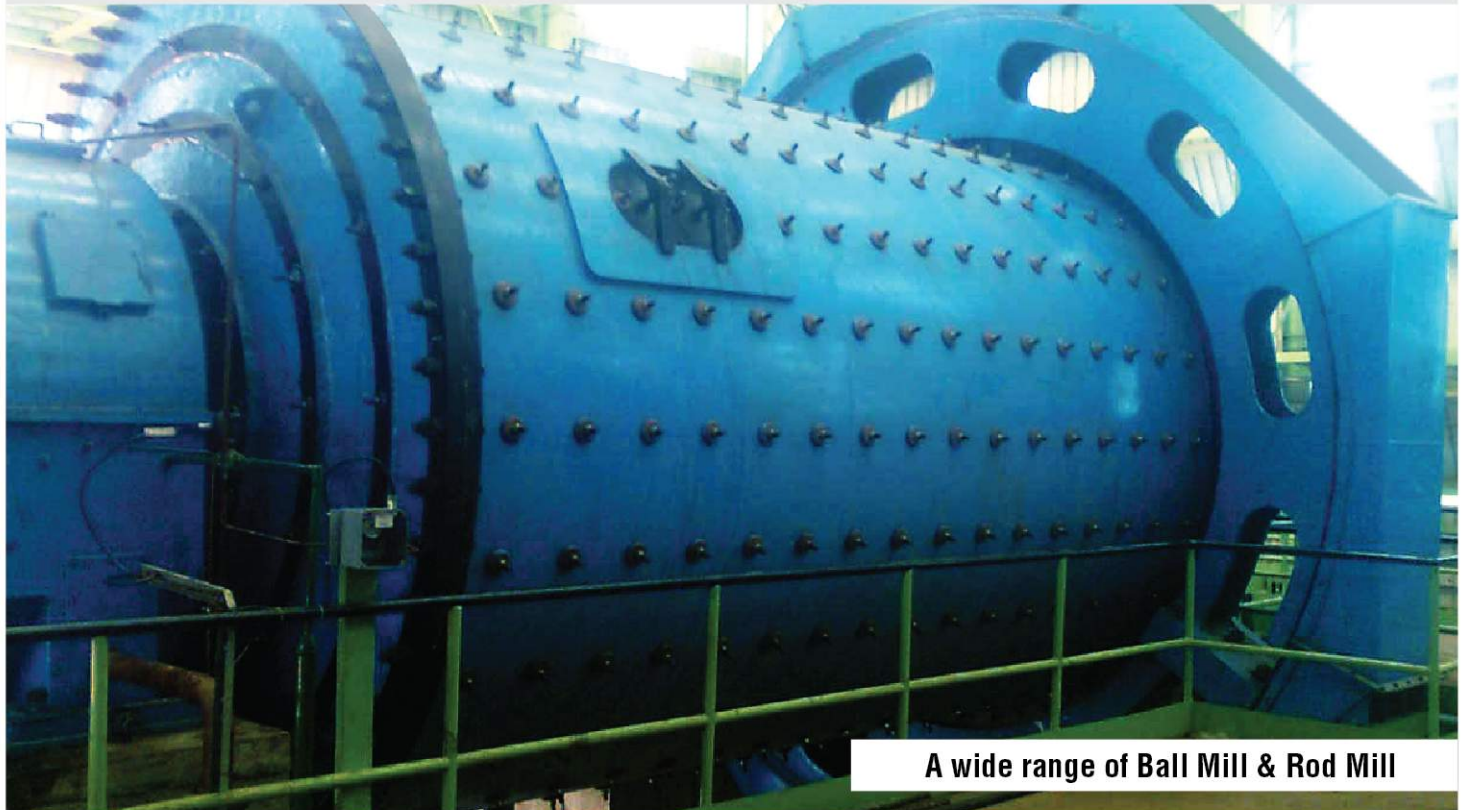


McNALLY SAYAJI ENGINEERING LIMITED

(A Member of the Williamson Magor Group)



A wide range of Ball Mill & Rod Mill

GRINDING MILL

At MSEL we believe in constantly reinventing ourselves. And in line with this we are always on the lookout for new avenues and opportunities.

McNally Sayaji Engineering Limited (MSEL), with factories in Kumardhubi, Asansol, Bangalore and Baroda, is one of the country's leading manufacturer of Crushing, Screening, Milling, Material Handling and mineral processing and other heavy equipment, serving the core sectors of the economy. These sectors include Coal, Mining, Power, Steel, Ports, Cement, Aluminium and Non-Ferrous Metals.

All manufacturing units of MSEL are ISO 9001-2008 certified with well established quality assurance department supported by modern testing facilities and

managed by a team of highly experienced professionals.

MSEL has branch offices at Kolkata, Bangalore, Chennai, Delhi, Mumbai, Hyderabad, Nagpur, Vishakhapatnam, Kochi, Vijaywada, Coimbatore. This makes MSEL capable to render comprehensive customer support.

MSEL has inducted technology over the years through strategic alliances and developed focused R&D and Design & Development teams, who offer optimum and cost effective solutions to meet customer needs.

APPLICATION

Grinding Mills are widely applied in Cement Industry, Fire resistant materials, Fertilizer Industry, Porcelain and Glass Industry, Mineral Processing Industry like Iron Ore, Lead Zinc Ore, Copper Ore, Uranium Ore etc.

