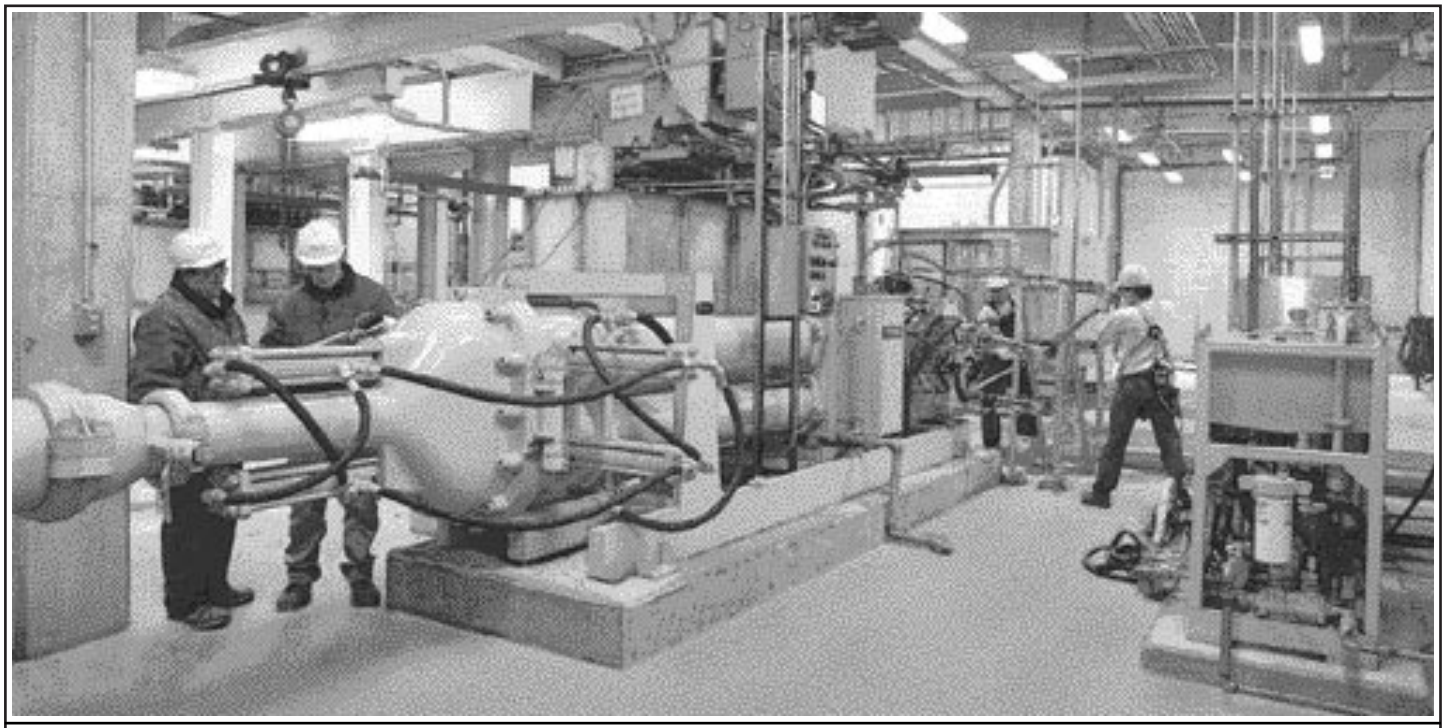
SCHWING AMERICA INC.

MATERIAL HANDLING DIVISION

Mining and Industrial Pumps and Mixers

SOLUTIONS
VALUE
SUCCESS



Featuring the innovation and performance expected from SCHWING

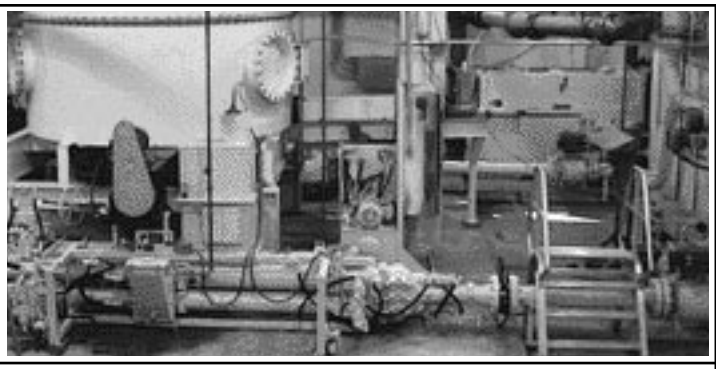
Count on Schwing equipment to perform as expected in harsh mining and industrial environments. Consult with our engineers early in the planning process and be assured of achieving production goals. As your single source supplier for piston pumps, twin auger feeders, mixers, screw conveyors, live bottom hoppers and integrated PLC controls, Schwing provides the engineering, fabrication and seamless integration of your material handling system.

