



# HEAVY DUTY

Process systems

## Our company



CAMPINAS, BRAZIL Agency



BELO HORIZONTE, BRAZIL Agency

- Serving in the solids processing industry since the company founding in 1980 our goal is to deliver the best cost benefit solution for our customer needs with world class equipment and provide the best in class value chain for transforming global natural resources with optimal efficiency and returns.

We represent equipment manufacturers that are global leaders in their fields and bring them together providing you with the best option for the supply of single critical equipment or complete process solutions.

Knowledge, imagination, excellence in our people and long term relationship with our customers are the values we passionately follow.

Based in Brazil and Argentina forming an important geographical link gives us the ability to reach all of Mercosur with the best global solutions.

Proglobal, your partner for success.







## Screeners dry

Rotex Global is a manufacturer of dry-separation screening equipment with over 100 years of experience serving the needs of worldwide processing industries.

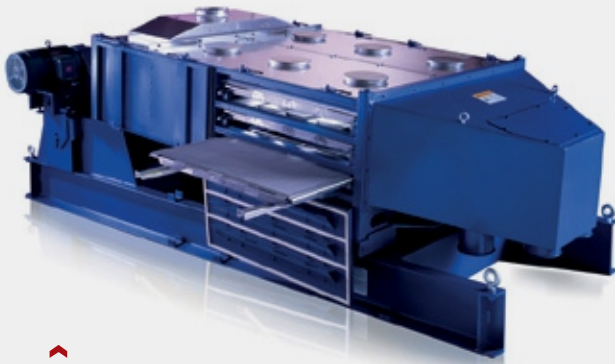
### Applications:

Minerals / Ores / Coal / Fertilizers / Frac sand / Sands



### ROTEX SCRENNERS

Original Rotex screener with gyratory reciprocating motion. Proven, rugged, long-lasting and versatile screener used in countless applications throughout the world.



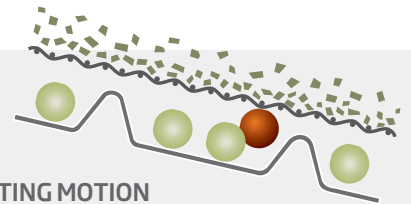
### APEX SCRENNERS

Same high efficiency performance gyratory reciprocating motion with a revolutionary ergonomic design, screen changes and maintenance can be carried out by a single operator.



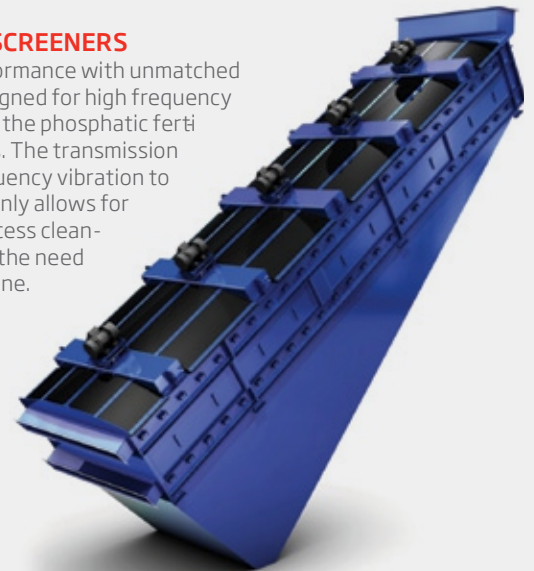
### GYRATORY RECIPROCATING MOTION

Highest efficiency screening performance



### HI-CLINE SCREENERS

Classic performance with unmatched quality. Designed for high frequency screening in the phosphatic fertilizer process. The transmission of high frequency vibration to the screen only allows for While In Process cleaning without the need to stop the line.



### MINERALS SEPARATOR

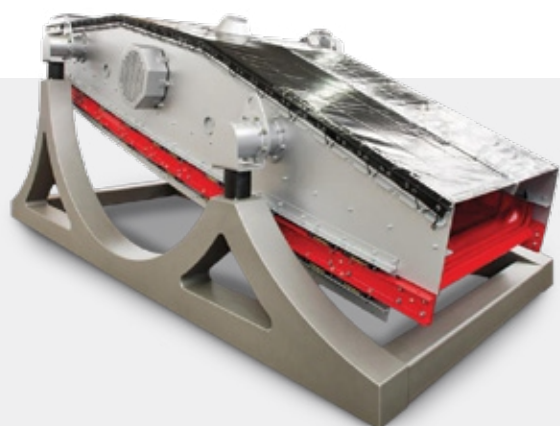
Providing high volume and unsurpassed screening performance for applications requiring accurate separations. Specifically designed to meet the demanding screening requirements of high-volume applications in the minerals industry.





## Screening Technology

Leader supplier of thermal processing, vibrating screening, wet processing and sorting.



