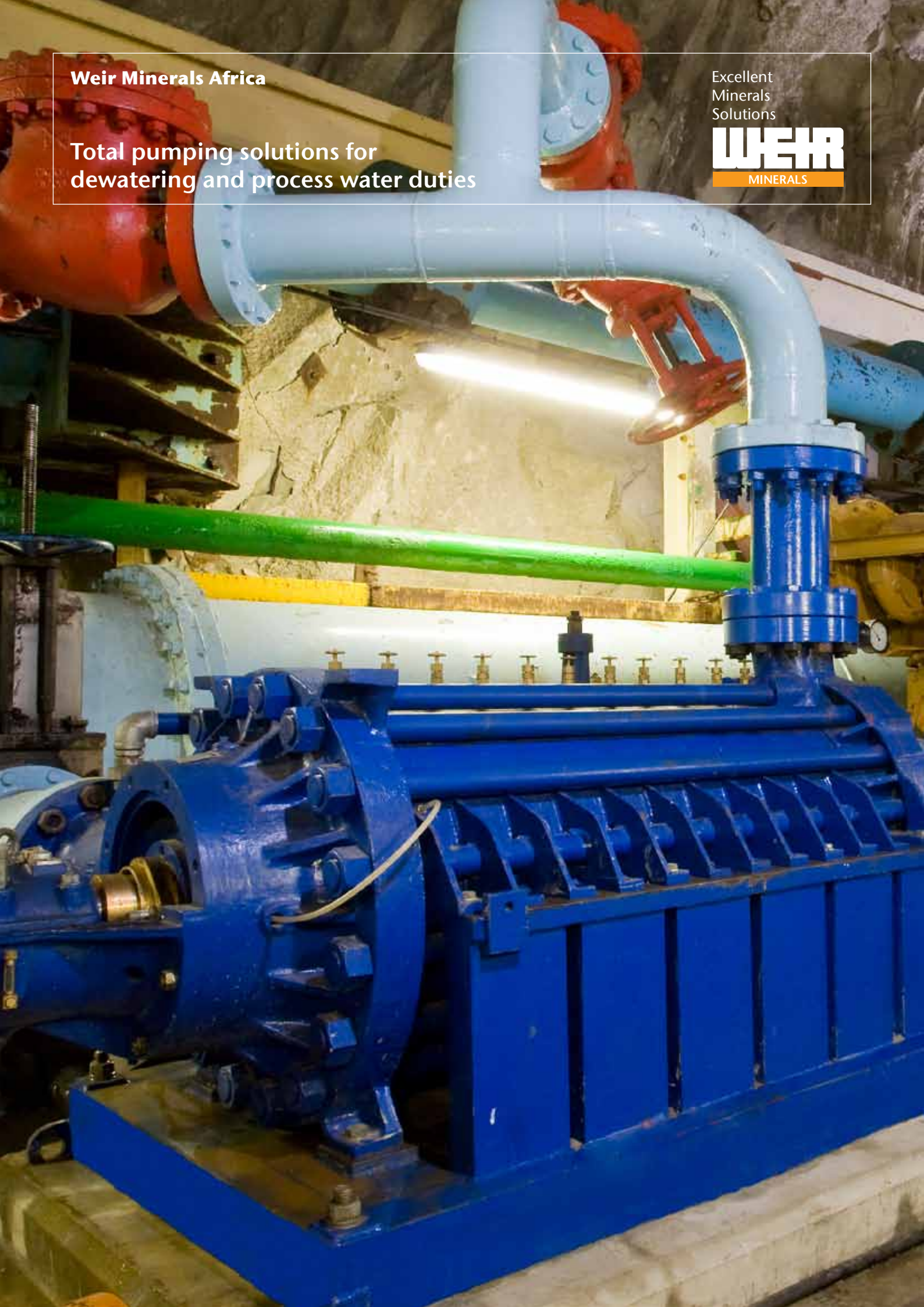


**Weir Minerals Africa**

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

Excellent  
Minerals  
Solutions

**WEIR**  
MINERALS



# Meeting the needs of the mining & minerals sector, worldwide

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

## **Mine dewatering and process water applications**



Most mining and quarrying operations the world over require some form of dewatering system to keep their operations moving and as water becomes even scarcer this precious resource is often being reclaimed, used, cleaned, re-used and recycled throughout the process.