Grinding is the size reduction of material by compression, impact & abrasion.

OPERATING PRINCIPLE

Grinding is done mostly in a rotating cylindrical drum or shell which is partially filled with spherical or cylindrical grinding media. The grinding material enters from one end of the drum and leaves from the other after grinding. This drum or shell rotates at a speed which is sufficient to tumble the grinding media and the material to be ground. The stresses imparted to particles during impact with the grinding media are sufficient to cause fracture of the material.

As a grinding media steel rods are used in Rod Mill and steel balls are used in Ball Mill. Semi Autogenous mill is filled with a little amount of steel ball whereas Autogenous mill uses no separate grinding media.

CONSTRUCTIONAL FEATURES

Major components of Ball mill and Rod Mill are:

Feed Chute: It is normally a fabricated steel pipe of adequate diameter and provided with inside liner.

Feed Sleeve: It is generally fabricated with mild steel. Sometimes cast steel feed sleeves are also used. Inside of the sleeve has forwarding spirals. Efficient sealing arrangements are provided at the junction of the feed chute and feed sleeve to prevent leakage of slurry in wet grinding.

Discharge Sleeve: It is generally fabricated. Cast steel discharge sleeves are also used. Discharge sleeve has reversing spirals.

Discharge Trommel: It is generally fabricated with mild steel having rubber lining inside and small aperture to discharge the ground material. Forwarding spirals are provided inside.

Mill Head: MSEL Design Mill Heads are fully integral cast Head with trunnion. It is a rotating part of the Mill and bolted at each end of the Mill Shell . The trunnion part is fully polished to minimize friction.

Mill Shell: It is fabricated from steel plate of adequate thickness and comprises the main body of the mill. MSEL has in-house facility for rolling and machining of mill shell up to 80 mm thick.

Mill Bearing: It has a removable , self-aligning , babbitted insert which protects the trunnion part of mill head. The Mill Bearings at each end are furnished with oil lubrication system and take the entire load of the mill. MSEL Mills are normally provided with High Lift Lubrication system to reduce friction & wear at start up.

Mill Liners: Mill Shell Liners are furnished with a variety of lifter designs and can be cast from High Chrome or Manganese steel. Nowadays, wear resistant Rubber Liners are very popular to Ball Mill application for inside lining of Mill Shell & Mill Head.

Girth Gear: It is bolted at one end of the Mill Shell along with Mill Head. MSEL has its own Gear Hobbing machine which can generate gear teeth up to 8 meter gear diameter and 50 module.

Pinion: Pinions are always made from high strength alloy steel. These are either integral with the shaft or keyed to the shaft.

Drive System: It consists of Motor, high speed coupling, reducer and low speed coupling which connects the reducer output shaft to pinion shaft. For erection and maintenance, an auxiliary drive is also provided which consists of an auxiliary motor, couplings, reducer and brake.

SALIENT FEATURES

- As optional item MSEL can supply ball Charging Bucket and Rod Charging mechanism if required.
- MSEL offers installation, commissioning and after sales service by an expert service team.
- All spares and wear components are readily available.

AVAILABLE SIZES

MSEL has supplied various sizes of Grinding Mills satisfying its clients in India and abroad.

| TYPE OF MILL | AVAILABLE SIZE (Diameter, mm X Length, mm) | | MOTOR POWER (kW) | |
|--------------|---|-------------|------------------|------|
| | FROM | TO | FROM | TO |
| BALL MILL | 1200 x 1500 | 4800 x 8000 | 22 | 3400 |
| ROD MILL | 1500 x 2250 | 4400 x 6300 | 45 | 1900 |

NOTE: As improvements are made from time to time, specifications and other details are subject to change without notice.

McNally Sayaji Engineering Limited

Corporate Office: Ecospace Business Park, Campus-2B, 11F/12, New Town, Rajarhat, Kolkata 700 156, India. P +91-33-3014 2345/6628 2345; F +91-33-3014 2393.

Factories: Kumardhubi P +91-6540-273010/11, +91-6540-272 235/197; F +91-6540-273024 | **Baroda** P +91-2667-263000/2661-2793650; F +91-2667-263051 | **Bangalore** P: +91-08151399964/67/58 | **Asansol** M +91-8016090116, +91-8016090128.

Sales Office: **Kolkata** P +91-33-40111300; F +91-33-40111317 | **Bangalore** P +91-80 41153781-83; F +91-80 41153784 | **Chennai** M +91-9500011660; F +91-044-22431309 | **Delhi** M 9910661861 | **Mumbai** P +91 022-26397641 | **Hyderabad** P +91-040-27204395; F +91-040-27205361 | **Nagpur** M +91-9422114059; F +91-712-2535089/2560097 | **Vishakhapatnam** P +91-891-2551534 | **Kochi** P +91-9846034939; F +91-484-2405914 | **Vijaywada** M +91-9440320529 | **Coimbatore** M +91-978 978 0318.

Crusher | Screen | Grinding Mill | Feeder | Conveyor | Wagon Tippler | Pulley & Idler | Port Crane | Stacker Reclaimer | Mobile/Skid Mounted Crushing & Screening Plant | Slurry Pump | Thickener | Floatation Cell | Pressure Vessel | Equipment for Iron Ore, Steel, Cement, Power, Coal & Other Non-Ferrous Metal Processing Plants