



MULTOTEC

PROCESS EQUIPMENT

High Capacity Classification Cyclones



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Multotec Pty Ltd



- The Multotec Group, established more than thirty years ago, is a Johannesburg South African organization with German shareholding. Its core business is the supply of products and services to the mining, mineral beneficiation and power generation industries.
- The group comprises four main operating entities, each with its own product range and associated services, namely Multotec Manufacturing, Multotec Process Equipment, Multotec Wear Linings, and Multotec Rubber.



Resources Mining Technologies [RMT]



- Florida based Resources Mining Technologies [RMT] is the key Multotec Product Distributor and Servicing Agent for the United States.
- In addition to RMT's extensive Multotec and RMT proprietary product offerings, the RMT organization has an established reputation for providing optimum mineral processing technical solutions and the highest levels of personal support. RMT provides direct assistance of appropriate equipment selection through to delivery accuracy, both hot and cold commissioning. RMT offers the very best industry equipment guarantee and even includes vital routine on-site equipment inspections and reporting to help eliminate unexpected costly down time.

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Resources Mining Technologies [RMT] Partners



Multotec -
PROCESS EQUIPMENT
[Edmonton, Canada]



Manhattan -
BALL MILLS
[New York, USA
RSA,]



Tema Systems Inc. -
**VIBRATORY SCREEN
PANELS**
[Cincinnati, OH USA]



Hazen Research -
**METALLURGICAL
RESEARCH**
[Golden, CO USA]



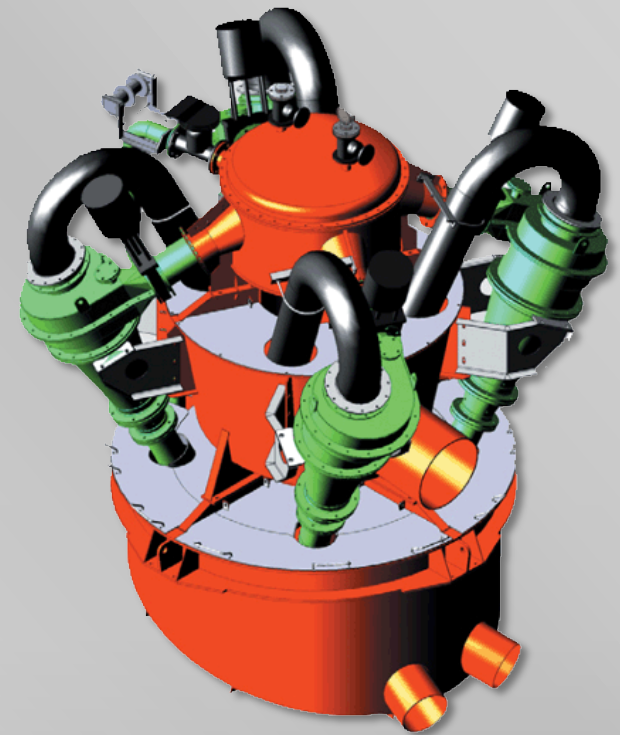
McClelland Laboratories, Inc. -
METALLURGICAL TESTING
[Sparks, NV USA]





Multotec Cyclone Distributors

- ✓ Cost effective
- ✓ Highly efficient
- ✓ Long lasting
- ✓ Custom designed to meet client requirements
- ✓ Multotec cyclone distributors are fabricated from mild steel and lined internally with rubber or alumina tiles
- ✓ Highly qualified RMT metallurgical staff ensure prompt and accurate advice on all aspects of cyclone sizing and distributor design
- ✓ The Multotec cyclone distributors are designed to be compact in order to minimize the floor area required, but still provide adequate space for access and maintenance
- ✓ The underflow launder is designed for floor level installation to allow visual inspection of the spigot discharge and easy spigot maintenance



General Features

- ✓ Galvanized mounting brackets provide ease of alignment
- ✓ Galvanized splash covers
- ✓ Light weight overflow pipes for ease of maintenance
- ✓ Diaphragm or knife gate valves (pneumatic or manual)
- ✓ Distributors are trial assembled during manufacturing to ensure correct alignment



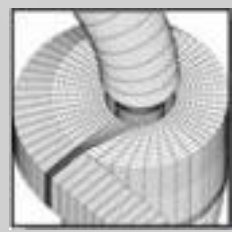
A multiple arrangement of cyclone distributors undergoing trial assembly prior to delivery to a diamond operation



High Efficiency Inlet Designs

The heart of the Multotec cyclone range

Through extensive testing and simulation, Multotec Process Equipment has proven that both the scrolled evolute and ribbon inlet designs have a higher capacity when compared to other inlet designs. These designs substantially reduce vortex finder wear, thereby reducing operating costs whilst maximizing cyclone efficiency.