Whether deep mine, opencast or in a quarry, Weir Minerals Africa has a complete portfolio of products including submersible, self priming, end-suction, split case, multistage ring section, vertical turbine and both crankshaft and hydraulic driven piston and diaphragm pumps, making Weir Minerals the only single source for all your mine dewatering and process water handling equipment.

## **Critical process plant slurry equipment**



At the heart of every process the grinding circuit represents the most abrasive applications that process equipment ever encounter. Weir Minerals' abrasion and corrosion resistant materials technology leads the world.

In critical through-the-process applications such as autoclave feed, reactor feed and digester feed, Weir Minerals Africa's engineered hydraulics are utilised to optimise slurry systems and lower ownership costs.

With reliability, performance and durability of such key importance, an experienced supplier with innovative and trusted solutions is paramount. Weir Minerals Africa's range of pumps, valves, hydrocyclones, mill liners, high pressure grinding rolls and service offering can be relied upon to meet your critical needs.



## **Transportation and waste management**

Whilst conveniently located reserves are becoming exhausted, the efficient movement of ore from more distant sites to and from existing processing plants is an increasingly vital element in the minerals processing industry. Weir Minerals Africa has the product and service capabilities to meet this need, replacing conveyor, road and rail infrastructure with cost effective pumping solutions.

Customers and society on the whole expect sustainability and environmental responsibility. Improving valuable fines recovery, recycling tailings water and developing technology to increase slurry densities, are all areas where Weir Minerals Africa's vast expertise, coupled with our product ranges provide added value to our customers.

# Dewatering and process water

The total solution for your dewatering and process water applications

## Opencast mine dewatering

Weir Minerals Africa offers a range of pumps to overcome high heads and flows to ensure that we keep your operations moving, and production on time in an opencast mining operation through a reliable and structured dewatering system.

## Underground mine dewatering

We offer an unrivalled range of pumps ranging from conventional to customised underground arrangements. These include submersible, multistage ring section and horizontal split case designs to address conventional systems, which pass water from the stopes down to the lowest point of the individual stopes or mine, allowing heavier solids to settle in settling dams utilising abandoned stopes.

We also offer alternatives to multistage pumping and the elimination of settling ponds in dirty water systems. Using a Geho® crankshaft or hydraulic-driven diaphragm pump can raise both water and suspended solids to the surface in one single pumping stage.

## Aggregates quarry dewatering

Normally, on a smaller scale than the large mineral ore opencast mines, aggregate quarries require pumps to handle much lower heads. Warman® submersible and Multiflo® horizontal self-priming centrifugal pump ranges are well suited to these types of applications.

## Process water

Water can be both an expensive and scarce resource used both within the process and also increasingly to transport the ore or product over long distances. It often has to be cleaned and recycled. To address this Weir Minerals offers its Warman® submersible, Envirotech® dewatering and Flowway® vertical turbine pumps or a combination of all three.



1



2



3



4



5



6

1 : Warman® SJ submersible mine dewatering pump

2 : Envirotech horizontal split case pump

3 : Envirotech multistage ring section pump

4 : Flowway vertical turbine pumps

5 : Geho PD slurry pump

6 : Multiflo self-priming diesel-driven pump sets

Weir Minerals is a specialist provider of slurry and mine dewatering equipment solutions and services 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 Africa 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.

# Horizontal pumps

## Horizontal centrifugal dewatering and process water pumps

### Warman® DWU dewatering horizontal pump

The Warman® DWU dewatering pump has been developed to enhance our existing high lift dewatering pump range.

The intended area of application is high head mine dewatering, as well as any general dewatering applications. The DWU pump will be able to handle dirty water of SG 1,05 with RD = 1.05, and a casing pressure rated at 7000kPa for series pumping, if required.

