for you.
- We will also provide you with system automation to match your needs.
- A complete turnkey system that can perform dependably and durably with minimal down time.

FROM CHEMICAL TANK TO INJECTION QUILL – COMPATIBLE ACCESSORIES

- We have pre-matched every component that goes in the system. No incompatibility issues.
- Tested components and controls to ensure optimal performance.
- One responsive team. Comfort in knowing you can call one team known for its responsiveness.

AVAILABILITY OF ALL SERVICE PARTS UNDER ONE ROOF

- We maintain adequate inventory of critical service parts to ensure minimal down time.
- Our vendors also support us with similar availabilities for outsourced parts.
- Since we maintain complete records for all CI systems built we can always get right parts.

SKID MOUNTED, MOBILE STATIONS, SITE MOUNTED, VEHICLE MOUNTED OPTIONS

- While most assemblies are skid mounted which is then placed at the site there are some systems that are too big for skid mounting. For such systems we provide on site assembly.
- Where mobility is important, we have built mobile systems mounted on carts / trailers or even mounted directly on a vehicle for covering long distances.

STANDARD RANGE OF CHEMINJECTOR PACKAGES

CHEMINJECTOR BASIC ASSEMBLY

- Essential Accessories like Back Pressure Valve, Pressure Relief Valve, Inlet and Discharge Valves, Connecting piping mounted on a simple skid along with the pump and motor.

CHEMINJECTOR STANDARD SYSTEM

- In addition to the Basic Assembly components we add Calibration Column, Inlet Strainer, Pressure Gauge with Isolator, Control Panel with On / Off Switch.

CHEMINJECTOR AUTO SYSTEM

- This includes automation controls which can be communicated with a 4-20mA signal from a computer or a SCADA. Capacity is adjusted with either a VFD or ECCA (Stroke Adjuster).

CHEMINJECTOR AUTO PLUS SYSTEM

- This also includes a feedback loop from a flow meter to ensure the accurate delivery of the chemical. This system also comes with an optional memory for record keeping.

CHEMINJECTOR AUTO PLUS REMOTE CONTROL SYSTEM

- As the name suggests this system has the additional capability to be controlled remotely using a radio signal or over the internet using a computer, tablet or a smart phone.
AQUFLOW WARRANTY – INDUSTRY LEADING

For Hydraulic diaphragm metering pumps Manufactured in the USA!

AquFlow has been manufacturing premium quality hydraulic diaphragm metering pumps for over 40 years since 1972. We have refined the design and perfected the performance over that period to earn a reputation as a maker of long lasting durable pumps that never quit. We have numerous testimonials from our customers who had made the change from competitive pumps to AquFlow never to buy another brand again.

It is with this confidence that AquFlow offers a limited warranty for all its hydraulic diaphragm metering pumps that are manufactured in Irvine, California, USA up to 3 years on all prequalified applications.

OTHER PUMP LINES WE CARRY INCLUDE:

XTRAFLOW PROGRESSING CAVITY PUMPS

XTRAFLOW sells progressing cavity pumps with top notch mechanical components to increase performance. The patented pin join allows the pump to be completely reversible and sustain constant high pressures. Rotors are available in small to large, with many options to meet all your process demands. Progressing cavity pumps are strong and compact, but precise geometry remains with big solid passages for max suction.

Range: Diamond series, Dosing, Flanged, Hopper, Bridge breaker, Food grade, Vertical, Grinder AND MORE

TAPFLO AIR OPERATED DIAPHRAGM PUMPS

Tapflo America sells high end Air Operated Diaphragm pumps made by Tapflo a Sweden based manufacturer. Tapflo has a complete line of AODD pumps made out of corrosion resistant plastics and metals. Their plastic pump housings are machined out of solid block of material which ensure tighter tolerances and hence better sealing surfaces. This ensures longer leak free life in comparison to molded plastic pumps.

Tapflo is also known for their line of sanitary and pharmaceutical pumps. Tapflo makes the only USP Class VI certified line of pharmaceutical pumps. Flow rates over 212 GPM in sizes up to 3” inlet and outlet.

FOLLOW US ONLINE:

AQUFLOW
AQUFLOWPUMPS

Corrosion Resistant Materials
316 Stainless Steel, Alloy 20, Hastelloy C
PVC, PVDF, PTFE

Chem Injector Chemical Systems
Complete Customized chemical system
Uninterrupted Consistent Chemical Delivery
Perfectly matched Accessories
Controls that are user friendly and digitized
All Components proven to work well together
Easy to operate, maintain and service
No downtime with parts availability

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