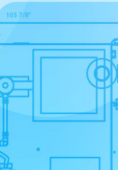
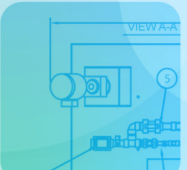
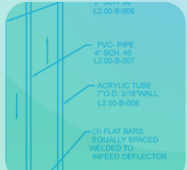
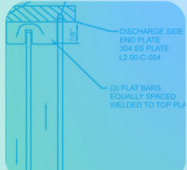
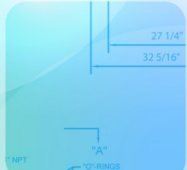
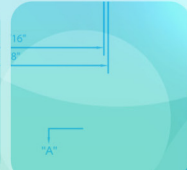
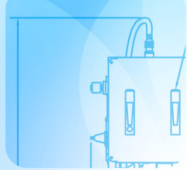
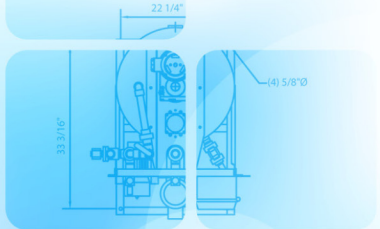
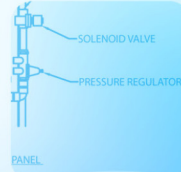
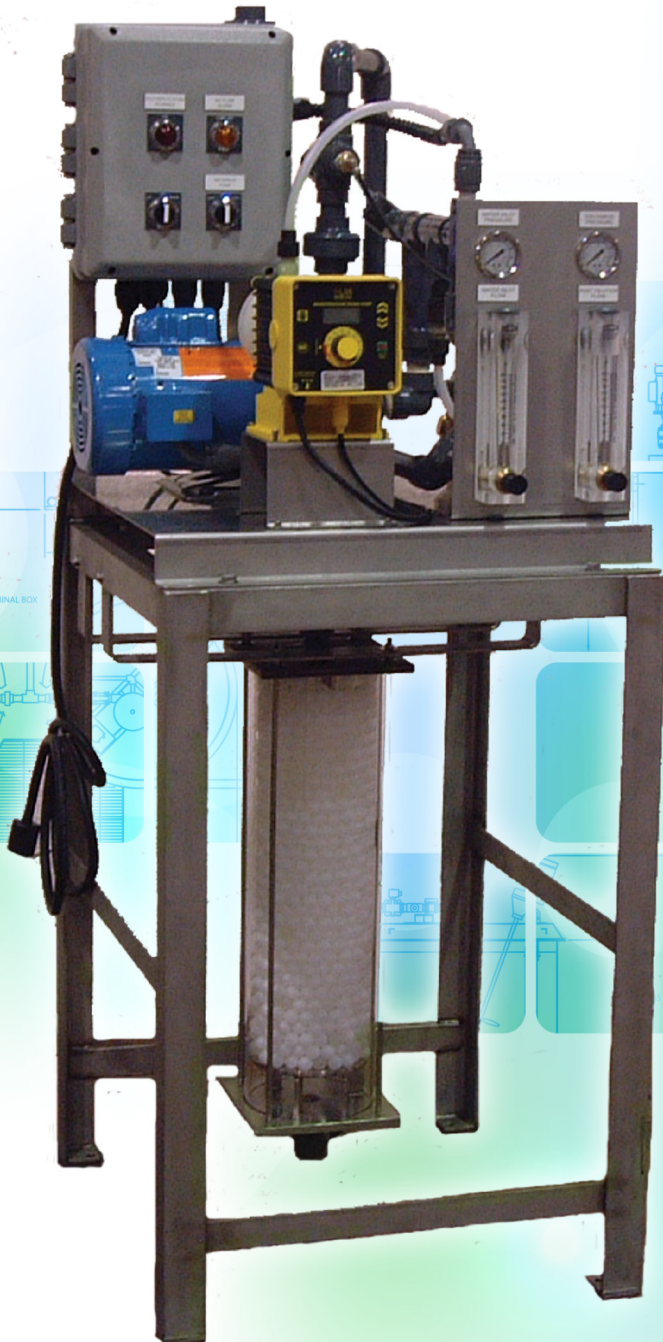


Polymer Solutions

Get thicker quicker.



ROEDOS

A versatile polymer line to complete your dewatering system.

