

Polymaster™

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, or progressing cavity pumps for polymer injection.

Neptune
A DOVER COMPANY



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.

GATLIN DISTRIBUTION HEAD

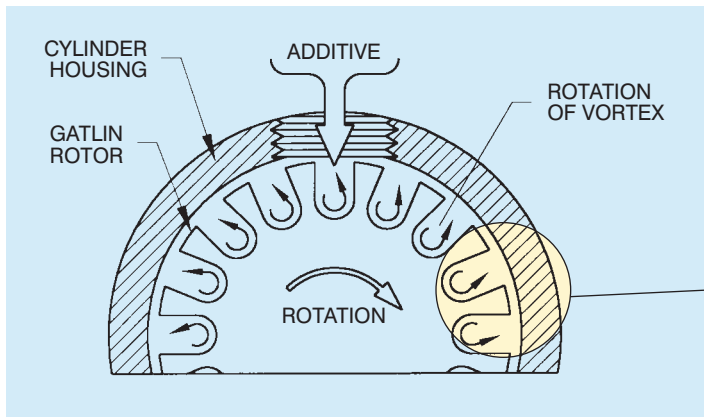
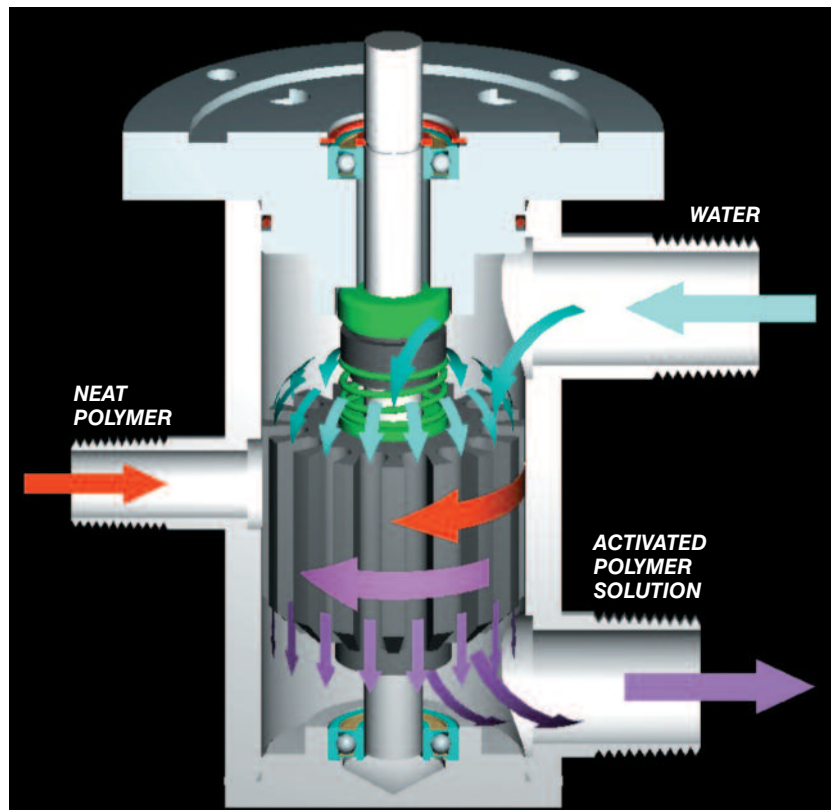
The patented, motorized Gatlin distribution head hydraulically segments polymer into ultra thin film platelets maximizing the polymer surface area exposed to dilution water, providing maximum activation. **Degree of activation is not affected by fluctuating water pressures or dilution water ratio changes.**

How It Works

The Gatlin provides a rapid, high energy initial introduction of polymer to water followed by gentle, low shear mixing in a multi-stage static mixer.

The rotating, slotted head operates at close tolerance to the inner wall of the mixing chamber. The clearance does not permit fish-eyes or gels to form. The slotted rotor creates a series of high velocity vortices without the use of turbine blades which can damage fragile polymer chains.

Superior performance proven repeatedly in side-by-side tests with other blending machines.



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.

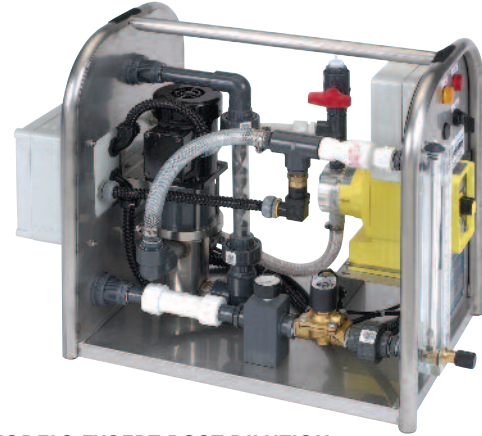
3. Select correct Polymaster™ and pump combination.

