

# Mining & Mineral Processing

- 
- » **Trusted Reliability**
  - » **Higher Performance**
  - » **Maximum Efficiency**



**CHALLENGES WE ADDRESS:**  
 SUSTAINABILITY EXPECTATIONS,  
 ENERGY CONSUMPTION,  
 LOW GRADE DEPOSITS,  
 SITE DOWNTIME,  
 RECOVERY RATES,  
 REMOTE SITES,  
 WET AND STICKY ORES,  
 HIGH MOISTURE



## YOUR WORLDWIDE MINERAL PROCESSING PARTNER

At Schenck Process, we are a global engineering leader of material handling systems. We manufacture world-class solutions, high performing products and enable customer advancements through smarter technologies. Alongside mining, we support all material handling industries.

**Our mission is to Make Processes Work**

### EFFICIENT, RELIABLE PROCESSING

We help mineral processors maximize revenue, improve efficiencies and extract minerals in the most sustainable and economic manner. Our solutions combine decades of expertise and knowledge, to help clients overcome the challenges they face.

### OUR SOLUTIONS

- » Truck and train loading
- » Vibrating screens with condition monitoring
- » Batch & continuous feeders
- » Weighing solutions
- » Continuous dense & dilute phase pneumatic conveyor systems
- » Mechanical conveyors
- » Pulverising mills
- » Sifters, mills & mixers
- » Plant & logistical control systems
- » Bulk bag loading & unloading
- » Air filtration (dust collection) and Guillotine gates (valves)

## HOW WE ADD EXTRA VALUE

### MATERIAL TESTING

We offer material and process testing in a number of global Technology Centres. Through many years of in-depth analysis, we have gathered a significant amount of knowledge, which helps us optimize processes and customize the design of all our solutions, to suit client's applications and desired outcomes. All test centres are equipped to allow for remote 'digital' involvement with customers, or you are welcome to visit and witness the testing process first-hand.

- » Material and process testing
- » Extensive site services
- » Stress-free project management

### SITE SUPPORT

Our highly experienced engineering teams, will travel far and wide to provide a variety of services, including:

- » On-site engineering
- » Support with installation and operation
- » Emergency breakdown call-out
- » Repair and refurbishment
- » Upgrades and spare parts

### PROJECT MANAGEMENT

For the supply of new equipment, our project management teams become an extension of your business. From start to finish, our teams are dedicated to meeting your business goals.



"We see too often, the wrong feeder and screening media fitted into our Vibrating Screens, which literally chews up their life-span. Through consultation, our Engineers can easily prevent that".

**Paul Donovan,**  
**Schenck Process**  
**Global Engineer**

## DIGITAL REMOTE AFTERMARKET SERVICES

Digital support from our global Aftermarket team, means that no matter your location, an engineer can be available to help you. To contact one our team please call: **+1 (816) 891-9300**, or email: [americas@schcnckprocess.com](mailto:americas@schcnckprocess.com)



Email: [americas@schcnckprocess.com](mailto:americas@schcnckprocess.com)

## ASSET MANAGEMENT

We're here to help you achieve recovery of the highest purity. Economically, profitably and efficiently.

Partnering with a supplier of mineral processing equipment needs to be a long-term relationship. That's why our teams are fully entrenched into the belief that our solutions are an investment, which we must help clients to achieve the best possible results from, over the longest conceivable period.

Through an extensive Asset Management Program, our mineral processing teams are trained to help you accomplish this.

**PROGRAM BENEFITS**

- » Extensive site support, for optimal operation & efficiency of all assets
- » Advice on integrating solutions & recommend processes which generate improved site performance
- » Maintenance planning on all relevant equipment
- » Feeder & screen pairing, for longstanding machine longevity
- » Support on monitoring AI algorithms shown through condition controls
- » Specification of the correctly sized, robust screening media & other spare parts

Tel: +1 (816) 891-9300



## MINERAL PROCESSING CAPABILITIES

For mineral processing, Schenck Process solutions will maximize recovery, generate efficiencies and help optimize site revenue. Through adopting smarter and more efficient technologies, we endeavour to enable the successful recovery of a variety of minerals, including:

- » **GOLD**
- » **IRON ORE**
- » **COAL**
- » **LIMESTONE**
- » **COPPER**

### INCREASED EFFICIENCY

- » Improved quality & throughput
- » Increased uptime

### HIGHER PERFORMANCE

- » Designed for volume
- » Durability; long-life performance
- » Customized for each project

### SUSTAINABILITY

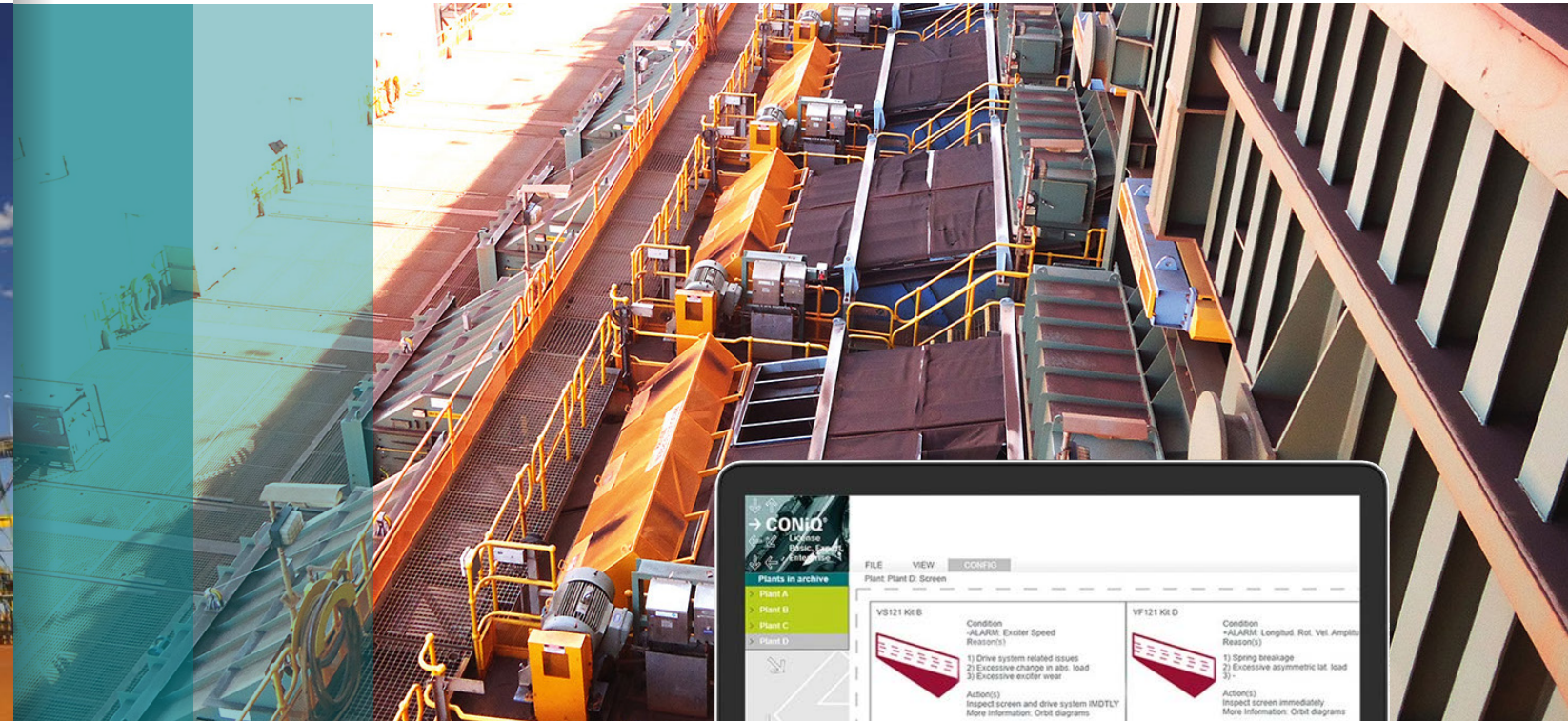
- » Lower energy consumption
- » Solutions enabling a lower CO2 footprint

### RELIABILITY

- » Low maintenance with real-time remote monitoring
- » Less wear and high availability

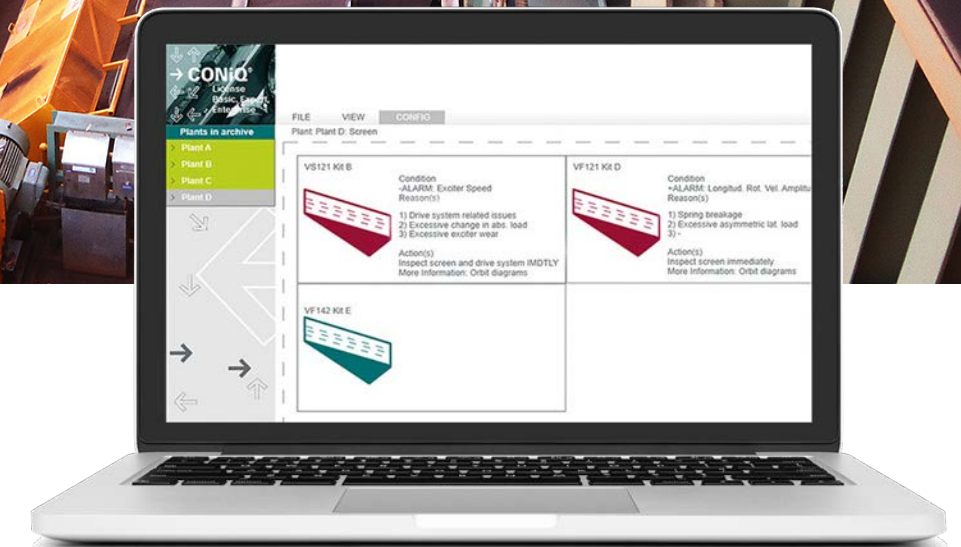
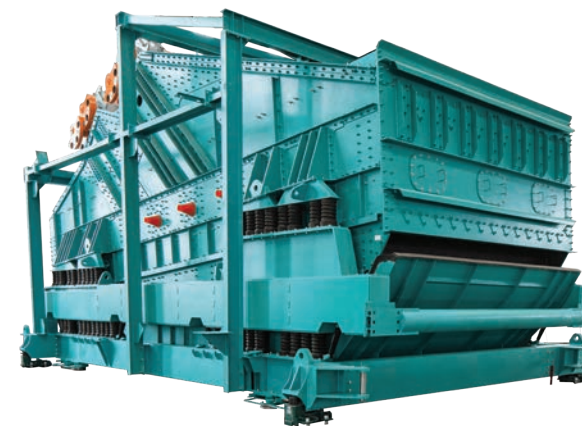
### SAFETY

- » Operator-safety-features
- » Low noise emissions



## MINERAL PROCESSING SOLUTIONS

Designed to achieve the best results, our extensive solutions for mineral processors, cover each stage, start-to-finish. Whether it be a full system, stand-alone equipment or machine upgrade, Schenck Process can support you through all these options.



