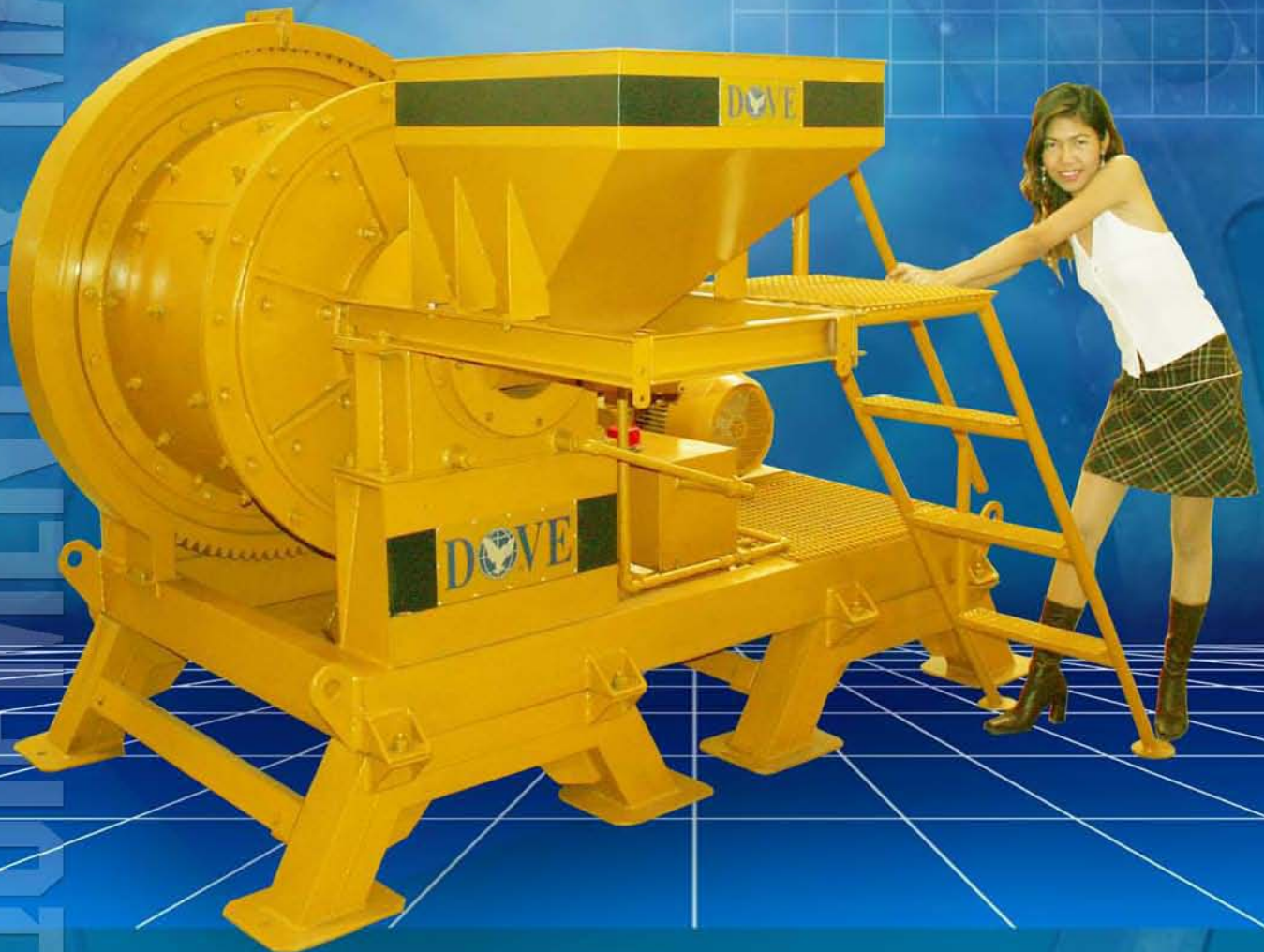




GRINDING MILLS

BALL MILLS (OVER FLOW DISCHARGE)

- OVER 21 MODELS TO CHOOSE.
- EFFICIENT, DEPENDABLE & TROUBLE FREE.
- MOST ECONOMICAL AND LOWEST OWNERSHIP COST.



