

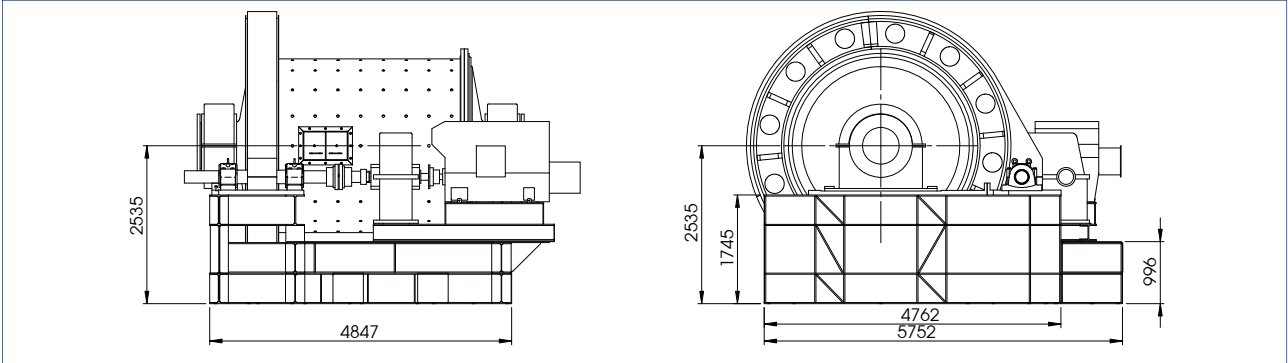


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IN MINING AND PROCESS SOLUTIONS

MILLING PROJECT SHOWCASE

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TURNKEY BALL MILL SUPPLY, INSTALLED AND COMMISSIONED



Customer	Bumigeme Inc - Canada
Project Value	ZAR 3 million - ZAR 5 million
Mineral	Gold
Customer's Needs	Greenfields project for West Africa
Benefits to Customer	Reduced CAPEX, 3 month delivery time
Engineering Services Provided	Refurbishment of Ball mill, liner installation, FEA tests and non destructive tests, Installation and commissioning, Re-metal of white metal bearings and refurbishment of Lubrication units. Design and manufacture of new electrical panel Critical operating spares
Project overview	Supply refurbished 10x12ft, 350kW ball complete with Lubrication unit, Installation, alignment of mill ,commission and critical spares supply

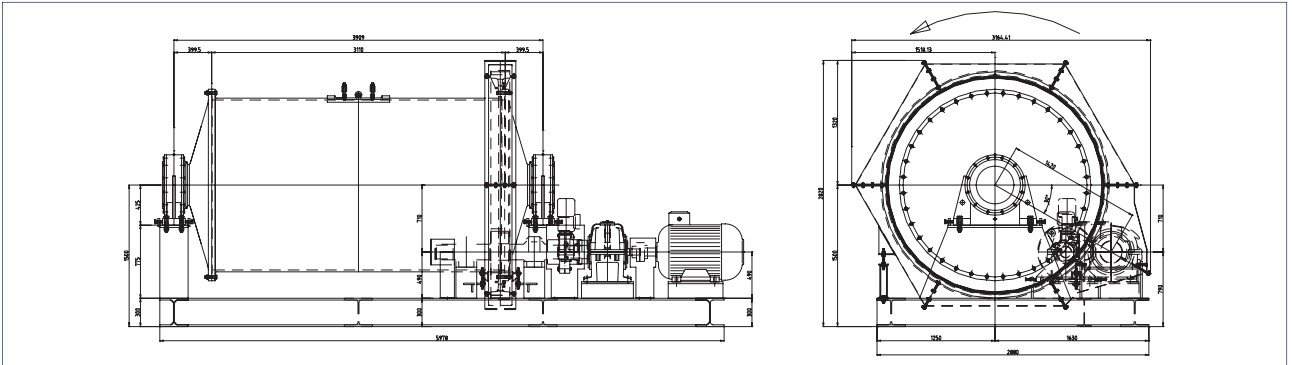
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7 X 10FT BALL MILL WITH DUAL DRIVE



