

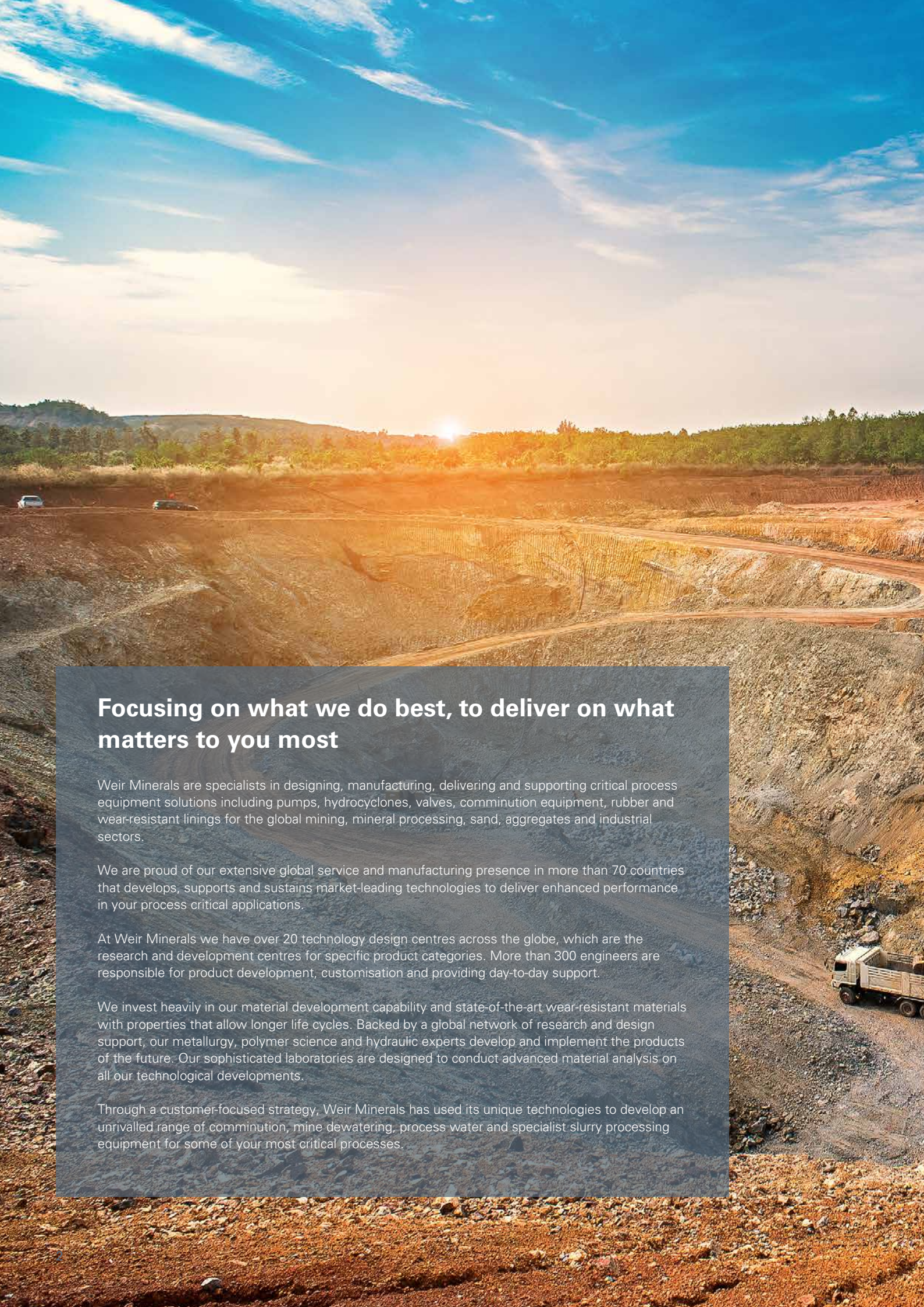
**WEIR**

**Minerals**

**Product Catalogue**







## Focusing on what we do best, to deliver on what matters to you most

Weir Minerals are specialists in designing, manufacturing, delivering and supporting critical process equipment solutions including pumps, hydrocyclones, valves, comminution equipment, rubber and wear-resistant linings for the global mining, mineral processing, sand, aggregates and industrial sectors.

We are proud of our extensive global service and manufacturing presence in more than 70 countries that develops, supports and sustains market-leading technologies to deliver enhanced performance in your process critical applications.

At Weir Minerals we have over 20 technology design centres across the globe, which are the research and development centres for specific product categories. More than 300 engineers are responsible for product development, customisation and providing day-to-day support.

We invest heavily in our material development capability and state-of-the-art wear-resistant materials with properties that allow longer life cycles. Backed by a global network of research and design support, our metallurgy, polymer science and hydraulic experts develop and implement the products of the future. Our sophisticated laboratories are designed to conduct advanced material analysis on all our technological developments.

Through a customer-focused strategy, Weir Minerals has used its unique technologies to develop an unrivalled range of comminution, mine dewatering, process water and specialist slurry processing equipment for some of your most critical processes.



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# The Warman® range

Slurry transportation is at the heart of a mine site, so it's crucial your pumping equipment is up to the task. Is your existing pump vibrating, cavitating or leaking? Does your pump shaft keep breaking? Maybe you're experiencing problems with wear life? Whatever your issue, our industry-leading Warman® centrifugal slurry pumps can help.

When you purchase a Warman® slurry pump, you aren't just getting a heavy-duty product which can handle highly abrasive slurries and is designed to offer high performance, reliability and low total cost of ownership. You're gaining access to our global support network of expert service teams, who will work with you to solve your problems and improve your slurry transportation process.

From horizontal and vertical slurry pumps designed for heavy-duty applications including mill discharge and tailings processing to submersible, horizontal dewatering and axial flow pumps, there's a Warman® slurry pump to suit your needs. When you need a slurry pump for mining, chemical or industrial applications, speak to our team of Warman® pump experts, trusted for over eighty years.

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## WARMAN® HORIZONTAL SLURRY PUMPS

### Offering diverse designs for the toughest duties



#### Warman® MC, MCR®-M and MCU® pumps

The Warman® MC pump is designed to easily manage large-size particles in dense abrasive slurries and offers the right combination of ruggedness, durability, hydraulics and materials. From the most difficult mill discharge to water-flushed crusher, the Warman® MC pumps are your best choice.



#### Warman® WBH® pumps

The Warman® WBH® pump is the world's new standard for heavy duties. A wide variety of impellers and shaft seals provide a perfect fit for a wide range of applications. The WBH® pump is designed to provide excellent wear life while maintaining efficiency through 'one-point adjustment' during the wear cycle for the best total operating cost. The low-flow gland seal, expeller seal and mechanical seal options on the WBH® pump mean there is less dilution of the slurry and lower required flow of gland water.



#### Warman® AH® heavy duty slurry pumps

The Warman® AH® pump is the world's standard for heavy duties. A wide variety of impellers and shaft seals provide a perfect fit for a wide range of applications. The AH® pump provides excellent wear life while maintaining efficiency during the wear cycle, delivering the best total operating cost. The Warman® AH® pump, together with the Warman® MC series pump, provides a complete selection for most duties in the mill. From cyclone feed to regrind, flotation and tailings, the Warman® AH® pump is the best choice.



#### Warman® HH, H and HRM pumps

The Warman® HH/H/HRM pump lines were designed to produce high heads per stage at high pressures. Commonly used for long-distance transport lines, the HH and HRM pumps can often satisfy application duties with a single pump where others require multiple pumps in series.



#### Warman® PC and PCH pumps

Abrasive or abrasive/corrosive applications require a pump which is designed for the duty. The Warman® PC pump is ideal for applications requiring greater reliability and durability than a conventional process pump can offer. Even low concentrations of abrasive solids can cause high wear and costly downtime for conventional pumps. These "dirty water" and light slurry duties are ideal applications for the Warman® PC pump, especially when the ultimate in reliability is demanded.



#### Warman® D, G, GH, GHP, GHPP and SHG pumps

The Warman® D, G, GH, GHP, GHPP and SHG pump range is the world's standard for dredge and gravel applications. The range provides excellent wear life while maintaining efficiency during the wear cycle and the best total operating cost. A wide variety of shaft seals provide a perfect fit for a range of applications.