### SCREENING

Efficient particle size separation of heavy screenable materials by using dynamically activated screening panels. This Screener shows its advantages specially with difficult-to-screen materials. A relative movement of two oscillating masses effects stretching and relaxing of the dynamic screen mats. Dissolving of clumpings due to very high acceleration of material, up to 50G. No blinding of the mats boosts screening efficiency. Optimal operation with adjustable oscillating masses.

#### Applications:

Industrial minerals / Coal / Ores / Salts / Aggregates / Recycling materials

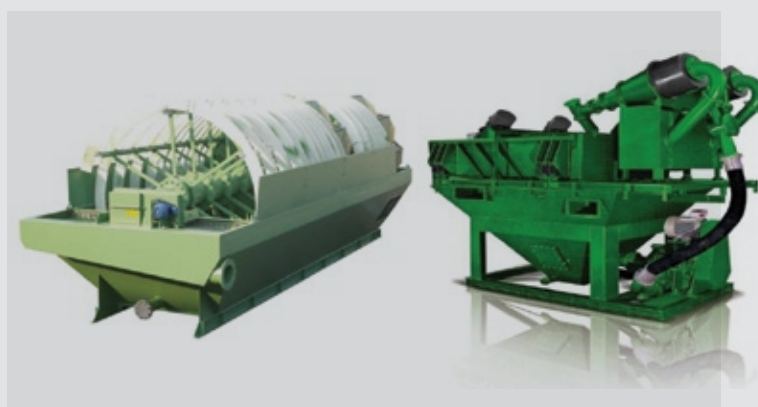


### CONVENTIONAL VIBRATORY SCREENING



Linear vibratory screeners / Circular vibratory screeners

### SAND TRAP AND HIDROSIZER



Applications: Dewatering screws / wet sizing process / wet classifying



## Fluid Bed

Drying and cooling with outstanding quality.

## Sorting

We offers to its customers the complete processing of SORTING industrial products and minerals.



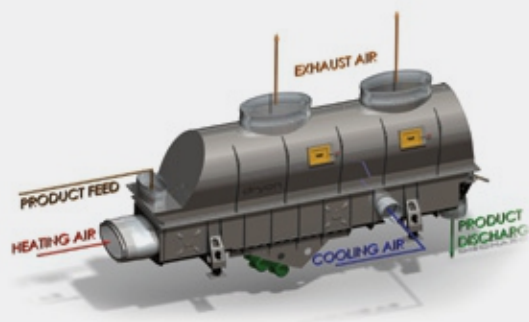
## DRYON

Economically efficient drying system and uniform quality of the product with gentle handling.

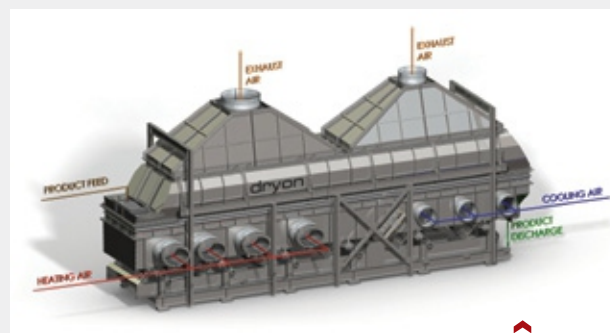
Another advantages are the high level of availability of the system, the easy cleaning and discharging and the influence on retention time by means of vibration adjustments.

### Applications:

- Mining & Steel
- Recycling
- Petrochemistry
- Salt industry
- Chemical Industry
- Industrial Minerals
- Sand
- Coal
- Others



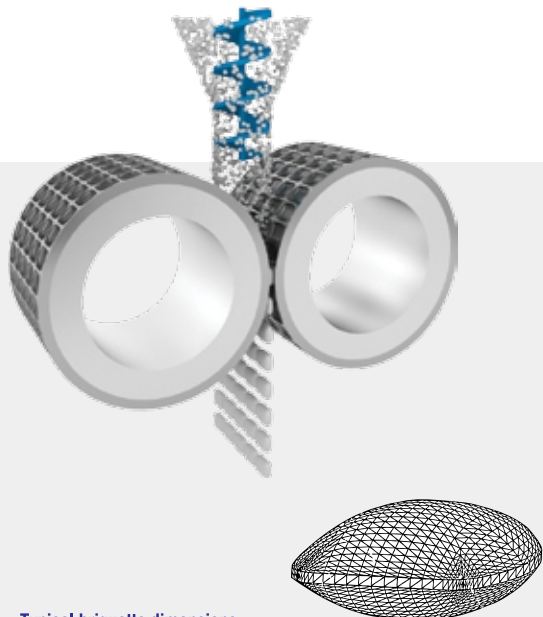
DRYON Single mass vibration system



DRYON Resonance vibration system



# Köppern



Typical briquette dimensions

Volume	cm <sup>3</sup>	1,5	3	5	10	20	100	220
Width	mm	19,0	26	30	33	45	104	92
Height	mm	16,0	20	24	29	36	49	69
Thickness	mm	9,0	12	14	18	22	29	55

