

**Total pumping solutions for  
dewatering and process water duties**

Weir Minerals North America

Excellent  
Minerals  
Solutions



# Meeting the needs of the mining & minerals sector worldwide

Weir Minerals is committed to delivering market leading products and services across a full spectrum of mining and minerals processing activities.



Most mining quarry, and industrial operations the world over require some form of dewatering system to keep their operations moving. As water becomes even scarcer, this precious resource is often being used, cleaned, and recycled using Weir Minerals products. Weir Minerals has the product portfolio that can provide solutions across the full spectrum of dewatering applications.

## **Dewatering equipment**

Weir Minerals provides end-to-end solutions for dewatering with the widest product portfolio in the industry including:

### **Submersible Pumps:**

- Submersible dewatering pumps
- Submersible slurry pumps

### **Self Priming Pumps:**

- Diesel driven
- Electric drive
- Trailer mounted
- Skid mounted
- Pontoon mounted

### **Centrifugal Pumps:**

- End suction slurry
- Split case single and multistage
- Ring section multistage
- Vertical cantilever
- Vertical turbine



### **Positive Displacement:**

- Crankshaft driven piston diaphragm
- Hydraulically driven hose diaphragm

### **Ancillary Equipment:**

- Hydrocyclones
- Knife gate valves
- Pinch vales
- Ball valves

### **Global Service & Support**

Weir Minerals supports our equipment with a full array of service options including:

- Installation
- Commissioning
- Equipment monitoring
- Emergency on-site maintenance
- Planned on-site maintenance
- Service exchange units
- Engineering support
- Equipment rental
- Customer training
- Asset management

# Dewatering and process water

The total solution for your dewatering and process water applications



## Opencast mine dewatering

A reliable and structured dewatering system is critical in opencast mining operations. Weir Minerals offers a complete range of pumps to overcome high heads and flows to ensure that we keep your operations moving and production on time.

## Underground mine dewatering

Weir Minerals offers an unrivalled range of pumps from conventional to customized underground arrangements. These include submersible, multistage ring section, and horizontal split case designs to address conventional systems. These systems pass water from the stopes down to the settling dams, where the solids and slimes are removed and the clean water is pumped to the surface.

Weir Minerals also offers pumping solutions for dirty water systems. These systems offer an alternative to multistage pumping and the elimination of settling dams. Geho® crankshaft or hydraulic driven diaphragm pumps are designed to raise both water and suspended solids to the surface in a single pumping stage.

## Aggregates quarry dewatering

Typically, on a smaller scale than the large mineral ore opencast mines, aggregate quarries also require reliable pumps to handle tough applications. Warman® submersible, Multiflo® horizontal self-priming and Floway® Pumps vertical turbine centrifugal pumps provide robust and reliable products that are well suited to these types of applications.

## Process water

Water can be an expensive and scarce resource used both within the process and to transport the ore or product over long distances. Today, more than ever for both environmental and economic reasons, it has to be cleaned and recycled. To address this Weir Minerals offers Warman® submersibles, Multiflo® dewatering and Floway® Pumps vertical turbine pumps to meet your process water applications needs.



1 : Warman SJ submersible mine dewatering pump.

2 : Hazleton horizontal split case pump.

3 : Multiflo multistage ring section pump.

4 : Floway vertical turbine pumps.

5 : Geho PD slurry pump.

6 : Multiflo self priming diesel driven pumpsets.

Weir Minerals are specialists in delivering and supporting slurry and mine dewatering equipment solutions including pumps, hydrocyclones, valves and wear resistant linings for global mining and mineral processing, the power sector, and general industry.

Focusing upon what we do best, Weir Minerals delivers on what matters to you most. This simple philosophy, combined with being part of the global Weir Group, provides you with added benefits over alternative suppliers.

Weir Minerals brings together an extensive global service and manufacturing presence combined with an investment capability able to develop, support, and sustain market leading technologies that deliver enhanced performance in your process critical applications.