#### Warman® WGR® pumps

The Warman® WGR® pump is the pump of choice for the sand and aggregate market. The second-generation Warman® WGR® offers several innovative features including improved hydraulic design, enhanced gland options, simplified wet-end and added benefits for safety and reduced maintenance.



### Warman® L pumps

Designed for rugged duties while offering higher efficiencies, the Warman® L series is a combination of the proven Warman® AH® unique features. The Warman® L series provides the widest range of hydraulics from the 3/4" to a 26" discharge pumps. The 3/4" is perfect for laboratories or in demonstration plants.



### Warman® GSL and GSLHD pumps

Since the introduction of the first Flue Gas Desulfurisation (FGD) systems in the 1970s, Weir Minerals has led the world in the supply of more than 4,000 specially designed Warman® FGD pumps. The GSL pumps are designed to achieve in excess of 90% in the best efficiency area. They can be either directly coupled to slow speed electric motors or directly driven through gearboxes.



### Warman® MU pumps

The Warman® MU pump is an economic solution for medium-abrasion slurries pumping, with relatively small footprint, designed to meet the requirements of slurry, liquor and process applications, where the use of the world-renowned AH® ultra heavy duty slurry pump might not be justified. The Warman® MU medium-duty slurry pump provides abrasion resistance, simple installation and maintenance.



### Warman® AHF, MF and LF horizontal froth pumps

A large oversized inlet with a unique impeller inducer blade handles heavy froth and higher-viscosity, dense slurries with ease. The Warman® AHF/LF/MF line of horizontal froth pumps has proved valuable for very dense slurries where viscosity starts to become a pumping issue for the standard slurry pump.



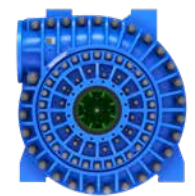
### Warman® AHP and AHPP high pressure pumps

The higher-pressure capability allows the user to operate several pumps in series, all consolidated into one pump house. Such set-up saves the expense of supporting systems like gland water supply in the alternative design of several pump houses along the transport line.



### Warman® AHSM slurry pumps

Built upon the world's standard for heavy duties, Warman® AH® series pump, the Warman® AHSM series pump offers the same features and benefits as the AH® pump, including identical hydraulics. The AHSM difference is the special impeller and suction cutter components to remove scale in alumina plants.



### Warman® HTP and HTPP fully lined pumps

Fully lined pump for severe multi-stage applications which offers numerous ease of maintenance features. The Warman® HTP line represents the highest-pressure-rated, large, lined pumps prioritising increased safety, wear life, and reliability. The Warman® HTP is rapidly establishing itself as the dominant pump in the Canadian oil sands, providing an efficient and durable solution to long-distance hydro transport and tailings duties.



### Warman® MDC unlined pumps

The Warman® MDC pump is Weir Minerals' newest all-metal unlined pump range designed to pass extremely large-particle slurries. The MDC wet end easily adapts on to the long-proven Warman® mechanical end to simplify field upgrades. Sealing options include a centrifugal seal with an extremely large expeller to provide waterless sealing for a large range of operating conditions.



#### Warman® WRR® recessed impeller pumps

The Warman® WRR® recessed impeller pump is equipped with a classic single-vane-screw centrifugal impeller design for clog-resistant pumping for trouble free movement of solids, and fibrous and stringy materials. The steep head-capacity curve produced by the impeller provides additional head to help push through any partial blockages.



#### Warman® DWU dirty water pumps

The Warman® DWU pump is specifically engineered to handle dirty water from onsite water sources such as ponds and open pits with specific gravity (SG) of up to 1.05. Designed using Weir Minerals' advanced materials technology, the Warman® DWU pump processes fluid efficiently and minimises the need for pump maintenance.

## WARMAN® VERTICAL PUMPS

### Designed to deliver maximum efficiency



#### Warman® SP/SPR pumps

The Warman® SP/SPR heavy duty cantilever sump pump is designed for applications requiring greater reliability and durability than conventional vertical process pumps can offer. Fully elastomer-lined or fitted with hard metal, the pump features no submerged bearings or packing, high-capacity double suction design, with optional recessed impeller and suction agitator available.



#### Warman® WBV® and WBV® hybrid pumps

The Warman® WBV ultra-heavy-duty range of vertical cantilevered slurry pumps sets a new industry benchmark for general sump applications. The Warman® WBV pump provides substantial performance with low power consumption, making it one of pumps of its class with the lowest total ownership cost.

The Warman® WBV® hybrid pump enables sump pump operators to benefit from the enhanced technical advantages of the WBV® sump pump. The WBV® hybrid unit provides hydraulic sump agitation, which keeps solids in suspension, meaning a sump can be almost completely emptied with minimal settlement, removing the need for mechanical agitation, or other external sump pump clearing solutions.





## WARMAN® ELECTRO-SUBMERSIBLE PUMP

Offers solutions for open sumps and pits



### Warman® SHW submersible slurry pumps

The Warman® SHW submersible slurry pump is a fully customisable slurry pumping solution that provides advanced pump features and high chrome wear parts for maximum processing efficiency. The SHW pump makes extensive use of Weir Minerals' finite element stress analysis and state-of-the-art solids modeling to ensure reliable, long wearing, solids handling capability.

## ACCUMIN® AUTOMATIC LUBRICATORS

An automatic lubricator designed to optimise Warman® pump performance



### Automatic lubricating system

Accumin® lubricators are designed to ensure the correct lubricant dosage is safely applied on a consistent basis. This reduces the need for manual labour and helps to prevent unplanned downtime.





## GEMEX® BELT TENSIONING SYSTEM

Change belts on any critical machine in just a few minutes



### Gemex® belt tensioning system

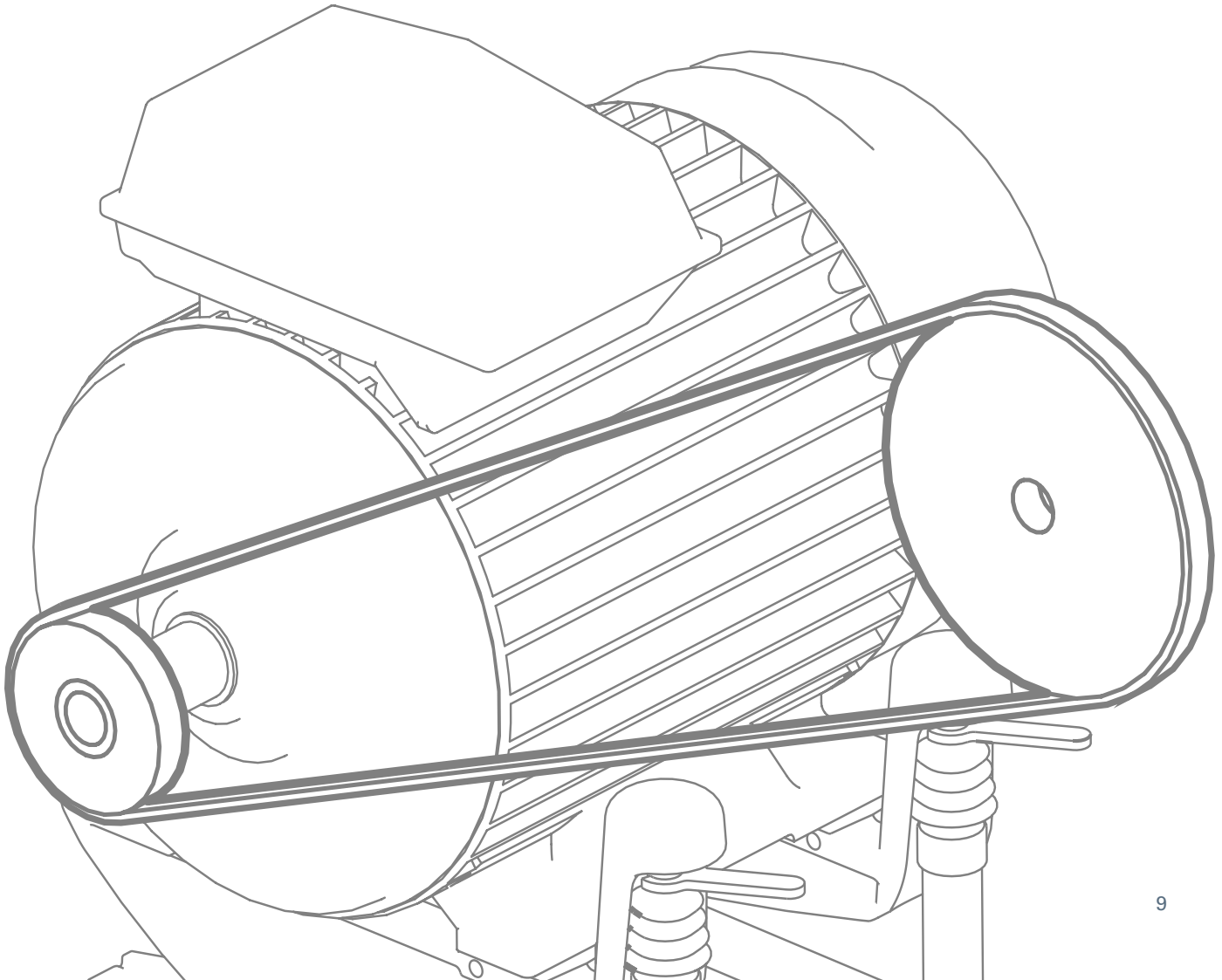
The Gemex® belt tensioning system makes it possible to change belts on any critical machine in just a few minutes. No alignment needs to be done when changing belts or adjusting belt tension - it is done during the initial installation. Correct alignment and belt tension gives your belts, pulleys, and bearings longer and more consistent life, while also providing the conditions for maximum efficiency.