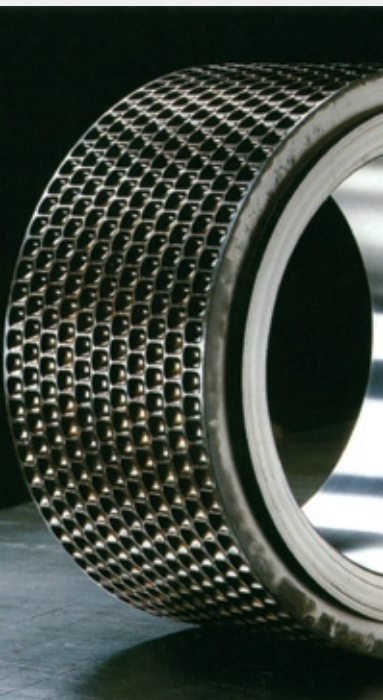
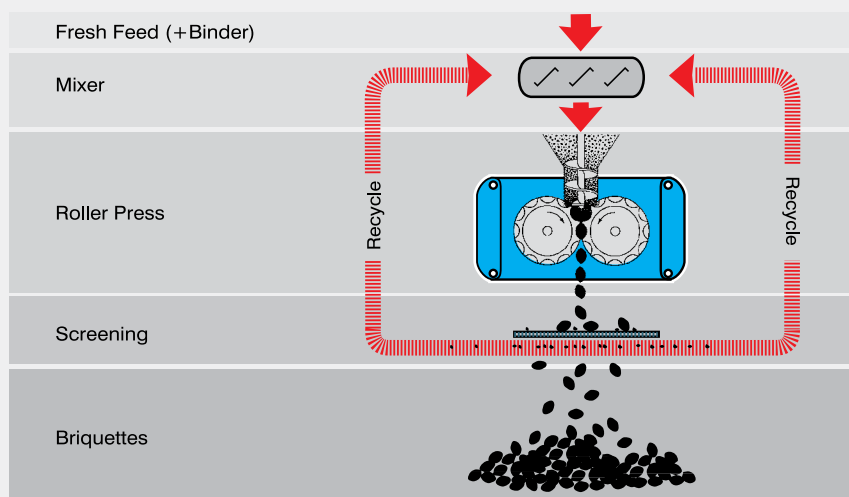
Briquetting rings available in various materials for different applications.



## Briquetting with roller presses

During briquetting granular material is compacted between two counter-currently rotating rolls.

Forming of briquetting may be supported by a binding agent. Application in ashes, lime, metallic ores, coal, oxides, filter dusts, metal chips and turnings, salts, sponge iron, steelworks dust and others.

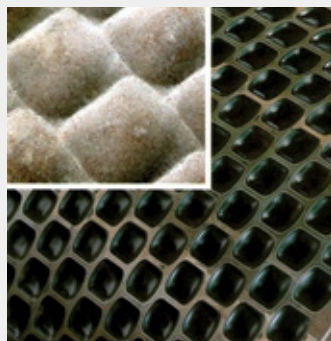
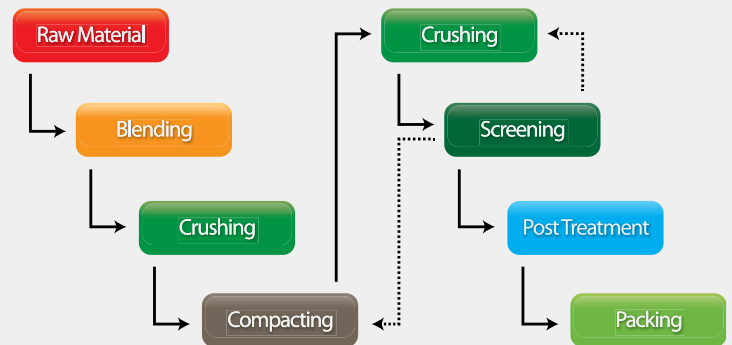




## Compaction with roller presses

Compaction with roller presses is the most efficient way to reach the desired specs of your product lines such as potash, lithium, borates, fertilizers. Feeding reduced size materials and getting out compacted strips before crushing and screening set you material on spec. Recycling of aluminium and other metals.