- » **VIBRATING SCREENS**
- » **CONDITION MONITORING**
- » **FEEDERS**
- » **WEIGHING**
- » **TRAIN LOADING**
- » **RAIL WEIGHING & AUTOMATION**
- » **SPARES**
- » **SERVICES**



## GOLD

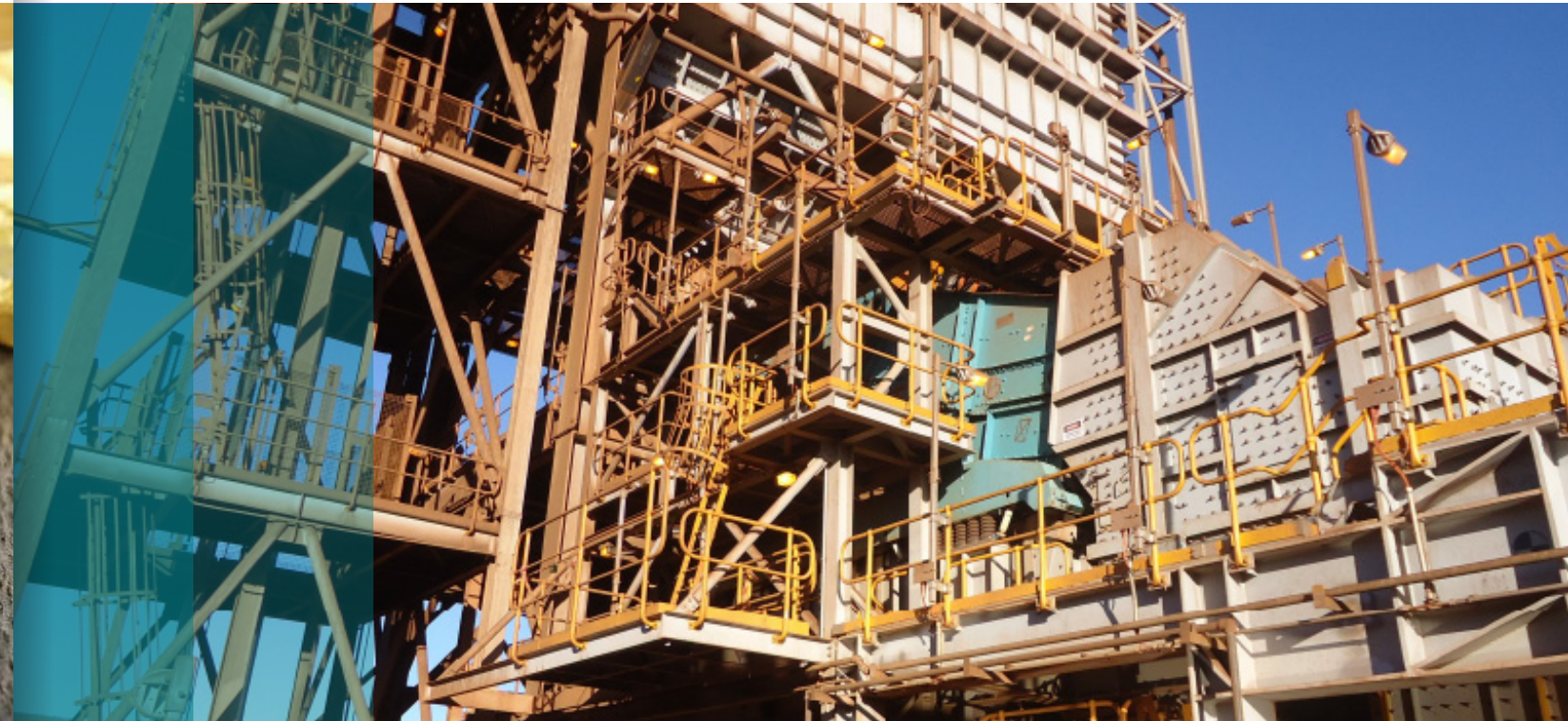
The gold mining industry has seen significant growth in recent years, partly due to the variability of what gold is now used for, as well as changes in exploration.

The value of gold regularly fluctuates. This presents mining companies with significant pressure to ensure operation and energy consumption costs are continually minimized and production is optimized. The solutions we provide for the extraction of gold from ores are designed to enable maximum mineral recovery, across both wet and dry mining sites world-wide, as efficiently and economically as possible.

The preferred process for modern gold beneficiation is carbon leaching gold extraction. It involves adding activated carbon to the pulp, leaching and adsorbing gold at the same time. Critical to these processes are a number of Schenck Process solutions.

### **GOLDING MINING PLANTS WE SUPPORT:**

- » SAG mills
- » Ball mills
- » Heap leach



## GOLD

Schenck Process vibrating screens and feeders are core to our offering for the extraction and recovery of gold and applications:

### **WET PLANTS**

- » SAG mill discharge screen
- » Pebble crusher feeder
- » Trash screen
- » Loaded carbon screen
- » Carbon sizing screen
- » Carbon screens
- » Gravity concentrate screen

### **DRY PLANTS**

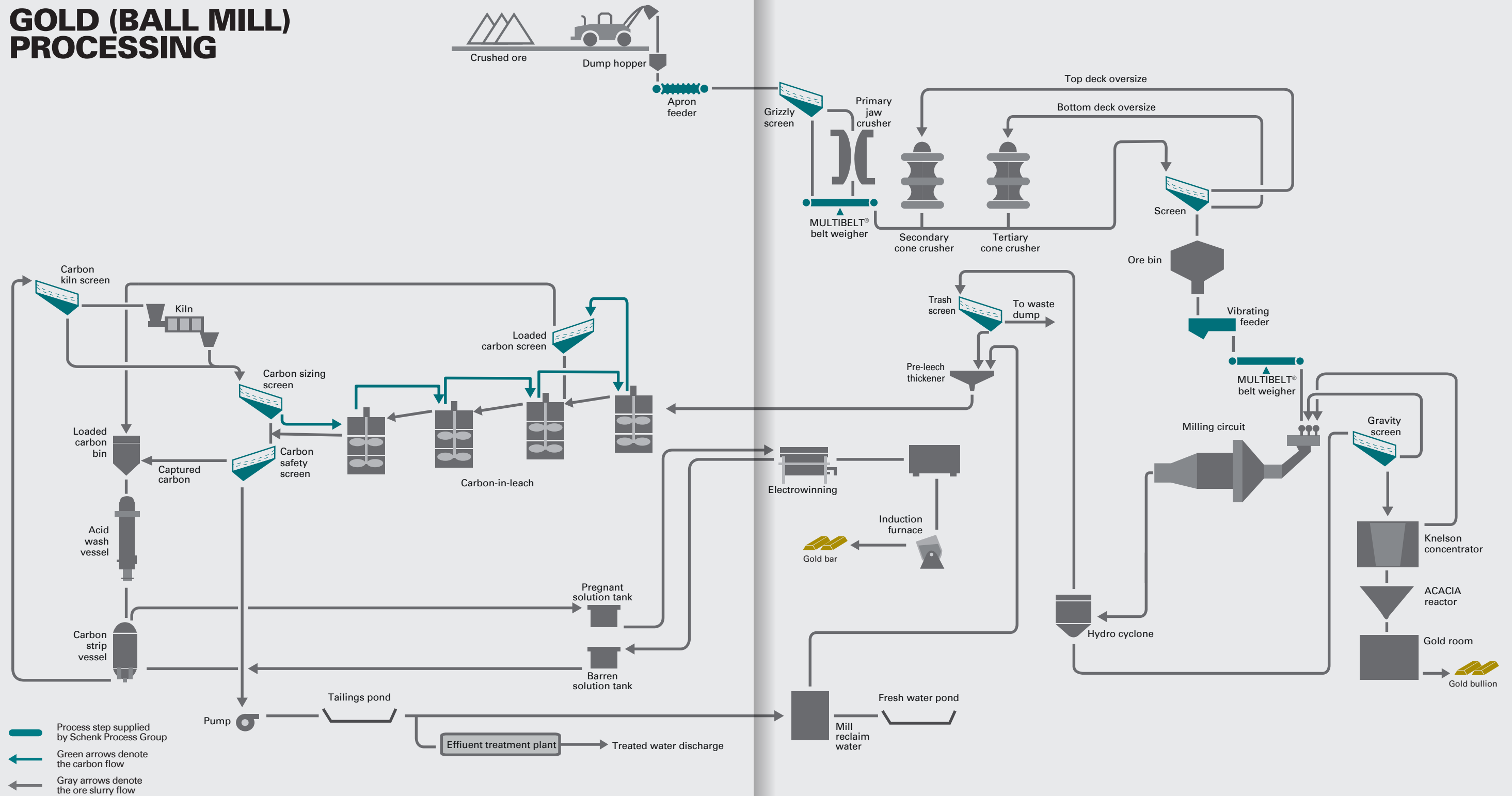
- » Primary crusher vibrating grizzly screen
- » Secondary and tertiary crusher screens
- » Secondary and tertiary screen feeders

This exceptional range is also supported by:

- » Condition monitoring, which detects faults or wear on screens and feeders, before they break-down and become a costly problem.
- » Weighing technologies which control variable flow rates, with very easy maintenance.
- » Precise, controlled systems for train loading.
- » Rail weighing and automation solutions that specialize in weighing and monitoring, such as for rail track and load weighing.



# GOLD (BALL MILL) PROCESSING





## IRON ORE

Our unparalleled knowledge and experience in iron ore recovery, has seen many of the world's largest producers rely on us for the design and engineering of mineral processing systems, that deliver them increased efficiencies and higher production.

Iron ore mining is imperative to sourcing the primary raw material used to make steel – a material that is used across many worldwide industries such as construction. Steel is strong, long-lasting and cost-efficient to produce – making it perfect for everyday products such as vehicles, bridges, utility machines, tools and more. It also means that demand and our requirement for it, remains high.

Before the ores are ready to be sent for processing into iron and steel making, a combination of crushing and beneficiation takes place, to ensure the final material consists of the highest concentrates possible. These stages are where Schenck Process screens, feeders and weighing systems are crucial towards successful output.