Gemex® belt tensioning systems are available in standard models for belt drives from 1kW up to 500kW. We also offer bespoke designs for machines where our standard models cannot be applied. Gemex® belt tensioning systems can be found in nearly every industrial environment which uses belt transmissions; as well as in clean environments such as the pharmaceutical industry, ventilation systems in hospitals and in other public buildings.



### Integrated Warman® slurry pump and Gemex® belt tensioning system

The Gemex® belt tensioning system is available as an integrated unit with the Warman® AH®, WBH® and MU slurry pump ranges. By integrating a hydraulically adjustable and mechanically lockable motor platform onto the pump's bearing assembly, the system removes the need to re-align the motor each time the drive belt needs to be replaced, reducing the downtime required from hours to minutes.



# The Multiflo® range

Do you need robust, reliable dewatering pumps which can perform in the harshest of environments? Whether you're pumping water, solids or slurries, our Multiflo® range of pumps, barges and pontoons won't let you down.

Custom built to endure the toughest operating conditions, Multiflo® dewatering products can be used across mining, quarrying, industrial, water transfer and environmental water management applications.

Combining ruggedness and flexibility, the range includes skid base and trailer to single, double and triple mounted pontoon pumps and heavy duty barges constructed in a range of materials including steel, MDPE and fibreglass. With diesel, electric or hydraulic driven options, we can create the perfect dewatering configuration to meet your needs.





## MULTIFLO® DEWATERING SYSTEMS

### Offering complete solution for dewatering duties for Sand and Aggregates



#### Multiflo® LF dewatering pump units

The trailer-mounted Multiflo® LF range of high performance, high head, pumps is specifically designed to effectively handle a wide-range of liquids from water, to sewage and sludge.

Multiflo® LF pumps provide a dependable, highly efficient, and portable solution for variable site conditions, including applications where liquids may contain high percentages of solids and other material.



#### Multiflo® pontoon barges

Multiflo® pontoon barges are engineered to be safe and extremely stable, available as both heavy duty single hull or lighter-weight modular designs.

Our Multiflo® pontoon barge range includes polyethylene, steel or fibreglass floats paired with vertical or horizontal mounted pump sets to suit a wide range of applications.



#### Multiflo® dewatering pump units

Multiflo® dewatering pump units are equipped with a heavy-duty skid and diesel or electric engine capable of producing high volume flow at extra high heads. Our Multiflo® dewatering pump skids utilise a self-priming arrangement for a range of horizontal mounted pump sets, and the heavy duty construction and modular design create a stable skid that is designed to be lifted or dragged into position where it's needed. These Multiflo® units reliably maintain high pump efficiencies, ideal for quarrying and environmental water management.



#### Multiflo® SJG submersible pumps

The Multiflo® SJG submersible dewatering pump is engineered to combine a light weight pump design with proven materials of construction to create an efficient and reliable dewatering pump solution.

The SJG pump utilises a design that maximises pump wear life through standard pump features such as epoxy coated casings that provide demonstrated corrosion and erosion resistance.

# The Enduron® range

Our range of Enduron® screens have been designed for the tough conditions of the mining and minerals processing industries. These linear motion screens come in banana, horizontal or dewatering arrangements. Custom-built, Enduron® screens are designed to meet your specific needs.

Enduron® High Pressure Grinding Rolls (HPGR) set the benchmark for energy efficient grinding and use dynamic skewing to provide best-in-class wear life for mining applications. With their excellent throughput capacity, low maintenance requirements and energy efficiency, HPGRs are fast becoming the go-to technology for greenfield projects.

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## ENDURON® SCREENS

Designed to maximise operational efficiency



### Enduron® Banana screens

Often referred to as multi-slope or multi-inclination screens, our range of Enduron® banana screens offer exceptionally high throughput per deck. Offered in a variety of deck angles, our high capacity, high velocity screens have a low bed depth which results in greater efficiencies by allowing quicker stratification of the material bed.



### Enduron® Horizontal screens

Featuring a stress-relieved, all-bolted construction using locking bolts to ensure structural integrity, our Enduron® horizontal screens deliver exceptionally high throughput per deck. As Enduron® screens are specifically engineered for your process, they will offer an increased service life compared with alternative solutions. Capable of being installed from 0 to 10 degrees, these screens are suitable for a variety of different mineral processing duties.



### Enduron® Dewatering screens

Featuring an uphill screening slope design and drainage feed-slope, these screens offer class-leading dewatering capability delivering an end product that can be easily handled and stock-piled. Our range of Enduron® dewatering screens offer exceptionally high throughput per deck, excellent water removal and high load capacity, making them integral to our range of sand wash plants.

## ENDURON® HIGH PRESSURE GRINDING ROLLS

For hard rock mining applications

### Enduron® High Pressure Grinding Rolls (HPGR)

With substantial savings in energy and water consumption, lower maintenance requirements and high availability, Enduron® High Pressure Grinding Rolls are a proven way to improve the efficiency of minerals and aggregate grinding circuits, while significantly reducing their carbon footprint. Our innovative design allows our Enduron® HPGR to maximise crushing pressure while allowing oversized and tramp materials to pass without incident through dynamic skewing. This is only possible with the unique bearing arrangement of our Enduron® HPGR, which prevents premature bearing failure and enable the rollers to be quickly exchanged within a 24-hour shutdown.



# The Trio<sup>®</sup> range

## Trio<sup>®</sup> products you can rely on.

Trio<sup>®</sup> products operate in some of the most challenging environments in the industry. Our Trio<sup>®</sup> solutions are designed and proven to be able to withstand even the harshest of operating conditions.

Designed to perform, our Trio<sup>®</sup> products assure ease of operation. We understand that the continued production of quality end-products is of critical importance - that's why our Trio<sup>®</sup> products are manufactured to be quickly installed and commissioned, and are fully supported by our Weir Minerals global service network.

**SYNERTREX<sup>®</sup>**  
ENABLED





## TRIO® CRUSHERS

### Engineered for the most rugged and demanding applications



#### **Trio® CT series jaw crushers**

Our Trio® CT series jaw crushers combine a robust design with a steep nip angle and optimised toggle to create a crusher that offers an aggressive bite and reliable operation. This crusher can be fitted with a hydraulic toggle relief system as required.



#### **Trio® TP series cone crushers**

Our Trio® TP cone crushers are designed for customers producing aggregates with fractured faces or who need maximum size reduction at a high production rate. Cast in high strength, alloy steel with an optimised design, our Trio® TP cone crushers deliver maximum strength and durability in demanding applications.



#### **Trio® TC series cone crushers**

Trio® TC cone crushers deliver a proven approach to processing primary, crushed ores and quarry rock products. These crushers are designed to be reliable, simple to operate and maintain, while incurring low operational costs. The Trio® TC cone crushers' design is universally accepted as the global standard for heavy-duty, reliable secondary and tertiary crushing. Designed to deliver high crushing force, increased horsepower and moderate increases in crushing speed. Trio® TC cone crushers also include modern hydraulic features that allow users to safely and easily adjust each crushers' settings.