# Köppern



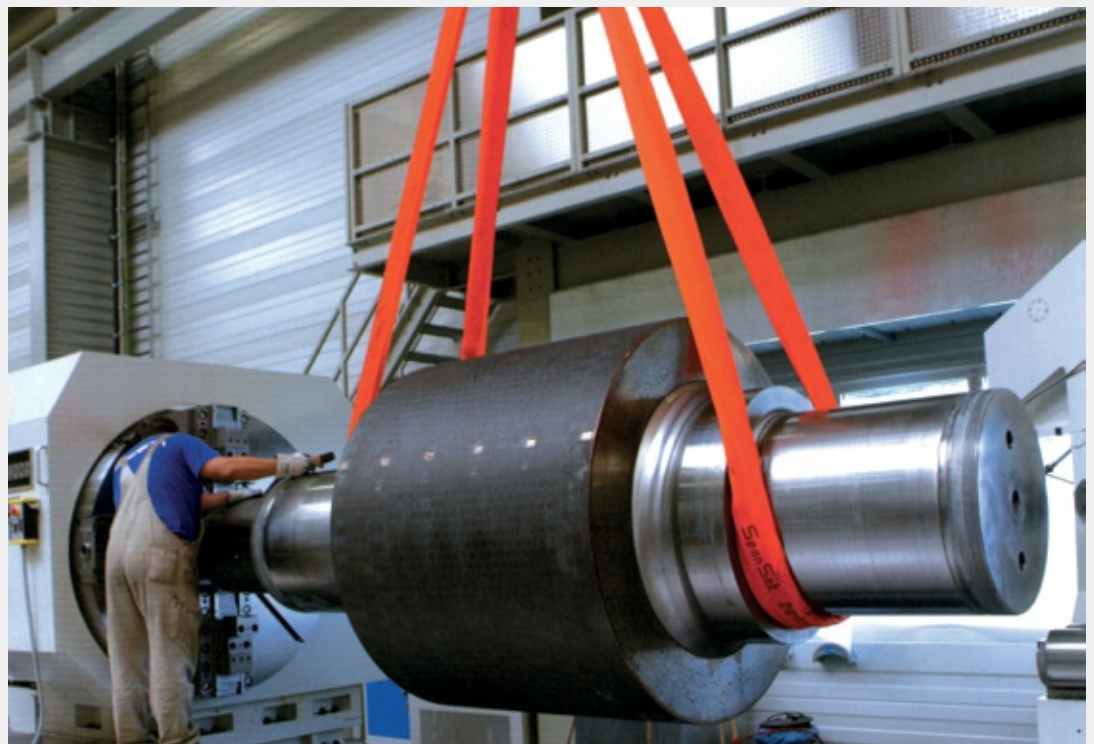
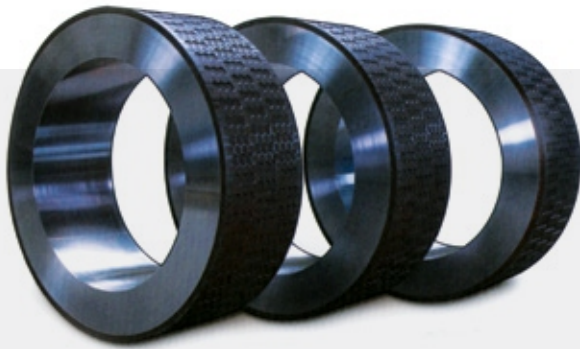




## High-pressure grinding

During high-pressure grinding in roller presses coarse mineral materials, such as cement clinker, ore or limestone are subjected to very high compressive forces.

The sheets produced contain a high amount of the fine particles. Köppern high-pressure grinding rolls are operation- and maintenance-friendly. Easy separation of drive and rolls together with the Köppern hinged frame allow for quick roll removal and replacement. Wear parts of the gravity feeder can be replaced easily from the outside.







## Hexadur

Köppern, the specialist in the high-pressure comminution introduce HEXADUR the wear protection for the HPGR of the cement industry.

With the inherent disadvantages of HPGRs in mind Köppern has pioneered the development of a new generation of highly efficient wear protection for HPGRs with the objective of achieving the combination of: Long Service Life / Uninterrupted Availability / Stable Throughput Over Its Service Life / Low Operation Costs.

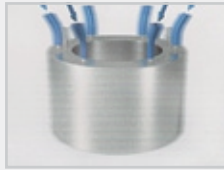
# Köppern



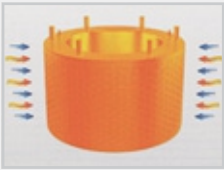
### Manufacturing process:



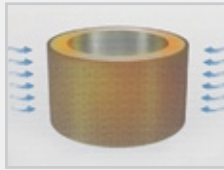
1. Base ring.  
The assembly.



2. Capsule assembly.  
Powder filling

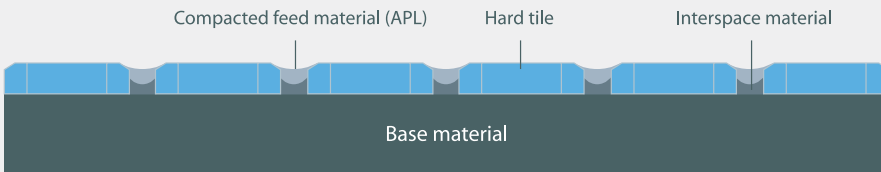


3. Evacuating and  
sealing. Hot isostatic  
pressing (HIP)



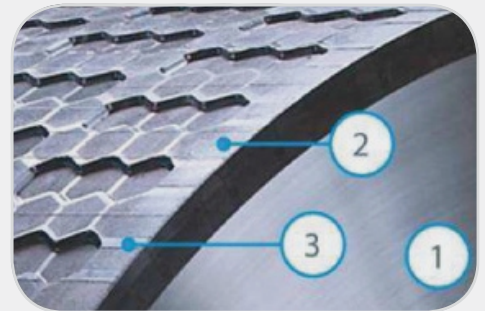
4. Removing the capsule.  
Hardening.