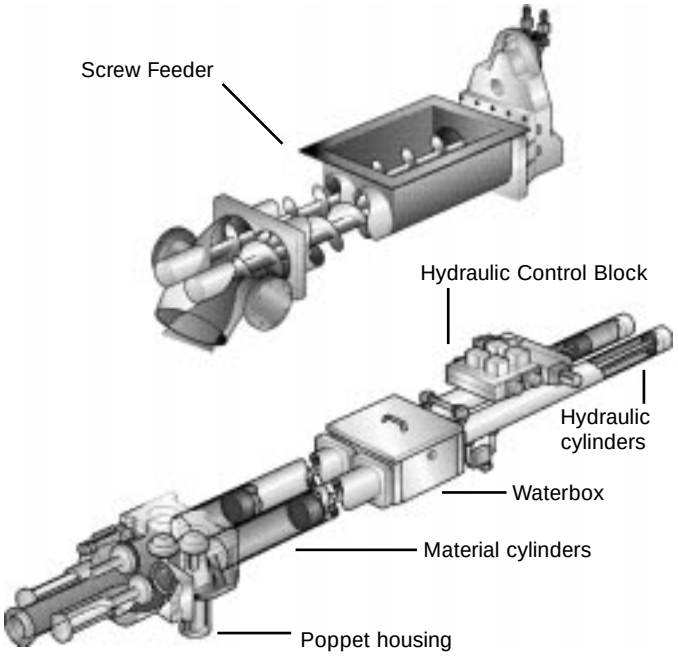
No guesswork, we have the experience to assure a successful system. After sale support is a Schwing trademark with technicians, parts and service strategically located throughout North America and around the world. Let us streamline your material handling with proven products. Solutions, Value and Success, only from Schwing.

Power Pack/Controls:

Schwing designs both the power source and control system to integrate into your current facility. Specify your preferred PLC supplier and Schwing controls interface seamlessly.

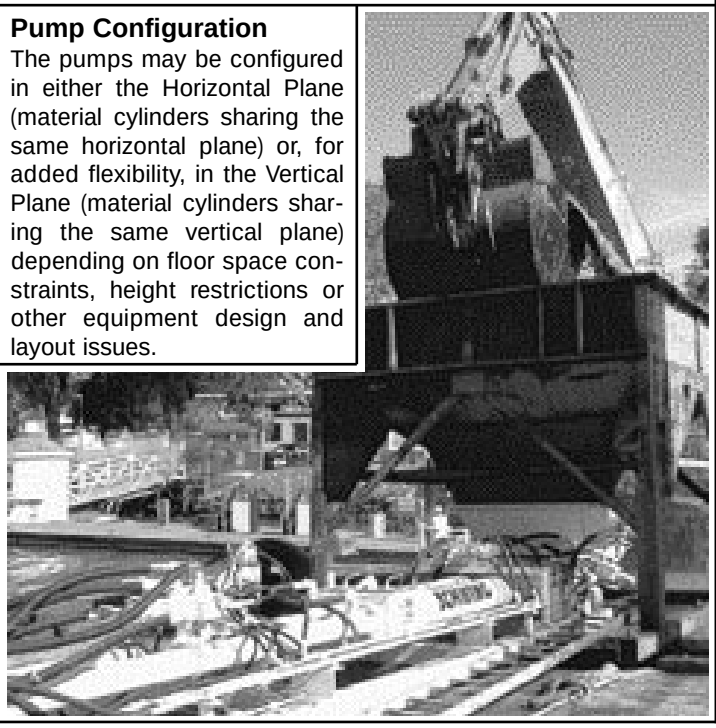
Schwing electrical power packs incorporate the motor, hydraulic pump and oil reservoir in one compact package. Units can be skid-mounted with forklift slots or lifting eyes for easy portability. Stationary units simply mount in the most convenient area of your plant.





Pump Configuration

The pumps may be configured in either the Horizontal Plane (material cylinders sharing the same horizontal plane) or, for added flexibility, in the Vertical Plane (material cylinders sharing the same vertical plane) depending on floor space constraints, height restrictions or other equipment design and layout issues.