#### **Trio® APP series horizontal impact crushers**

The Trio® APP horizontal impact crushers are designed for high volume and high reduction ratio impact crushing. They are particularly suitable for limestone and in applications where typical compression crushers, such as jaw crushers and cone crushers, would have difficulty meeting strict particle shape requirements. In some applications. The Trio® APP horizontal impact crushers can generate a product that does not require secondary crushing. These crushers are valued for their versatility under a wide range of operating conditions.



#### **Trio® APS series horizontal impact crushers**

The Trio® APS horizontal impact crushers offer large reduction ratios and a high production capacity, without compromising the quality of its cubical product. Trio® APS series crushers feature a large unobstructed opening for slabby feed. These versatile crushers can be used in a range of applications including hard rock crushing and the recycling of asphalt, concrete, slag and glass.



#### **Trio® TV series vertical impact crushers**

The Trio® TV vertical impact crushers are high performance comminution machines. Unlike compression crushers, Trio® TV series crushers accelerate rock to high speeds, breaking it along its natural fracture lines with high energy impacts. This reduces the wear on each crusher while still producing high-quality shaped aggregates and manufactured sand.

## TRIO® FEEDERS

### Optimising flow control at each stage of processing



#### TRIO® TF series vibrating grizzly feeders

The Trio® TF grizzly feeders are available in an extensive range of sizes suitable for mobile or stationary vibrating feeding applications. These feeders incorporate grizzly sections at the discharge end to remove undersize rock and ore before the primary crushing station.



#### TRIO® AF series apron feeders

The Trio® apron feeders offer a cost effective solution when feeding even the most difficult materials. These positive displacement feeders are especially effective in applications that have large rock with sharp edges, materials that are sticky or hot materials. The AF series feeders utilise crawler tractor type undercarriage components with lifetime lubricated track chain, carrying and return roller assemblies.



#### TRIO® EF series pan feeders

The Trio® vibrating pan feeders are used in mining, aggregate and recycling operations and ideally suited for installation in surge tunnels and under surge bins applications to control the feed rate to the next processing station. There is a bottom mounted arrangement with heavy duty resilient coil springs to support the feeder while absorbing and isolating shock loads. Spring base plates supplied. Suspended mounting arrangement available as an option.





## TRIO® SCREENS

### Designed for the toughest duties



#### **Trio® TIOSP inclined scalping screens**

Our rugged Trio® TIOSP series scalping screens reliably accept feed sizes up to 400mm and are available in up to a triple deck configuration. These screens are well suited to secondary scalping and large size separation applications. They typically operate at an inclination of 20° and can be supplied with a steel punch plate, steel-backed rubber media, or cascading grizzly bars.



#### **Trio® THDS series inclined scalping screens**

Our Trio® THDS series scalping screens are proven performers when removing undersize material before the primary crusher in mining, aggregate, recycling, or rip rap separation applications. Trio® scalping screens can be supplied with multiple deck options including grizzly bars, heavy duty rubber steel-backed media and steel punch plate in an optional stepped-deck layout. The stroke can be easily adjusted using counterweights that are bolted to the flywheels, while the vibrating units are attached with threaded bolts to enable easy servicing.



#### **Trio® TIO series inclined screens**

Our range of Trio® TIO series screens is designed for continuous, reliable operation in the most demanding wet and dry applications. These high-performance screens are available in 2, 3 and 4-deck configurations. Screen support decks can be supplied to accommodate all media types including woven wire mesh, Linathane® polyurethane, Linard® rubber panels, self-cleaning mesh and punch plate. The stroke can be easily adjusted using counterweights that are bolted to the flywheels.



#### **Trio® TTH series horizontal screens**

Trio® horizontal screens are designed to deliver the perfect combination of quality, superior performance, and exceptional reliability when processing even the most difficult materials. Vibrating motors and gear cases are attached using threaded bolts to facilitate easy maintenance and servicing. Accepting feed sizes of up to 250mm, our Trio® TTH series is fitted with a variable pitch drive sheave allowing for quick speed adjustment.

## TRIO® WASHERS

Engineered to deliver a clean, high-quality end product

### TRIO® LW series log washers

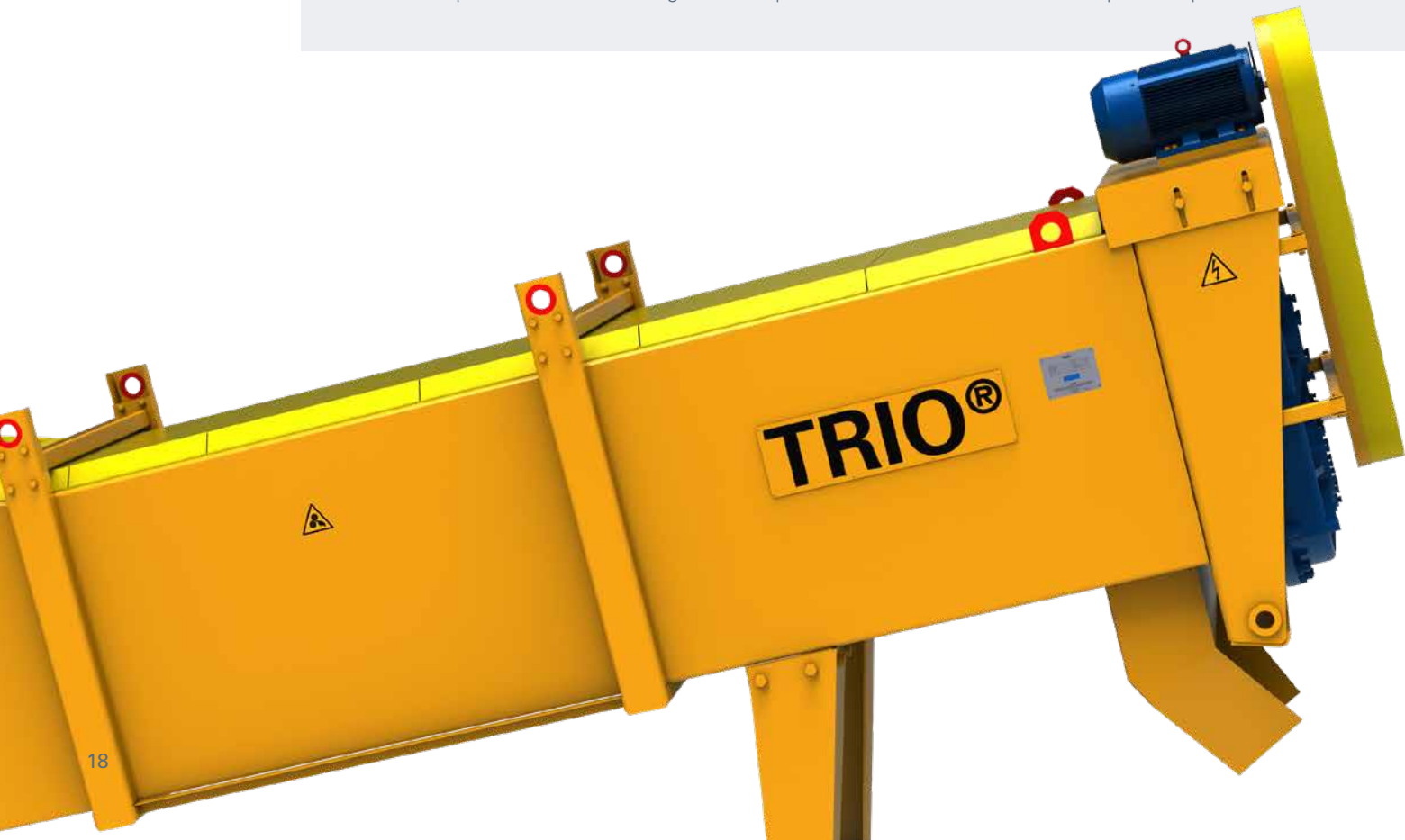
TRIO® LW series log washers assist in breaking down heavy plastic clay, conglomerates and certain types of soft stone that may be present in ore, crushed rock, or gravel. Scrubbing is accomplished by the severe abrading action of corrugated faced Ni-Hard shoes mounted on the spuds welded to the log shafts. The log shafts rotate in opposite directions. The two log shafts are timed to obtain an overlap of the paddle shoes for maximum scrubbing action.