- SUPPLIED IN PORTABLE OR STATIONARY CONFIGURATION.
- PRECISION EXTRA-HEAVY-DUTY ROLLED PLATE.
- HIGH GRADE CAST STEEL TRUNNIONS, FOR EXTRA STRENGTH.
- HIGH GRADE CAST STEEL SPUR-GEAR.
- HIGH GRADE FORGED STEEL PINION.
- COMPLETE SELECTION OF LINERS.
- TOTALLY ENCLOSED GEAR-GUARDS.



LEADER IN SURFACE MINING TECHNOLOGY

APPLICATION

DOVE Ball Mills are designed for use in wet or dry Grinding operation, where a fine material grind of (-28 mesh/0.589 mm) and finer, is required.

DOVE Ball Mills deliver the most efficient, trouble free and economical comminution of material ranging from (5-30mm) down to varying product sizes.

DOVE Ball Mills are designed for vast range of applications, within different branches of industry, such as (mining gold & other metals and in chemical and food industry).

DOVE Over-Flow Ball Mills are normally used for most ball mill grinding applications and provide the most simple, trouble-free and economical method of grinding. Mills are available with spiral-screen, configured for discharge trunnion, to provide material sizing and classification.



PRINCIPLE OF OPERATION

DOVE Ball Mills can be operated in either open or closed circuit. Open circuit operation is best utilized when :

- ◆ Another stage of grinding follows The Mill.
- ◆ Reduction ratio is small.
- ◆ Feed material is already fine and a single grinding cycle (one pass through the mill) produces the desired results.
- ◆ Product size control is not critical and oversize material can be tolerated in the final production.

The closed circuit Grinding is the most efficient method of operation, where size control of the final product is important. Mill can be supplied with DOVE Screen on discharge; DOVE Ball Mills are classified in accordance to the type of discharge :


- ◆ DOVE Over Flow Ball Mills, are suitable for almost all applications, where higher grade of fines are required simple and trouble free Grinding method.
- ◆ DOVE Grate discharge Ball Mill, usually works with a higher circulating load and thus produces very little extreme fines. The specific power consumption is lower than Over Flow Ball Mill, with 15-25 % higher capacity.

The feed required for the Ball Mill is prepared by:

- ◆ Single or multistage crushing and screening.
- ◆ Crushing, screening and/or Rodmilling.
- ◆ Primary Crushing and autogenous/ semi-autogenous grinding.
- ◆ Primary Ball Mill, with 25-40 mm Grinding Ball size (1"-1.5") feeding the secondary Ball Mill with Grinding Ball size of 20 mm. ($\frac{3}{4}$ ").

TOTAL SOLUTION FOR YOUR MINING OPERATIONS

SUPERB PROPERTIES & FEATURES



HEAVY DUTY SHELL : is made of carbon-steel of extra heavy, rolled plate precision-rolled to closed tolerances, insuring round flange conformation and accurate liner fit. Thickness of shell is always considerable in excess of strength required to support the mill and its load.

SHELL LINERS : Manufactured with rigid specifications and control, from manganese steel, for proper fit and maximum wearing qualities. Liners are extra thick for longer wearing life.

LINER - BOLT & SOCKET : Liner - bolt are high carbon, forged steel, heat treated, of approximately 100,000 psi tensile and 22% elongation, Specially designed for proper fitting and to minimize shifting between shell and liner.

TRUNNIONS : are of cast steel for extra strength. Trunnions fit into a machined seat on mill head where they are securely held in place by large high strength steel stud bolts on close centers. The trunnion flange and seat are high precision machined in order to provide perfect alignment of the interlocking male & female joints and absorb shear stresses.

TRUNNION BEARING SURFACES : made of high grade Babbitt metal or bronze provide low bearing loading long life and trouble-free operation.



HEAD LINERS : Are high carbone cast of (13-14%) manganese steel, chrome-moly, decolloy or other alloys, designed for smooth passage into the mill.

SPUR GEARS : High grade case steel, cast steel tooth spur gear is standard. Gears are split and reversible for longer wearing life.

FORGED STEEL PINION : is cut from forged steel billet. All pinions are reversible for longer life. Teeth are cut in a 20° involute stub tooth design, for long service and smooth engagement with gear.

COMPLETE SELECTION OF LINERS : to suit any grinding requirement, Liners of Manganese Steel, Chrome-Moly, Ni-Hard, Hard Iron, are also available.

EASY ACCESS MANHOLES : are conveniently located to eliminate costly downtime.