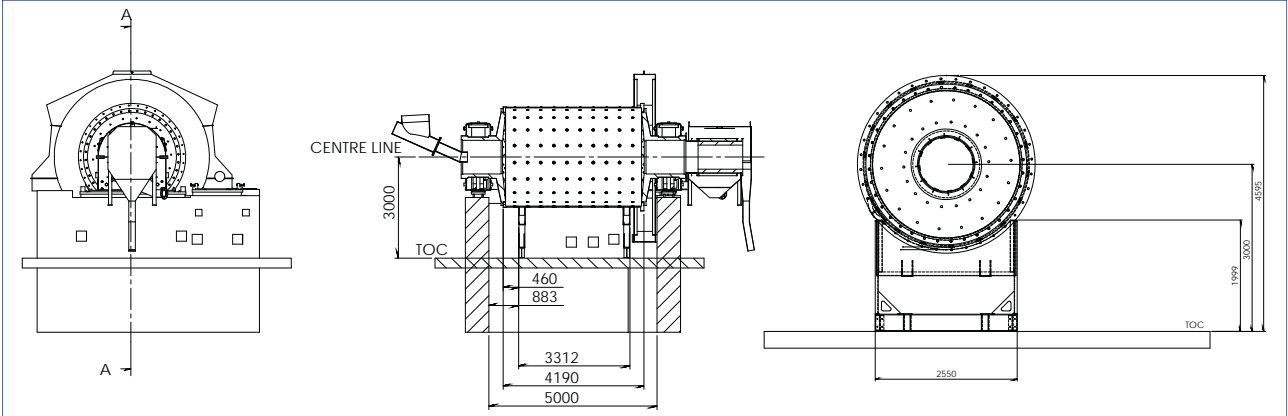
Customer	Barbra Mining Ghana Ltd
Project Value	ZAR 1 million - ZAR 5 million
Mineral	Gold
Customer's Needs	Grinding mill for gGravity or heap leach gold recovery
Benefits to Customer	Refurbished mill more cost effective than new, quick turnaround time
Project overview	<p>REFURBISHED BALL MILL</p> <ul style="list-style-type: none"> - 2x 90kW drives and gearboxes - Re-rubber lined trommel - Designed and manufactured new feed chute - Refurbished / replaced plummer blocks and bearings - Designed and manufactured new guide wheel

6X10 FT BALL MILL ON SKID BASE



Customer	Lonmin Platinum Plc
Project Value	ZAR 3 million - ZAR 5 million
Mineral	Platinum
Customer's Needs	To be used as a repulper mill in the platinum dump section
Benefits to Customer	New mill with warranty
Project overview	<p>Continuous Ball Mill: Mill diameter: 1,800 mm - Mill length: 3,100 mm - Motor power: 110 kW</p> <p>Consisting of: Mill drum with feeding and discharging trunnions, Mill bearing units with roller bearings Automatic lubrication unit for gear rim. Installed on Steel Chassis</p> <p>Drive unit: -Main electric motor 110 kW, 1500 rpm, 380 V -Input coupling -Main gearbox -Output coupling - Chassis of drive unit - Pinion gear and bearing units - Rim gear of the mill and rim gear protection - Anchorage parts</p> <p>Electric Control Board - 132 kW frequency inverter.</p>

MILL TO PROCESS PYROLUSITE FOR URANIUM PLANT



Customer

MDM Technical Africa

Project Value

ZAR 4 million - ZAR 8 million

Mineral

Pyrolusite (Uranium)

Customer's Needs

Needed mill to process Pyrolusite for a Uranium plant

Benefits to Customer

Reduced CAPEX, quick delivery time

Engineering Services Provided

Refurbishment: Mill & Related Components

Logistics: transport, loading: Project management of the repair and logistics

Project overview

Refurbishment of:

Mill Shell
Girth Gear
Gearbox Base Plates
Motor Base Plate
Electrical Starter
Guards and Covers
Trommel Hood
Manhole door and cover
Instrumentation

Feed Trunnion
Pinion Assembly
Pinion Base Plate
Sprocket Drive Unit
Trunnion Bearing Housings
Feed Chute
Discharge Chute
Transport Cradle
Lubrication System

Discharge Trunnion
Gearbox Assembly
Bearing Housing Base Plates
Motor 400Kw
Lubrication and Jacking System
Jacking Cradle
Pump Box
Foundation Bolts
Grease spray system

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6 X 10 FT BALL MILL , 165kW



Customer	Kaleida Project Management Company. (Pty) Ltd (KPMC)
Project Value	ZAR 1 million - ZAR 5 million
Mineral	Undisclosed
Customer's Needs	To reduce running costs
Benefits to Customer	Reduced running costs; low CAPEX, immediately available
Project overview	<p>RECONDITIONED BALL MILL - CURRENTLY INSTALLED</p> <p>Refurbished ball mill required for immediate purchase and project implementation</p> <p>Length: 10 - ft</p> <p>Diameter: 6 - ft</p> <ul style="list-style-type: none"> • The mill was fully reconditioned and never worked since installed. • New white metal bearings, steel liners installed. <p>Motor details: 165kW</p>

REFURBISHMENT OF 16X30FT PEBBLE MILL



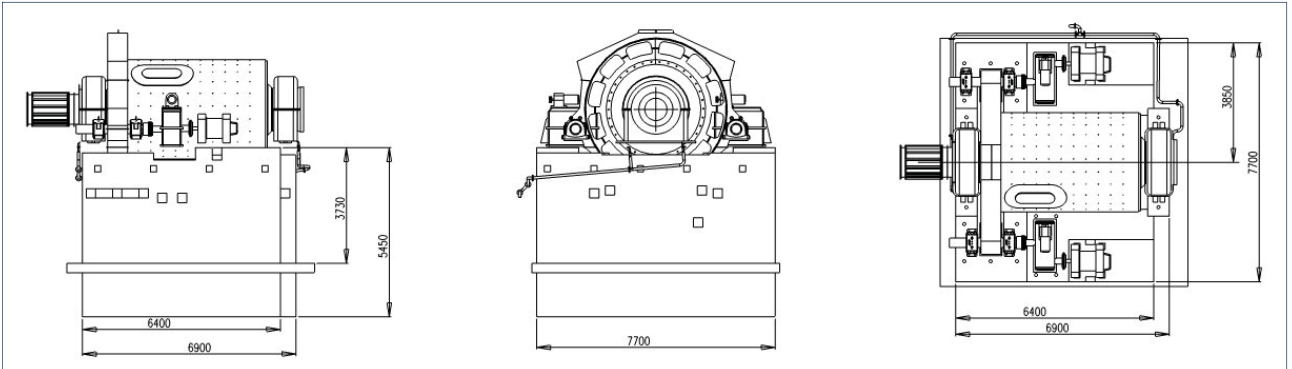
Customer	Forrest Group, DRC
Project Value	ZAR 10 - ZAR 15 million
Mineral	Copper
Customer's Needs	Turnkey 2700kW SAG mill for brownfields project
Benefits to Customer	Turnkey, refurbished, 6 month delivery time
Engineering Services Provided	Refurbishment: Mill & Related Components
Project overview	Uplift and transport to engineering works, pre-owned SAG mill NDT and compile detailed repair scope Compile civil and GA drawings for the mill Full refurbishment with some outsourced repairs under Manhattan QA project management and QC systems