**Duties:**

Heads up to 140 m  
Capacities up to 1199m<sup>3</sup>/hr



Warman DWU pump

### Envirotech® Spiroglide\* multistage horizontal pump

The Envirotech® Spiroglide multistage horizontal pump is engineered for a wide range of high lift duties. Featuring robust through-bolt construction, this pump offers optimum efficiency and reliability, coupled with low maintenance costs. The pump has a balanced disc arrangement which minimises axial hydraulic thrusts.

This pump has a unique diffuser design which facilitates handling small quantities of solid content in water and ensures minimum turbulence during transfer from stage to stage.

**Duties:**

Heads up to 1300 m  
Capacities up to 1000 m<sup>3</sup>/hr



Envirotech Spiroglide pump

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."*

**Envirotech® Isoglide\* single stage end-suction pump**

The Envirotech® Isoglide single stage end-suction pump offers high efficiency and is capable of achieving maximum duty from minimum motor ratings. The pump's hydraulically balanced impellers minimise thrusts, extend bearing life and give increased reliability.

The pump is equipped with a back pull-out facility which allows the rotating assembly to be removed without disturbing the pump alignment or pipework. Designed to ISO 2858, the Isoglide is available in close-coupled and long-coupled configurations. The Isoglide range is interchangeable with other standard pump ranges.

**Duties:**

Heads Up to 150 m  
Capacities Up to 900 m<sup>3</sup>/hr

**Envirotech® Uniglide\* single stage horizontal split casing pump**

The Envirotech® Uniglide single stage horizontal split casing pump offers 150 frame sizes to perform all duties at optimum efficiency. A double volute on larger frames reduces the radial hydraulic thrusts.

This pump is available in both horizontal and vertical arrangement. The pump is equipped with a back pull-out facility which allows the rotating assembly to be removed without disturbing the pump alignment or pipework.

**Duties:**

Heads up to 180 m  
Capacities Up to 4320 m<sup>3</sup>/hr

**Envirotech® Duoglide\* two-stage horizontal split casing pump**

The Envirotech® Duoglide two-stage horizontal split casing pump offers higher efficiencies than single stage pumps for the equivalent duty. Diffuser passages on this pump are designed to minimise radial hydraulic thrusts, while back-to-back impellers minimise axial hydraulic thrusts.

The pump is equipped with a back pull-out facility which allows the rotating assembly to be removed without disturbing the pump alignment or pipework.

This pump features low gland sealing pressure. The Duoglide is available in both horizontal and vertical configurations

**Duties:**

Heads up to 200 m  
Capacities Up to 850 m<sup>3</sup>/hr



*Envirotech Isoglide pump*



*Envirotech Uniglide pump*



*Envirotech Duoglide pump*

*\*ENVIROTECH® Spiroglide, Isoglide, Uniglide and Duoglide pumps are manufactured and supplied by Weir Minerals Africa (Pty) Ltd under licence from Clyde-Union Limited*

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

# Submersible pumps

## Premium submersible mine dewatering and slurry pumps

### Warman® SJ submersible dewatering pump

The Warman® SJ submersible dewatering pump range is engineered for ease of operation. These units can be submerged to depths of up to 20 metres and have no suction lift limitations. Designed to run dry, the pump does not need to be moved as water levels vary. There are no suction hoses and no vacuum priming issues.

Modular in design, the Warman® SJ pumps are robust in construction, yet lightweight. An encapsulated motor and no external moving parts make both installation and operation simple and safe. Easy access is provided to the separate sealed electrical junction box. Wet ends can be easily adjusted and/or replaced. The Warman® common component philosophy with parts interchangeability means easy maintenance and servicing.

#### Duties:

Heads up to 80 m  
Capacities up to 1050 m<sup>3</sup>/hr



Warman SJ submersible dewatering pump

### Warman® SHW submersible slurry pump

The Warman® SHW submersible slurry pump offers exceptional wear life and reliability resulting in a low cost of ownership. Engineered using finite element stress analysis and solid modelling software, the rugged Warman SHW provides dependable solids handling capacity at the lowest possible cost.

A heavy duty, all chrome wet end, ensures reliable operation in demanding applications. Optimum protection against abrasive wear in heavy slurries is ensured because of its standard high chrome iron with heavy section thickness construction.