### TRIO® TCW series coarse washers

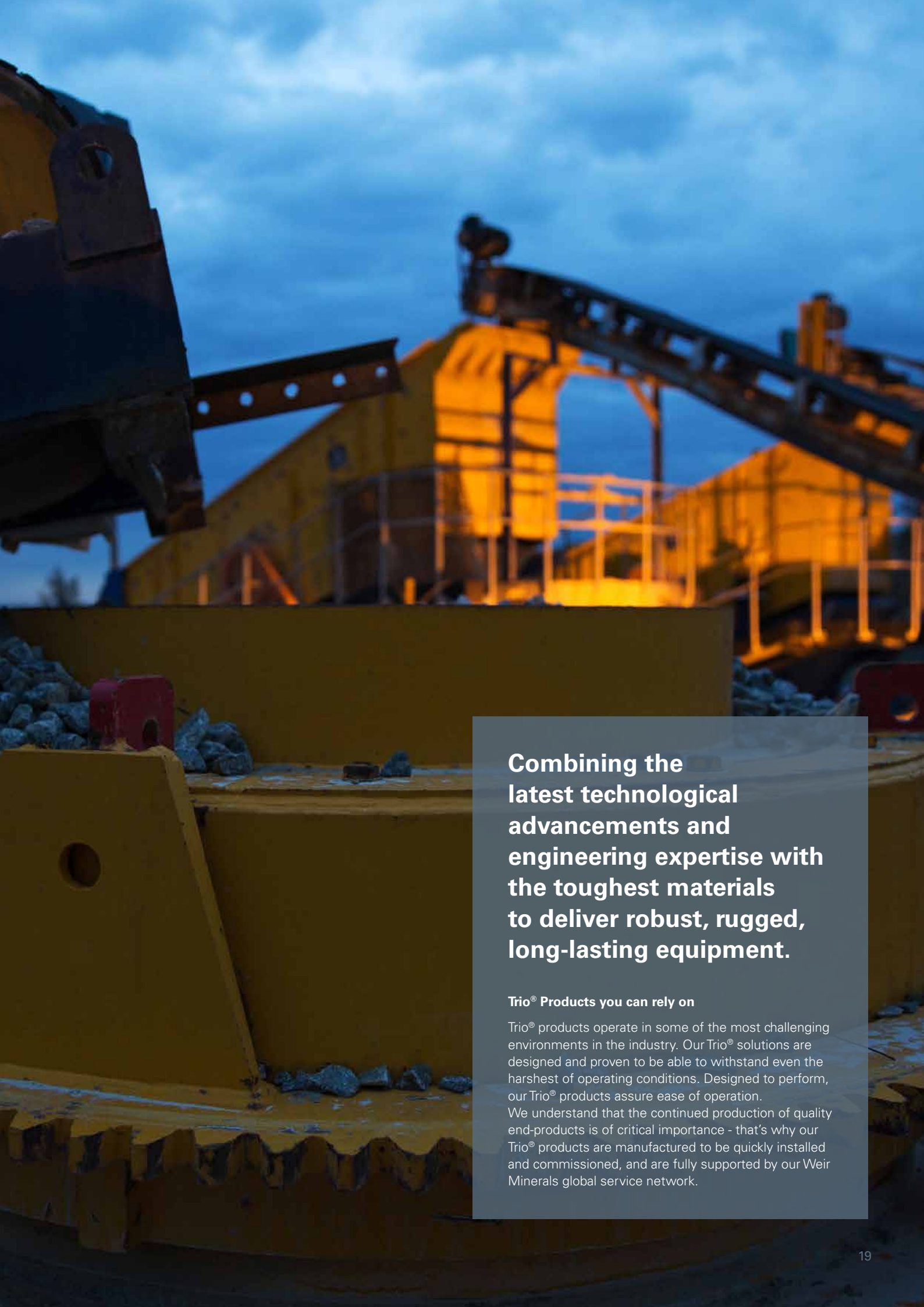
Our TRIO® TCW series coarse washers, clean coarse material containing water soluble slits and soft clay. Material rolls and tumbles while carried up the spiral shaft. Cast paddles abrade and separate aggregate from dust, and soluble clay. The waste material absorbed by the water is discharged over the adjustable weirs at the back of the machine. Classifying is accomplished when material containing deleterious matter that has a specific gravity less than the coarse material, is floated upwards and carried over the adjustable weirs. The water velocity to float the deleterious materials comes from the manifold on the bottom of the tub. The cleaned product is discharged at the inclined section of the machine.

### TRIO® TSW series fine washers

TRIO® TSW series sand washers use hydraulic separation by water to clean and classify sand particles by weight. Heavier particles sink when processed and are collected in the bottom of the trough. The trough adds a further layer of classification, the added water pressure allows lighter dust particles to float to the surface of the claim settling pool and are discharged over the weirs at the rear of the machine. The sand particles are transported to the inclined discharge end by the pitched steel spiral shafts. Dewatering occurs as the spiral shaft transports the settled sand up the incline of the trough where liquids often flow down as the sand is pushed up.







**Combining the latest technological advancements and engineering expertise with the toughest materials to deliver robust, rugged, long-lasting equipment.**

**Trio® Products you can rely on**

Trio® products operate in some of the most challenging environments in the industry. Our Trio® solutions are designed and proven to be able to withstand even the harshest of operating conditions. Designed to perform, our Trio® products assure ease of operation.

We understand that the continued production of quality end-products is of critical importance - that's why our Trio® products are manufactured to be quickly installed and commissioned, and are fully supported by our Weir Minerals global service network.

# The sand wash plant range

**Our range of Weir Minerals compact sand wash plants feature industry leading materials technology, process equipment and are fully supported by Weir Minerals' unrivalled global service network.**

These plants contain our advanced technology and are designed to be portable, easy to assemble, maintain and operate. Weir Minerals sand wash plants are capable of meeting the needs of even the most experienced of sand producer while proving intuitive and easy to operate for a new entrant.





# WEIR MINERALS SAND WASH PLANTS

## A world class compact solution



### Weir Minerals SP-series - Single-grade sand wash plants

The Weir Minerals SP-series sand wash plant is designed to remove excess fines or coarse material in a simple way, providing exceptional washing results while delivering clean, low moisture product for conveying or stockpiling.

The Weir Minerals SP-series creates one type of sand which is discharged using the discharge chute at the front of the plant.



### Weir Minerals DP-series - Dual-grade sand wash plants

Weir Minerals DP-series sand wash plants feature the same industry-leading technology and benefits of the SP-series sand wash plant. The dual-sand sand plant has added functionality which enables it to create two separate sand products, simultaneously.

Where the SP-series discharges the finer particles from the Cavex® hydrocyclone, the DP-series feeds the product onto one side of the partitioned Enduron® dewatering screen. The fine sand helped by the screen vibration and high pressure spray bars falls through the screen panels into the sump and the coarser sand is discharged via the chute. The fine material is then pumped back to the Cavex® hydrocyclone which removes ultra-fines to the overflow and discharges clean, fine sand to other side of the dewatering screen's deck.

Some blending of fine sand back into coarse sand is possible using a blending mechanism located on the discharge chutes.

## Component products

The combination of these products ensures our plant delivers exceptional results.



Cavex®  
Hydrocyclones



Enduron®  
Dewatering  
screens



Warman® WGR®  
Gen 2 slurry pump



Linatex®  
Hose and rubber  
lining



Isogate® WS  
Slurry knife gate  
valve



# The Cavex® range

Are you struggling to get more tonnage out of your plant? Are you experiencing bottlenecks at the classification and separation stage of your circuit? Consider our range of Cavex® hydrocyclones, designed to deliver maximum efficiency, capacity and wear life.

Whether your fines bypass is too high or you are experiencing misplacement of coarse particles, there's a Cavex® hydrocyclone to meet your needs. For increased productivity and reduced total ownership costs, ask how we can help you streamline your entire process to get more out of your plant using the right hydrocyclone.

**SYNERTREX®**  
ENABLED





## CAVEX® HYDROCYCLONES

### Increase hydraulic capacity and minimise local wear



#### **Cavex® 2 hydrocyclones**

With its increased separation efficiency, Cavex® 2 hydrocyclone optimises plant recovery by reducing the quantity of misclassified particles by an average of 10% and improving fines bypass by an average of 15%. Its LIG+™ advanced laminar spiral inlet and size of the feed chamber reduce turbulence and allow the hydrocyclone to classify up to 30% more feed slurry, while occupying the same footprint as the original Cavex® or competitor cyclones. This enhanced performance is unmatched by any known hydrocyclone in operation today. Our customers can now achieve more throughput with fewer operating hydrocyclones, reducing the upfront capital expenditure and resources required for operation.