# Submersible pumps

## Premium submersible mine dewatering and slurry pumps

### Warman® SHW submersible slurry pump

The Warman SHW submersible slurry pump offers exceptional wear life and reliability providing low cost of ownership. The SHW has a unique combination of features not found in any other submersible slurry pump including:

- Motor manufactured specifically for slurry services with dual moisture detectors that sense moisture in the seal chamber and motor housing
- Balanced double seal is isolated in oil reservoir with silicon carbide faces on both the inner and outer seal. The mechanical seals are subjected to submergence pressure only.

#### Duties:

Heads to 425 ft

Flows to 12,000 gpm

Hazleton SSB



Warman SHW



### Hazleton® engineered to order submersible pumps

Weir Minerals Hazleton has developed an extensive line of Engineered to Order (ETO) submersible pumps for the wide variety of specialized and demanding applications encounter in mine dewatering and slurry services. By working with our customers, Hazleton has gained a reputation for being able to do what others can not.

#### Duties:

Head to 700 ft

Flows to 10,000+ gpm

### Warman® SJ submersible dewatering pump

The Warman SJ submersible dewatering pump range represents an optimal combination of ruggedness, durability, hydraulics and materials technology. Designed for ease of maintenance and use, it utilizes a lightweight modular design, is run dry capable, and may be operated in any position.

#### Duties:

Heads to 280 ft

Flows to 5,000 gpm

Warman SJ



Through a customer focused strategy Weir Minerals has used its unique technologies to develop an unrivalled range of mine dewatering, process water, and specialist slurry processing equipment for some of your most critical processes. This means that today's Weir Minerals is much more than a pump company.

*"Understanding the critical role our products play in the customer's process, we ensure that Weir Minerals consistently outperforms our competitors and exceeds customer expectations."*



**Scot Smith**  
Divisional Managing  
Director



1 : Skid mounted diesel driven units  
2 : Multiflo MF4x3AH onsite at a coal mine  
3 : Multiflo MF120 & MF160 trailer units being shipped to site

# Self priming pump units

**Designed to withstand the harsh, arduous operating conditions found on mining sites.**

## Custom dewatering solutions

Weir Minerals Multiflo® units offer the optimum solution for your dewatering needs rather than a "one-size-fits-all" approach with fully customizable features such as:

- Skid or trailer mounted units
- Diesel or electric drive with your choice of diesel engine or electric motor
- Wide range of pump ends available
- Variety of corrosion and wear resistant materials available
- Customized instrumentation

## Reliable long lasting equipment

Multiflo self-priming units are designed to provide years of reliable performance with features such as:

- Mining duty skids and trailers
- Continuous welded joints
- Internal painting
- Stainless and fully galvanized hardware and fittings
- Vactronic™ Auto-Prime Vacuum System
- Chrome Iron pump ends
- Canopy to protect drive as standard
- 24 hour fuel tank

## Vactronic™ auto prime system

Multiflo self priming units utilize a unique auto prime system using a proprietary, twin piston vacuum pump that generate 38CFM to ensure fast and reliable priming that will tolerate small losses unlike the more common venture style priming system. The Vactronic™ auto prime system provides for the maximum lift possible and requires no manual priming and will prime from a completely dry volute and suction line.

More than 30 years of mine dewatering experience makes Multiflo pumps the best choice for dewatering applications.

Weir Minerals offers the convenience of the most extensive mine dewatering and process water pump range available today.

**Geoff Moore**, Divisional Marketing Director

*"We view our products in the same way as our customers, seeing them not in isolation but as part of a chain. In doing this, we recognise that a chain - the customers' process - is only as strong as its weakest link. This philosophy ensures we address the areas that cost the customer time and money. Our specialist approach to these critical applications means that all our development time and effort ensures we deliver*

# Pontoon mounted pumps

**Custom designed and built to ensure the very best performance for your specific dewatering needs.**

## **Custom engineered solution**

Weir Minerals has the ability to custom engineer a pontoon to meet your specific requirement. Whether you need diesel or electric drive, a simple float for a single pump or a pontoon to house multiple pumps our in-house design group can provide the optimal solution.

