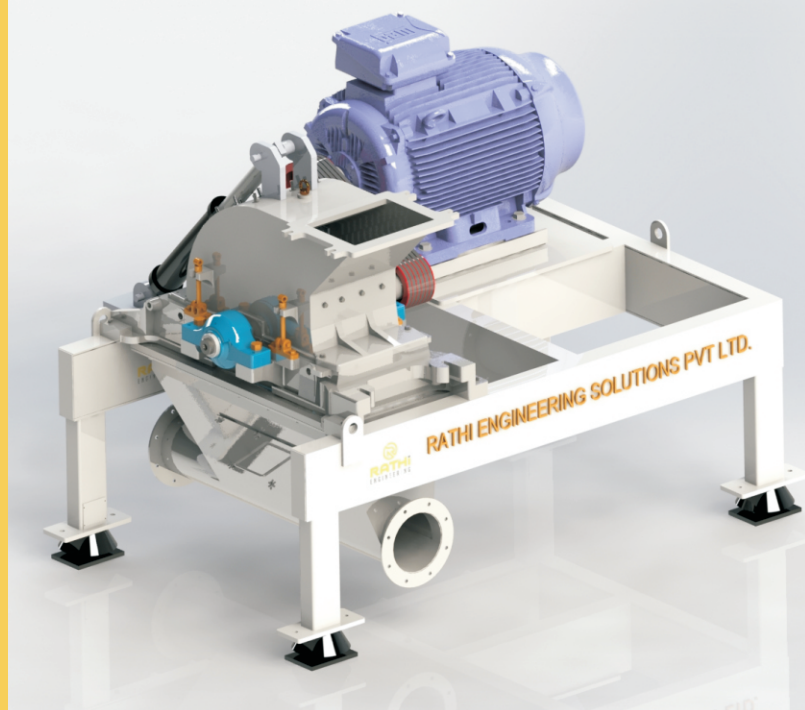


RATHI PULVERISER


RATHI
ENGINEERING



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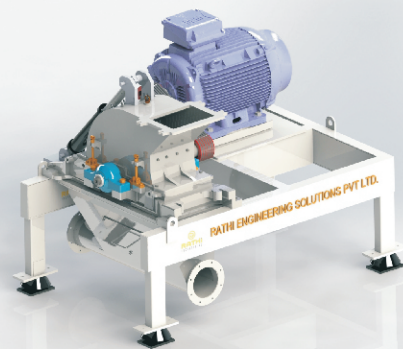
RATHI PULVERISER

At **Rathi Engineering**, we work diligently to ensure that our products deliver maximum performance and dependability. Our products are built to match European standards, that to at affordable prices. All our equipment' share inspected and tested individually, meeting strict standards before availed to our customers.

The **Rathi Pulveriser** comes with our pledge of performance and guaranteed dependability. The **Rathi Pulveriser** is our most economical yet versatile grinding machine, capable of grinding materials up to a Moh's hardness of 3and producing a range of particle sizes from a coarse or granular grind to fine powder.

Design Features

- Versatile Grinding Capability
- Highly Efficient Grind
- High Production Throughput
- Robust & Long Life
- Ease of Operation & Maintenance
- Low Operation Cost
- Economical



Wide Range of Applications

The **Rathi Pulveriser** is generally used for irregular shaped or coarse, granular materials of hardness ranging from soft to medium hard. Typically used for grinding, Sugar, Cocoa, Coffee, Gram Flour Chilly, Turmeric, Coriander, Cumin, Ginger and other Spices, Animal Feed, Pigments and other Chemicals, Chalk, Starch Dyes, Pharmacy, Capsules, Carbon Black and many more....

Range of Rathi Pulveriser

The **Rathi Pulveriser** comes a various size from a lab-scale model to large scale models, ranging in capacities from 20 kg to 2 tons per hour depending on feed material. The Pulveriser can be availed in any material of preference, as required.

Pulveriser	Power (HP)	Achievable Fineness (MESH)
BANTAM TYPE	1 - 3	20 - 200
MODEL 1	3 - 7.5	
MODEL 2	10 - 20	
MODEL 3	30 - 50	
MODEL 4	50 - 100	
DOUBLE 4	100 - 180	

RATHI PULVERISER

It can be further customised with a variety of different feeding systems, depending on the type of operation required and on the properties of the material. The grinding setup is also customized depending on the fineness and capacity required.