#### **Cavex® CVX hydrocyclones**

The Cavex® CVX hydrocyclone consists of a housing lined with a variety of wear-resistant materials such as rubber, ceramic, polyurethane among others. The Cavex® CVX hydrocyclone is designed to provide exceptional performance together with strength and corrosion resistance. Sizes from 40mm to 1200mm diameter.

#### **Cavex® DE hydrocyclones**

The Cavex® DE hydrocyclone is a double-efficiency classification unit, working in a single stage without intermediate pumping. It is designed to be extremely efficient, improving two aspects of classification: bypass of fines to the underflow and the misplacement of coarse particles in the overflow. This hydrocyclone is ideal for grinding circuits and tailings and desliming applications.

#### **Cavex® CVXU polyurethane hydrocyclones**

Cast in solid unlined polyurethane, the Cavex® polyurethane hydrocyclone is solidly constructed and provides exceptional separation efficiency, hydraulic capacity and long feed chamber liner life. With sizes up to 250mm diameter, this hydrocyclone is ideal for light-duty, low-temperature and low-wear applications (e.g. desliming, dewatering and tailings dam wall construction). The Cavex® CVXU polyurethane hydrocyclones do not contain housing and do not require additional lining.

#### **Cavex® CVXT ceramic-lined dense-medium hydrocyclones**

Our heavy-duty Cavex® CVXT ceramic-tiled cyclone is designed to provide efficient classification and longer wear life in dense-medium applications, including coal and diamonds. It features the innovative laminar spiral inlet geometry design of the original Cavex® hydrocyclone range with the addition of mild steel fabricated housings and thick 92% alumina ceramic tile liners.

#### **Cavex® CVXA chrome white iron hydrocyclones**

Cast in chrome white iron, the Cavex® CVXA hydrocyclone is designed to provide exceptional performance together with strength and corrosion resistance. With sizes up to 650mm diameter, this hydrocyclone is ideal for a range of corrosive applications requiring heavy-media separation such as potash, coal, diamonds and hard rock.

#### **Cavex® dewatering hydrocyclones**

The Cavex® dewatering hydrocyclone delivers a consistent underflow density regardless of solid content fluctuations in the feed. Advanced and proven high efficiency is attributed to well-engineered siphon arrangement at a cyclone with lip seal also known as discharge regulator or fishtail. Available in a variety of sizes from 150mm to 800mm.

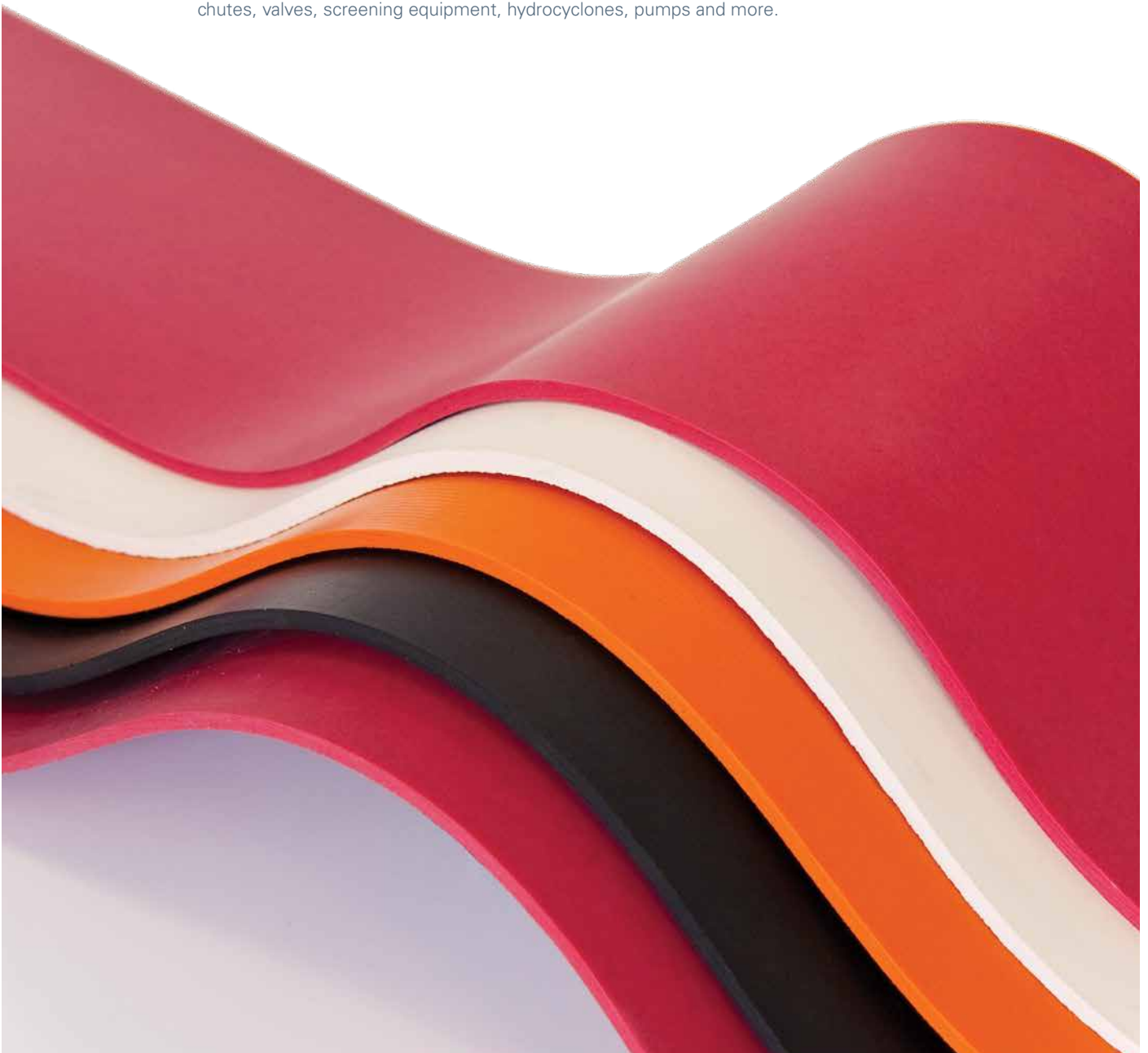
# The Linatex<sup>®</sup> range

## **An unrivalled reputation since 1923**

Are you experiencing wear across your site? Do you need long-lasting protection for your mining, aggregates or general industry equipment? Our Linatex<sup>®</sup> rubber experts can help.

With a range of high-quality rubber sheet and hose, we can provide a fully customised wear lining solution to protect your equipment in the harshest conditions.

Whether you're experiencing wear around your mill circuit, hydrocyclone underflow launders or classifiers, our incredibly durable rubber products can be used to line hoses, chutes, valves, screening equipment, hydrocyclones, pumps and more.





## LINATEX® RUBBER PRODUCTS

### Increase hydraulic capacity and minimise local wear



#### Linatex® hoses

Our specialty Linatex® hose range incorporates slurry and mining hose, dredge hose, and a wide variety of preformed bends and reducers. All products in the range are available with a versatile array of end types. Linatex® hoses are manufactured using state-of-the-art computer-controlled lathes, ensuring hose construction that is both robust and reliable using the best rubber materials. With sites around the world and a distribution network unparalleled in the industry, we can deliver application-engineered Linatex® hose systems to your operations, wherever you are.



#### Linatex® preformed hose bends

Similar in construction to our hard wall hose, our preformed hose bends are intended for use where space limitations demand a much sharper bend radius than can be achieved using a length of hard wall hose (808). Designed to offer superior wear performance over normal hose and steel-lined pipes, we provide these in an extensive array of diameters, bend angles and radii configurations.



#### Linatex® rubber sheet

Linatex® is a 95% natural rubber that exhibits outstanding resilience, strength and resistance to cutting, tearing and abrasion. With almost 100 years of experience in handling aggressive materials, Linatex® rubber is still ranked as the leading premium wear resistant rubber for sliding or wet abrasion service. It is our unique liquid phase compounding process that gives Linatex® rubber its extraordinary physical properties and outstanding performance. Our process, unlike other processes, causes minimal mechanical disturbance to the molecular structure of the finished rubber, resulting in significant cost benefits to the user. With Linatex® premium rubber there is no equivalent when it comes to wet abrasion.