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.

POLYMASTER™ STANDARD MODELS SELECTION CHART



ALL MODELS EXCEPT POST DILUTION

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

MODEL NUMBER	MAX. WATER FLOW	A LENGTH	B POLYMER INLET	C DILUTION WATER INLET	D MIXED SOLUTION OUTLET
PA-60	60 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PA-100	100 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PA-200	200 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PA-300	300 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PA-600	600 gph	22"	½" FNPT	¾" FNPT	1" FNPT
PA-1200	1200 gph	22"	½" FNPT	1" FNPT	1½" FNPT

Electronic Metering Pumps

For Use With Automatic Polymasters™

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

MODEL NUMBER	CAPACITY	MAX. PRESSURE
107806A	0.6 gph	140 psi
107802A	1 gph	110 psi
107803A	2 gph	50 psi
107804A	4.5 gph	50 psi
107805A	8 gph	60 psi

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

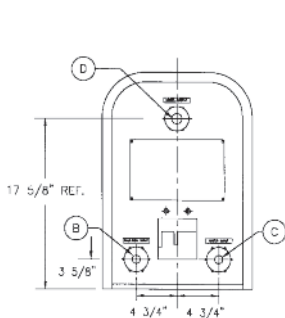
MODEL NUMBER	MAX. WATER FLOW	A LENGTH	B POLYMER INLET	C DILUTION WATER INLET	D MIXED SOLUTION OUTLET
PM-60	60 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PM-100	100 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PM-200	200 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PM-300	300 gph	22"	½" FNPT	¾" FNPT	¾" FNPT
PM-600	600 gph	22"	½" FNPT	¾" FNPT	1" FNPT
PM-1200	1200 gph	22"	½" FNPT	1" FNPT	1½" FNPT

Electronic Metering Pumps

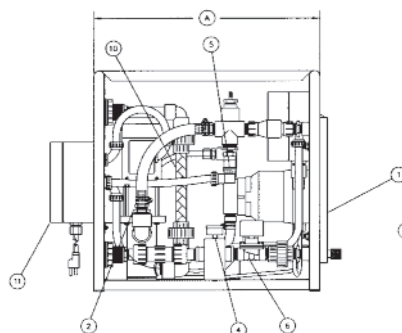
For Use With Manual Polymasters™

Manual Stroke Length Control • Manual Speed Control

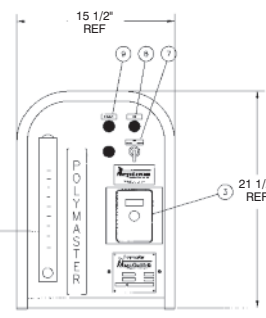
MODEL NUMBER	CAPACITY	MAX. PRESSURE
107806M	0.6 gph	140 psi
107802M	1 gph	110 psi
107803M	2 gph	50 psi
107804M	4.5 gph	50 psi
107805M	8 gph	60 psi



ALL MODELS



MODELS PA/PM-60 to PA/PM-1200

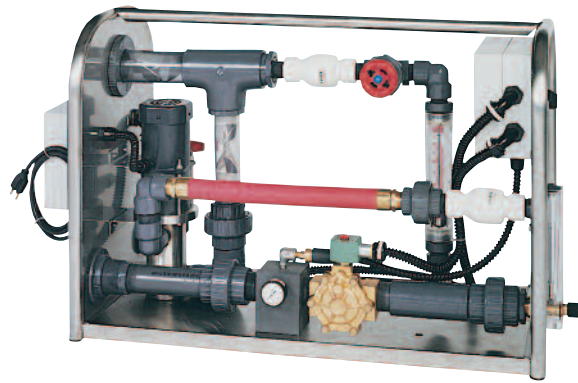
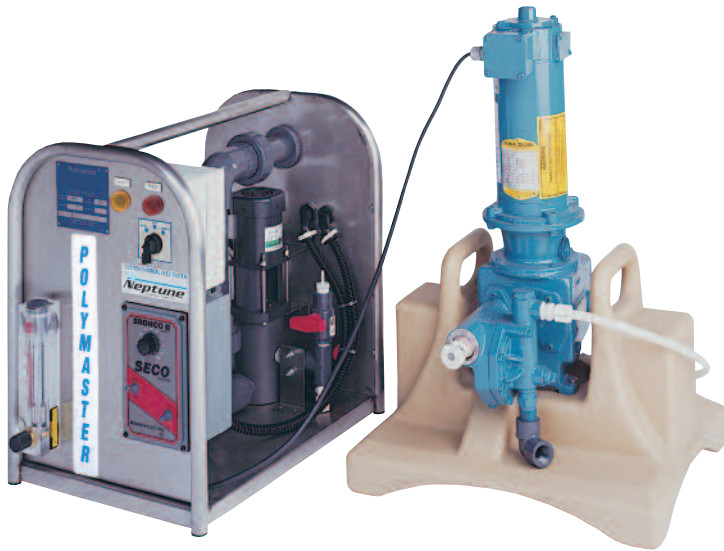