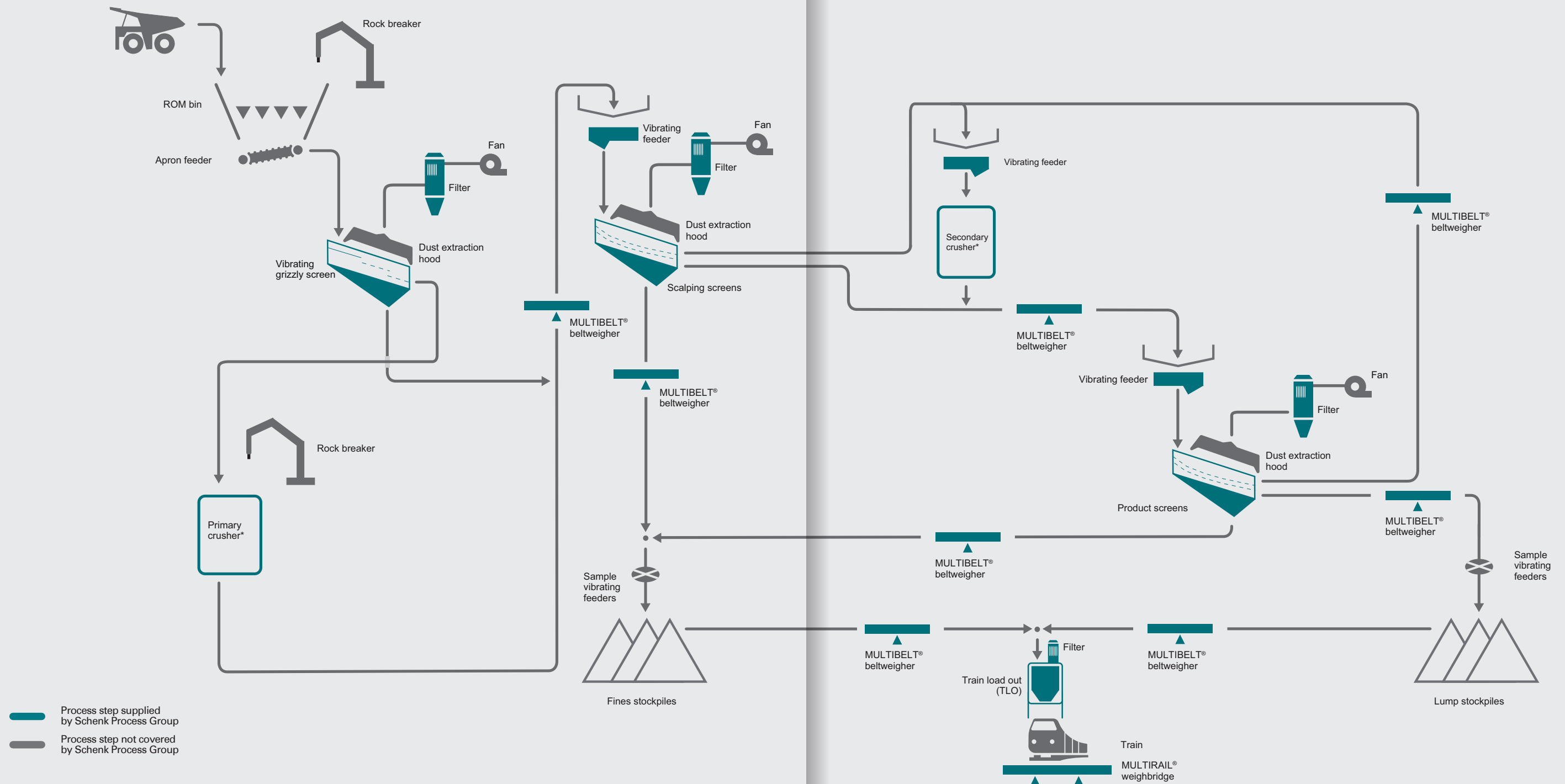
## IRON ORE

Schenck Process mineral processing solutions prevail where others give up. Our systems and products for the recovery of iron ore are durable and extremely reliable, even under the most difficult conditions. Increasing profitability and productivity is made possible with Schenck Process:

- » Heavy duty vibrating screens for material separation, that also include crushing and de-watering capabilities.
- » Condition monitoring for vibrating machines. Enabling the very best, long-term performance of screens and feeders, combined with remote performance analysis for planned maintenance.
- » Vibrating feeders, that offer a variety of feed rates and reliable material weighing abilities.
- » Precise weighing equipment, such as belt weighers.
- » Train loaders that offer either gravimetric and volumetric capabilities, with outstanding, trusted performance.
- » Rail technologies that optimize the loading and transport of iron ore, to correctly and safely meet set weights and requirements.



# IRON ORE PROCESSING





## COAL

Every year, Schenck Process help clients free around 10 million tonnes of raw coal in preparation plants, from impurities – a crucial process that contributes towards environmentally-friendly energy production.

Coal preparation plants allow for cleaner burning processes, enhanced value and cleaner emissions. Our solutions in these plants ensure their processes are undertaken efficiently and maximize profit.

### **CAPABLE FOR EVERY COAL PREPARATION APPLICATION**

- » We cater to the requirements of various coal categories, including steam, coking and anthracitic coal
- » Have successfully proven and met the requirements of washery capacities ranging from 0.6 M tons/year to 31 M tons/year
- » Offer innovative design techniques, that meet the needs of multiple products and cover all advanced techniques, such as coarse coal bath separation, cyclone fine coal separation, coarse slurry separation and fine slurry flotation



## COAL

Preparation in coal mining requires technologies capable of withstanding harsh and unclean conditions. Coal is valued not just due to its energy properties but also as a component of steel and cement production – both of these are also two core industries for Schenck Process and therefore help add to our expert knowledge.

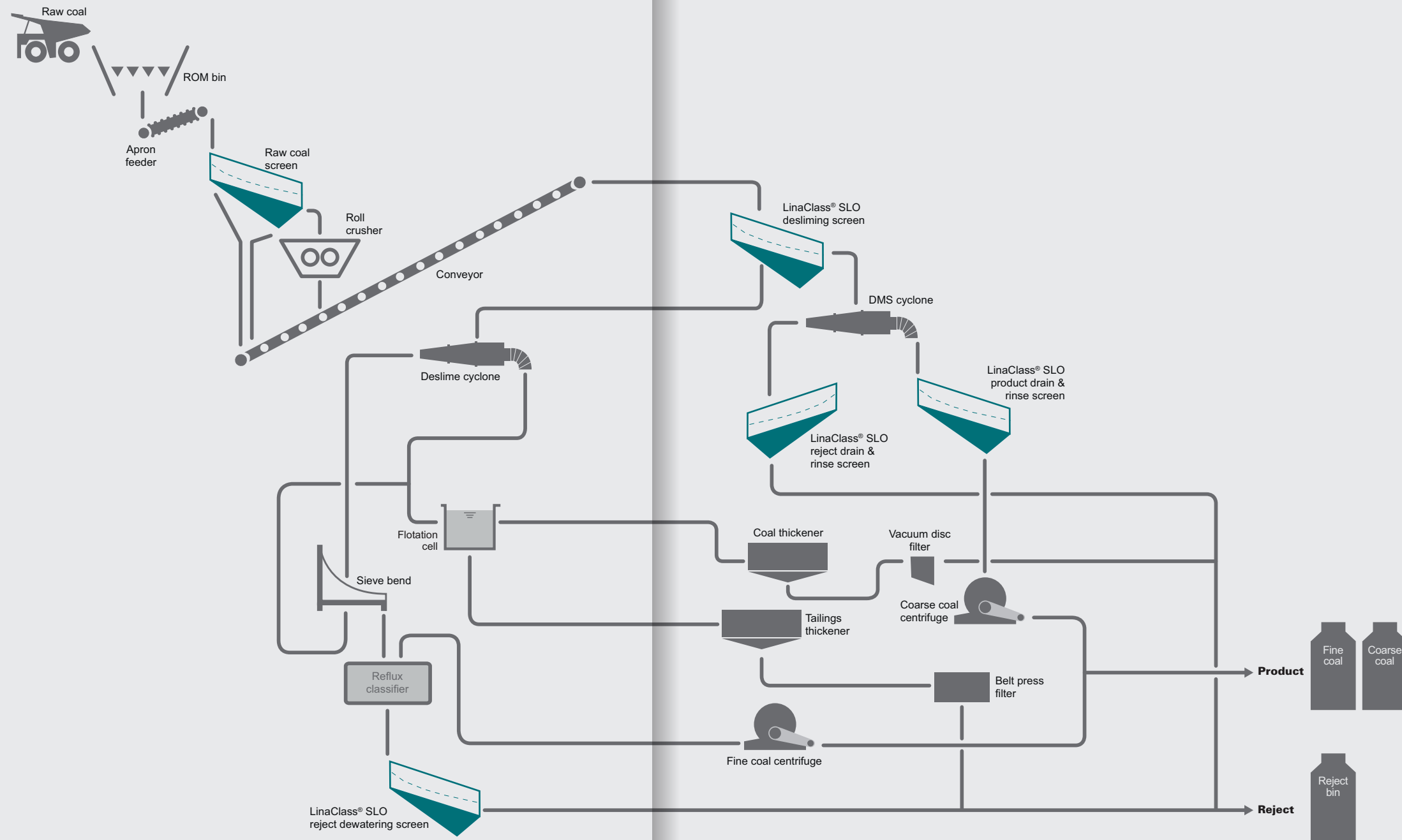
Increasing profitability and productivity in coal preparation is made possible with Schenck Process, through a variety of solutions.

High performing, reliable screens for:

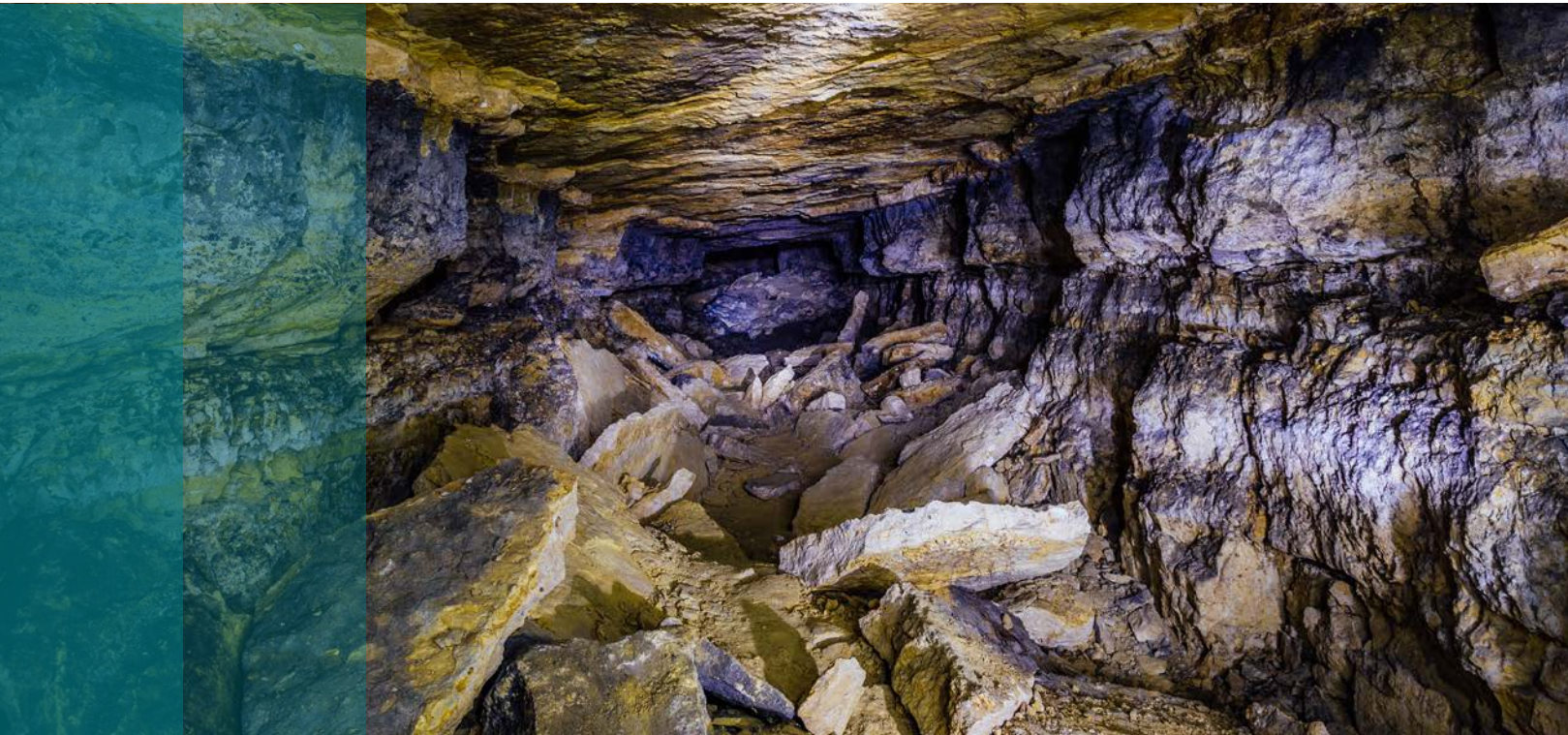
- » Dry sizing
- » De-sliming and wet sizing (coal washery)
- » Media drain and rinse (coal washery)

- » Condition monitoring for screens and feeders. Designed to allow long-term performance, avoid downtime and instead enable simple, planned maintenance.
- » Heavy duty vibrating feeders that can work in conjunction with our screens or as stand-alone. They offer variable feed rates with trusted performance.
- » Dynamic, durable weighing solutions, such as belt weighers.
- » Train loading systems, that are seen across many of the globe's mining sites.
- » Rail weighing and automation technologies that optimize the loading and transport of coal, to efficient and safe levels.