#### Linatex® rubber lining

Weir Minerals offer rubber lining services both in-house or on site. The rubber liners employed by Weir Minerals are skilled in the art of rubber lining with pre-cured sheet. The rubber lining is performed based on our documented lining system. We can mobilise to your site with as many liners as needed for short or long term requirements; whether it be for an 8-hour shut down or something more specific such as lining a leach tank, a flotation cell or a thickener. We use our standards and line within the parameters to achieve the best results. We record and document what we do so you can be confident in the quality of the work undertaken using the best materials available. Our expert rubber liners are available wherever and whenever needed.



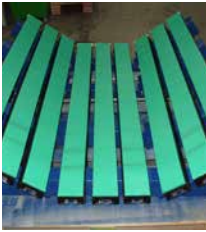
#### Linard® moulded haul truck liners

Linard® steel-backed, moulded liners are designed to withstand severe abrasion and heavy-duty impact, to help maximise the life of your truck body. Linard® rubber provides superior wear and cut resistance, noise suppression, and vibration elimination. These features work together to deliver a long-term, cost-effective liner system and maximum return on your haul truck investment.



#### Linatex® MAP panels

Linatex® modular anti-abrasion panels (MAP) are high-performance impact- and abrasion-resistant panels for use in all medium to high wear applications. Easy to fit and replace, the MAP panel utilises a rigid construction without the use of steel backing or reinforcement. With only one fixing point required per panel, the interlocking design and secure fastening mechanism ensures superior abrasion and impact resistance, reducing the chance of fine material ingress between panels. Panels are compression-moulded and available in thicknesses of 30, 40, 50 and 75mm.



#### **Linard® impact bars**

Linard® impact bars are made from unique abrasion- and impact-resistant 60 shore natural rubber. Offering an extended life, Linard® impact bars have a protective top surface providing low friction, preventing damage and reducing wear. Angled leading edges prevent bolt and belt damage. Available in 55mm and 75mm thickness, the Linard® impact bars are easily installed using M16 bolts. The metal channel running the length of each Linard® impact bar enables easy fixing and removal. Impact cradles offer a strong platform for installing Linard® impact bars. Allowing quick installation, each cradle is fully adjustable to increase or decrease the belt trough.



#### **Linard® impact panels**

Linard® impact panels are easy to fit and provide a quick and cost-effective solution in areas of high wear, impact and abrasion. Made from Linard® 60, or Linard® HDS compounds, highly resistant to abrasion, cut and tear, these high-quality hard-wearing rubbers are suitable for use in either wet slurry or dry, hard-rock environments. Compression-moulded, with two T-section strips that provide support for fixing, they are lightweight and easy to handle and fit.

## **LINATEX®-LINED FLAT BOTTOM CLASSIFIER** **Proven performance in hydraulic classification**



#### **Linatex® flat bottom classifier**

A well-proven piece of equipment for the hydraulic classification of particles by size or density, the classifier reliably extracts light or small particles from slurry at high efficiency, whilst displacing a minimum of heavy or coarse particles to the overflow.

## **LINATEX® LOCTITE® - LINA 88™** **Innovative Zero VOC solution for the cold bonding of rubber**



#### **LINATEX® LOCTITE® - LINA 88™**

The LINATEX® LOCTITE® - LINA 88™ solvent-free adhesive range is designed for use in a wide range of applications including hydrocyclones, flotation cells, tanks, mills, pipes, and chutes - anywhere where rubber is applied to protect your valuable mining equipment.



# The GEHO® range

## Hard working pumps for a range of applications

Constant innovation means that our GEHO® positive displacement pumps have been trusted across the globe for over 100 years. If you are pumping extremely viscous slurries, sludges, paste or backfill with solids of up to 90%, then our GEHO® piston diaphragm pump is the pump for you. And with up to 98% availability and outstanding efficiency, GEHO® high pressure slurry pumps are designed to meet your requirements, both today and tomorrow.

With the ability to handle slurry concentrations up to 85% and temperatures up to 250° Celsius, GEHO® Positive Displacement pumps offer outstanding availability and efficiency.

GEHO® PD pumps also offer minimal energy costs, water consumption and heat production. Combined with long maintenance intervals and highly dedicated service engineers, they keep your processing plant operating at peak performance while delivering a low total cost of ownership.



### GEHO® crankshaft driven piston diaphragm pumps

The GEHO® ZPM pump is two-cylinder double-acting high-pressure piston diaphragm pump. The unique preformed GEHO® diaphragm separates the pumped slurry from all the pump moving parts. This pump handles abrasive and corrosive slurries, dirty water and process mixtures at lowest possible total costs of ownership. Low energy consumption and high reliability contribute to this objective.



The GEHO® TZPM pump is a crankshaft driven three cylinder single-acting piston diaphragm pump. The unique preformed GEHO® diaphragm protects piston and liner from abrasive slurry contact. Abrasive ore and tailings slurries and dirty mine water are handled highly efficient (up to 96%) and the pumps ensure a high availability up to 98%.

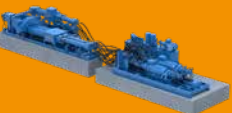


This GEHO® heatbarrier pump is a crankshaft driven two-cylinder double-acting and three-cylinder single-acting high temperature piston diaphragm pump. This range is specially designed for feeding high temperature, acid or caustic abrasive slurries into high pressure autoclave processes.



### GEHO® hydraulic driven piston pumps

The GEHO® DHC pump is a hydraulic driven piston pump with cone valves designed for extremely viscous pastes and sludges. This pump type ensures uninterrupted, troublefree operation, high reliability and low operational costs. The DHC can be equipped with the GEHO® VZ-system for pulsation free operation, preventing damage, excessive wear and noise.



The GEHO® DHT pump is a hydraulic piston pump with transfer tube designed for extremely viscous slurries, sludges and paste, both organic and mineral on a 24/7 operational basis. This pump type offers a high reliability and low operating costs. The DHT is especially designed for slurries with large particle sizes up to 100 mm.

# The Isogate® range

## Innovation at the forefront of slurry valve design.

Are your existing valves not handling abrasive or corrosive slurries? Are you experiencing rapid wear of valve seats and liners, sticking, and leakage to the atmosphere during operation? Our Isogate® slurry valves can help with all of that.

Designed to be low maintenance for reduced total ownership costs, Isogate® slurry, industrial and process valves consistently perform in the toughest conditions. Whether you need a knife gate valve, pinch valve or check valve for mining or industrial applications, Isogate® slurry valves provide ease of maintenance and maximum reliability.





## ISOGATE® VALVES

Designed for today's slurry applications with ease of maintenance in mind

### Isogate® WR series valve

The Isogate® WR knife gate valve is designed to ensure longer wear life and increased reliability for multiple industries. An improved gate guide reduces gate deflection and stress on the downstream side of the sleeve. The lightweight sturdy valve body is made from our Linard® HD60 premium rubber which allows for easy change-out of sleeves.

### High pressure - Isogate® WH/WHP series valve

The Isogate® WH and WHP series high-pressure slurry knife gate valves are designed to provide reliable service in tough, abrasive and high-pressure slurry applications. Sizes range from 80mm (3") to 900mm (36"), operating to a maximum pressure of 5100kPa (740psi). Optional gate guards are available.

### Wafer style - Isogate® WS series valve

The Isogate® WS series wafer-style slurry knife gate valve's unique design provides reliable service, ease of maintenance and long term performance. Sizes range from 50mm (2") to 600mm (24"), operating to a maximum pressure of 1034kPa (150psi). Optional gate guards available.

### Wide body - Isogate® WB series valve

The Isogate® WB series wide-body slurry knife gate valve's robust design and heavy-duty construction provides dependable reliability and long life in highly abrasive, corrosive and coarse slurry applications. Sizes range from 80mm (3") to 1370mm (54"), operating to a maximum pressure of 1400kPa (200psi). Optional gate guards available.

### Isogate® mechanical pinch valves

The Isogate® mechanical pinch (MP) valve series is designed to provide effective control of abrasive and corrosive flow in industrial process systems. The double-acting pinch mechanism closes the pinch sleeve along the valve centreline to maximise control of the process flow and minimise wear damage to the sleeve liner.

### Isogate® pneumatic pinch valves

The Isogate® pneumatic pinch (PP) valve series is designed to control abrasive and corrosive flowing media in industrial process systems. They are ideal for remote operations using typical plant air, and do not require auxiliary cylinder actuators.

### Isogate® RF check valves

The single non-return Isogate® RF series check valve is specifically designed for reverse flow prevention for harsh, highly abrasive applications in slurry services.