ALL STANDARD MODELS

1	Water Flow Meter w/Rate Set Valve
2	Gatlin Mixer
3	Polymer Pump*
4	Water Pressure Gauge
5	Water Pressure Switch
6	Water Solenoid Valve
7	Sector Switch, Main Power
8	Red Run Light
9	Amber Fault Light
10	Static Mixer
11	Junction Box Power & Signal

*Motor Speed Control for Remote Pump Units

POLYMASTER™ REMOTE MODELS SELECTION CHART



POST DILUTION MODEL PA/PM-3000R

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 progressing cavity type pumps.

4-20mA Pump Control

MODEL NUMBER	MAX. WATER FLOW	A LENGTH	B POLYMER INLET	C DILUTION WATER INLET	D MIXED SOLUTION OUTLET
PA-1200R	1200 gph	22"	½" FNPT	1" FNPT	1½" FNPT
PA-3000R*	3000 gph	32"	½" FNPT	1½" FNPT	2" FNPT

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 progressing cavity type pumps.

Manual Pump Control

MODEL NUMBER	MAX. WATER FLOW	A LENGTH	B POLYMER INLET	C DILUTION WATER INLET	D MIXED SOLUTION OUTLET
PM-1200R	1200 gph	22"	½" FNPT	1" FNPT	1½" FNPT
PM-3000R*	3000 gph	32"	½" FNPT	1½" FNPT	2" FNPT

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

Motor Driven Metering Pumps For Use With Remote Automatic Polymasters™

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

MODEL NUMBER	CAPACITY	MAX. PRESSURE
532-VS-N3A	11 gph	100 psi
535-VS-N3A	18 gph	100 psi
547-VS-N3A	30 gph	100 psi

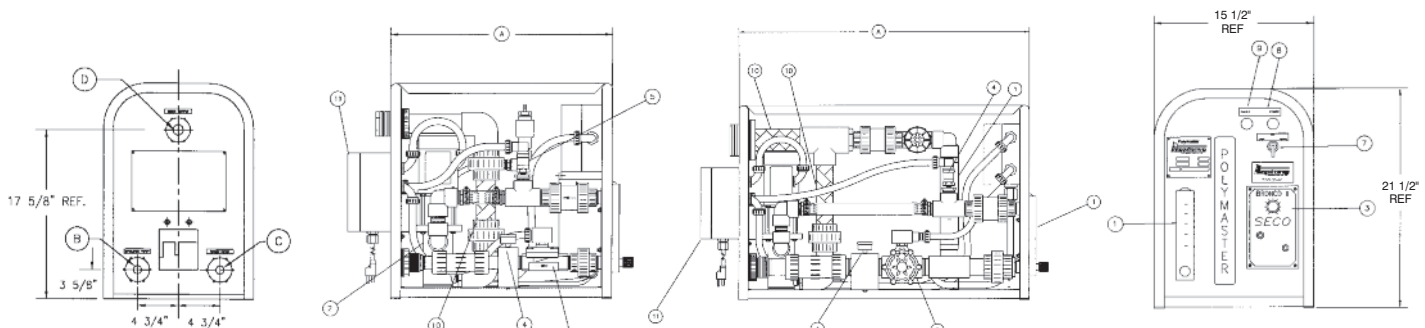
Motor Driven Metering Pumps For Use With Remote Manual Polymasters™

Manual Stroke Length Control • Constant Speed Motor

MODEL NUMBER	CAPACITY	MAX. PRESSURE
532-VS-N3M	11 gph	100 psi
535-VS-N3M	18 gph	100 psi
547-VS-N3M	30 gph	100 psi

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.