# COAL PROCESSING



█ Process step supplied by Schenk Process Group  
█ Process step not covered by Schenk Process Group



## LIMESTONE

Limestone is a key component of many construction materials and one of the main elements for cement production, making it an important mineral resource. Limestone is also used to make many household products that include plastic, glass, paint, steel and is used in water treatment and purification plants, as well as in the processing of many foods.



Schenck Process solutions play an important role towards extracting the material that helps make these products, which is reinforced by our in-depth experiences and understanding of limestone processing.

Limestone quarries are typically open-air and require only the best and robust equipment and systems – which is why we are an ideal fit.

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**LIMESTONE IS A FUNDAMENTAL BASIC COMPONENT, FOR MANY OF TODAY'S COMMONLY USED PRODUCTS.**

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## LIMESTONE

Through state-of-the-art technology and hands-on experience, our teams at Schenck Process have built-up a number of years in optimizing systems, that efficiently and cost-effectively handle sand and gravel. These include:

Extremely reliable vibrating screens that handle the largest quantities of materials and classify them to a very high level of accuracy.

Condition monitoring for vibrating screens, as well as feeders. Unique to Schenck Process, the technology makes avoiding break-downs possible and instead enables simpler, routine maintenance.

Vibrating feeders, capable of handling even abrasive materials. They operate at different feed rates and come available with weighing capabilities.

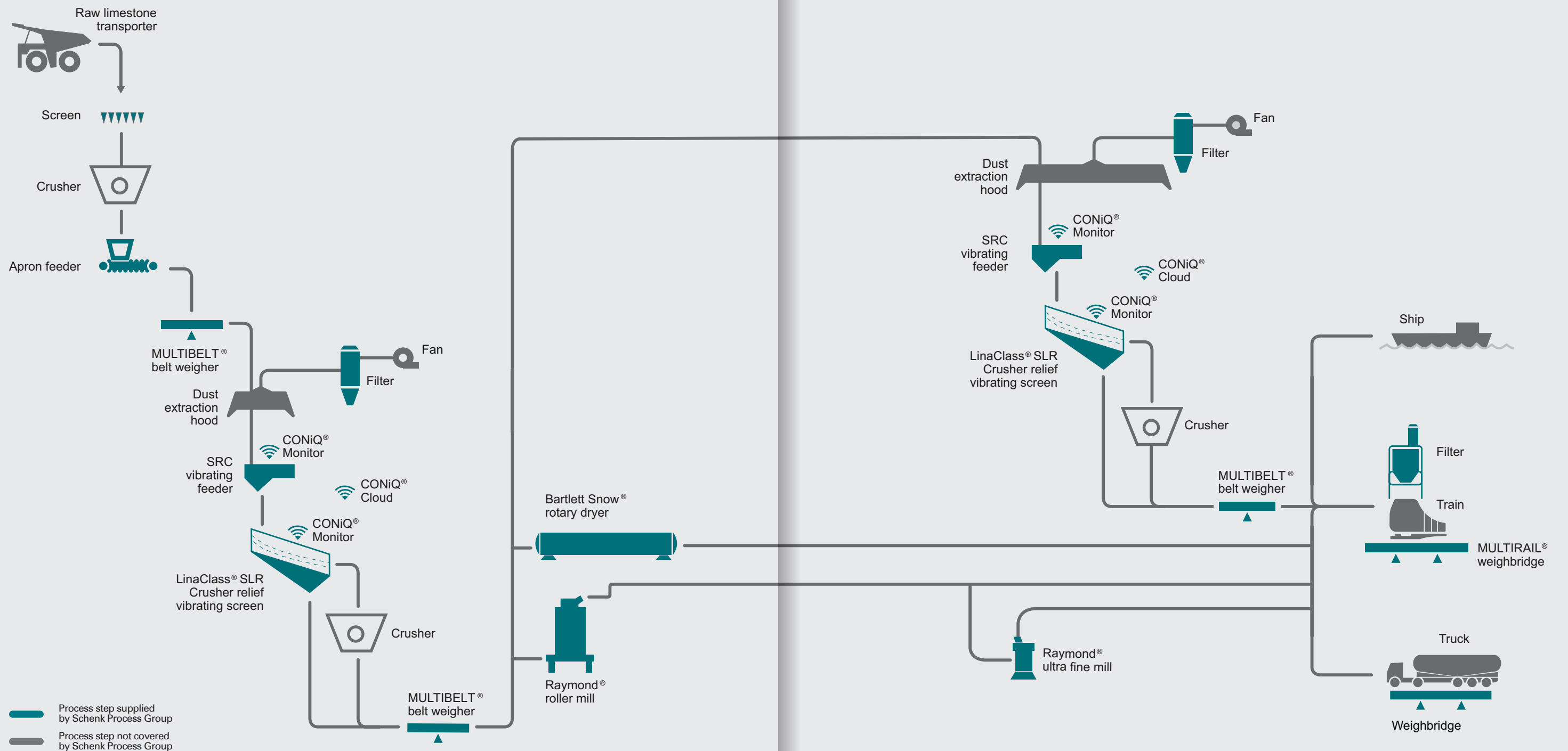
Reliable and highly accurate weighing equipment, such as belt weighers.

Speedy gravimetric or volumetric train loading, that allows for consistent and easy material loading.

Dynamic and precise rail technologies for weighing rail carriages and monitoring transport.

Simultaneously dry, pulverize and classify clays, minerals and manufactured materials that are 5 or less on the Mohs scale. Milling provides efficient control of product size with minimal power, resulting in a flexible, cost-effective production.

# LIMESTONE PROCESSING





## COPPER

Whether it's large lumps or fine particles, the extraction of NF Metals, such as Copper, is another core speciality for Schenck Process.

Copper is a critical material that is used in many sectors including construction, power, water supply and transport.

While it's properties, such as recyclability are extraordinary, the resource is limited; making efficient recovery crucial.



**COPPER IS A MAJOR INDUSTRIAL METAL, BUT IS ALSO AN ESSENTIAL NUTRIENT IN OUR DAILY DIET AND OFFERS ANTIMICROBIAL PROPERTIES.**



## COPPER

Only around 2% of mined ores contain copper. As often seen in Ball Mills, Schenck Process solutions form part of the extraction process, to maximize recovery rates to the highest possible level. After the concentrate is recovered, copper then goes through many other stages, such as Smelting – which are other areas we can help with.

For the recovery of concentrate, our core solutions include:

Vibrating screens that robustly handle a variety of materials for size classification. The range is recognized for their superior reliability.

Condition monitoring for vibrating screens and feeders. The CONiQ Monitor technology provides a warning of impending failures and allows for planned maintenance.

Vibrating feeders, that offer varying feed rates and are available with weighing capabilities.

Highly accurate weighing solutions, such as belt weighers, which are known for their longevity and reliability.

Gravimetric or volumetric train loading solutions, for controlled and accurate loading.

Rail technologies for controlling the weighing of materials, such as those handled in rail carriages and for further optimizing loading.

## ROBUST, RELIABLE SOLUTIONS

WE PROVIDE PACKAGES,  
NOT JUST EQUIPMENT...  
...FOR A WHOLE-LIFE  
RETURN ON INVESTMENT



## SITE SOLUTIONS. NOT JUST EQUIPMENT

One of our core aims for mineral processors is to help make their processes work. This is partly achieved through the integration of packages which include not only the central machine, but also all additional accessories or process parts.

Working with our Schenck Process team as a single trusted source, not only simplifies supply chain, but most importantly provides peace of mind that all components are engineered to work seamlessly together.

