Neptune Polymaster™ dilutes, mixes and thoroughly activates emulsion, dispersion and solution polymers including new high molecular weight products.

Polymaster™ provides state-of-the-art polymer activation and blending through the use of the patented, motorized Gatlin distribution head.

Polymaster™ is simple, automatic and economical, providing better mixing and a higher degree of activation than similar machines. Polymaster™ is easy to operate and maintain.

**Features**

- **Patented Gatlin Mixer**
  - Provides maximum activation; degree of activation not affected by fluctuating water pressure.
  - Eliminates the need for costly booster pumps.
  - Contains no blades to damage fragile polymer chains.

- Models available up to 300 gpm dilute solution at concentrations from 0.1 to 2.0%.

- Single and post dilution models available.

- Compact, lightweight, stainless steel design allows portability if required.

- Easy access to all components.

- All electrical controls, pump controls, dilution water flow control and flow indication located on front panel.

- Simple installation. Requires plug-in electrical connection plus connection to water and polymer supply lines and point of use.

- Automatic shut-down and alarm on loss of dilution water.

- Manual or automatic models. Automatic units adjust polymer pump flow rate by pacing the speed of the polymer pump to an external 4-20mA signal.

- Choice of electronic or motor driven metering pumps, gear pumps or progressing cavity pumps for polymer injection.

Remote pump models available. Allows use of the Polymaster™ with motor driven pumps. Also allows remote mounting of pump for housekeeping purposes or to eliminate the need for separate polymer drum/storage tank at each point of polymer use.
HOW TO SIZE AND SELECT

Follow these easy steps to select the correct Polymaster™ unit:

1. Determine the amount of neat polymer required. This will determine the pump size.

2. Determine the correct dilution ratio at which the polymer is to be used. This will determine the Polymaster™ model.

   Example: 2.5 gph of liquid polymer is required. The desired application rate is a 0.5% solution (200:1 dilution). Therefore, a pump 2.5 gph or greater is required. The dilution water requirement is (200 x 2.5) 500 gph.

3. Select correct Polymaster™ and pump combination.

   Example: Decide if the unit is to be manual or automatic. Assuming an automatic model is desired, select an automatic Polymaster™ with greater than 500 gph water capacity: the Model PA-600 is selected. Select a pump with a capacity greater than 2.5 gph: the 4.5 gph automatic pump (Model 107804A) is selected. Order Polymaster™ Model PA-600 with pump Model 107804A.
Standard Automatic Units

The following models may be specified with any electronic metering pump from the chart below. Note, only electronic metering pumps may be used with standard units. Motor operated diaphragm pumps, gear pumps or progressing cavity pumps must be used with remote units (see chart on opposite page).

4-20mA Pump Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>MAX. WATER FLOW</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA-60</td>
<td>60 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PA-100</td>
<td>100 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PA-200</td>
<td>200 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PA-300</td>
<td>300 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PA-600</td>
<td>600 gph</td>
<td>22&quot;</td>
<td>1&quot; FNPT</td>
<td>1&quot; FNPT</td>
<td>1⁄2&quot; FNPT</td>
</tr>
<tr>
<td>PA-1200</td>
<td>1200 gph</td>
<td>22&quot;</td>
<td>1⁄2&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>1&quot; FNPT</td>
</tr>
</tbody>
</table>

Electronic Metering Pumps
For Use With Automatic Polymasters™

Manual Stroke Length Control • Automatic 4-20mA Speed Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CAPACITY</th>
<th>MAX. PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>107802A</td>
<td>1 gph</td>
<td>110 psi</td>
</tr>
<tr>
<td>107803A</td>
<td>2 gph</td>
<td>50 psi</td>
</tr>
<tr>
<td>107804A</td>
<td>4.5 gph</td>
<td>50 psi</td>
</tr>
<tr>
<td>107805A</td>
<td>8 gph</td>
<td>60 psi</td>
</tr>
<tr>
<td>107806A</td>
<td>10 gph</td>
<td>80 psi</td>
</tr>
</tbody>
</table>

Standard Manual Units

The following models may be specified with any electronic metering pump from the chart below. Note, only electronic metering pumps may be used with standard units. Motor operated diaphragm pumps, gear pumps or progressing cavity pumps must be used with remote units (see chart on opposite page).