At Weir Minerals, we bring the complete pontoon and pumpset under a single company; no dealing with separate suppliers. Using state-of-the-art 3D-CAD modeling, our engineers ensure the pumpset and pontoon is matched and goes together properly; lead times are reduced, assembly and installation problems are eliminated.

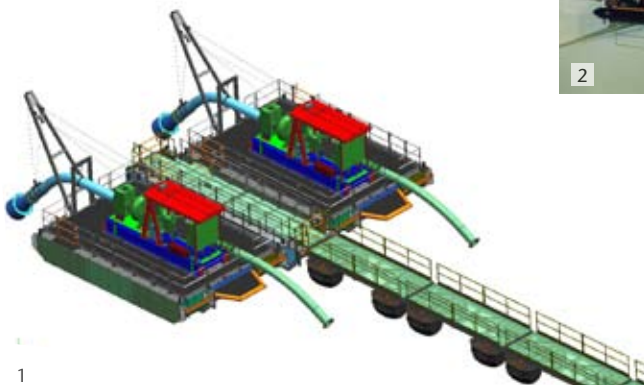
## **Multiflo® self-priming diesel driven pontoons**

- Wide range of pump ends available
- Variety of corrosion and wear resistant materials available
- Vactronic™ Auto Prime System
- Designed to be skidded around site, no cranes required
- 24 hour fuel tank
- Customizable control and accessories
- Pontoons may be customized
- Walkways may be provided

1 : CAD rendering of diesel driven barge units with walkway

2 : Diesel driven barge unit

3 : Twin diesel driven barge units



maximum performance where it counts most. This is something that a turnkey provider just cannot deliver. With their focus and resource diluted across a plants entire process it inevitably limits their ability to target key areas. This is why today so many of the world's major operators specify our high performance equipment in their project briefs to provide them with the competitive edge".

### Multiflo® electric pontoon pump units

The Multiflo ME range offers multiple configurations including single or multiple pump units, direct or belt drive and inclined or vertical pump mounting.

Our wide offering of pontoon mounted pump units includes polyethylene floats, steel hulled, and fiberglass pontoons. Larger units are designed in multiple sections for simplified logistics and ease of assembly. This flexibility allows Weir Minerals to tailor a unit to your specific needs and budget.

#### Advantages of electric pontoon units

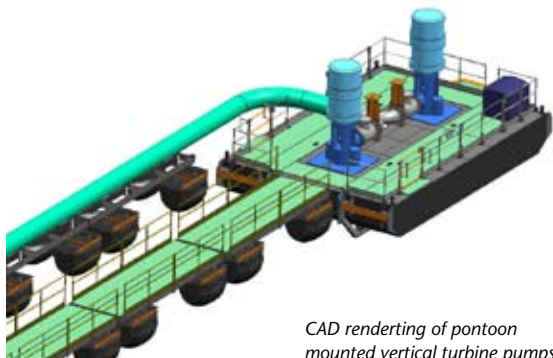
- All configurations are self priming
- Minimizes or eliminates suction lift
- Can eliminate NPSH / cavitation issues
- Can move around pond and/or be located where needed
- Eliminates flooding issues
- Raises and lowers with water level maintaining prime
- Can be designed to handle multiple pumps