The scrolled evolute design of the HC and HR cyclone ranges



The ribbon inlet design with patented pressure bulge for the PC range





General Features

Lightweight overflow elbow

Overflow elbows are made from an abrasion-resistant polymer that is lightweight requires no corrosion protection and is cost-effective. A rubber sleeve is fitted to reduce wear at the vortex finder discharge



Vortex finders

The scrolled evolute and ribbon inlet designs reduce vortex finder wear to the degree that polyurethane or rubber lined vortex finders can be used cost-effectively



Loose liners

All wetted surfaces are lined with 15 or 25mm thick loose, replaceable rubber liners which have up to three times the life of conventional liners. This reduces operating costs, maintenance and stock holdings. Alternative liners, such as polyurethane and silicon carbide are available. For extremely abrasive applications, housings lined with 25mm alumina tiles can be supplied.



General Features

Weep holes prevent damage to housing

Outer housings are fitted with weep holes located in the highest wear areas. Slurry dripping from the weep holes gives an early indication that the liner needs replacing preventing housing wear. HC and HR cyclones incorporate mild steel shell housings, while PC cyclones incorporate light weight, rust resistant, fibre-reinforced composite housings.



Spigot

The spigot is housed in a light-weight holder, the design of which enables easy inspection and/or replacement of the spigot. Inserts are available in either polyurethane or silicon carbide.



Cyclone distributors

We offer distributors for larger multiple cyclone operations. These assemblies have been designed to ensure cyclone operation and are extremely compact.





High Capacity Classification Cyclones



HC CYCLONES

- 25mm thick replaceable natural rubber liners
- Mild steel shells



PC CYCLONES

- 15mm thick replaceable natural rubber liners
- FRC cone shells



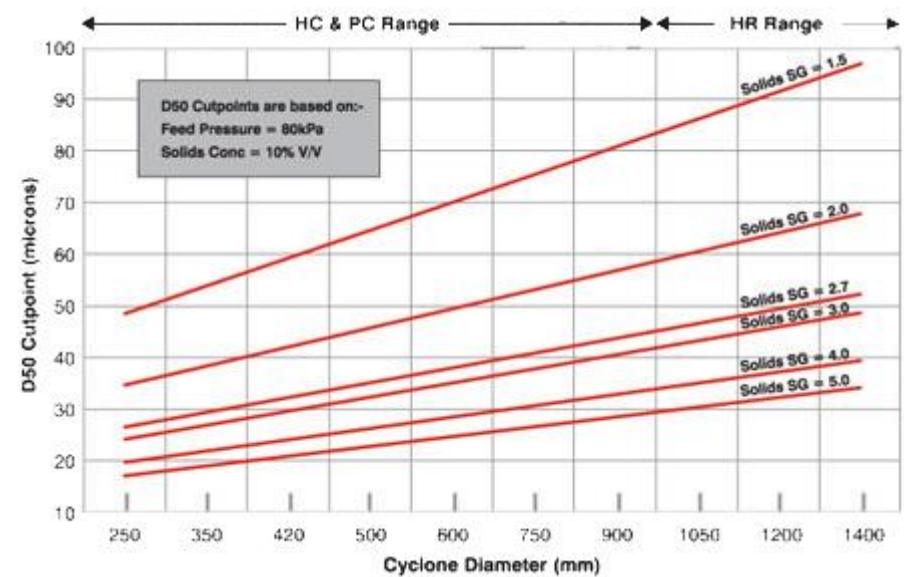
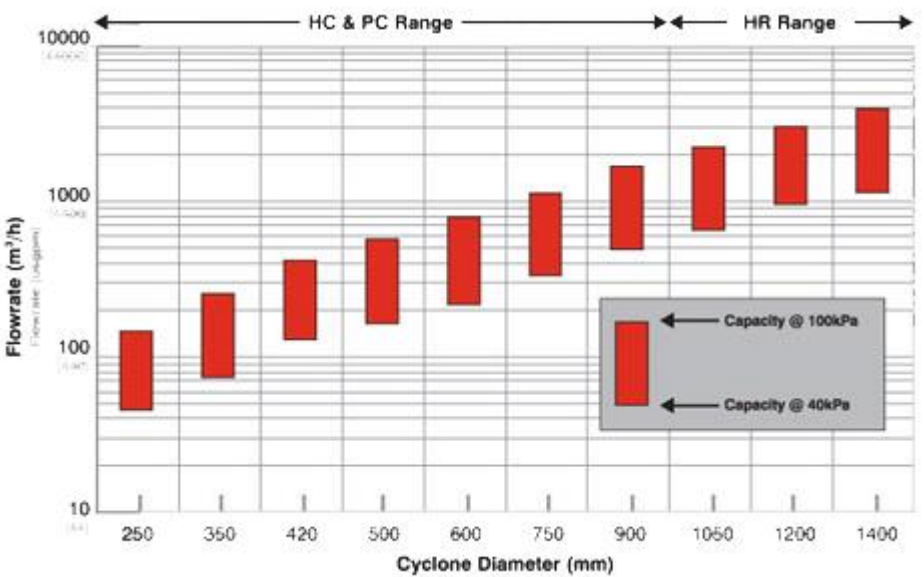
STACKER CYCLONES