### Principle of the HEXADUR® Surface



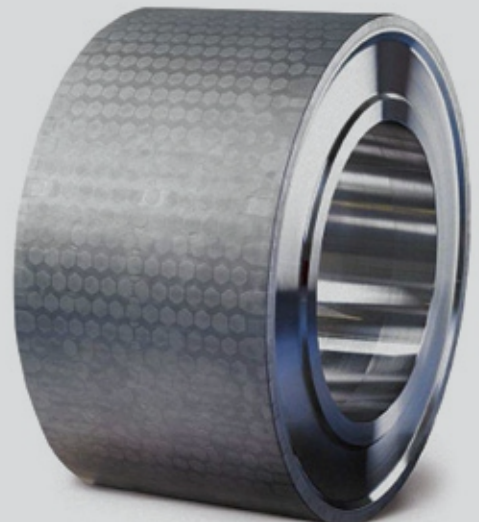
### HEXADUR® Pattern

The use of tool steel or carbide-rich metal matrix composites (MMC) for the hexagonal tiles gives strong wear resistance when grinding abrasive materials. material (3).



### HEXADUR® Multi Material Wear Protection System consisting of a:

1. Base material
2. Wear resistant HEXADUR® tiles
3. Tough interspace filler material





## Particle size reduction

Impact Crushers / V Roller Max /

Others: Hammer Mills - Lumpbreakers - Fine Grinders - Waste Recyclers - Chain Mills.



### V ROLLER MAX

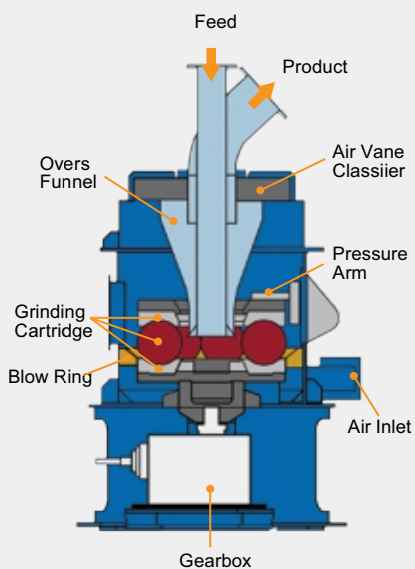
The STEDMAN V Roller Max is an Air Swept Fine Grinding System. Similar to vertical Raymond mills but introducing a new grinding media technology with results comparable to traditional ball mills.

Feed material enters the center of lower ring and flows to pulverizing zone through centrifugal force. Material is air-swept for classified conveyance by means of an air stream supplied through the blow ring. Fine powder is air-swept to a second classification zone.



### CRUSHERS

Primary secondary and tertiary impact material crushers. Horizontal and vertical shaft.



VERTICAL IMPACTOR



HAMMER MILL



DUAL ROTOR CRUSHER



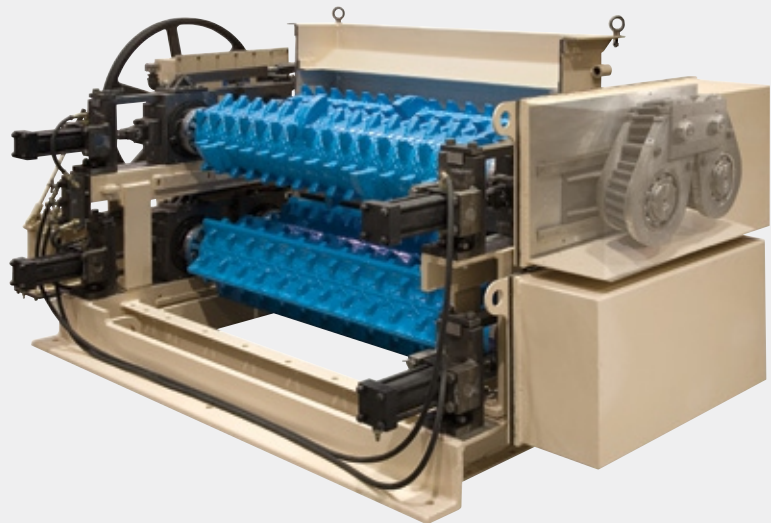


## Size reduction and Material handling equipment

TerraSource Global is the ultimate resource for material processing and handling equipment, uniting market leaders whose brands are recognized and trusted around the globe.



Single-Stage, Two-Roll Crushers  
Two-Stage, Four-Roll Crushers  
Nanosiz-R® Roll Mills



### MULTI-ROLL CRUSHERS

Gundlach roll crushers are available in four model series with single-stage and two-stage designs and produce precise product sizing with fewer fines.



Single Roll Crushers  
Impactors (Reversing)  
Granulators  
Sizers  
Breakers  
Jaw Crushers  
Posimetric® Feeders



### MOUNTAINEER SIZERS

Mountaineer II Sizers are designed for primary or secondary sizing of coals, industrial minerals and ores with minimum fines.