Utilizing over 30 years of experience, Charter Machine Company is proud to offer a complete line of polymer solutions to enhance your treatment process. Polymer selection and preparation is vital in ensuring effective thickening and dewatering. With Charter Machine's high quality products and expert staff, you can feel comfortable in knowing that we will meet your dry/liquid polymer process needs.

It all starts with the right polymer.

Effective solid settling and thickening requires the right polymer selection. The polymer solution acts as the physical bridge that connects the suspended solids together, promoting liquid separation. The chief issue interfering with polymer efficiency occurs when molecular chains are bound tightly together reducing the particle's contact area. A truly effective polymer solution should be selected and aged properly to achieve its highest activation, resulting in the unfolding of the molecular chains. Improper selection and/or mixing results in higher polymer consumption and lower system performance. Our in-house testing facility offers sample testing to assist in assuring optimal performance for our polymer systems.

The Roemix design demonstrates Charter's custom solutions capabilities.



This customized polymer/bentonite mixer is built to meet the exact specifications of our paper mill customer. Each element was designed and developed to meet the facility's unique milling needs.

Custom solutions: One size does not fit all.

Charter Machine offers products for both dry and emulsion polymer systems. Our most popular units the L-1 and the L-2 system, utilize emulsion polymers and can fit a wide range of applications. Charter Machine can also design and customize polymer systems to meet customer requirements.

Our Roedos line of polymer systems provide the proper aging time while ensuring that the correct solution is always available to allow adjustments of your process requirements. Utilizing variable speed type pumps, the Roedos injects the polymer solution into the water or sludge stream. We do not rely on the incoming water pressure that can vary or be too low to properly prepare and transport the polymer solution into the water or sludge line.

In addition:

- Our Roedos systems maintain a constant dosing rate independent of pressure variations in either the water or sludge line.
- The polymer solution is pumped into the line through our multi-port injection non-clog polyethylene ring ensuring the best initial introduction possible.
- Polymer solution and sludge are rapidly mixed in our inline venturi type mixer. *Mixing energy is easily adjustable.
- All units built with non-corrosive construction stainless steel components and Schedule 80 PVC piping.
- We provide a full range of customer services by our team of trained service technicians.

Take a look at our full line of polymer systems, and choose which one works best for you.

Model	Mixing/Holding Capacity (Gal.)	Type of Polymer	Power Requirements	Control Option	
				Discrete	PLC
Roedos L-1	50	Emulsion	120V/1PH/60Hz	X	
Roedos L-2.10	Variable	Emulsion	120V/1PH/60Hz	X	
Roedos L-2.20	Variable	Emulsion	120V/1PH/60Hz	X	
Roedos 500	500/500	Liquid, Emulsion, and Dry	480V/3PH/60Hz	X	
Roedos III	300/450	Liquid, Emulsion, and Dry	480V/3PH/60Hz		X
Roedos VI	600/750	Liquid, Emulsion, and Dry	480V/3PH/60Hz		X

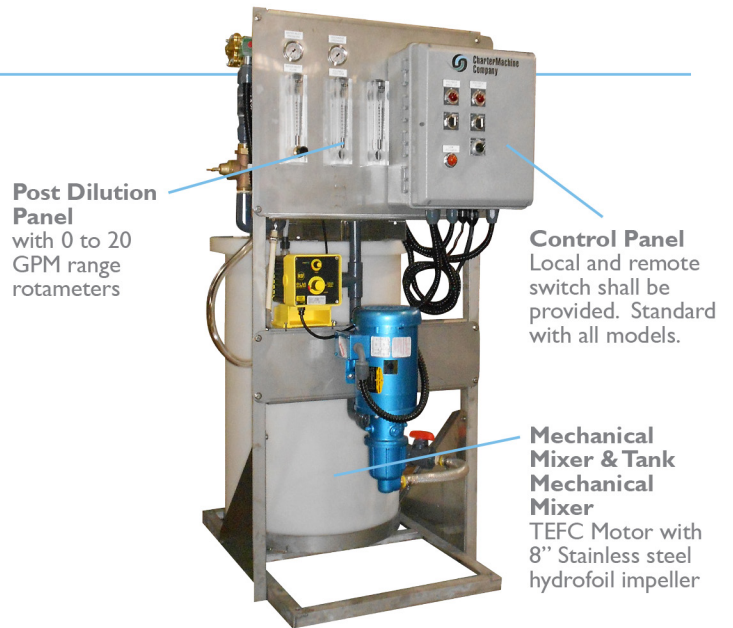
Charter Machine can customize or configure polymer systems to meet your needs.