2X 1200kW , 12x16ft NEW BALL MILLS



Customer	GBM Minerals Energy Consultants (c/o Jerooy - Kyrgystan)
Project Value	ZAR 30 million
Mineral	Gold
Customer's Needs	Brownfields project. Need to secure options with a lead time of 12months or less.
Benefits to Customer	New mills, manufactured to European standards. Competitive pricing. Manhattan provided the technical support in quality evaluation and overall project management of the mills supplied
Engineering Services Provided	New manufactured mills in Europe. Overall project management
Project overview	Two, 1200kW, 12x16ft ball mills, new

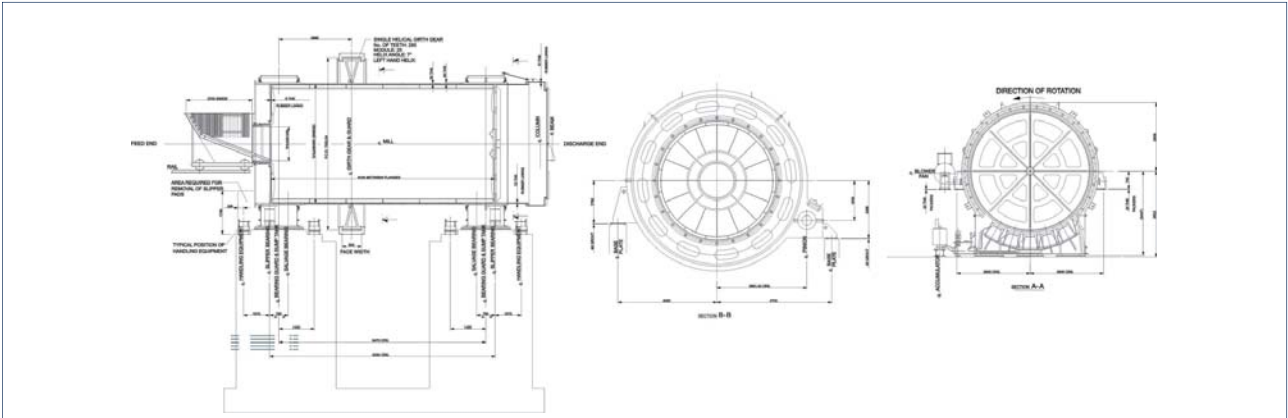
800kW TURNKEY MILL SUPPLY



Customer	Jabal Salab
Project Value	ZAR 4 million - ZAR 8 million
Mineral	Zinc
Customer's Needs	Turnkey supply of a refurbished 10x15ft 800kW ball mill for a Greenfields project in Yemen to recover Zinc
Benefits to Customer	Turnkey supply, dismantling and refurbishment QC control ; new rubber lining; project managed sub-contractors during repair scope
Engineering Services Provided	Design, Drawings Refurbishment: Mill Shell; Feed Trunion; Discharge Trunion; Girth Gear; Pinion Assemblies; Gearboxes; Sprocket drive unit; Motors 2x 400Kw; Electrical Starters; Lubrication & Jacking System; Chute & Ball Bucket
Project overview	Ball mill, 10x15ft, 800kW for Middle East Zinc project.