#### Pumpsets available in any configuration

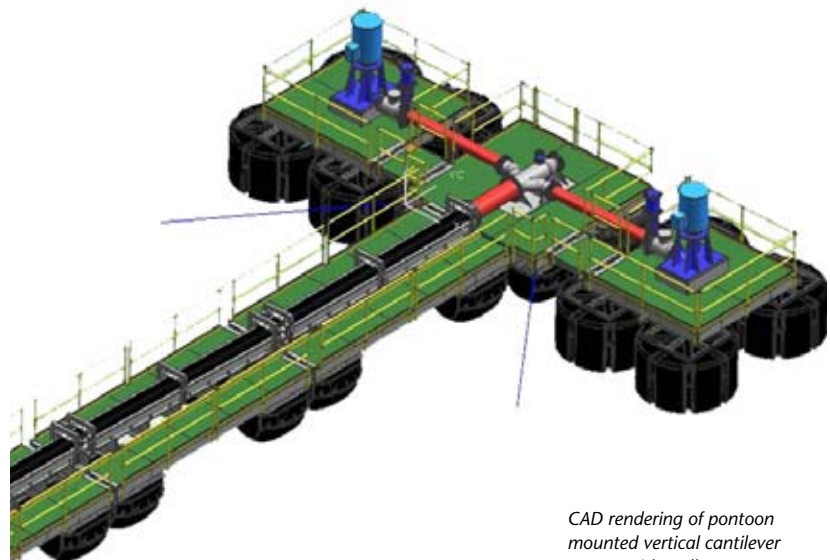
- Vertical cantilever pumps
- Submersible pumps
- Vertical turbine pumps
- Horizontal pumps mounted at 30° angle



1 : Hazleton vertical cantilever with 800HP motor on 11' pontoon  
 2. Multiflo pontoon unit skidded around mine site  
 3 : Single and double pontoon pump unit operating in tandem  
 4 : Vertical pump on poly float pontoon



CAD rendering of pontoon mounted vertical turbine pumps



CAD rendering of pontoon mounted vertical cantilever pumps with walkway

## WARMAN® Centrifugal Slurry Pumps

Warman slurry pumps are the worlds most comprehensive range of centrifugal slurry pumps for use in mining, power and industrial sectors.

The horizontal, vertical and submersible slurry pumps are designed for heavy duty applications from mill circuit applications, process plant and tailings as well as mine dewatering.

# Vertical cantilever pumps

The world's leading vertical cantilever pumps for dewatering.

### Hazleton® and Warman® vertical cantilever pumps

Through a customer focused strategy Weir Minerals has used its unique technologies to develop an unrivalled range of vertical cantilever pumps. From standard to "Engineered to Order" designs, we can provide a pump to meet your specific dewatering sump, pit or pond application.

Designs include:

- End suction and double suction hardened chrome iron pumps for medium and severe duty slurry services
- End suction and double suction alloy and elastomer lined pumps for corrosive slurries
- Twin volute top, end, double suction for high flows
- Two stage and twin volute pumps for high heads and balanced loads
- Vortex design with recessed impeller for handling large, stringy or fibrous solids

With no seals or packing and no submerged bearings, vertical cantilever pumps are ideal for handling corrosive and abrasive slurries, and all models are design to maximize reliability, durability, and to provide the lowest total cost of ownership.

#### Duties:

Heads to 900 ft

Flows to 25,000 gpm



1 : Hazleton vertical cantilever with 800HP motor on 11' pontoon



Hazleton VND cantilever pump



Warman SP vertical sump pump

**HAZLETON®**  
Centrifugal Slurry Pumps

Hazleton pump is a leading supplier of specialty Engineered-to-Order slurry pumps.

An extensive line of submersible, cantilever and horizontal slurry pumps are designed for the wide variety of specialized and demanding applications encountered in the mining, dewatering, power, oil & gas, nuclear, and general industries.



Weir Minerals understands that “clear” water is not always clear and upsets occur. This is why we design our pumps to handle small amount of solids for extended life and less downtime. Weir Minerals offers a range of horizontal dewatering pumps from the single stage Hazleton® DS to the multistage Hazleton® MS and Multiflo® PB and PJ lines.