Feeders

For highly viscous materials Schwing will equip the pump with a twin-screw feeder that positively charges the material cylinders.

The screw feeder speed is controlled using Schwing's patented variable speed constant pressure control system that not only minimizes the electrical consumption, but also maximizes the pump filling efficiency regardless of speed or of the materials solids content.

By continuously operating at the peak filling efficiency Schwing maximizes the wear life of the poppet discs and seats and keeps your operation on-line, and profitable.

A Schwing pump is comprised of twin cylinders operated hydraulically. As material is fed to the pump, the suction of one cylinder on its backstroke pulls high solids material into the cylinder as the other cylinder pushes material out.

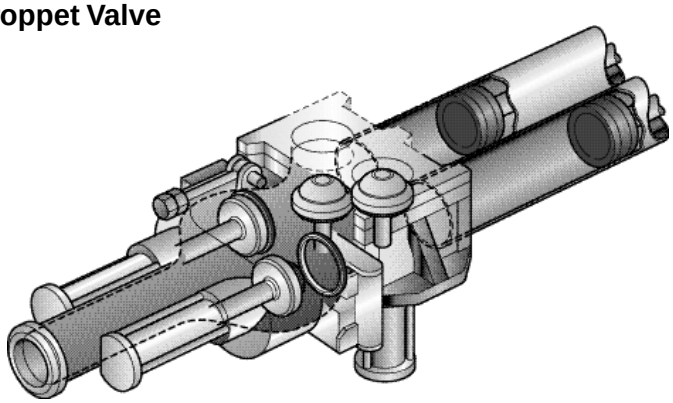
This smooth, slow stroking action provides near continuous flow. Hydraulic components are the same design used on thousands of Schwing concrete pumps.

This all-hydraulic system eliminates trouble prone electronic solenoids that can interrupt continuous operation. All-hydraulic translates to reliability in the 24/7 duty most pumps encounter.

An open circuit hydraulic system provides better cooling and 100 percent filtration of the oil for long hydraulic pump life. Our engineers have the experience to provide a cool running system utilizing separate oil coolers as necessary to assure an ample supply of fresh, cool oil to the system without increasing hydraulic pressure.

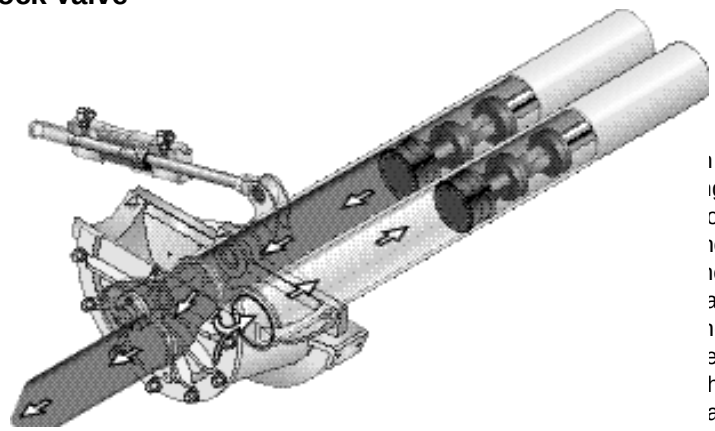
We Engineer Success

Poppet Valve



The most important component of the pump is the sequencing valve. The Schwing Poppet Valve is ideal for fine or compressible material. The Poppet Valve assembly isolates the pump from the material pipeline and prevents any harmful hammer effects from pipeline backflow. As the pump cycles, the cylinder that is stroking forward to push material into the pipeline has its pressure poppet open and the suction poppet closed. The cylinder that is being charged has its pressure poppet closed and suction poppet open. This sequencing of the material cylinders continues to provide smooth discharge at the delivery point.

Rock Valve



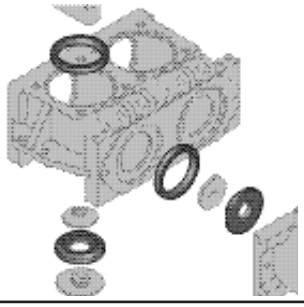
l applications requiring pump-
ıg of harsher materials such as
oncrete and oil field cuttings,
ıe patented Rock Valve is the
ıethod of choice. This is the
alve used so successfully by the
ıousands of Schwing pumps
erving the construction industry.
his valve provides low mainte-
ance, reliable service and can be equipped with carbide wear parts to extend rebuild intervals.