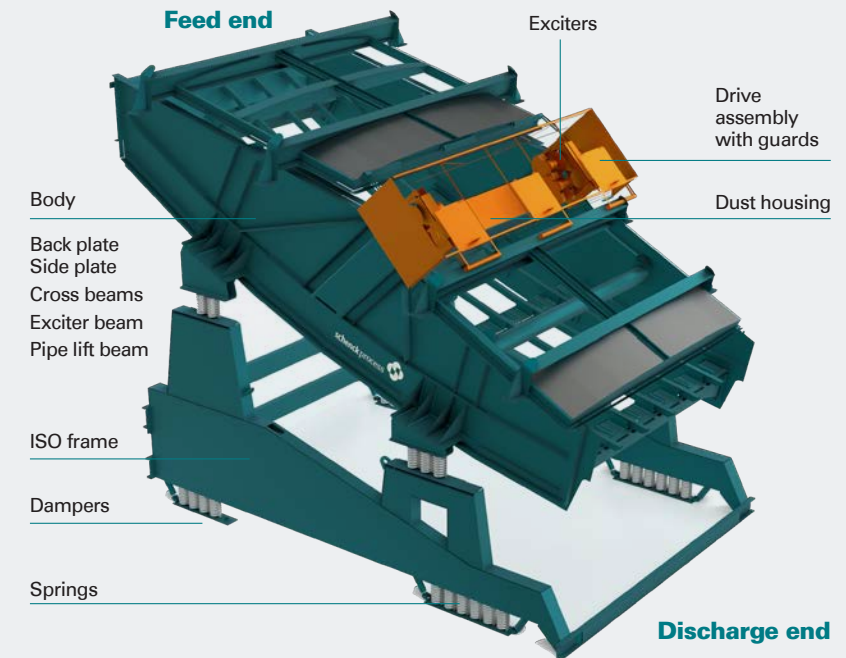
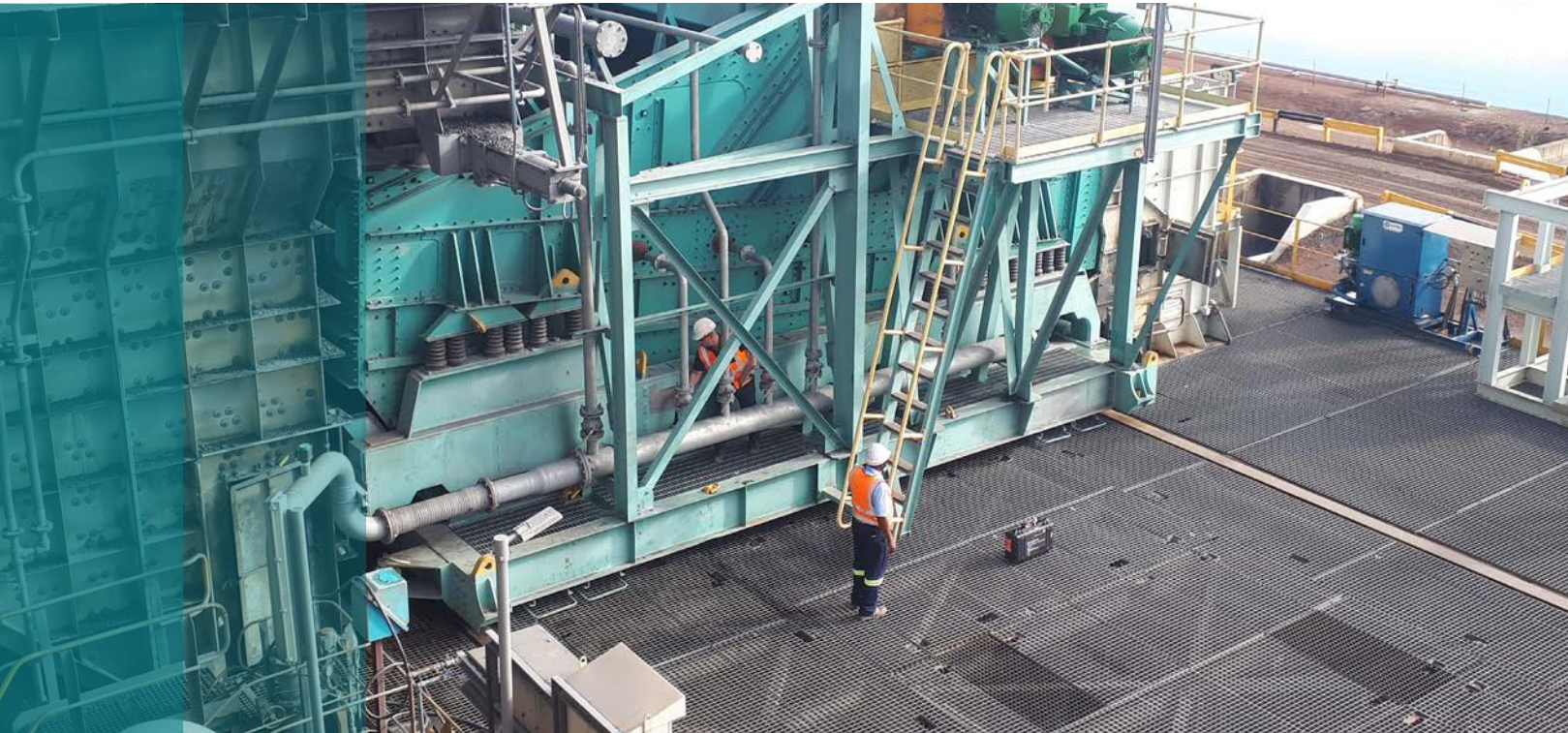
**We offer full end-to-end solutions, not just a machine!**

### CUSTOMIZED PACKAGES

Our packages are designed to meet project needs and ensure you get the highest functionality and efficiency from their overall performance.

In addition to the main equipment, packages can include many elements, such as:

- » Screening media
- » Chutes
- » Belt weighers
- » Gates
- » Hoppers
- » Much more

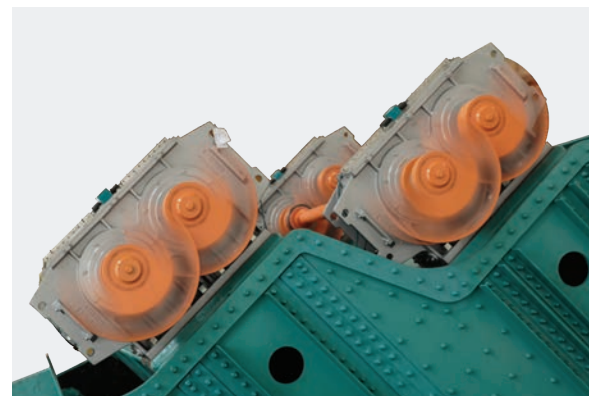


## VIBRATING SCREENS

Schenck Process linear LinaClass® vibrating screens easily handle the largest quantities of materials and classify them with a significant level of accuracy. Driven by robust exciters, they are specially customized for the widest range of onsite requirements and optimally operate, even under extreme weather constraints.

Recognized for their reliability and outstanding performance, LinaClass screens have decades of experience and enhancements engineered into them.

Used in conjunction with the UNIQUE CONiQ Monitor, they become the most dynamic, dependable screens available.



**WE'LL HELP YOU ACHIEVE UP TO 97% OPERATIONAL AVAILABILITY.**

## VIBRATING SCREENS

### KEY BENEFITS

#### INCREASED EFFICIENCY

- » Improved quality and throughput
- » Lower energy and water consumption
- » Lower CO<sub>2</sub> foot-print
- » Larger open area

#### HIGHER PERFORMANCE

- » Higher reliability; increased uptime
- » Durability; longer service life

#### CUSTOMIZED

- » Customized screens and screening media to suit material

#### SAFETY

- » Rubber encapsulated screen springs, that prevent accidents/tampering
- » Low noise impact
- » Dust control and covers

#### REDUCED MAINTENANCE

- » Designed to withstand higher stresses
- » Shorter, less frequent maintenance
- » Quick change-out hydraulic systems
- » Screen panels are manufactured and available globally, for a quick turnaround





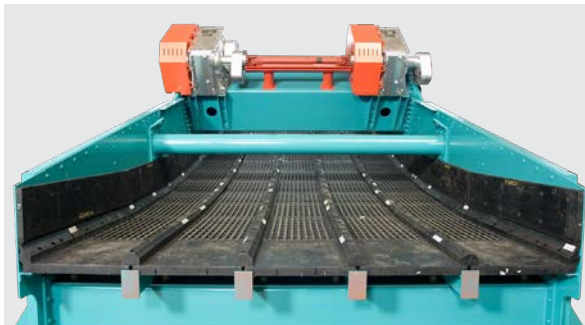
## VIBRATING SCREENS

### MODELS

#### FLAT-DECK LINEAR

A classic screen, for the classification of all bulk solids that are suitable for screening.

- » Screening widths up to 4.3 m (14.1 ft) and screening lengths up to 9.0 m (29.5 ft)
- » Reliable directional force exciters
- » Single, double and triple deck designs



Schenck Process Banana Linear Screen

#### BANANA LINEAR

Features a banana-like arrangement, enabling a larger quantity of feed, with high finesses, but still using the same screen area.

- » Large capacities for a wide range of materials
- » Multi-slope designs for maximum fines recovery
- » Screening widths up to 4.9 m (16 ft) and screening lengths up to 9.7 m (31.8 ft)
- » Reliable directional force exciters
- » Single and double deck designs

## VIBRATING SCREENS

### MODELS

#### DRAINAGE & DEWATERING LINEAR

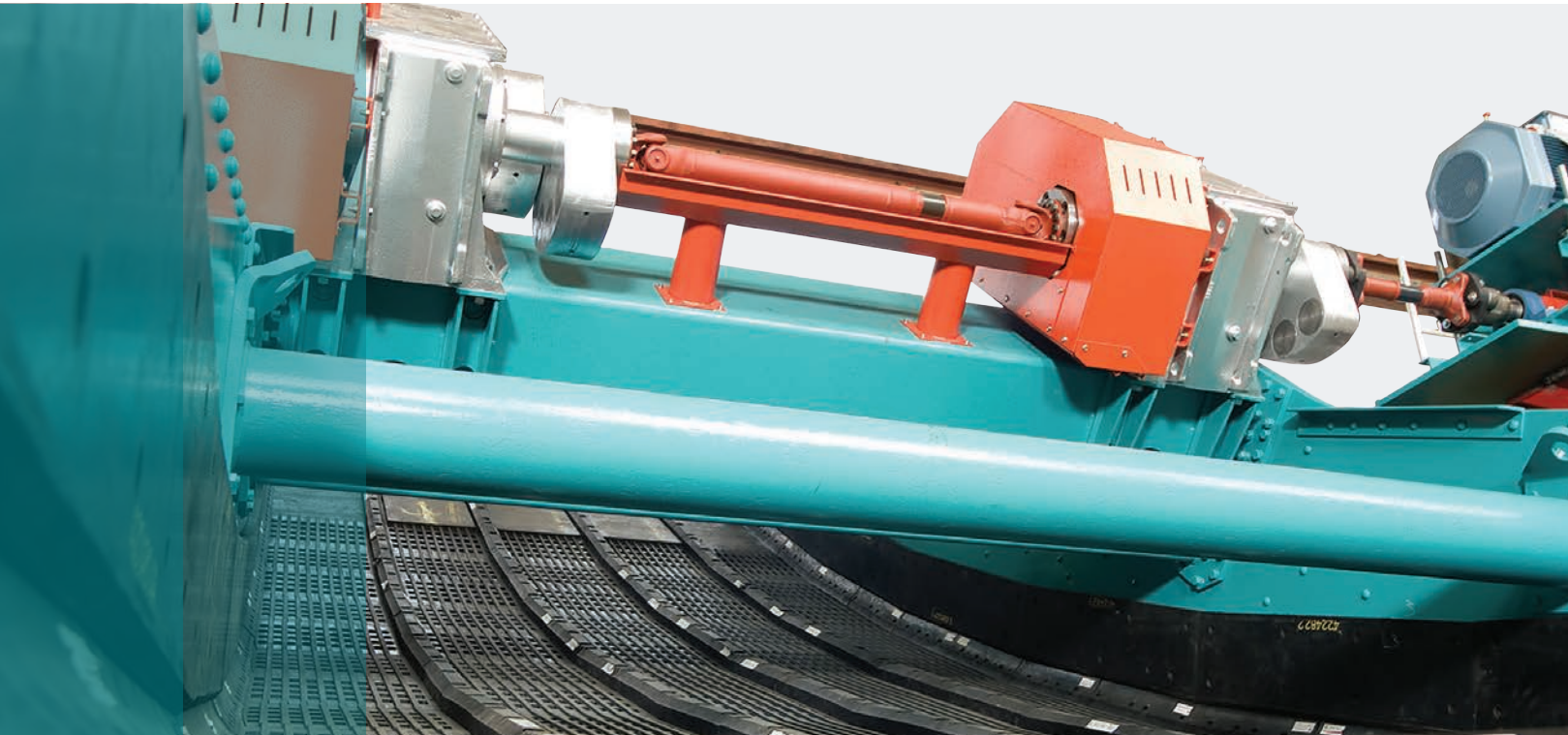
- » Used for washing, drainage, cleaning, preliminary classification and wet screening or for screening out foreign bodies
- » Reverse incline or reverse banana style
- » Reliable directional force exciters or vibrator motor driven options
- » Widths up to 3.0m (10 ft) and lengths up to 8.0 m (26 ft)
- » High capacities for a wide range of materials