**Hazelton® MS and DS pumps**

Hazelton MS multistage and DS single stage pumps, unlike other split case pumps, are design to handle small amounts of solids found in the dewatering process. The MS and DS are supplied with:

- Heavy duty bearings and shaft
- Generous material sections
- High chrome iron internals to ensure long reliable performance while maintaining efficiency
- Opposing impellers on the MS provide balanced loading for smooth, vibration free operation

**Hazleton MS Duties:**

Heads to 2,000 ft  
Flows to 3500 gpm

**Hazleton DS Duties:**

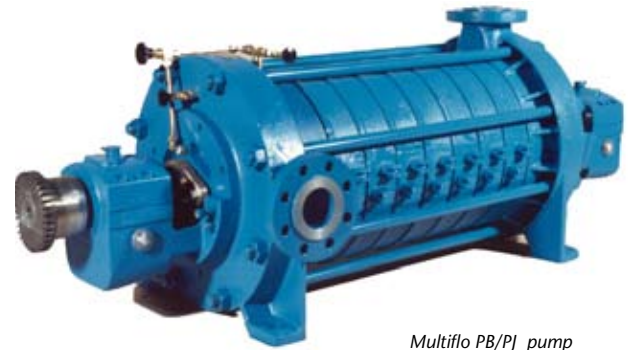
Heads to 600 ft  
Flows to 11,000 gpm

**MULTIFLO®**  
Mine Dewatering Pumps

Multiflo offers multistage horizontal pumps designed for high lift shaft dewatering along with the industry’s most complete range of self priming trailer, skid, pontoon and barge mounted units. Multiflo units are specifically designed and customized for the harsh and arduous conditions encountered in the mining industry to provide maximum reliability and performance.

# Horizontal pumps

## Horizontal centrifugal dewatering and process water pumps



*Multiflo PB/PJ pump*

**Multiflo® PB and PJ pumps**

Multiflo multistage pumps are an established leader in mine dewatering. Engineered for a wide range of heads by adding stages, the pump features:

- Heavy duty through-bolt construction
- High efficiency design
- Large impeller diameters operate at lower speed to maximize wear life
- Unique diffuser design facilitates handling small quantities of solids
- Designed to ensure minimum turbulence between stages

**Duties:**

Heads to 5,500 ft  
Flows to 4,400 gpm



*Hazleton MS pump*

**GEHO®**  
**PD Slurry Pumps**

Geho pumps are the market leading piston, piston diaphragm and diaphragm slurry pump for use in paste, sludge and mine dewatering applications.

Using a Geho PD pump can raise both the water and suspended solids direct to the surface in one single pumping operation without the need for settling ponds.

# Positive displacement pumps

## Piston diaphragm and hose diaphragm mine dewatering pumps



*Geho TPZM pump*

Mine dewatering has traditionally used so called “clean water” systems; however today, alternative “dirty water” systems are available. This system handles unsettled dirty mine-run-off water with a single positive displacement pump. Over the years the application of these pumps has proven to be highly efficient, reliable and cost effective. Weir Minerals is the leader in “dirty water” systems offering both a piston diaphragm and hose diaphragm pump

### **Geho® TPZM piston diaphragm pump**

The Geho TPZM is a crankshaft driven three cylinder single-acting high pressure piston diaphragm pump. It's unique diaphragm design separates the pumped slurry or contaminated mine water from the piston, liner and other pump components from contact with the abrasive slurry. The TPZM is ideal for handling slurries, dirty mine water and slimes.

#### **Duties:**

Heads to 9,800 ft (3,000m)

Flows to 3,960 gpm (900m<sup>3</sup>/hr)

### **Geho® APEXS hose diaphragm pump**

The Geho APEXS pump is a hydraulically driven two chamber single acting high pressure pump. The APEXS (annular pressure exchange system) pump is used for contaminated fluids. This technology combines a highly efficient standard hydraulic drive system with a unique hose pumping principle that allows for virtually pulsation free operation.