Dual Discharge

Pumps can be equipped with optional dual discharge to allow multi-port placement of grout or pastes. This allows the unit to simultaneously pump to two separate injection points.

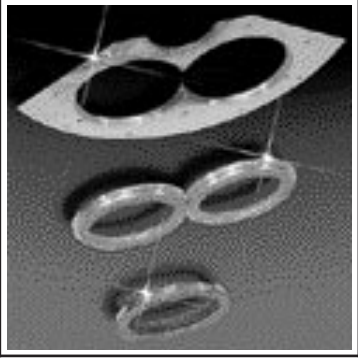
CPR Wear Parts

Schwing's commitment to offering the very best in wear parts has led to the development of our proprietary CPR steel alloy. This alloy yields a tough and durable material suitable for highly abrasive slurries. Used as an option to our standard Rc55 case hardened poppet wear parts, the CPR components offer superior wear resistance in tough applications.



Carbide Wear Parts

By manufacturing these essential Rock Valve wear parts from carbide, Schwing allows replacement intervals to be dramatically extended in even the harshest environments.



Flow Measuring System (FMS)

Schwing's patented flow measuring system operates on the principle of variable calculated filling efficiencies for each individual pumping stroke. As such the FMS measures the volume of material pumped to within +/- 5%.

Tunneling:

In tunneling, the smooth stroking and effortless shifting means low surge at the point of placement. Careful monitoring of the discharge pressures prevents over-pressurization of the tunnel annulus. Optional dual discharge and control blocks permit multi-port placement at varying outputs. Pumps and controls can also be designed to meet explosion proof requirements.

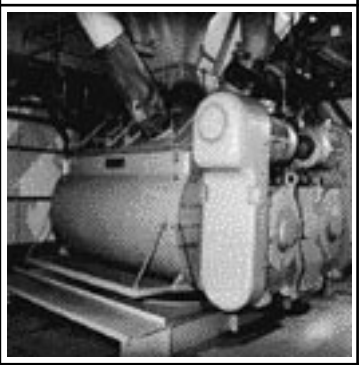
Models

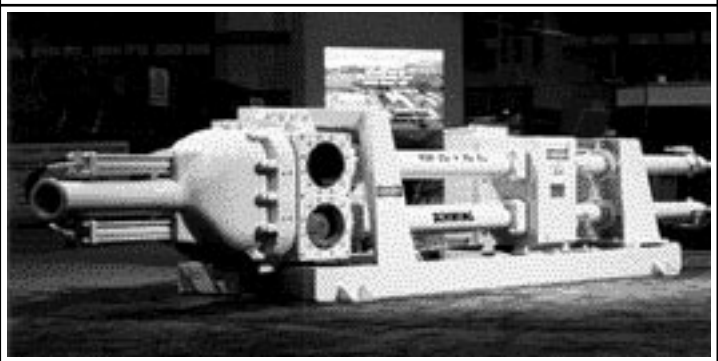
KSP	50	65	80	110	120	140	220
• Pump Cylinder Diameter (inch.)	7.9	9.1	9.1	11.8	10	11.8	11.8
• Stroke (inch.)	39	63	78.7	63	98.4	78.7	122
• Pump Cylinder Capacity (gal.)	13.3	17	22	29.8	33.5	37.5	57.9
• Hydraulic Cylinder Size (inch.)	5.9	5.9	5.9	7.8	4.8	7.8	7.8
• Cylinder Ratio	1.78	2.35	2.35	2.25	4.34	2.25	2.25
• Large Poppet Suction/Pressure	8/6	8/6	8/6	8/6	N/A	8/6	8/6
• XL Poppet Suction/Pressure	11/9.8	11/9.8	11/9.8	11/9.8	N/A	11/9.8	11/9.8
• Approximate Weight (L / XL)	5,750 / 10,915	6,000 / 11,165	6,230 / 11,460	6,750 / 11,915	5,950	9,500 / 13,900	11,480 / 15,880
• Length x Width x Height	215/40/40	215/40/40	250/40/40	215/40/40	280/64/44	289/47/47	374/52/52

Pump capacities are dependent upon material being pumped.
Please consult Schwing for information on additional pump models and proper pump selection.
All models also available with Rock Valves.
KSP 120 available with Rock Valve only.