Manual Pump Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>MAX. WATER FLOW</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-60</td>
<td>60 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PM-100</td>
<td>100 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PM-200</td>
<td>200 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PM-300</td>
<td>300 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PM-600</td>
<td>600 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
<tr>
<td>PM-1200</td>
<td>1200 gph</td>
<td>22&quot;</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
<td>3⁄4&quot; FNPT</td>
</tr>
</tbody>
</table>

Electronic Metering Pumps
For Use With Manual Polymasters™

Manual Stroke Length Control • Manual Speed Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CAPACITY</th>
<th>MAX. PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>107802M</td>
<td>1 gph</td>
<td>110 psi</td>
</tr>
<tr>
<td>107803M</td>
<td>2 gph</td>
<td>50 psi</td>
</tr>
<tr>
<td>107804M</td>
<td>4.5 gph</td>
<td>50 psi</td>
</tr>
<tr>
<td>107805M</td>
<td>8 gph</td>
<td>60 psi</td>
</tr>
<tr>
<td>107806M</td>
<td>10 gph</td>
<td>80 psi</td>
</tr>
</tbody>
</table>

*Motor Speed Control for Remote Pump Units
### Remote Pump Automatic Units

The following models may be specified with any automatic electronic metering pump (see chart on opposite page) or with any motor operated metering pump from the automatic pump selection chart below. These models may also be used with gear type or progressing cavity type pumps.

#### 4-20mA Pump Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>MAX. WATER FLOW</th>
<th>A LENGTH</th>
<th>B POLYMER INLET</th>
<th>C DILUTION WATER INLET</th>
<th>D MIXED SOLUTION OUTLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA-1200R</td>
<td>1200 gph</td>
<td>22&quot;</td>
<td>½&quot; FNPT</td>
<td>1&quot; FNPT</td>
<td>1½&quot; FNPT</td>
</tr>
<tr>
<td>PA-3000R*</td>
<td>3000 gph</td>
<td>32&quot;</td>
<td>½&quot; FNPT</td>
<td>1½&quot; FNPT</td>
<td>2&quot; FNPT</td>
</tr>
</tbody>
</table>

*Post Dilution Model provides 1200 gph initial dilution, 1800 gph post dilution, independent water control valve and flow rate indicator for each dilution stage.

### Remote Pump Manual Units

The following models may be specified with any manual electronic metering pump (see chart on opposite page) or with any motor operated metering pump from the manual pump selection chart below. These models may also be used with gear type or progressing cavity type pumps.

#### Manual Pump Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>MAX. WATER FLOW</th>
<th>A LENGTH</th>
<th>B POLYMER INLET</th>
<th>C DILUTION WATER INLET</th>
<th>D MIXED SOLUTION OUTLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-1200R</td>
<td>1200 gph</td>
<td>22&quot;</td>
<td>½&quot; FNPT</td>
<td>1&quot; FNPT</td>
<td>1½&quot; FNPT</td>
</tr>
<tr>
<td>PM-3000R*</td>
<td>3000 gph</td>
<td>32&quot;</td>
<td>½&quot; FNPT</td>
<td>1½&quot; FNPT</td>
<td>2&quot; FNPT</td>
</tr>
</tbody>
</table>

### Motor Driven Metering Pumps

**For Use With Remote Automatic Polymasters™**

Manual Stroke Length Control • Automatic 4-20mA Speed Control

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CAPACITY</th>
<th>MAX. PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>532-VS-N3A</td>
<td>11 gph</td>
<td>100 psi</td>
</tr>
<tr>
<td>535-VS-N3A</td>
<td>18 gph</td>
<td>100 psi</td>
</tr>
<tr>
<td>547-VS-N3A</td>
<td>29 gph</td>
<td>100 psi</td>
</tr>
</tbody>
</table>