#### SCALPING

- » For automatic loading and unloading of crushers



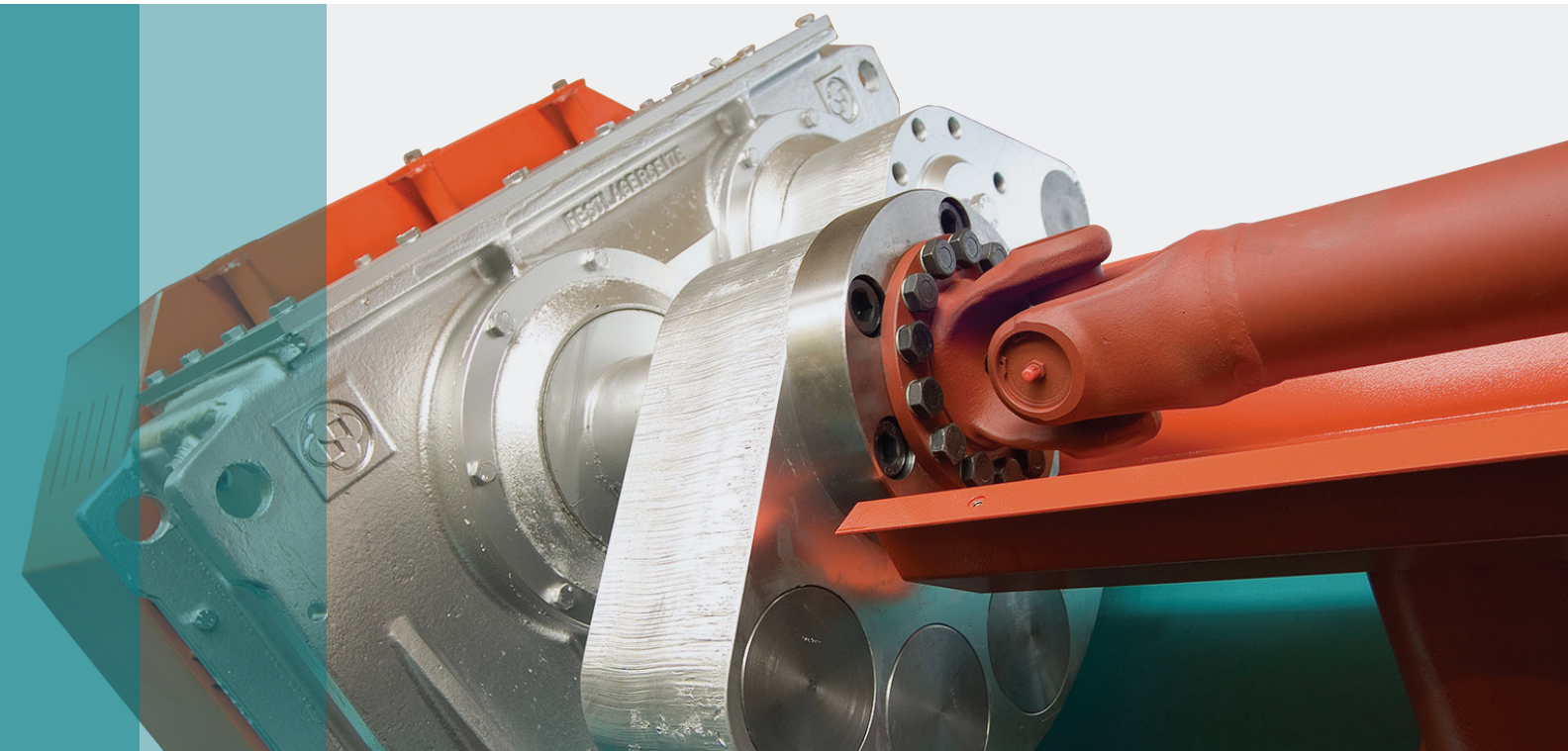
Our screens are manufactured for strength



## VIBRATING SCREENS

### DESIGN FEATURES SCREEN BODY

- » Larger open area. Using fewer yet larger machines, reduces plant build costs, lowers emissions and power consumption
- » Fully bolted construction with corrosion and erosion resistant designs, for long-life performance
- » Stress relieved cross members, ensuring maximum rigidity, optimal force transmission and minimum weight-load
- » Thicker deck rails for ultra-heavy media; resulting in longer service life, less maintenance and a lower production cost per tonne
- » Maintenance-free shafts between exciters, for higher production and less downtime
- » No welding on side plates, avoiding stresses
- » All stiffeners and attachments are bolted to side plates
- » Integrated feed box, removing extra cost for a bolt-on unit
- » Can be supplied with matched vibrating feeders to optimize material withdrawal from bins and feed
- » Wide range of high-quality screen deck options; resistant to wear



## VIBRATING SCREENS

### DESIGN FEATURES DIRECTIONAL FORCE EXCITERS

- » Economic and powerful exciters up to 900kN for high screening performance
- » Range of exciters, speed and plug weight settings to generate required 'g' force
- » Long-life and extremely smooth operation
- » Minimum maintenance requirements
- » Low operation noise level
- » Drive system allows smooth adaption of speed, for optimum performance

### ISOLATON FRAME

- Robust isolation frames ensure the maximum level of vibration isolation. This minimizes noise emissions and reduces the dynamic loads; resulting in less material needed in the support structure, a lower plant cost and fewer emissions.
- » Reduces dynamic forces transmitted to the structure
  - » Increase isolation of up to 99.9%
  - » Saves cost on structural supports in steel

### SPRING SUSPENSION

- » Low dynamic foundation loads
- » Allows constant ratio between load and spring deflection
- » 'Safety spring' design to avoid injury



**CUSTOMER CASE:  
THE WORLD'S  
BEAST OF  
A SCREEN**

## VIBRATING SCREENS

**Meet the BEAST - at over 72 tons in body mass, using twin exciter beams, four 900kN force exciters and processing around 10,000 t/hr of slurry in a metal's extraction process, our BEAST Vibrating Screen, may well be the largest ever built.**

The BEAST was made for wet processing the highest possible mine throughputs, with extreme fatigue strength and ability to handle huge loads. The project goal was to supply screens that withstood a SAG mill discharge of 6000 t/hr, in addition to 4000 m<sup>3</sup>/hr of water. Designed with a robust isolation frame ensured that structural vibration is effectively absorbed, It was supplied equipped with the CONiQ Monitor – to regularly update operators on screen

performance and allow remote or planned maintenance, with no unexpected downtime. In fact, it enabled less maintenance requirements.

This BEAST screen is around 5.5 m (18 ft) wide, 10.5 m (34.4 ft) long and 6.5 m (21.3 ft) high; featuring almost every available design option possible. A typical project needing a screen of this size includes large open-pit copper and gold mines.

**NOW OFFERING  
FIRE RETARDANT  
PANELS**

## SCREENING MEDIA

As the market leader in screen panel supply, our teams understand the importance of the relationship between the design of our vibrating screens and correct screening media selection, in order to obtain optimum performance.

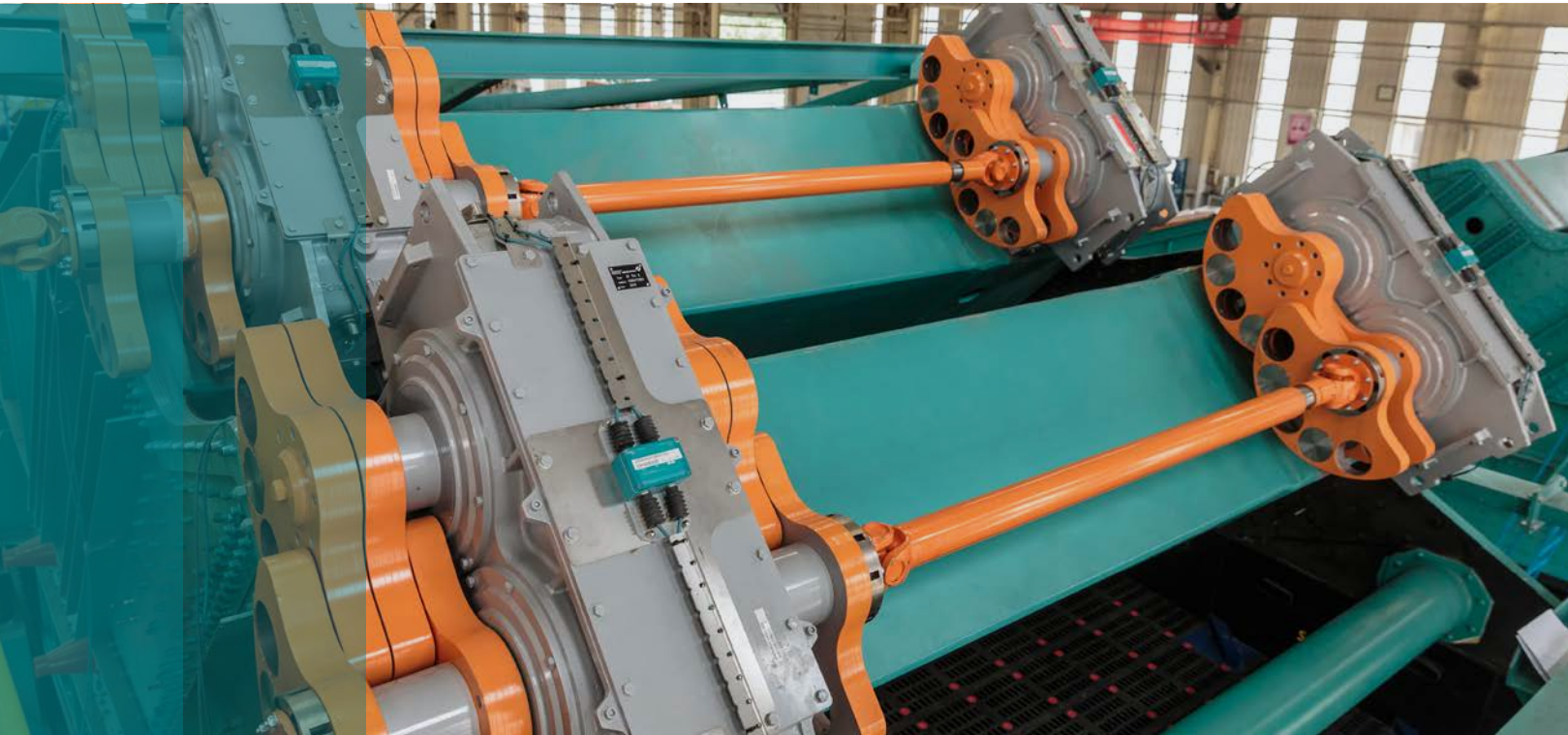
Through our range of screening media we can ensure your system is designed to best satisfy individual project requirements, and to provide process efficiency, structural integrity and high service life.