- All rubber-lined cyclones can be supplied in a stacker cyclone configuration, complete with flapper valve, rubber lined overflow elbow and air-bleed/vacuum gauge arrangement.
- Stacker cyclones are ideally suited to duties where maximum underflow densities are required and the tonnage of solids handled by the spigot, fluctuates.





High Capacity Classification Cyclones



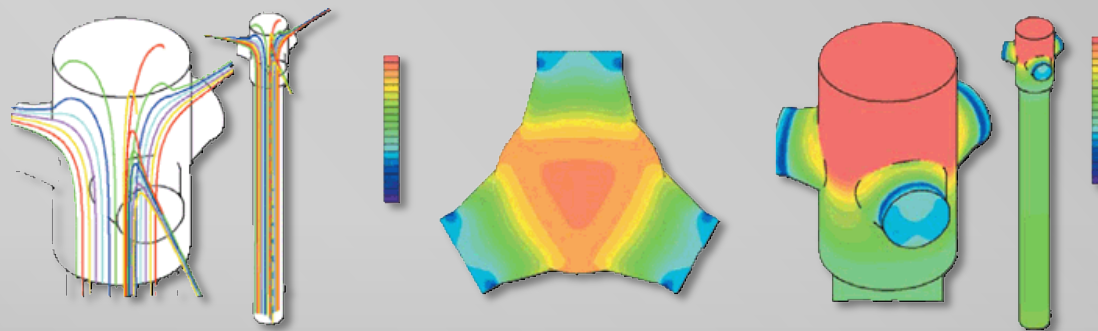
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The Pulp Distributor

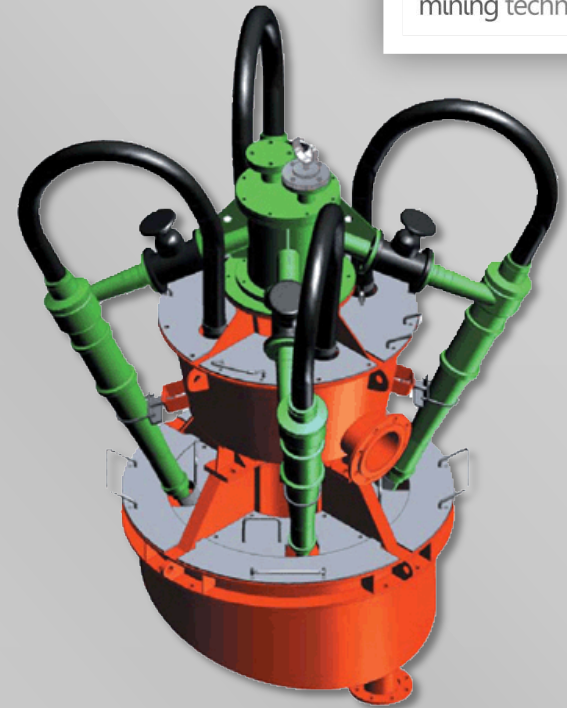
- ❑ Within a Multotec cyclone distributor, careful consideration is given to the design of the pulp distributor. This design has to ensure an even distribution of flow and an equal split of solids, whilst minimizing wear through the outlet pipes. Multotec cyclone distributors feature a replaceable solid polyurethane wear pad to protect the internal lining of the pulp distributor and increase operating life
- ❑ Cyclone distributors can be provided with pulp distributors that are either top fed or bottom fed
- ❑ The pulp distributor is supplied with a pressure gauge port and pressure gauge in order to monitor cyclone performance