### COALPACTORS

Coalpactors effectively reduce the size of coals and are ideally suited for fluid bed boiler plants. They're also popular for crushing metallurgical coal for coke.





**MULTOTEC**  
You Mine | We Refine



## Hidrocyclons

High capacity classification cyclones / MAX dense medium cyclones / Pulp distributors / Cyclon distributors / PU, RUBBER and CERAMIC lining.

## Gravity Concentration

Gravity concentration is used as a lowing ilm concentrator in several wet processing. With the advantages of relatively low capital cost and virtually no operating cost (reagents, consumables, power, wear).



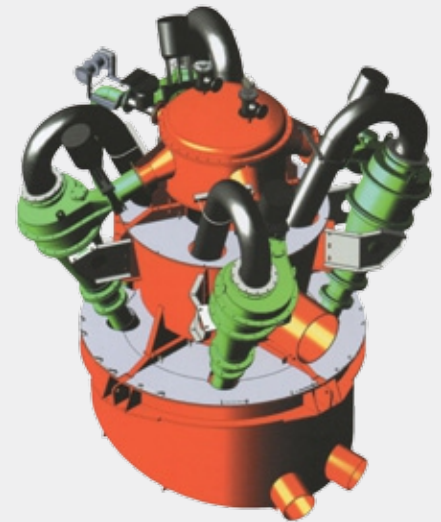
### HIDROCYCLONS

Multotec has designed and optimized cyclons for diferent applications:

- High capacity classification cyclons.
- VV Cyclons.
- Compression rubber moulded range cyclons
- Max dense medium cyclons.
- Cast iron dense medium cyclons.
- Additional components like pulp distributors and overflow launders.

### Applications:

Industrial minerals / Coal / Metallic ores / Fer tilizers in wet processing / Chemical industry / Iron ore / Zinc / Tinc and similar.



### SPIRAL CONCENTRATORS

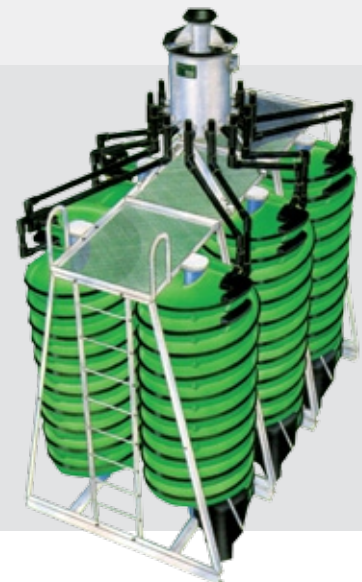
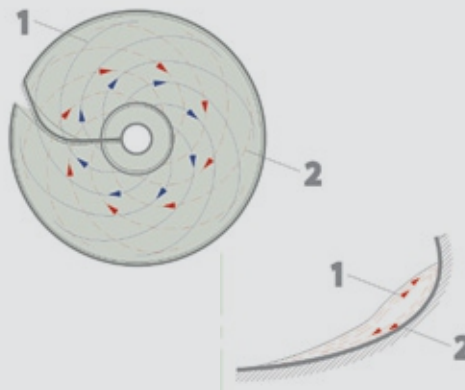
Coal spiral concentrators. SX4 / SX7 / MX7.

Heavy minerals spiral concentrators. HX5 / SC.

Pulp distributors, pipe launders systems.

**Centrifugal forces drive low in outer direction:**

(1) Upper layer goes radially outwards, and low returns radially inwards at the bottom as a result of (2) friction at bottom = low velocity low centrifugal forces. Resulting in circulation and in radial direction superimposed on main low.







## Sampling Systems

Cross belt sampling system (dry) / Cross stream sampling systems (dry and wet) / Two-in-one samplers (wet) / Dividers, sampling collectors, sampling milling and collectors / Complete systems.



**MULTOTEC**  
You Mine | We Refine

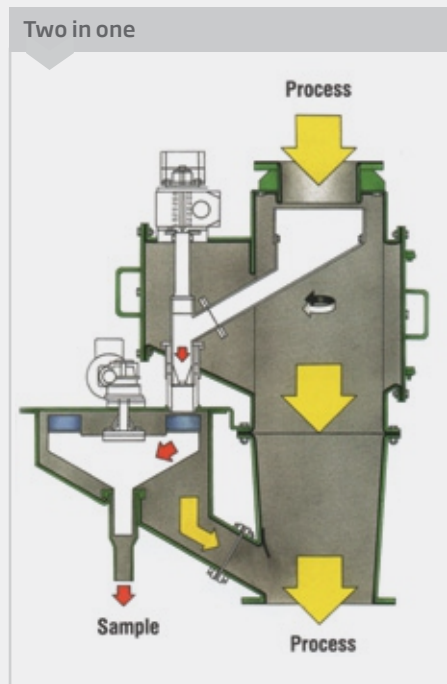
## Magnetic Separators

A complete equipment line for wet and dry application of magnetic separators.