### OUR MEDIA DESIGN:

- » Large open area
- » Allow extended service life; reduced wear
- » Modular screen panel design
- » Versatile fixing systems
- » Enable noise reduction
- » Range of material and surface features
- » Assured quality

### OUR MEDIA SERVICES:

- » Process optimization
- » Recommendations for deck and aperture selection
- » Audit of screen surfaces to identify wear patterns and corrective actions
- » Development of customized solutions
- » Installation of new systems and components
- » On-site technical support
- » Replacing existing alternative supplier screening systems
- » Extensive knowledge and experience
- » ISO9001 certified



CONiQ® IS A 'HANDS-ON' EXPERT, MONITORING YOUR SCREEN ALL DAY, EVERY DAY.

## CONiQ® MONITOR

Using **artificial intelligence**, the latest sensor technology and analytical software, the intelligent CONiQ® will in 'real-time' enable processors to avoid the costly downtime caused by failing screens or feeders and instead allow better performance, higher profitability and longer machine lifespan.

### KEY BENEFITS

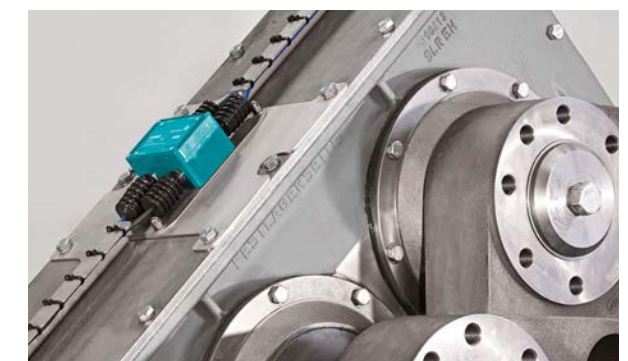
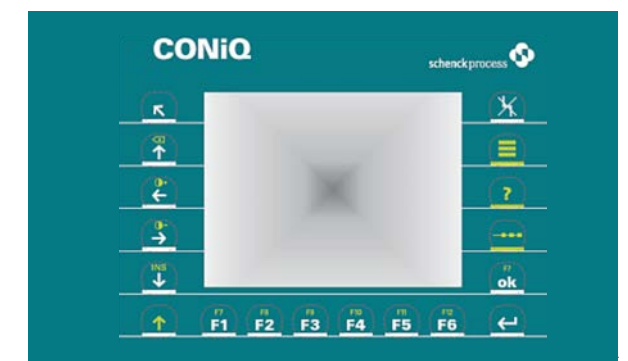
- » Provides early warnings of impending failures
- » Maximizes revenue by avoiding profits lost from site downtime
- » Increases output and efficiency
- » Avoids unexpected downtime and instead enables forward planning
- » Enables greater process control
- » Allows predictive and planned maintenance
- » Improves the lifespan of your machines
- » Improves safety through remote monitoring
- » Lowers CO2 footprint by sending less operators to site
- » Accessing data remotely, enables OEM technical expert support to assist site
- » Implementation and user support is readily available
- » Availability of long-term monitoring service

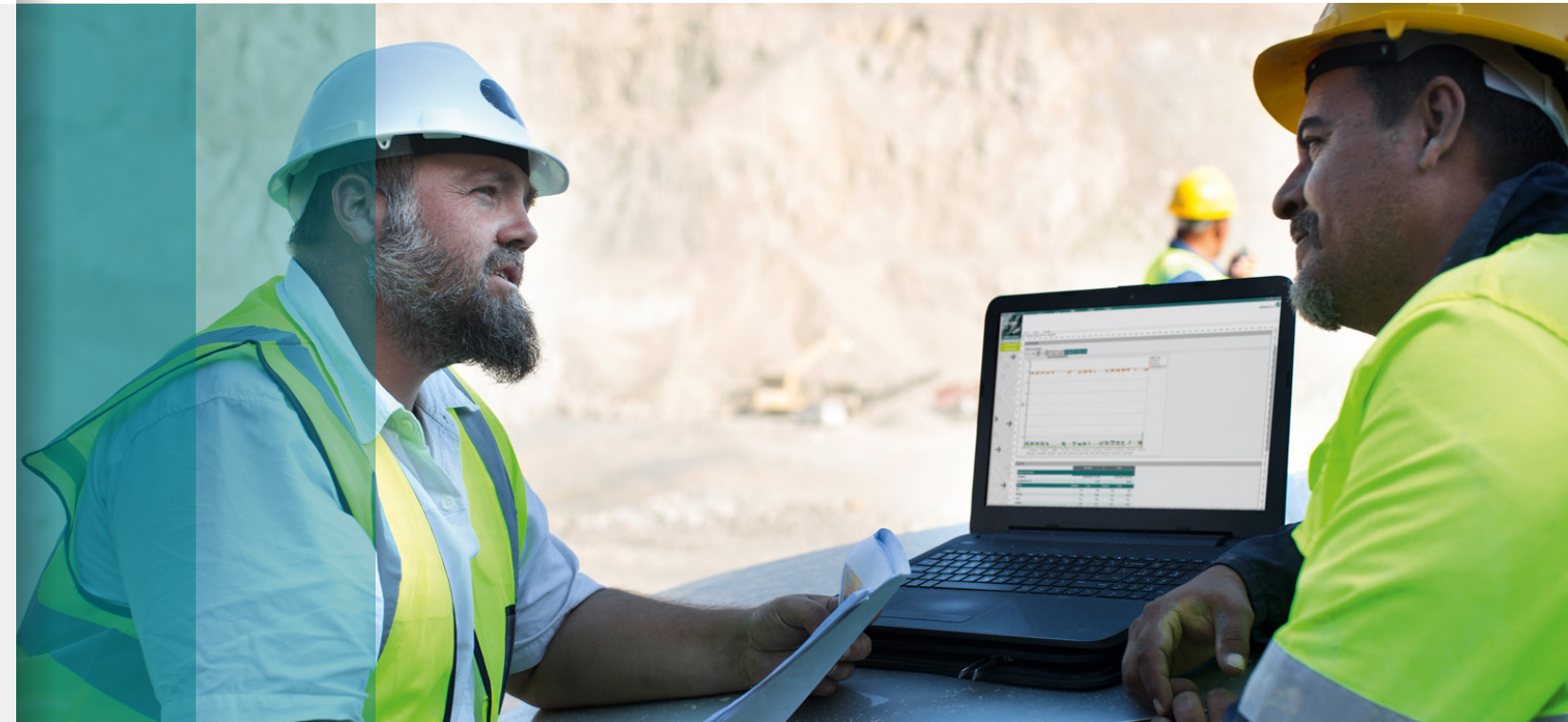
## CONiQ® MONITOR

**CONiQ® will pay for itself immediately, when just one occurrence of unplanned downtime takes place.**

Inspection and maintenance accounts for up to a third of indirect site costs. Our unique condition monitoring system enables companies to realign their maintenance strategies around fault detection, prevention and increased profits.

The real-time monitoring of critical variables, also delivers additional peace of mind and ensures more energy-efficient site operation. With many built-in parameters, the CONiQ® is specifically optimized for vibratory equipment and outperforms any other solutions on the market.





## CONiQ® MONITOR

CONiQ® consists of three main elements - to measure, to analyze and to interpret.

### MEASURES:

- » FULL machine, with a 6 dimensional microelectromechanical system, including detection of any motion changes
- » Cracks or defects
- » Exciter performance
- » Oil temperature
- » Wireless and non-wireless set-up: ensures flexibility of sensor mounting, stability and security in data transmission and synchronicity to detect out-of-phase vibrations

### ANALYZES:

- » Uses Artificial Intelligence, sensors and other measurement devices; sending data to the processing unit located beside each machine
- » Data is also held centrally and available remotely, through a secure interface
- » Data is compared against previous history and preconfigured values

### INTERPRETS:

- » Overall machine condition is automatically interpreted
- » Warnings on impending failures or maintenance requirements

## CONiQ® MONITOR

### EASY DETECTION AND ACCESS OF EARLY TRENDS

The CONiQ® enables a complete plant overview, consolidating information about all monitored vibrating screens or feeders.

Data is sent to CONiQ® software on a PC or other device, for interpretation of long-term trends, enabling early identification of any potential risks. This also means that trend data can be analyzed remotely, for example at corporate or regional head quarters; thereby reducing the demands on local operational staff and making access to data for isolated sites much easier.

- » Remote access to fault trends means a faster expert response to evaluate performance or potential problems
- » Centralized monitoring of a plant-wide view minimizes demands on operational and maintenance staff
- » Quality performance data means faster understanding and optimization of machine performance

Contact our team for an assessment of your requirements and a demonstration of the CONiQ® solution.



## VIBRATING FEEDERS

Schenck Process vibratory feeders easily discharge heavy, highly abrasive material in a controlled and reliable manner, even under the most difficult conditions. They can also be used to convey material over a variety of distances.

This robust range of feeders are engineered to meet specific site requirements and are truly optimized to work alongside Schenck Process vibrating screens. Our feeder options include trim gates, magnetic exciters, unbalance exciters or force exciters; all depending on the application.

**PAIRING A POOR OR WRONG FEEDER WITH YOUR SCREEN, WILL RESULT IN BREAKDOWNS.**

### KEY FEATURES

- » Straight or diverging pan designs
- » Include directed-force exciters or unbalance motors/magnetic exciters
- » Reliable and proven designs
- » Work seamlessly with Schenck Process vibrating screens
- » Can include condition monitoring control, for break-down prevention
- » Optional wear protection
- » Trough or lip sealing capabilities
- » Several models available



## VIBRATING FEEDERS

Our vibrating feeders are designed as combinations of riveted and welded constructions. On specific models, a trough is bolted in place and is therefore easy to replace. Each trough plate offers a range of plate thicknesses and materials, depending on the application.

The vibrating screens can also be equipped with wear linings or hard-surfaced finishes and come available with robust coil springs. Machines can be suspended depending on requirements.

### DESIGN FEATURES

#### Directed Force Exciter

- » Minimal service required; just regular lubrication

#### Unbalanced Motor

- » Long motor lifetime and satisfying motor quietness

#### Spring Suspension and Isolation Frame

- » Coil springs with linear spring characteristic
- » Optional isolation frames with hydraulic shock absorbers for larger machines

#### Wear Protection

- » Optional wear lining can be rubber, ceramic or hard-surfaced plates

#### Trough Sealing

- » Include optional rubber lip-sealing, or any seal required

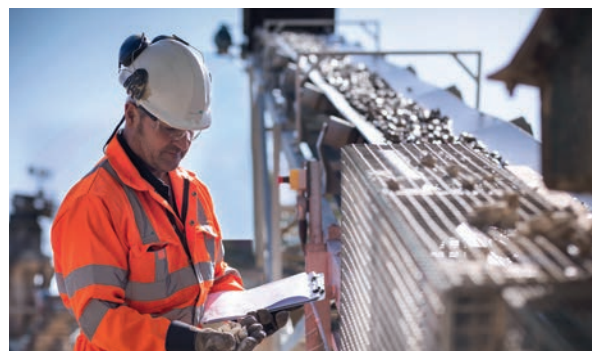


## WEIGHING

Designed for high feed rates and satisfying accuracy, MULTIBELT® provides exact performance for controlling flow rates and consumption, coupled with flexible integration as well as very simple, fast maintenance.