#### Duties:

Heads up to 100 m  
Capacities up to 2000 m<sup>3</sup>/hr



Warman SHW submersible slurry pump



Warman ANZE submersible slurry pump

### Warman® ANZE submersible pump

The Warman® ANZE submersible pump combines reliable performance with minimum costs for installation and maintenance. The pump has a twin volute which is engineered to balance all opposing hydraulic forces in the pump casing, thus optimising the life of the cantilevered shaft and its components. The impeller clearance is adjustable for wear by use of steel spacers and is fitted with an external agitator which breaks down and re-suspends compacted solids, thus assisting the pump to transfer a high percentage of solids rather than surface water.

Manufactured from 28% chrome alloys, the casing, impeller and wear plates of the Warman ANZE submersible pump offer excellent wear life when handling abrasive slurries. Non-flameproof pumps are supplied with a current operated earth leakage circuit which detects any imbalance between the phases.

#### Duties:

Heads up to 38 m  
Capacities up to 220 m<sup>3</sup>/hr

# Vertical turbine pumps

World's leading vertical turbine mining pumps



Floway submersible pump



Floway vertical turbine pump



Floway vertical 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® 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 7,000 GPM (1590 m<sup>3</sup>/hr)

Settings to 1,500 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 man-made 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 in-line applications such as pipelines, booster and low-NPSH systems.

# Self-priming pump units

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

Multiflo CF pump unit



Multiflo® multistage horizontal pumps are designed for high lift shaft dewatering along with the industry's most complete range of self-priming trailer, skid, pontoon and

The Multiflo® self-priming pit dewatering pump range is designed to withstand the harsh, arduous operating conditions found on mining sites. The heavy-duty robust construction as well as features such as full welded joints, internal painting and the attention to detail in stainless steel and fully galvanised fittings, ensures long life and optimum performance.

### Multiflo® CF open diesel pump units

The Multiflo® CF range is the cost effective pumping solution. The CF range of auto vacuum primed, diesel-driven pump units have been designed and built to simplify both the operation and maintenance of the unit. The CF pump range is built for general purpose pumping applications.

#### Duties:

Heads up to 130 m

Capacities up to 160 m<sup>3</sup>/hr

### Multiflo® MF diesel pump units

The Multiflo® MF range features a Vactronic™ auto vacuum priming system which eliminates priming problems. Optimum pump unit mobility is assured with the Multiflo MF range which is available with several types of mounting options, including heavy-duty skid bases, steel pontoons or mining trailers.

Other customised options include suction and discharge arrangements, monitoring and instrumentation and an auto start/stop function.

#### Duties:

Heads up to 140 m

Capacities up to 1100 m<sup>3</sup>/hr

Multiflo MF pump unit



### Multiflo® ME electric pontoon pump units

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

Smaller units are manufactured with a single hull, facilitating easy transportation due to compact overall dimensions.

Larger units are designed as three piece pontoons thus simplifying the logistics of transportation. The two outer sections are the flotation units while the centre houses the pumps.

Positive self-priming is critical to the reliability of a pump, and Multiflo® ME pump units are engineered to ensure that the pump is always able to self-prime within minutes of starting.



450kw pump set on an 18 ton pontoon



barge-mounted units. Multiflo pump units are specifically designed and customized for the harsh and arduous conditions encountered in the mining industry to provide maximum reliability and performance.

# Barge pontoon barge units

**Custom built to ensure the very best performance for your specific mining operation.**



*Waterspider unit*

## The Waterspider

The Waterspider design allows for the use of several configurations of electric pump sets. The most common use is for the suspension of submersible pumps used for normal pit dewatering and level control.

Vertical turbine and spindle pumps are also used for the more permanent or static installations.

Light dredging or silt removal systems are also designed around the use of the Waterspider in conjunction with a slurry type submersible pump suspended from an electric winch allowing for maximum mobility with relative ease of operation.

The Waterspider is available in a standard design of various sizes depending on the pump size and the ancillary equipment required by the client. Customised designs to accommodate the specific needs of the customer are also available .

The Waterspider is lightweight and modular in design allowing for easy dismantling and assembly for transportation between different sites.

Most important is that the flotation and stability of the Waterspider design is paramount in the safety of any operating or maintenance personnel to carry out their operational duties.