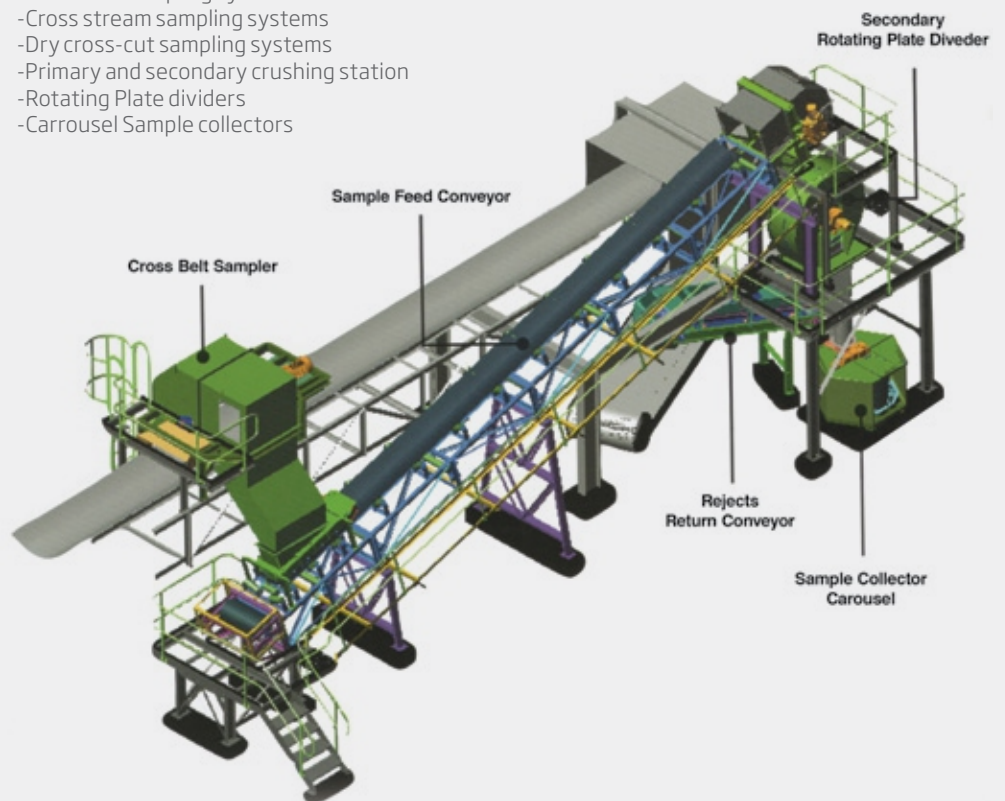
### WET SAMPLING SYSTEMS

- Wet cross cut sampling solutions
- Two in one sampler



### DRY SAMPLING SYSTEMS

- Cross belt sampling systems
- Cross stream sampling systems
- Dry cross-cut sampling systems
- Primary and secondary crushing station
- Rotating Plate dividers
- Carrousel Sample collectors

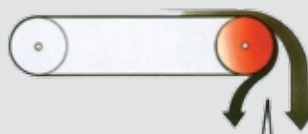


### MAGNETIC SEPARATION

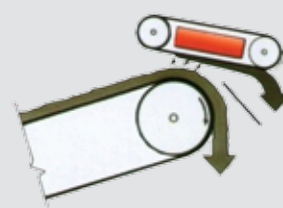
Wet drum magnetic separator / Wet high intensity magnetic separator / Induced magnetic separator / Magnetic roll separator / Overbelt magnetic separator / Magnetic drum separator.



WET DRUM



MAGNETIC ROLL



OVERBELT



MAGNETIC DRUM



The material handling problem solvers. PEBCO is the major manufacturer of valves, diverters, feeders, dustless loading systems and chutes for the bulk material handling industry.

## Loading Systems

### Spouts and feeders

Dustless Loading Spouts. Telescopic Chutes. Cleveland Cascade Chutes. Mass Flow Feeders. Uni-load Systems.

#### AUTOMATED TRUCK LOADOUT



- ✓ The bulk loading systems of the future, loading railcars or trucks with amazing speed and high weight accuracy.

#### DUSTLESS LOADING SPOUT



- ✓ The Dustless Loading Spout (DLS) from PEBCO is available in many models and configurations engineered to withstand the rigors of harsh daily industrial use.

Each system is designed to minimize the emission of dust into the environment while loading dusty, free-flowing materials into a wide variety of containers and vehicles.

#### CLEVELAND CASCADE CHUTE



- ✓ Strong, simple and highly flexible The Cleveland Cascade® Chute consists of a series of oppositely inclined cones, supported by straps, and surrounded by an independent wind shroud.