Feeding Mechanisms

'H-Type' Screw Feed :

Feed material is fed to Mill Chamber by Helical Feed Screw, Screw RPM is adjusted with help of Variable Frequency Drive, mostly used for Granular, Regular size, Non-Heat sensitive feed materials.

'W-Type' Gravity Feed :

Feed material is fed to Mill Chamber by Gravity method with help of Rotary Air lock, Rotary Air lock RPM is adjusted with help of Variable Frequency Drive, mostly used for Granular, Fine, Irregular & Heat sensitive feed materials.

Suction Carbon Black :

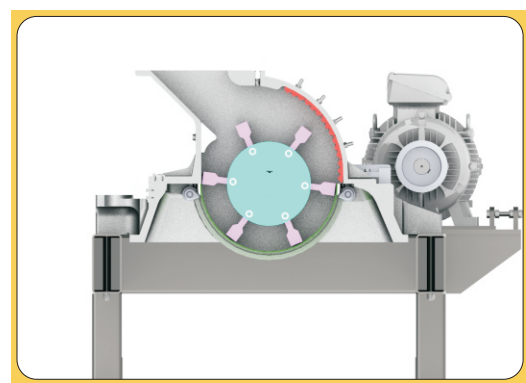
Feed material is fed to Mill Chamber by Positive/Negative Suction force of Pneumatic Air, Suction force of Pneumatic air is controlled by means of Rotary Air Lock, Rotary Air lock RPM is adjusted with help of Variable Frequency Drive, mostly used for Granular, Fine, Irregular Carbon Black materials.

Working Principle:

The Rathi Pulveriser provides remarkable accuracy in particle size control owing to the grinding action being entirely mechanical. As a result of the impact grinding action, every aspect contributing to the character of the finished product can be controlled with a high degree of accuracy.

The pulveriser setup consists of a feed mechanism which allows for a **uniform feed** of the ungrounded material into the grinding chamber. The grinding chamber fitted with a rotor assembly that operates at high speeds. The rotor assembly is fitted with **hammers or beaters** that are specifically selected based on the required application. Below the rotor assembly, a **retaining screen** is fitted at the bottom half of the grinding chamber. Above the chamber, a cover is fitted with a wear resistant **deflecting liner**.

Model Size	HP	Helical Feed Screw Type 'H' Type	Gravity Feeding 'W' Type	Suction Feed 'SCB' Type
1	5-7.5	✓	✓	✗
2	10-20	✓	✓	✓
3	30-50	✓	✓	✓
4	50-100	✓	✓	✓
44 (s)	150-180	✗	✓	✗



Grinding Chamber internals with colour

- MD Linner
- Rotor
- Bar Hammer
- Screen

RATHI PULVERISER

Impact grinding occurs at the heart of the Rathi Pulveriser between the rapidly moving hammers and the feed particles against the deflecting liner. Energy from moving hammers transfers itself to the particles being ground by virtue of their inertia causing the **particle size reduction**.

Key Components of the Rathi Pulveriser

Hammer/ Beater Set

Hammers or beaters fitted on the rotor assembly provide the inertia through which size reduction occurs via direct impact with the ungrounded material. As the hammers are subject to maximum contact and are likely to wear; Rathi hammers come tipped with an abrasion resistant alloy on the wearing edge.

A] Bar Type

These hammer coarser grind with minimum of fines. Hammers can be supplied with both sides tungsten carbide tip nat wearing edge. These hammers are suitable for fibrous material such as chilli, coriander and other spices.



Bar Type



LFS or Stirrup type:

B] LFS or Stirrup type:

These hammers are recommended where fine particles size is desired. These hammers are tipped with various abrasion resistance alloys. These hammer are suitable for brittle material and also used for fine grinding.

Multiple Deflecting Liner

This liner breaks down feed material in fine particles by impact forces against multiple edges

RATHI PULVERISER

Retaining Screen

The retaining screen at the discharge end of the Rathi Pulveriser allows only the achieved particle size to pass through the grinding chamber while retaining material that has not yet achieved the fineness required.

A] Round perforated screen - Screen is used for coarse, fine particle generation. These types of screen are also suitable for fibrous material.