Pumpable material:

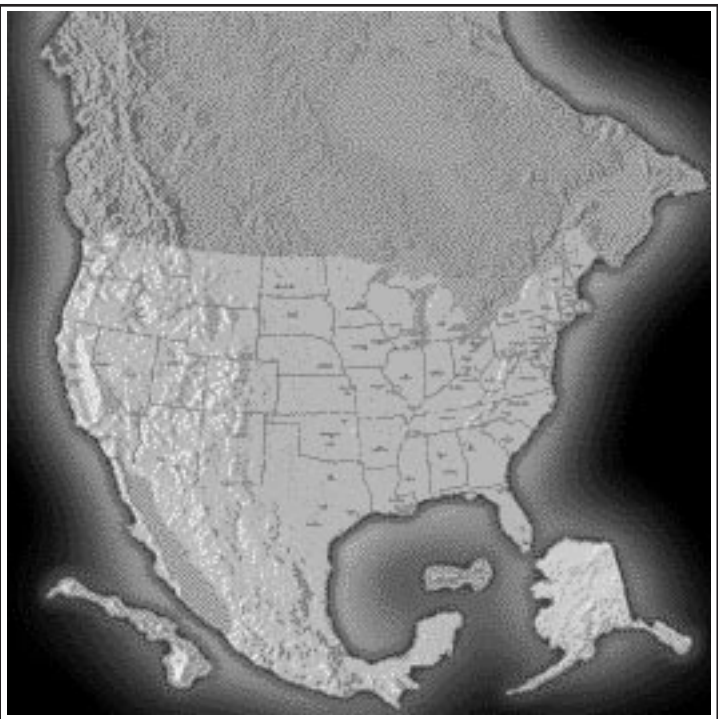
- **Animal Renderings**
- **Biosolids**
- **Calcium Carbonate**
- **Chemical Slurries**
- **Coal Slurry**
- **Concrete**
- **Dredging Muck**
- **Food Processing**
- **Grout**
- **Mine Tailing Paste**
- **Oil field drillings**
- **Oil Sludge**
- **Paint Sludges**
- **Paper Pulp**
- **Pharmaceutical Waste**
- **Shotcrete**
- **Wastewater Sludge**





The SCHWING Advantage

When you buy from Schwing you get the total package - reliable equipment, parts stockpiled throughout North America and around the world, the largest service staff in the industry, and training for your people. We don't just want your business, we want your complete satisfaction and success.



Experience and inventory is what you want in a parts department and only Schwing offers you so much of both. Many of our parts staff have been on the job for more than 15 years. Comprehensive records identify your pump from our files and allow us to ship the right part. Our inventory of spare parts is unmatched.

More than 40 million dollars of computerized inventory is kept constantly updated for the highest percentage of on time shipments in the industry. In the rare case of an out-of-stock part, machines in production will sacrifice the part to keep a customer pumping. The more you pump, the more you appreciate the Schwing advantage in parts.

Attend a Schwing service seminar and get the education the factory servicemen receive. Our unique, dedicated training facility utilizes the latest computerized training techniques. Cut-away components, troubleshooting of actual problems and computer animated hydraulic schematics assist in the learning process.

Choose from our library of interactive CDs' for continuing education. Our training staff spends 100 percent of their time designing classes to prepare operators, mechanics and owners for field situations. Don't underestimate the value of this training - it may be the biggest part of the Schwing advantage.

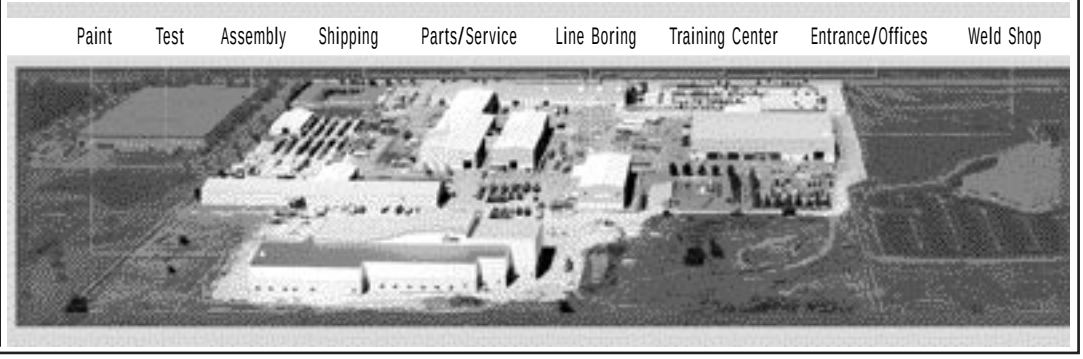
How can we service our customers 24 hours a day, six days a week? One word answer - dedication. That's how much we care about your business. When you call, expect a person who knows your pump thoroughly.

