

**DIMENSIONS OF MOVERS (INDIA) BALL MILL**

SL#	MILL SIZE DIA x Lg	POWER HP	MEDIA IN TON	MILL Wt. IN TON	DIM. A IN m	DIM. B IN m	DIM. C IN m	DIM. D IN m	DIM. E IN m	DIM. FIN m
1	1.2m x 5m	195	6.0	19	1.2	5.0	2.0	6.70	1.94	1.44
2	1.4m x 6.0m	180	10.5	98	1.4	6.0	1.5	7.08	2.62	0.80
3	1.6m x 7.5m	200	17.5	34	1.6	7.5	2.0	8.64	3.92	1.30
4	2.0m x 10.0m	650	38.0	60	2.0	10.0	2.5	11.5	4.2	1.67
5	2.2m x 8.0m	600	38.0	66	3.4	8.0	2.5	9.57	4.4	1.29
6	2.2m x 10.0m	650	40.0	80	2.2	10.0	2.5	11.57	4.4	1.53
7	2.4m x 9.0m	800	50.0	82	2.4	9.0	2.7	10.78	4.9	1.85
8	2.4m x 12.0m	800	60.0	100	2.4	12.0	2.7	13.78	4.9	1.85
9	2.6m x 10.5m	1250	70.0	108	2.6	10.5	3.0	12.5	5.3	2.00
10	2.8m x 11.0m	1500	85.0	130	2.8	11.0	3.0	13.16	5.6	1.90
11	3.0m x 12.0m	2200	96.0	170	3.0	12.0	3.0	14.32	5.8	1.86
12	3.2m x 12.0m	2500	110.0	180	3.2	12.0	3.4	14.4	6.1	2.00
13	3.4m x 13.0m	3000	138.0	200	3.4	13.0	3.8	15.46	6.5	2.20
14	3.6m x 13.0m	3400	166.0	220	3.6	13.0	4.0	15.56	7.0	2.30

## PRECISION PRECEDES SUCCESS.

We are an engineering consulting house catering to the growing needs of the Cement industry. Today we are on the pinnacle of success with over 30 years of experience and Know-how, in the process engineering industry.

We manufacture following equipment on Turnkey basis.

1. Integrated Cement plants ranging from 100TPD to 600TPD based on Vertical Shaft Kiln (VSK) Technology (each kilns are of 100TPD capacity).
2. Rotary Kiln Cement plant ranging from 600 TPD to 1500 TPD.
3. Clinker grinding plants from 100TPD to 2000 TPD.
4. Generation of electricity from Municipal Solid Wastes ranging from 10TPD to 100TPD.
5. Mineral Size reduction and conveying equipment, crushers, screen, Rotary driers, Shredders and special purpose equipment, etc.

Committed to the innovation and growth of today's Cement industry, we are also passionate to extend our expertise to re-shape and re-construct ailing Cement Plants.

AN ISO 9001-2008 CERTIFIED COMPANY

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# MOVING TOWARDS A NEW TOMORROW.



**M MOVERS**  
(INDIA) PRIVATE LTD.

# BALL MILL

BALL MILLS - although one of the oldest forms of grinding machines, it still forms the most significant class of equipment used today in the field of particle size reduction. As a result of their slow rotational speed, simplicity of design and rugged construction, they have no equal for the grinding of hard and abrasive materials particularly where continuity of service and low maintenance costs are the criteria. Ball mills offer extreme reliability and long life. Movers (India) Mill is designed for heavy duty work and incorporates modern features like automatic feed control, self / pressure lubrication system, and a variety of renewable liners.

Our service extends from feasibility studies of client's materials to system and equipment design, engineering, installation and commissioning of complete grinding installations.

With our range of ancillary equipment, particularly classifiers, crushers and material handling equipment, Movers (India) is in a unique position to provide the full required service. Every plant is custom built to satisfy the requirements of client's individual process.

## GRINDING SYSTEMS

**Open Circuit Grinding:** In this system the material is ground in a single pass. Control of retention time of the material within the mill is very important and hence calls for careful design of the internal diaphragms. Characteristically, open circuit mills gives products with a wide size distribution and a relatively high proportion of super-fine material.

**Closed Circuit Grinding:** In many grinding applications, optimum condition can only be achieved by the use of the closed circuit grinding system in which the product from the mill is fed to a classifier where the required product is segregated from grits, the rejects being returned to the mill for further reduction. Such grinding minimizes over-grinding and controls the product to optimum granulometric composition. Closed circuit grinding allows smaller mills to be used for a given throughput, resulting in lower installed horsepower, lower wear rates and a closer control of the final product size. It has not only reduced grinding costs by increasing mill capacities as also lowering power consumption, and decreasing upkeep, but also improved efficiencies by providing fines consistently of the required size.

A simple and efficient closed-circuit system for dry grinding of rawmeal with Movers (India) Classifier can give products of the order of 95% passing 170 mesh.

## MILL DESIGNS

Depending on the selection of the milling system it is necessary to give consideration to the detail design of the mill. It includes the type of the mill to be utilised, its size, horsepower, feed and discharge arrangements.

## CONSTRUCTIONAL FEATURES

**Mill Shells:** Mill shells are fabricated from heavy mild steel plate conforming to IS 2062, suitably stiffened and complete with machined end flanges to accommodate end bottom plates and girth gear. Shell plates are drilled to fasten grinding/liner plates with bolts.

**Liner Plates:** Liner plates are supplied in a variety of forms such as taper, classifying and V-groove, the material being either manganese, chrome steel or nickel iron castings to suit individual applications.

**Trunion Castings/End Bottoms:** Inlet and outlet castings incorporating integral trunions are manufactured in cast steel to IS 1030 Gr 27-54 and machined to ensure accurate alignment with the mill shell flange to which they are bolted. All trunion bearing surfaces are fully machined, polished and fitted with internal replaceable bolted liners.

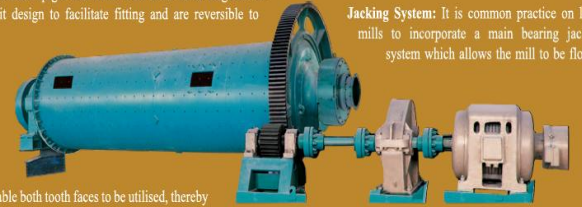
**Main Bearing:** Mill trunions run in heavy duty white metal bearings fully protected against the ingress of dust. The use of high grade anti friction metals and the generous proportions of the bearing surfaces ensure long life and reliability.

**Girth Gear:** Machined from cast steel IS 2708 Gr 3A. The gear is bolted to the end flange of the mill, located by a machined spigot and fitted with bolts. Gear rings are of split design to facilitate fitting and are reversible to

the girth gear. Drive from the countershaft is accomplished through a reduction gear box fitted with high and low speed couplings.

**Lubrication:** Main bearing lubrication is by means of oil rings in flooded chamber. The Girth gear drive lubrication is by means of immersing gear teeth in flooded drive for small mills or by forced lubrication for larger mills.

**Jacking System:** It is common practice on large mills to incorporate a main bearing jacking system which allows the mill to be floated



enable both tooth faces to be utilised, thereby maximising the life of this component. A forged machined steel pinion mounted on a counter shaft supported in heavy duty anti friction bearings meshes with

on a thin layer of oil prior to start-up thus minimising wear and tear on the bearing surfaces.