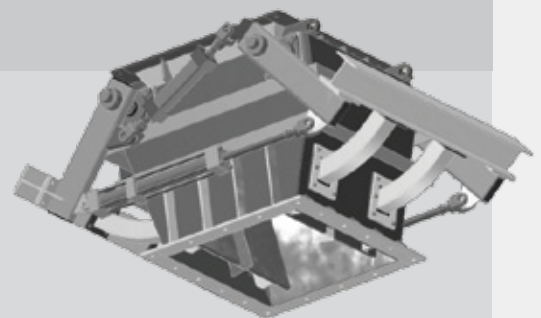
A carrier at the lower end of the chute is raised or lowered by cables from a winch assembly. When lifted, the carrier supports the compact stack of cones, while the cones themselves automatically stack into one another without any form of guide.

#### AUTOMATED RAILCAR LOADOUT



#### MASS FLOW FEEDER

The mass flow feeder was introduced for solving the problems associated with asymmetric funnel flow, funnel flow, and rat-holing. The need to develop a solution to aid in the solving of the asymmetric flow problem discovered in many silos.







## Material handling valves

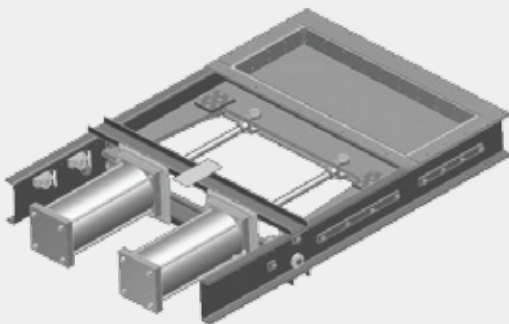
Slide Gates. One-Way Rolling Blade Gates. Clamshell Gates.  
Diverter Gates. Lock Gates.



### › SLIDE GATES

The most used valve in the bulk industry re-engineered to achieve low operational costs and low initial investment.

Heavy-duty structural design. Product contact surfaces made of abrasion resistant steel. Heavy-duty regreasable rollers with cast nylon high strength cryogenic slide bars as optional. Displacement pocket. Perimeter seals with an option for each app.



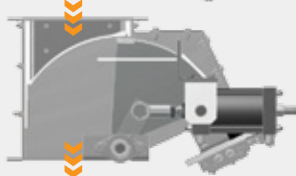
### › ROLLING BLADE GATES

The Rolling Blade Gate incorporates a camming into the seal for a positive cut-off.

CLOSE

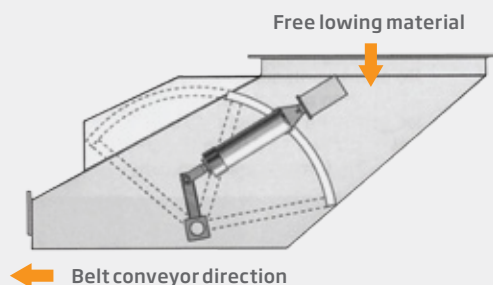
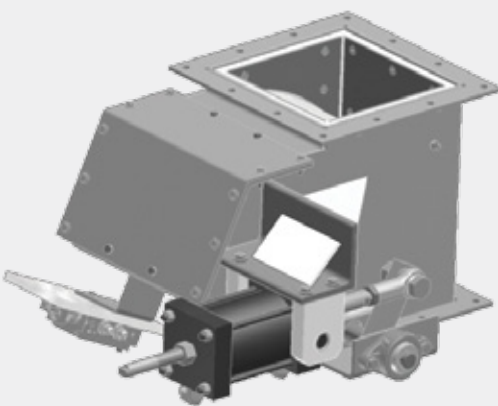


OPEN



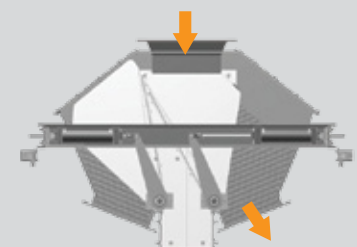
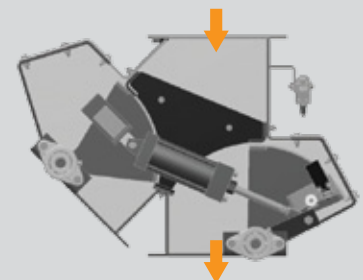
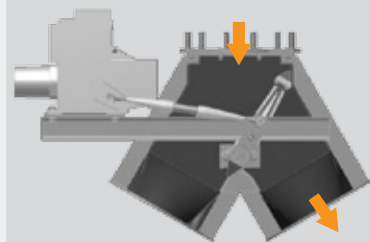
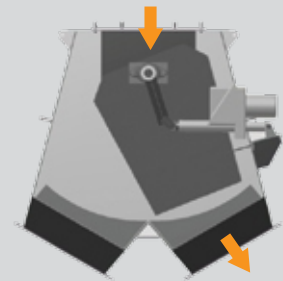
### › ROLLING BLADE BELT FEEDER

Using the rolling blade features and advantages the RBBF unify high availability with a very reliable low cost of investment and operation for loading free flowing material into belt conveyors.



### DIVERTERS

Single blade diverters. Double blade diverters. Basket diverters. Bucket diverters. Two way rolling blade diverters.





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