Roedos Model L-1

The original Roediger system.

- Utilized with any size press
- Variable speed mixing capabilities
- Built in 50 gallon high density Polyethylene mix/aging tank with mechanical mixer
- Level sensor for automatic continuous operation
- Metering pump from 8 GPH to 20 GPH of emulsion polymer
- Variable speed positive displacement type pump to feed aged/mixed polymer
- Capable of producing 1800 GPH of polymer solution*
- Control panel supporting fully automatic and manual operation

*Assuming 0.2 to 0.6 concentration

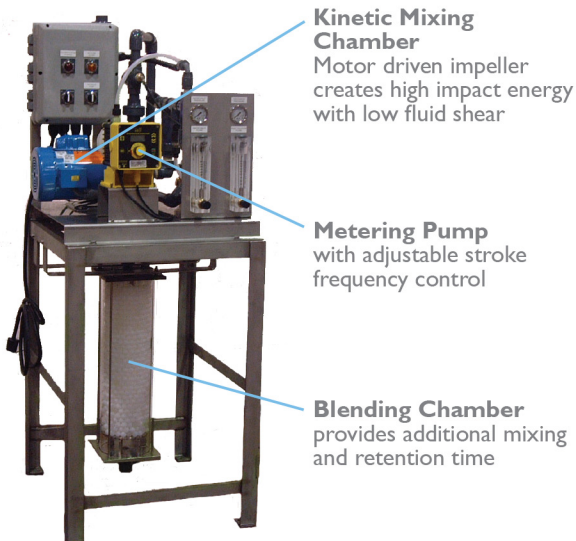


Roedos Model L-2

Our most popular emulsion polymer system. Economical, simple, direct.

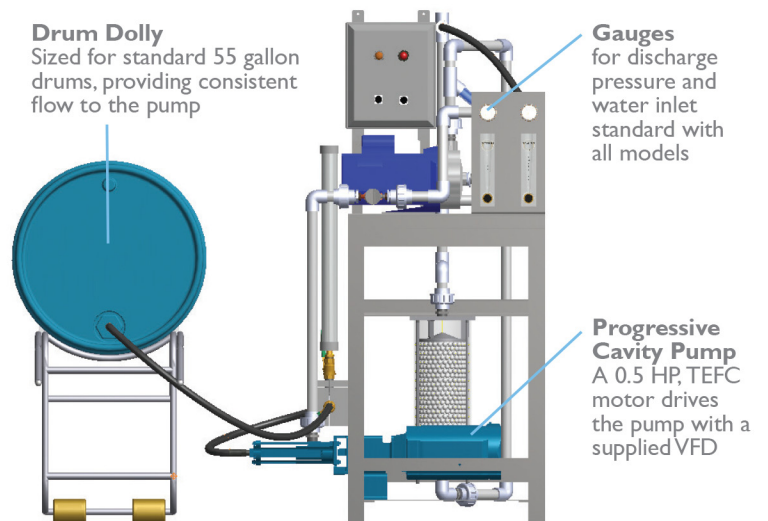
Emulsion Polymer Model L-2.10

- Multi-zone systematic mixing
- Volumetric mixing chamber
- Blending chamber providing additional mixing and retention time
- Calibration column reading in both gpm and ml
- Post dilution meter
- Easily accessible, waist height control panel
- Small footprint – 24" by 26" footprint
- Metering pump from 4 GPH to 20 GPH of emulsion polymer



Emulsion Polymer Model L-2.20

- Multi-zone systematic mixing
- Volumetric mixing chamber
- Blending chamber providing additional mixing and retention time
- Calibration column reading in both gpm and ml
- Post dilution meter
- Easily accessible, waist height control panel
- Low flow alarm