**For Use With Remote Manual Polymasters™**

Manual Stroke Length Control • Constant Speed Motor

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CAPACITY</th>
<th>MAX. PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>532-VS-N3M</td>
<td>11 gph</td>
<td>100 psi</td>
</tr>
<tr>
<td>535-VS-N3M</td>
<td>18 gph</td>
<td>100 psi</td>
</tr>
<tr>
<td>547-VS-N3M</td>
<td>29 gph</td>
<td>100 psi</td>
</tr>
</tbody>
</table>

### Gear or Progressing Cavity Pumps

May Be Used With Remote Automatic or Manual Polymasters™

Advise type and size of existing pump and drive or specify requirements for new pump and drive.
**FLOW DIAGRAMS**

**SPECIFICATIONS**

Minimum water pressure required . . . 25 psi  
Maximum operating pressure . . . . 100 psi  
Pressure drop across unit . . . . . less than 15 psi  

**Turndown ratio:**  
- Water 5:1  
- Polymer 10:1 on stroke length  
- 10:1 on speed  
- 100:1 total  

**Water control includes:**  
- Rotameter for flow indication and adjustment  
- Solenoid valve for on/off control  
- Water pressure gauge  
- Water pressure switch  
- Water supply line strainer  

**Polymer control includes:**  
- Positive displacement metering pump with manual stroke length control and manual or automatic stroke speed control  
- Polymer inlet line strainer  
- Polymer injection check valve and back pressure valve  

**Standard electrical controls include:**  
- NEMA 4X control enclosure and junction box  
- Power cord and plug  
- Terminal strip connection for 4-20mA pacing signal (automatic units only)  
- Local-off-remote selector switch and red running light. Terminals for remote start/stop interlock.  
- Interlock for shut-down on loss of dilution water includes local amber fault light and remote alarm contact  
- Local manual override of polymer flow rate  

**Power requirements:**  
- Specify 1 phase, 115 volt, 60 Hz  
- OR 1 phase, 220 volt, 50 Hz  
  - Solenoid pump models: 5 amps @ 115 volt  
  - Motor driven pump models: 15 amps @ 115 volt  

---

**LEGEND**

1. Polymer Metering Pump  
2. Injection/Check Valve  
3. Gatlin Distribution Head  
4. Water Pressure Gauge  
5. Solenoid Valve  
6. Dilution Water Adjusting Valve  
7. Flowmeter  
8. Water Check Valve  
9. Water Pressure Switch  
10. Static Mixer and Viewing Cylinder  

---

**ALL MODELS EXCEPT PA-3000R & PM-3000R**

**MODELS PA-3000R & PM-3000R**
**POLYMASTER™ ACCESSORIES**

**Desiccant breather** mounts to 3/4" or 2" bung on 55 gallon drum, preventing moisture laden air from contaminating polymer. Particularly useful in low feed rate applications.  **MODEL PB1**

**Drum suction wand** assembly mounts to 3/4" bung for convenient feeding from drums.  **MODEL PSW75**

**Stainless steel support stand** allows elevation of unit to convenient working height where shelf, table or pedestal mounting is not available. Lower shelf on stand provides convenient mounting location for heavier motorized metering pumps.  **MODEL PST**

**Drum mixer** mounts to 2" bung, allowing occasional mixing of 55 gallon drums. Useful for re-mixing drums that have been stored or for mixing drums that are used in very low flow rate applications.

**Mixer/desiccant breather adapter** allows mounting of both breather and drum mixer on the 2" bung, reserving the 3/4" bung for a polymer drum suction wand.  **MODEL PMA**

---

### Chemical Feed Products Available From Neptune

- **Metering Pumps**
  - from 0.2 to 300 gph simplex;
  - 600 gph duplex

- **Pump Accessories**
  - Relief Valves
  - Back Pressure Valves
  - Pulsation Dampeners

- **Packaged Chemical Feed Systems**

- **Tank, Tote and Drum Mixers**

- **Custom Systems With or Without Tanks**

---

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Toll-Free Fax: 1-800-255-4017
Web Site: http://www.neptune1.com
E-mail: pump@neptune1.com

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