#### **Duties:**

Heads to 9,800 ft (3,000m)

Flows to 1,936 gpm (440m<sup>3</sup>/hr)



*Geho APEXS pump*

## FLOWAY® PUMPS

### Vertical Turbine Pumps

Floway pumps are the most versatile, reliable and long lasting vertical turbine pumps on the market.

Utilizing a Precision Machined Low Vibration, PMLV™ quality program to produce significant reductions in vibration, increasing pump lifespan, reducing downtime and repairs, and lowering costs.



Floway Pumps submersible pump



Floway Pumps vertical turbine pump



Floway Pumps can pump

For more than 75 years Floway® Pumps has been an industry leader in the manufacturing and application of vertical turbine pumps. Floway vertical dewatering pumps are the most versatile, reliable and longest lasting pumps of their type on the market today

Floway Pumps vertical turbine pumps are offered in a variety of configurations for dewatering with features such as:

- Broad hydraulic coverage
- Wide range of wear and corrosion resistant materials
- Single or multistage
- Precision manufactured low vibration design
- Low NPSHR first stage impellers
- Multi-vane bowl diffuser for reduced loads

#### Vertical turbine pump series

Capacity to 35,000 GPM (7,950 m<sup>3</sup>/hr)

Setting to 600 ft (180 m)

Pressure to 1,500 PSI (103 Bars)

#### Submersible turbine pumps

Capacity to 7000 GPM (1590 m<sup>3</sup>/hr)

Settings to 1500 ft (457 m)

Pressure to 750 psi (52 Bars)

#### Vertical can pumps

Capacity to 35,000 GPM (7,950 m<sup>3</sup>/hr)

Setting to 100 ft (15.2 m)

Pressure to 3,000 PSI (207 Bars)

#### Typical vertical turbine applications

Vertical turbine pumps are typically used wherever a liquid needs to be pumped from manmade underground storage (caverns) or open bodies of liquid such as oceans, rivers, lakes, cooling ponds, tanks, sumps and upward from ground water tables (deep well pumps). Vertical turbine pumps are also used in inline applications such as pipelines, booster and low-NPSH systems.

# Vertical turbine pumps

World's leading vertical turbine mining pumps

# Service and support

## Marking a step change from costly reactive to preventative maintenance

### Service and support

Weir Minerals services range from on request service through to service agreements. Our on request services include commissioning, pump rebuilds and emergency repairs. Weir Minerals service offers an innovative approach to equipment servicing that ensures your plant achieves optimal 'health' and marks a step change from costly reactive to preventative plant maintenance.

### Health check

We diagnose the condition of your plant much in the same way your general practitioner would diagnose your health - from temperature checks through to basic maintenance.

### Fitness program

This includes bearing tolerance check, strip and rebuild and part condition report. This first stage also includes the necessary safety assessments to ensure we comply with all the required health and safety regulations.

### Peak performance

This involves a visit by our expert engineers to survey your plant design and provide a written report with recommendations. This value added service ensures you know exactly how to arrange your system to achieve optimal operating performance from your installed pumps, hydrocyclones, valves and mill lining systems. Additionally we will provide full training so that you understand exactly how our product works.



**WARMAN®** Centrifugal Slurry Pumps  
**GEHO®** PD Slurry Pumps  
**VULCO®** Wear Resistant Linings  
**CAVEX®** Hydrocyclones  
**FLOWAY® PUMPS** Vertical Turbine Pumps  
**ISOGATE®** Slurry Valves  
**MULTIFLO®** Mine Dewatering Pumps  
**HAZLETON®** Specialty Slurry Pumps  
**LEWIS PUMPS™** Vertical Chemical Pumps  
**BEGEMANN PUMPS™** Centrifugal Process Pumps



For further information on any of these products or our support services contact your nearest sales office or visit:

[www.weirminerals.com](http://www.weirminerals.com)

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