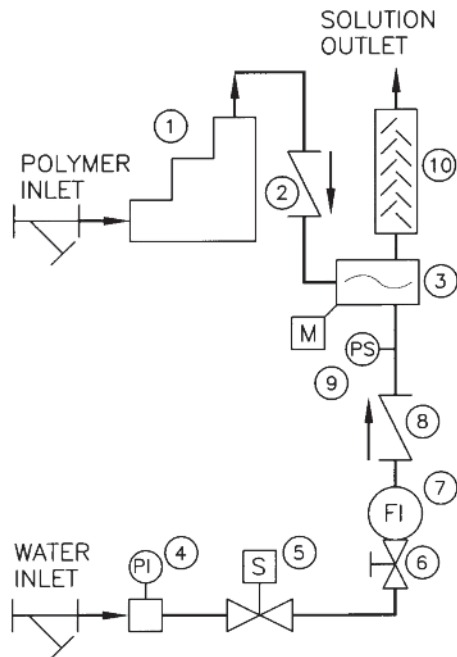
ALL MODELS

MODELS PA/PM-1200R

MODELS PA/PM-3000R

ALL REMOTE MODELS

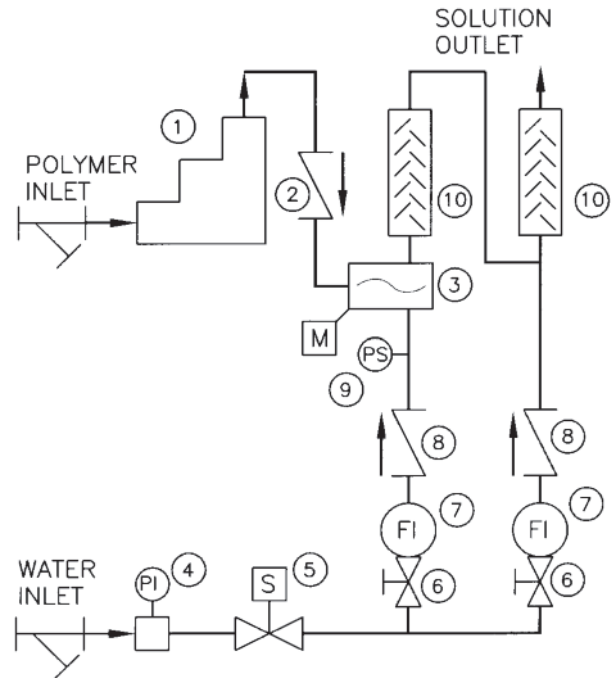
FLOW DIAGRAMS



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

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



MODELS PA-3000R & PM-3000R

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

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**

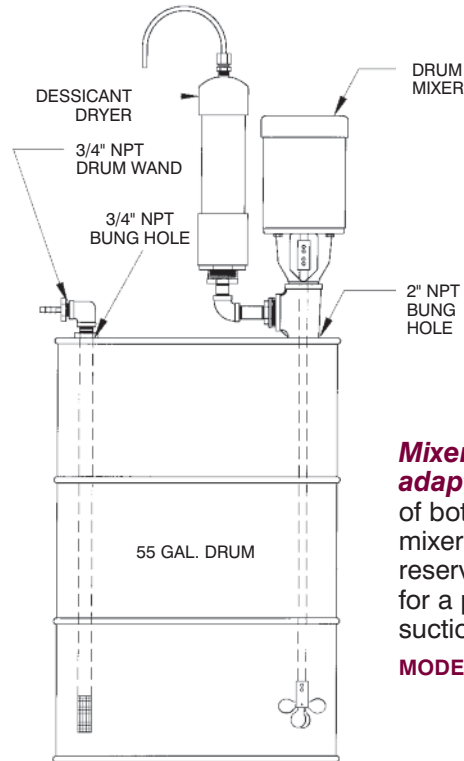


Drum suction wand assembly mounts to 3/4" bung for convenient feeding from drums.

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

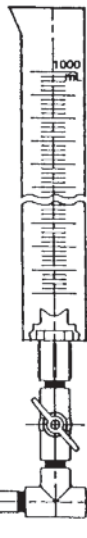


Drum mixer mounts to 2" bung, allowing occasional mixing of 55 gallon drums. Useful for re-mixing drums that have been stored or for mixing drums that are used in very low flow rate applications.

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

Calibration column kit with isolation valves mounts in polymer pump suction line to allow precise determination of polymer flow rate.



POLYMASTER CALIBRATION KIT	
PART NO.	RANGE, GPH
CK-100	0-3
CK-250	1-7
CK-1000	3-30
CK-4000	12-120

CONNECT TO
POLYMASTER

CONNECT TO
POLYMER DRUM

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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