Computational Fluid Dynamic Analysis Studies



Overflow Launder

- ❑ Individual cyclone overflows discharge into a common launder life
- ❑ Launder outlet pipe is sized to allow the maximum flow rate to discharge under gravity
- ❑ Outlet can be oriented to suit client requirements
- ❑ Overflow launder can be fitted with either fixed splash covers, which double as foot plates or removable splash covers, which allow sampling
- ❑ Launder is lined with rubber or ceramic tiles



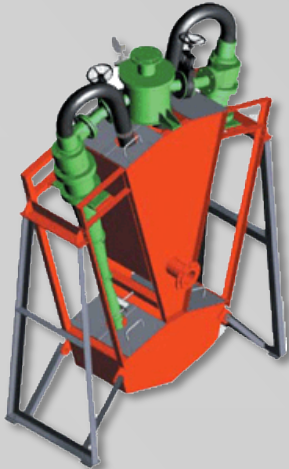
Underflow Launder

- ❑ Individual cyclone spigots discharge into a common underflow launder
- ❑ Large diameter outlet pipe and correct angle of tank base ensure that the dense spigot product can discharge under gravity
- ❑ Launder is rubber lined or ceramic tiled
- ❑ Removable splash covers minimize splashing spray whilst allowing quick access to spigots



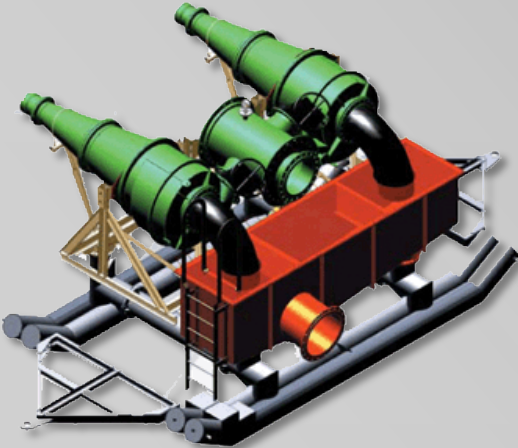


Various Cyclone Distributor Designs



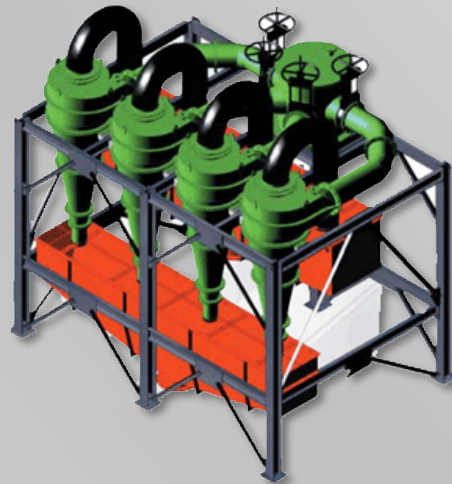
DUPLEX CYCLONE DESIGN

- Compact Design
- Low Cost
- Ease of operation



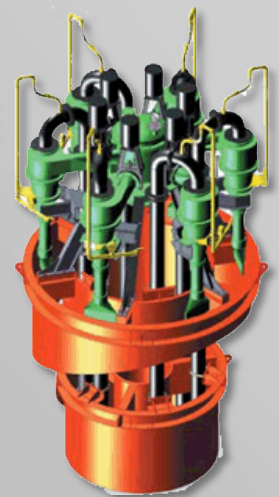
SKID MOUNTED CYCLONE DESIGN

- Specialized applications
- Ease of transport



INLINE CYCLONE DESIGN

- Small footprint
- Low capital cost

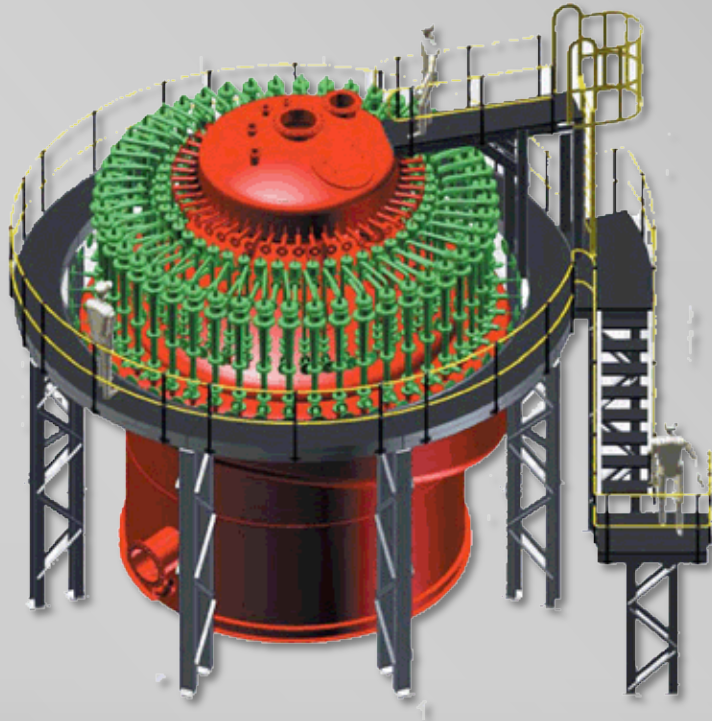


RADIAL STACKER CYCLONE DESIGN

- Compact design
- Ease of operation



Walkway and Access Platforms



WALKWAY AND ACCESS PLATFORMS

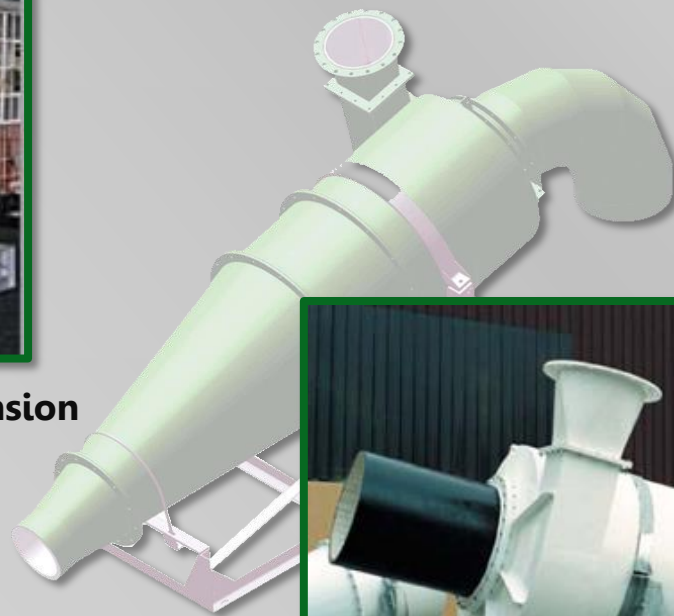
- Engineered to the highest standards
- Customized to suit client requirements