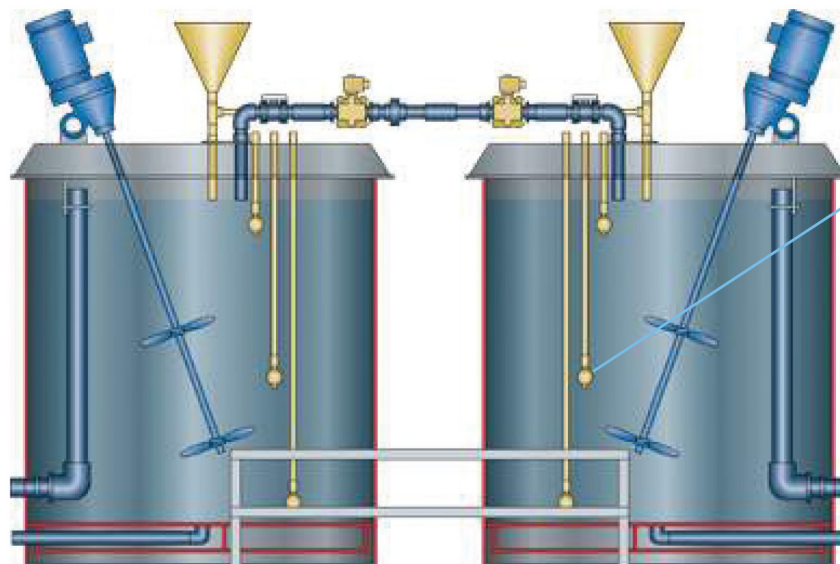




Roedos 500: Dry & Emulsion Polymers

Highly efficient and versatile with two 500-gallon capacity tanks.

- For liquid (mannich), emulsion or dry polymers
- Variable speed positive displacement pumps supply diluted/mixed polymer to dewatering unit (not shown)
- Separate tanks for preparing/aging and storing/dosing of stock solution
- Manual or semi-automatic operation
- Thorough dispersion of polymers, assuring effective polymer wetting reducing hydration and blending time. This also eliminates “fish-eyes” or clumping of polymer.



Multiple Level Sensors monitored through the control panel



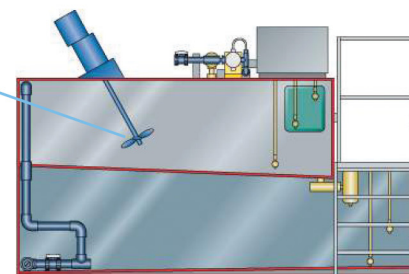
300, 600 and 1100 gallon capacity models

- High capacity/small footprint
- Stacked mix and feed tanks maximizes floor space
- Primarily utilized with dry polymers but can condition any type polymer
- Thorough dispersion of polymers, assuring effective polymer wetting reducing hydration and blending time. This also eliminates “fish-eyes” or clumping of polymer.
- Manual, semi-automatic or fully automatic continuous Operation
- Polymer feed range up to 30 lbs/hr* for dry polymer and 20 GPM for emulsion and liquid
- One variable speed positive displacement pump to feed mixed polymer
- OSHA compliant stairs, railings, and platforms
- Level sensors monitored through the control panel

Volumetric Screw Feeder with dry systems to accurately transport the polymer in mixing tank



Hydrofoil Impellers Stainless steel impellers attached to a 1.5 HP mixer motor



* for 0.6% polymer solution in batch operation

Over 65 years of Precision Machine Manufacturing.

We're Charter Machine Company, and for years we've manufactured and serviced the best designed and finest performing sludge thickening and dewatering equipment under the Roediger Pittsburgh name.

Today we offer the same exceptional equipment and service under our own name, Charter Machine Company. Now you can be sure that the name on your equipment is the company that built it – and stands behind it.



Custom solutions.

Sludge varies, and so are the facilities that handle it. Charter Machine Company offers custom solutions designed to meet your needs, whether it is stainless steel units to mobile dewatering trailers. With our in-house staff of design engineers and complete control over the fabrication we are able to make modifications so the equipment you order is perfectly suited to your operation.

Parts ready to ship.

Occasionally our equipment will need servicing. At Charter Machine Company we maintain a complete inventory of replacement parts ready for immediate shipment. Assistance is a phone call away with help in troubleshooting and problem solving. Technicians are available for on-site visits.

Total System Responsibility.

Charter Machine Company specializes in dewatering. Our staff of expert technicians can assist you in every aspect from sludge testing to design assistance to equipment start-up and training. We manufacture polymer systems and conveyors in addition to the dewatering units to provide total system responsibility. We strive very hard to meet all your dewatering needs and would welcome the opportunity to be of service.



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