### Isogate® Autoball™ AB3 valves

The Autoball™ AB3 valve is specially designed to enable a quick changeover between duty and standby pumps in the toughest slurry applications.

## SLEEVES AND LINERS

Designed to provide long-lasting abrasion resistance for your application



### Sleeves and liners

Replacement sleeves, featuring Linatex® premium rubber, fit most mechanical and pneumatic pinch valves and are designed to last longer and perform better than other OEM valve sleeves.

Available sleeve and liner materials: Linatex® premium natural rubber, EPDM, Neoprene Rubber, Linathane®, Polyurethane, Linagard® NBR Nitrile and Linagard® Butyl. Other natural and synthetic rubber options are available.

## ACCUMIN® AUTOMATIC LUBRICATORS

An automatic lubricator designed to fit with Isogate® knife gate valves

### Automatic lubricating system

Accumin® lubricators ensure grease is continually delivered to the top seals, so that your valves are always lubricated with the correct amount of oil. This ensures maximum sleeve life and optimum performance – without the need to undertake costly manual labour.





# The Delta Industrial™ range

## Reliable, high-performance knife gate valves

Regardless of your industry or application, there's a Delta Industrial™ knife gate valve to meet your needs.

Their construction provides zero leakage due to their unique transverse seal and shear gate design. Combined with its highly-engineered seating arrangement, our range of knife gate valves provide exceptional pipeline isolation, proving them to be one of the highest-performing valves in heavy-duty applications.

Backed by innovative engineering, high-grade material alloys, OEM parts and a commitment to customer service, Delta Industrial™ provides knife gate valves perform with high reliability.



### Delta Industrial™ Class 150 knife gate valves

The Delta Industrial™ 15S and 15L series valves are a fully rated ASME Class 150 (PN20) guided shear gate designed for heavy duty applications. Standard face-to-face dimensions conform to MSS SP-135. Maximum operating pressures, depending upon body material, are 285 psi (1965 kPa). In addition, Delta 15S or 15L series are available with custom face-to-face dimensions designed for specific applications.

### Delta Industrial™ Class 300 knife gate valves

The Delta Industrial™ 30S and 30L series valves are a fully rated ASME Class 300 (PN50) guided shear gate designed for severe duty applications. The Delta Industrial™ 30S and 30L series is identical to Class 150 but conforms with the higher working pressures of ASME Class 300 (PN50) to 740 psi (5100 kPa). Delta 30S or 30L series is available from 2" (50mm) through 36" (90mm).

### Delta Industrial™ Class 600 knife gate valves

The Delta Industrial™ Class 600 valves are a fully rated ASME Class 600 (PN100) guided shear gate designed for higher working pressure. The Delta Industrial™ Class 600 valves are identical to the Class series 150 but conforms with the higher working pressures of ASME Class 600 (PN100) to 1480 psi (10200 kPa). Delta Industrial™ Class 600 is available from 2" (50mm) through 24" (600mm).

### Delta Industrial™ CBB knife gate valves

The Delta Industrial™ Center, Block and Bleed (CBB) knife gate valve combines two separate gates into one body, each sealed with their own seats and transverse seals and operated by a single actuator. The center section houses the drain, purge or bleed connections and can be customized for each specific application. Sizes from 2" (50mm) through 36" (900mm).

### Delta Industrial™ TIV knife gate valves

The Transmitter Isolation Valve (TIV) is a customised 3" (80mm) series 150 guided isolation valve designed for close coupling to a tank wall operated by a ratchet handle to minimise dead space when using transmitters to measure elements including level, pressure and pH. The flange face on the tank side is dual-drilled with both B16.5 and tank flange drilling.



# The Vulco<sup>®</sup> mill lining systems

**Our innovative Vulco<sup>®</sup> mill lining systems are designed and manufactured to suit our customers' specific milling needs.**

Are abrasive materials wearing out your grinding mills and causing unplanned maintenance shutdowns in your plant? Our mill lining experts can help. Whether you need rubber or composite mill liners for AG, SAG, ball, rod or scrubber mills, Vulco<sup>®</sup> mill liners have you covered.

Our rubber compounds are formulated for maximum tear resistance and resilience, increased wear life and reduced downtime between relines. Weir Minerals engineers use the most up-to-date technologies to analyse data from the grinding circuit and recommend the most appropriate design and materials in order to deliver the optimal grinding performance and the lowest ownership cost.

With manufacturing facilities in most major minerals processing regions, our elastomer specialists work with you to create the perfect mill lining system to meet your needs.



## VULCO® MILL LINING SYSTEMS

### Wear-resistant linings to optimise grinding mill performance



#### Vulco® mill linings systems

Vulco® mill lining systems are custom-designed, thus maximising mill productivity whilst reducing power consumption, maintenance downtime and ore processing costs. As no two applications are the same, a broad range of rubber and composite lining systems for ball, rod, SAG and AG mills, as well as scrubbers are available. Incorporating a T-track fastening system and weighing 35-40% less than steel liners, rubber and metal-cap liners are faster, easier and safer to install. Through balancing the high- and low-wear zones within the mill, performance is optimised and similar service life can be achieved for all zones, achieving a lower Total Ownership Cost (TOC) for the circuit.



#### Vulco® rubber

Our team of highly experienced in-house elastomer scientists have created rubber formulations, which are ideally suited for use in mill linings under the Vulco® R series of rubber formulations. The inherent characteristics of elasticity, high tensile strength and corrosion resistance found in the Vulco® elastomer compounds position them as the preferred mill lining material over steel in many applications. Not only do the elastomer compounds perform better, but they do not wear as quickly as steel.



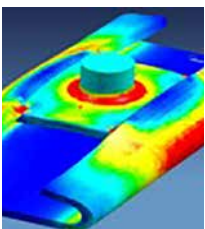
#### Vulco® R67 rubber compound

The Vulco® R67 premium rubber compound is the most wear resistant Weir Minerals has ever formulated. Operators using R67 lifter bars within their mill will not only benefit from the 20% increase in wear life, but they will notice a measurable reduction in installation and maintenance costs as a result of a longer run schedule and appreciate the opportunity to time mill maintenance with the plant maintenance schedule. The Vulco® R67 rubber compound is visually different from others in the marketplace, with green-cap ends on the lifter bars.



#### Vulco® composite rubber shell plates, lifter bars and discharge grates

The Vulco® composite rubber shell plates combine the best characteristics of metal alloys and rubber to obtain a superior design for use in AG/SAG or general grinding ball mills. Vulco® composite lifter bars utilise a variety of materials from chromium-molybdenum and white iron castings and high abrasive steel plate, all vulcanised within an elastometric matrix. Vulco® composite grates have many advantages over traditional cast steel. The range includes grate designs resistant to pegging, with relief angles on apertures, positive sealing and fitment between adjoining components, safety and ease of installation.



#### Vulco® fastening systems

Vulco® fastening systems are designed and tested through numerical FMEA modelling and are destruction-load-tested to suit any application. They are unique and employ a track system using either aluminium, rolled steel or (in specific conditions) stainless steel.







## WEIR MINERALS SERVICE

Our Weir Minerals Service teams go above and beyond, delivering world-class service, solutions and support wherever you may be.

With an extensive global network and the ability to service on-site or at 'one of our 160 dedicated service centres and facilities, we are always there when you need us - no matter how remote your operation is.

Our knowledge is built from over 150 years of engineering expertise and experience. Our engineering services ensure that you not only receive the best-in-class equipment, but expert configuration and support to optimise each of your applications. We can help with anything you need from technical expertise, advice on how to extend product life, increase uptime and improve the efficiency of your mine or aftermarket spare parts.

We work with you over a product's lifecycle to ensure it reliably performs to its original design and runs continually with no unplanned downtime.

As a trusted partner, we understand the challenges that you face and offer a wide range of services that can be viewed below. Contact one of your local Weir Minerals representatives for more information.

- New equipment sales
- Non-sale arrangements
- After sales support
- Training
- Equipment relining
- Service exchange
- Equipment rebuilds
- Maintenance and repair
- Commissioning / decommissioning
- Installation
- Automation
- Engineered upgrades
- Consulting and engineering
- Pilot processing
- Managed trials

- 
- Mobile service (39)
  - Service centres (11)





## Minerals

[www.global.weir](http://www.global.weir)  
[info.minerals@mail.weir](mailto:info.minerals@mail.weir)