## Pontoons

Weir Minerals Africa has the ability to custom engineer a pontoon to meet your specific requirement. Whether you need diesel or electric drive, we provide a complete solution. By using state-of-the-art 3D-CAD modelling, our engineers ensure the pump set and pontoon are balanced for optimal stability; lead times are reduced, assembly and installation problems are eliminated.

Consideration of the pontoon component size for transport and handling is taken into account during the design process. This ensures the end user can easily handle and assemble the unit on site with minimal effort.

For smaller units where transport isn't an issue, the pontoons can be manufactured with a single hull.

### Features:

- Minimal or no on-site assembly required
- Solid one piece construction
- Easily transported due to compact overall dimensions
- Larger units are designed as three piece pontoons. This simplifies the logistics of transport. The two outer sections are the flotation units while the centre section houses the pumps set/s.
- Designed to fit into shipping containers
- Easy on-site handling during assembly as component sizes are manageable
- Size of pontoon is not restricted allowing fitment of large and or multiple pump sets
- Various materials of construction are used to ensure that the product can withstand the demanding site conditions



*Typical light dredging pontoon from the Rental store*

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

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

# Hard metal & vertical cantilever pumps

The world's leading vertical cantilever pumps for dewatering.



Warman MS pump



Warman VND cantilever pump

## 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. All models are design to maximize reliability, durability, and to provide the lowest total cost of ownership.

### Duties:

Heads up to 275 m  
Capacities up to 1895 l/sec

## Warman® MS and DS pumps

Warman® MS multistage and DS single stage pumps, unlike other split case pumps, are designed 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

### Warman MS duties:

Heads up to 625 m  
Capacities up to 230 l/sec

### Warman DS duties:

Heads up to 182 m  
Capacities up to 835 l/sec



Warman SP vertical sump pump

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

Geho® PD pumps can raise both the water and suspended solids directly 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 TZPM pump*

### Geho® TZPM piston diaphragm pump

The Geho® TZPM pump is a crankshaft driven, three-cylinder, single-acting high pressure piston diaphragm pump. The unique preformed diaphragm separates the pumped slurry or contaminated mine water from all the pump's moving parts.

This range of pumps is often ideal to handle slurries and unsettled mine water, including slimes, in one lift to the surface.

#### Duties:

Heads	up to 3000 m
Capacities	up to 900 m <sup>3</sup> /hr



*Geho APEXS pump*

### Geho® APEXS® hose diaphragm pump

The Geho® APEXS® pump is a hydraulically driven two-chamber, single-acting high pressure hose 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.

The hydraulic drive, combined with a large stroke volume at low system cycle rates, allows virtual pulsation-free operation.

#### Duties:

Heads	up to 3000 m
Capacities	up to 440 m <sup>3</sup> /hr

# 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 ensuring that 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 programme

This includes bearing tolerance checks, strip-and-rebuild, and part condition reports. This first stage also includes the necessary safety assessments to ensure that 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 that you know exactly how to arrange your system to achieve optimal operating performance from your installed pumps, hydrocyclones, high pressure grinding rolls, valves and mill lining systems. Additionally we will provide full training so that you understand exactly how to get the most from our products.



- WARMAN®** Centrifugal Slurry Pumps
- ENVIROTECH®** Centrifugal Slurry Pumps
- GEHO®** PD Slurry Pumps
- LINATEX®** Rubber Products
- VULCO®** Wear Resistant Linings
- CAVEX®** Hydrocyclones
- FLOWAY® PUMPS** Vertical Turbine Pumps
- ISOGATE®** Slurry Valves
- MULTIFLO®** Mine Dewatering Solutions
- LEWIS® PUMPS** Vertical Chemical Pumps
- WEIR MINERALS RENTALS™**



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

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

### **Weir Minerals Africa (Pty) Ltd.**

PO Box 70, Isando, 1600  
31 Isando Road, Isando, 1601  
Gauteng  
South Africa

Tel.: +27 (0)11 929 2600  
Fax.: +27 (0)11 929 2960  
sales-za@weirminerals.com  
www.weirminerals.com

Excellent  
Minerals  
Solutions