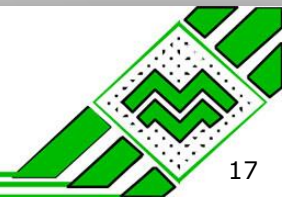
DMS Cyclones



A MAX1000 fitted with vortex extension

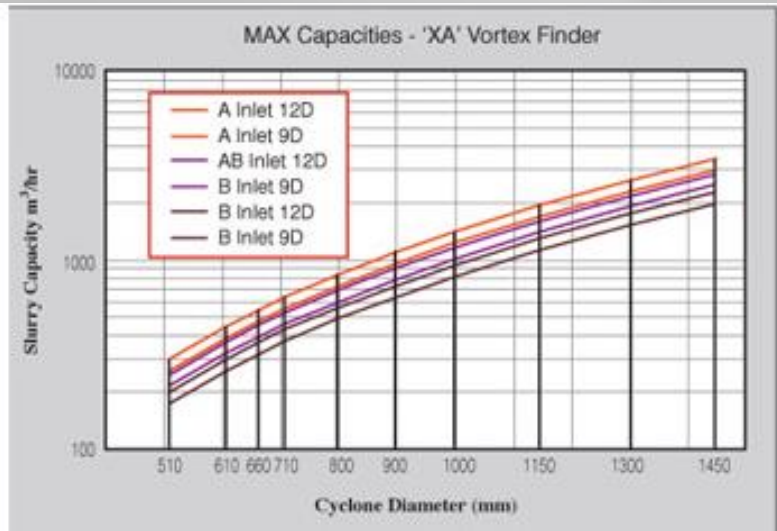
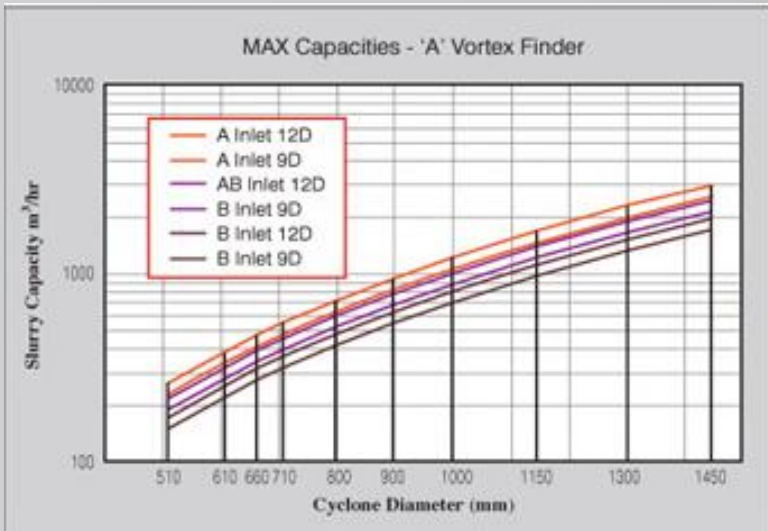


A MAX1450 awaiting shipping to an Australian coal operation





DMS Cyclone Fittings



The MAX range of cyclones is available with the following fittings:

- Inlet Nozzle** – A, AB and B
- Vortex Finder** – XA and A
- Spigot** – Normal High Capacity and Extra High Capacity

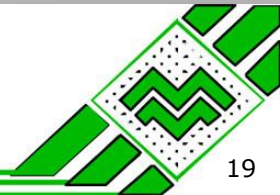




DMS Cyclone Installed On-Site



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Twin Ceramic Lined Cyclones Installed



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Cluster Hydrocyclones Benefits



Polyurethane cluster cyclones allowing easy adjustment of cut point and operating pressure for optimization of separation partition curve.



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Cluster Cyclone Installation



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Milling Circuit Cyclones



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Cyclones Loaded for Transport



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Ceramic Components



Multotec Manufacturing Facilities



Quality and Excellence

Based in Johannesburg, with branches nationwide as well as further afield in Africa, Australia and South America, the Multotec Group has several comprehensively equipped manufacturing facilities which produce specific product lines. Quality remains an integral part of the group's ongoing strategy and the entire organization is ISO 9001:2008 certified.



Multotec Group Polyurethane Screen Panels Facility



- Polyurethane Screening Systems and Accessories
- Polyurethane Spray Nozzles
- Conveyor High Impact Loading Points
- Polyurethane Flotation Cell Rotors, Stators and Accessories
- Fibreglass Floor Grating & Walkway Systems

Multotec Group Wedgewire Screen & Basket Facility



- Wedgewire Screening Systems (centrifuge baskets, sievebands, cylinders and flat panels)
- Trommel Screens (self-driven, mill and scrubber discharge)
- Steel Fabrication (sieveband housings, screen frames, trommel screen frames)



Multotec Group Spirals Manufacturing Facility



- Cyclones
- Spiral Concentrators
- Sampling Systems
- Rhodax Inter-particle Crusher
- Process Consulting

Multotec Group Cyclones Manufacturing Facility



- Flotation Cell Rotors
- Flotation Cell Stators
- Flotation Cell Hoods
- Flotation Cell Accessories



Multotec Group Rubber Production Facility



- Mill and Scrubber Rubber Liners
- Rubber Impact Wear Plates
- Rubber Screen Panels
- Conveyor Loading Points
- Composite Liners