Many times we can talk you through your situation and you're back pumping right away. If you need on-site service, skilled servicemen are positioned regionally to be at your location quickly. There's no way to measure the peace of mind you get knowing a Schwing serviceman is only hours away.

MADE IN THE U.S.A.

Most of SCHWING's pumps are manufactured and tested at our state-of-the-art facility in St. Paul, Minnesota.

Visit our factory and see why Schwing craftsmanship really matters to your success.



Schwing Mixers

These mixers represent an effective and reliable solution for continuous mixing processes, particularly mine paste backfill applications. The mixer produces mineral mixes, RCC, landfill sealings, heavy concrete, etc.

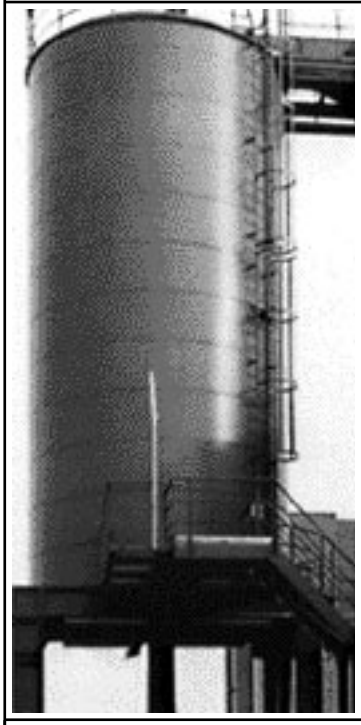
Notable features are reduced wear, simple maintenance and minimal energy consumption. The retention time of the mix can be adjusted to the respective requirements in order to obtain constantly homogeneous mixing results.

Schwing manufactures both twin shaft batching and continuous mixers as well as single shaft continuous mixers. With years of mixing experience, Schwing can select the right mixer, and incorporate the right optional features to ensure peak performance and availability. The twin-shaft compulsory mixing principle of the Schwing Continuous Mixer guarantees a high mixing effect.

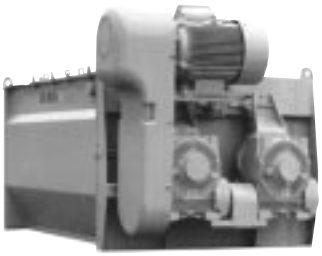
The counter-rotation of the parallel mixing shafts ensures intensive horizontal and vertical mixing. Binding agents, water, and different aggregates are dispersed homogeneously within the shortest possible time.

Let Schwing engineer your entire system from batching, to feeding to pumping. Single source responsibility with Value, Solutions and Success.

Batch Mixer



Continuous Mixer



Single Shaft Mixer

Sliding Frame/Push Floor Storage Technology

Sliding Frame truck loading, receiving stations, or intermediate storage silos incorporate vertical walls and flat floors to eliminate bridging and maximize storage capacity. These low cost, low maintenance storage vessels operate on a first-in first-out basis that allow for uniform draw down of material and accurately metered discharges. The hydraulically driven sliding frame reciprocates slowly on the floor of the silo breaking any material bridges while feeding material into the extraction screw.

Tell us what you have…We'll pump it. From highly viscous pastes to high solids sludges, Schwing equipment has probably pumped it. As recognized leaders in pumping technology, Schwing can tailor a unit to fit your material handling needs.

We pioneered the movement of materials through a pipeline and now our pumps are operating in the largest construction projects, municipal wastewater treatment plants, and mines throughout the world. In industrial settings, Schwing equipment is pumping calcium carbonate, food by-products, industrial waste, pulp in paper mills, coal slurries, and many other hard-to-handle materials. Mines have utilized Schwing pumps for years. Current installations include a Schwing -supplied mixer for batching tailings, integrated feeding systems and pumps for mine paste backfilling.

We have a wealth of experience pumping material to incineration which may require dual-outlet pumps for even feeding. Send us a sample of your material…we'll analyze it and, if it is pumpable, Schwing has the system.

SCHWING AMERICA INC.
MATERIAL HANDLING DIVISION

5900 Centerville Road
St. Paul, MN 55127
Tel 651-429-0999
Fax 651-429-3464
www.schwing.com

Represented by

Printed on recycled paper

06/02 - 1000