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3MW SAG/BALL MILL



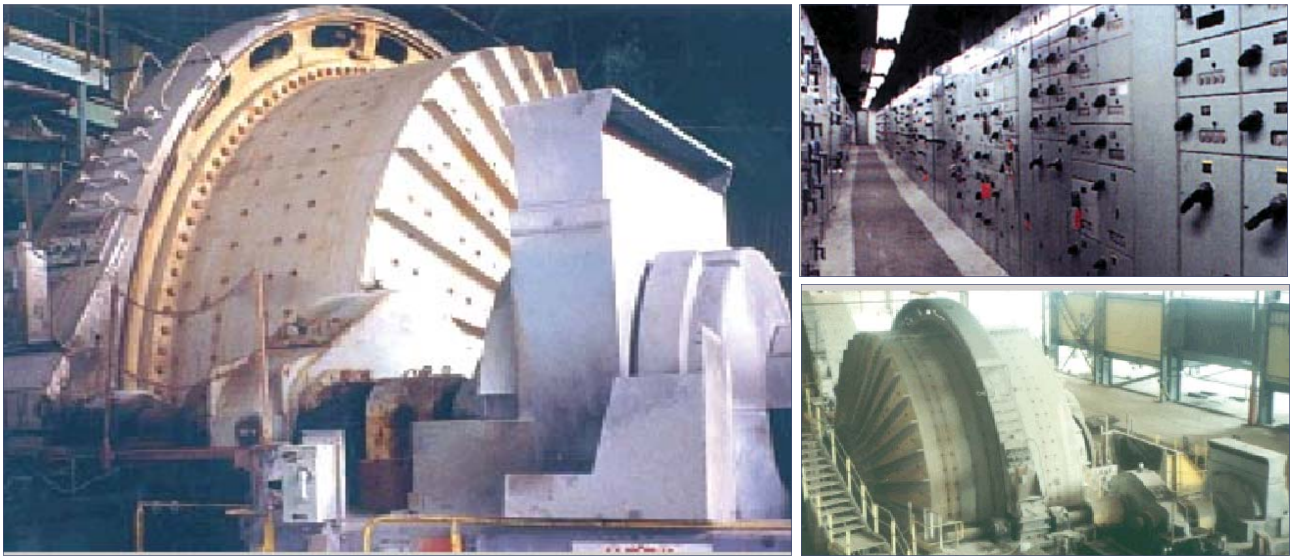
Customer	Hatch Africa (c/o Samancor Chrome mine, Steelpoort)
Project Value	ZAR 5 million - ZAR 10 million
Mineral	Chrome
Customer's Needs	New chrome processing plant for Samancor. The budget was constrained and lead time was of the essence due to market demand
Benefits to Customer	Existing 3MW SAG mill was sourced. This allowed for quick delivery time and excellent cost savings Turnkey supply - FEA, refurbished to client needs.
Engineering Services Provided	Design: Re-design of the mill from a SAG to a ball mill Refurbishment: new girth gear
Project overview	Refurbishment of mill - Mill shell shortening and rubber lining, Gearbox assessment, Motor assessment, Pinion bearings assessed, New SKEGA rubber Liners, replaced girth gear to allow for mill critical speed to be reduced from 90% to 75% of critical.

4.5X6.3M, 2200W BALL MILLS



Customer	DRA (Mimosa Mine)
Project Value	ZAR 5 million to ZAR 10 million
Mineral	Platinum
Customer's Needs	Needs 2x pre-owned mills in excellent condition
Benefits to Customer	Sourced from abroad; excellent condition, low CAPEX and quick delivery
Engineering Services Provided	Turnkey procurement and supply, from North America, delivered to RSA Detailed mill assessment, logistics: planning and execution
Project overview	2x ball mills, 2200kW supplied for a phases upgrade to an existing platinum processing plant

32x14ft SAG MILLS



Customer	Rhombus Vanadium
Project Value	ZAR 10 million to ZAR 15 million
Mineral	Vanadium
Customer's Needs	5.5MW SAG mills for ROM milling on a major process plant upgrade
Benefits to Customer	Excellent price, immediate availability
Engineering Services Provided	Turnkey procurement, dismantling and logistics from Canada to RSA
Project overview	Dismantled, shipped from Canada to RSA by Manhattan

12x28ft, 1500kW BALL MILL



Customer	DRA
Project Value	ZAR 10 million to ZAR 15 million
Mineral	Platinum
Customer's Needs	Turnkey supply, including installation and commissioning
Benefits to Customer	Excellent cost saving and quick turnaround time
Engineering Services Provided	Turnkey refurbishment
Project overview	Turnkey supply, dismantling to refurbishment, installation and commissioning