**We have the right belt weigher solution for every application.**

Suitable for large belt widths and high speed belt conveyors, MULTIBELT is often installed into difficult to access areas of a site, making its reliable performance and easy maintenance features, a significant benefit to mining and processing sites.



## WEIGHING

The MULTIBELT range includes single-idler belt weighers and multi-idler options, with variants for bandwidths from 400mm, up to 2000mm – depending on the application.

- » For flow rates up to 20.000 t/h
- » Robust design ensures high operational reliability
- » Accuracies of up to +/- 0.25% to the actual flow rate
- » Calibration class 2 to 0.5 according to OIMLR50
- » Flexible use in new and existing conveyors
- » Low maintenance required
- » Maintenance-free load cell(s) with high protection class
- » Optional speed transducer with friction wheel or for shaft mounting
- » Hazardous location versions for use above ground

### DOSING

For mineral processing applications that require dosing, the MULTIDOS weighfeeders are an ideal solution. Applications can include:

- » Belt weighfeeders used in mill feeding for optimized operation
- » Apron weighfeeders for the feeding of large, edged grain material



## TRAINLOADING

### Accurate, high-speed loading systems for any application.

Schenck Process train loaders are designed to operate reliably in the harshest mining environments - even when facing high and low temperatures, dust and significant rainfall. Our train loading systems require only routine maintenance, coupled with quick loading performance.

### CAPABILITIES

- » Extensive experience globally, for all commodities
- » Process knowledge and implementation
- » Fully automatic volumetric or gravimetric systems
- » Full train load out system solutions

### PERFORMANCE

- » High automation control
- » High accuracy wagon load measurements
- » Consistent high accuracy and fast loading
- » Prevents spillages

## TRAINLOADING

### OPERATION

- » High process safety, availability and operational reliability
- » High level of automation
- » Safety features for rail system compliance
- » Controls adaptable to process changes

### MAINTENANCE

- » Less maintenance through well engineered quality components
- » Easy to repair and inspect
- » Reliable OEM Aftersales support

Featuring high quality corrosion resistant paints, environmentally sealed electrical equipment and high quality hydraulic components – our train loading systems are engineered to enable minimal maintenance and easy repair.





## TRAINLOADING WITH WEIGHING & AUTOMATION TECHNOLOGIES - MULTIRAIL

THE PERFECT PAIR

## TRAINLOADING

**We have proudly been involved in a significant portion of all global train load out operations, for over 30 years.**

Our train loading experts have extensive know-how in materials handling and stockpile reclaim systems. We can support you with full-system design, thereby optimizing operation of the reclaim system and train loader, while at the same time considering capital expenditure constraints.

### ADDING VALUE

- » Development of tailor-made projects
- » End-to-end project management
- » In-house design and R&D
- » OEM for all train load out technology
- » Over 30 years' experience in train loading





## RAIL WEIGHING & AUTOMATION

### INBOUND AND OUTBOUND SCALES – TRAINLOADOUT

Train loading combined with our world-class rail weighing technology – MULTIRAIL® TrainLoadOut, offers complete control and automation with accuracies of  $\pm 0.5\%$  of the total train weight. MULTIRAIL provides data controlled, truly optimized and accurate train loading – all from a system which is simple to integrate and operate.

Weighing rail cars before and after loading provides a complete picture of axle loads and total train weight, as well as any material hang-up that can overload a rail car. Integration into on-site ERP systems ensures that operations run smoothly and efficiently. Fully automatic rail car loading software enables remote train loading, without the need for operators.

### DYNAMIC WEIGHING

- » Increased average rail car load
- » Optimized loading performance – no overload
- » Improved rail logistics efficiency
- » Management of roll back and data transmission
- » Train loader interface
- » Calculating the front / rear and right / left load distribution in the rail car
- » Tare and gross rail car weights to  $\pm 0.5\%$  accuracy



## RAIL WEIGHING & AUTOMATION

### FUNCTIONALITY:

MULTIRAIL includes the following basic functions:

- » Calculating and showing weights
- » Stop-and-go operation
- » Storing data
- » Issuing results on-line
- » Transmitting data to the PLC by OPC server

Other optional functions are available:

- » Rail car identification with RFID or other equipment
- » Monitoring the rail car centre of gravity
- » EDP / BDE system interfacing



**Please Note:** MULTIRAIL in the USA is designed and supplied as MultiTrain, for that specific region.



## RAIL WEIGHING & AUTOMATION

To automate and generate customers greater efficiencies as well as safety for material handling over rail, Schenck Process also offer the following MULTIRAIL solutions:

### LEGAL-FOR-TRADE DYNAMIC WEIGHING OF RAIL CARS

These systems are very quick to install and aim to reduce downtime and thereby improve revenue. MULTIRAIL train weighing solutions include reliable, automated force sensors and weigh tie technology – enabling real-time control.

### WHEEL SCANNING RECOGNITION OF DAMAGE AND PEAK FORCES

MULTIRAIL modular wayside train monitoring systems are capable of weighing in motion, detecting impact of load and reviewing wheel profiles such as diameter. Using radio-frequency identification, each wagon is scanned and identifiable. Speed monitoring is calculated 'live', whilst in-motion weighing detects any alterations in wagon weights.



## RAIL WEIGHING & AUTOMATION

### WHEEL SCAN POR (PERIODIC OUT OF ROUND)

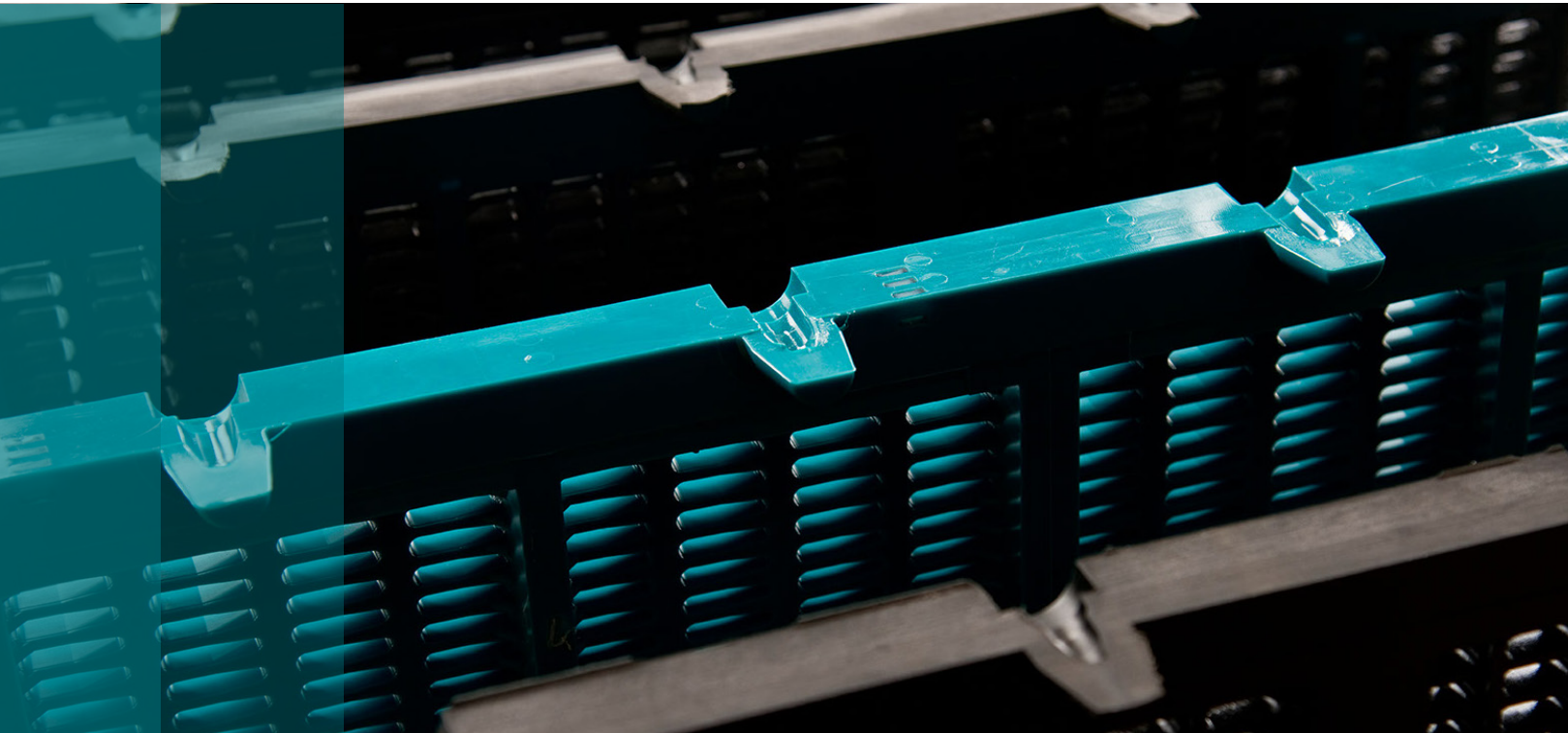
The periodic out of round modular wayside train monitoring system, ensures continued analysis of train wheels for safe and secure performance.

Designed to quickly identify wear in train wheels, also known as out of round, this system monitors the wheel tread polygonalization for radial irregularities. As a dynamic system, it also calculates axle loads and acoustic measurements.

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**WATCH ALL OUR LATEST INNOVATIONS FOR RAIL WEIGHING ON YOUTUBE**

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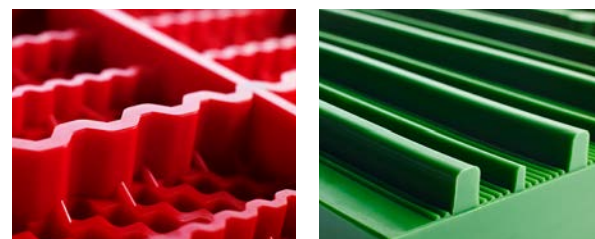


## SPARES, COMPONENTS AND SERVICES

For all our core systems we offer mineral processors, readily available spare parts, media replacement and components – globally.

### Examples can include:

- » Components for design improvements
- » Screening media
- » Refurbishment & 3rd party spare parts
- » CONiQ monitor upgrades
- » Belt weighers onto existing conveyors
- » Train loading spare chutes
- » Train loading ProLift chute exchange



## MINING & MINERAL PROCESSING SERVICES

### Our extensive services include:

- » Industry experts with decades of experience
- » Global centre of excellences
- » Dedicated application support
- » Product engineering design
- » Global manufacturing and engineering
- » Installation and commissioning
- » Global product and operation training
- » Remote, digital support services for testing and aftersales



### Technology specific:

- » Remote data analysis for CONiQ monitor installations
- » CONiQ Monitor performance checks
- » MULTIRAIL calibration services



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# Your Partner

Please contact Schenck Process where you will be directly connected to an engineering expert.



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we make processes work