TOTALLY ENCLOSED GEAR GUARDS : are available for operation in abrasive or dusty atmospheres.

SCOOP FEEDER : is used to elevate new wet feed from scoop feed box into the mill.

PRECISION & QUALITY : Modern machine tools, precision gauges and conscientious inspection practices are employed to produce a high degree of quality and accuracy .

MOST PRACTICAL, EFFICIENT & ECONOMICAL MEANS OF MINERALS RECOVERY

TECHNICAL SPECIFICATIONS

MODEL	SIZE INTERNAL SHELL		MOTOR POWER HP	PROCESSING CAPACITY (TONS/HOUR)				GRINDING BALL QUANTITY CHARGE (Kg)	SHELL LINER TICKNESS (MM)
	(CM)	(INCH)		I	II	III	IV		
BM-540	76.2 x 45.7	30 x 18	3.6	0.5	0.3	0.2	0.1	900	9.0
BM-720	76.2 x 60.96	30 x 24	6.6	0.7	0.4	0.25	0.15	900	9.0
BM-1080	76.2 x 91.4	30 x 36	6.6	0.8	0.5	0.3	0.2	900	12.0
BM-1296	91.4 x 91.4	36 x 36	10.0	1.25	0.8	0.6	0.4	1,400	12.0
BM-1728	91.4 x 121.9	36 x 48	15.0	1.65	1.0	0.7	0.8	1,500	12.0
BM-2160	91.4 x 152.4	36 x 60	20.0	2.00	1.5	1.0	0.8	2,000	32
BM-2592	91.4 x 152.4	36 x 72	25.0	2.50	1.75	1.2	1.0	2,500	32
BM-2304	121.9 x 121.9	48 x 48	25.0	3.2	2.5	1.6	1.25	3,000	35
BM-2880	121.9 x 152.4	48 x 60	30.0	4.2	3	2.1	1.6	3,000	35
BM-3456	121.9 x 182.8	48 x 72	40.0	5.2	3.8	2.5	2	4,500	35
BM-4608	121.8 x 243.8	48 x 96	50.0	7.0	5.0	3.3	2.7	5,500	35
BM-3600	152.4 x 152.4	60 x 60	50.0	7.0	5.0	3.3	2.7	5,500	38
BM-4320	152.4 x 182.8	60 x 72	60.0	7.8	5.6	3.7	3.0	6,500	38
BM-5760	152.4 x 243.8	60 x 96	75.0	10.4	7.5	5.0	4.0	9,000	38
BM-7200	152.4 x 304.8	60 x 120	100.0	13.0	8.0	5.8	4.8	11,000	38
BM-8640	152.4 x 365.7	60 x 144	125.0	14.5	8.5	6.2	5.0	12,000	42
BM-5184	182.8 x 182.8	72 x 72	125.0	14.0	9.5	6.25	5.2	9,000	42
BM-6912	182.8 x 243.8	72 x 96	150.0	18.5	13.0	8.75	7.0	14,000	42
BM-8640	182.8 x 304.8	72 x 120	200.0	23.0	16.5	11.25	9.0	15,000	42
BM-10368	182.8 x 365.7	72 x 144	250.0	29.0	20.5	13.5	10.8	18,000	42
BM-8064	213.3 x 243.8	84 x 96	200.0	29.0	20.5	13.5	10.8	18,000	45
BM-10080	213.3 x 304.8	84 x 120	250.0	37.0	25.8	16.5	14.2	20,000	45
BM-12096	213.3 x 365.7	84 x 144	300.0	45.0	31.0	20.5	16.5	26,000	45

- * (I) SOFT ORE, (II) MEDIUM SOFT ORE, (III) MEDIUM HARD ORE, (IV) HARD ORE.
- * EFFECTIVE FEED PARTICLE SIZE (3/4 to 1.0 INCH / OR 19 - 25 mm.)
- * PRODUCTION PARTICLE SIZE (-208 MICRONS / 65 MESH), 80%, REGULAR SIZE BALLS.
- * PRODUCTION PARTICLE SIZE (-74 MICRONS / 200 MESH), 80% SMALL SIZE BALLS (CYLPEBS).
- * CAPACITIES ARE APPROXIMATE AND SUBJECT TO FLUCTUATE, BASED ON THE FEED SIZE, FEED TYPE, ETC.
- * SPECIFICATIONS & DIMENSIONS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

MANUFACTURER

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