Multotec Group Ceramic Production Facility



- High Density Alumina Ceramics
- Cast Basalt Linings
- Epoxy Linings and Adhesives
- Multoslip Low Friction Linings



Cyclone Installation Base



SANDS & CONCRETE

A.E.C.I.	Ash	4	V250-20-0	Classification
Namakwa Sands "Project 1000"		1	HC750-L15-0/A-A/120 C/W FULL	
Namakwa Sands-Lutzville		2	VV165-8-0/A-B/30 C/W 180 DEG	
Serina Kaolin	Kaolin	3	V250-15-0	
Exxaro Sands (Pty) Ltd (Ticor		4	VV165-15-0/A-B/55 C/W 180 DEG	
Richards Bay Minerals Pty Ltd	Beach Sands	1	R500-20-0	Classification
Richards Bay Minerals Pty Ltd	Beach Sands	3	V250-15-0	Stacker
Consol Glass Cape	Silica	1	V350-15-1	Classification
Super Stone	Silica	1	V250-20-0	Classification
Tema Multotec	Silica Sands	1	HC750-15-0	Classification
B & E Silica		1	VV250-15-0/A-A/15 C/W 180DEG	
Namakwa Sands	Heavy Metals	1	MP750-15-0	

*** 107 Additional Cyclone Sands & Concrete Installations with References Available Upon Request**

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Cyclone Installation Base



COAL

Adp Projects Pty Ltd	1	C360-20-0	Dense Medium
Anglo Belgian	1	C100-180-2	Densification
Anglo American - Iron Duke Min	1	V250-150-2 COMPLETE WITH	
Anglo Operations Limited	1	HA500-20-0/A-B/130 C/W 105	
Arthur Taylor Coll	8	C660-20-0	Dense Medium
Bank Colliery	4	C610-20-0	Dense Medium
C.L.I. (America)	6	C360-20-0	Dense Medium
Corby Rock Colliery	1	C610-20-0	
D.R.A.	12	V165-8-0	
Douglas Colliery Ltd	10	C660-20-0	
Ermelo Mines	4	RP500-15-1	
Exxaro Coal (Pty) Ltd (Grooteg	2	C510-20-1/B-A/170 C/W 90 OE	

*** 1102 Additional Cyclone Coal Installations with References Available Upon Request**



Cyclone Installation Base



GOLD

Anglogold Ashanti Ltd-Samts No	1	PD550/4/4/300 RUBBER LINED	Milling
Aurec (France)	28	GV250-20-0	Slimes Dam
Avgold - E T C Div.	2	V165-8-1	Backfill
Barbrooke Mines	2	R750-15-0	Milling
Bikita (Zimbabwe)	1	C360-20-0	Dense Medium
Bikita (Zimbabwe)	1	GV350-20-0	Milling
Consolidated Murchison Ltd	1	HC500-L20-0/A-B/80 C/W 180 OE	Milling
Crown Gold Recoveries	10	HC420-15-0	Tailings Dewater
E.R.G.O.	130	V250-20-0	Dewatering
East Driefontein	16	HC600-20-0	Milling
Freda Rebecca Mine	20	V100-8-1	Dewatering
Harmony Gold Mine	19	V350-15-1	Backfill

*** 298 Additional Cyclone Gold Mine Installations with References Available Upon Request**

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Cyclone Installation Base



HUNDREDS OF OTHER CYCLONE INSTALLATION LOCATIONS...

PULP AND PAPER	4		
FGD	1012		
PLATINUM	372		
WASTE TREATMENT	4		
ALUMINUM	106		
DIAMONDS	1314		
FLUORSPAR	22		
TIN	5		
ZINC	23		
MINERAL LEAD AND ZINC	5		

* Contact References Available Upon Request



Cyclone Installation Base



HUNDREDS OF OTHER CYCLONE INSTALLATION LOCATIONS...

SUGAR AND SALT	6		
MINERAL TAILINGS	3		
TITANIUM	3		
COPPER AND COBALT	6		
CHROME	203		
NICKEL	44		
COPPER	64		
URANIUM	22		
IRON	53		
MANGANESE	7		

* Contact References Available Upon Request



Cyclone Presentation

This Presentation can be downloaded
from the RMT Gold Technology Website

www.resourcesgoldtechnology.com/our-partners.html