B] HB Screen - Screen is used for finest particle generation. These screen is mainly used for crystalline products.

C] Jump Gap Screen - Screen is used to grinding bigger & harder feed material in to coarse size. These screen gives higher life due to rigid design.

Hold-down Plate

Plate is used to guide feed material into rotating path of hammers & avoid bypass access to direct screen.

Particle Size Control

Three main variables affect the type of grind produced.

Hammers

We recommend Stirrup type hammers are recommended where a fine **particle size distribution** is desired. **Bar type** hammers are used where **minimum fines** are required with an **narrow distribution**.

Rotor Speed

In impact grinding, energy is transferred from the hammer to the particles. Thus, a **lower rotor speed** results in a **coarser grind**, and a **high rotor speed** produces the **fine grinds**.

RATHI PULVERISER

Maintenance & Cleaning

Once the mill is configured correctly, it continues to replicate the exact results with a high degree of precision over a long period of time. As far as the properties of the feed material are maintained, the Rathi Pulveriser will perform precisely without the need for any intervention or adjustment.

Designed for continuous size reduction on a wide range of applications, the Rathi Pulveriser is the most cost-effective & durable industrial workhorse on the market. Like any machine however, the Rathi pulveriser requires routine inspection & maintenance to continuously operate at peak performance.

Preventive maintenance carried out at systematic intervals inspections for wear or tear will ensure longevity of the mill.

At Rathi Engineering Solutions we ensure shipping of all our key components and spare parts within 24hrs from Rathi Factory.

Particle size conversion chart

PARTICLE SIZE CONVERSION CHART					
BSS MESH	ASTM MESH	TYLER MESH	ISS MESH	MICRON	IN MM
4	5	5	-	4000	4.00
6	7	7	280	2812	2.81
8	10	9	200	2057	2.05
10	12	10	170	1680	1.68
12	14	12	150	1405	1.40
14	16	14	120	1240	1.20
16	18	16	100	1003	1.00
18	20	20	85	850	0.85
22	25	24	70	710	0.71
30	35	32	50	500	0.50
36	40	35	40	420	0.42
44	45	42	35	355	0.35
52	50	48	30	300	0.30
60	60	60	25	250	0.25
72	70	65	20	210	0.21
85	80	80	18	180	0.18
100	100	100	15	150	0.15
120	120	115	12	125	0.12
150	140	150	10	105	0.10
170	170	170	9	90	0.09
200	200	200	8	75	0.075
240	230	250	6	63	0.063
300	270	270	5	53	0.053
350	325	325	4	45	0.045
400	400	400	-	37	0.037
500	500	500	-	25	0.025
-	625	-	-	20	0.020

RATHI PULVERISER

Rathi Pulveriser with Product Collection System

The Rathi Pulverisers are available with Cyclone & Dust collections system. This system is configured for dust free operations and can be setup to pneumatically convey the pulverised material to the required distance with minimal human contact.

Rathi Product Collection System.

A] Feeding System

A suitable **Rotary Air-lock Valve** or **Screw Feeder** feeds the material to mill in controlled fashion

B] Product Collection

A **Product Collector** of sufficient size, optimized to house an appropriate number of filter bags is used to separate product from conveying air and collect it at bottom discharge nozzle

C] Discharge Device

A suitable **Rotary Air-lock Valve** is used to discharge product from product collector

D] Prime Mover

A **Centrifugal Fan** of the required volumetric air-flow is provided to suction from the Rathi Pulveriser to the discharge point in the product

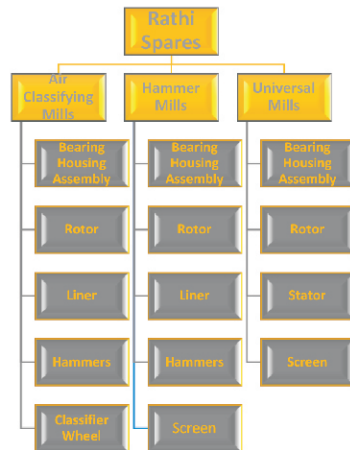
E] Control Panel

A relay or PLC based, **Control Panel** provided with necessary interlocks is used to operate, monitor & control performance of the system.



RATHI MILL PLANT

RATHI ADDITIONAL PRODUCT RANGE




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