



DP Pulveriser

since 1962



The DP Hammer Mill - HM
Hammer Mill



Function

The DP Hammer Mill is most broadly used grinding mills for food, chemicals and pharmaceutical processing. With experience gained over period of years in manufacturing size reduction equipments DP Pulveriser are experts and has gone into the design of hammer mill. Hammer mill is one of the dominantly used grinding mills in the particle size reduction industry. It has been designed to operate well in harsh environments and at continuous duty. It has a tough built and its versatile feature makes it suitable for grinding a plethora of different materials. The grinding mill comprises of many different swing hammer on the rotor shaft and serrated liners on the wall of the chamber. This produces size reduction by impact. It consist of screen and integrated blower with individual driving motor for pneumatic conveying of material out of the grinding chamber.

The DP Hammer mills can be used for a wide range of applicaitons in number of processing fields, e.g. Maize, Spices, Cattle feed & Poultry feed, Dry fish, Chemicals, Oil cake, Tea, Coffee, Crude drugs, Moulding powders, Dry soap, Charcoal.



Material of Construction

In the standard model, the mill housing is fabricated in carbon steel. Hammers are tipped with tungsten carbide. Serrated liners are available in simple grey cast iron to hard alloy steel castings. Replaceable linings made of hard alloy casting can be provided to protect the internal parts of the casting when grinding abrasive and hard material. The mill can also be manufactured according to GMP standards with contact and non-contact parts in stainless steel depending on the client's requirement.

Features

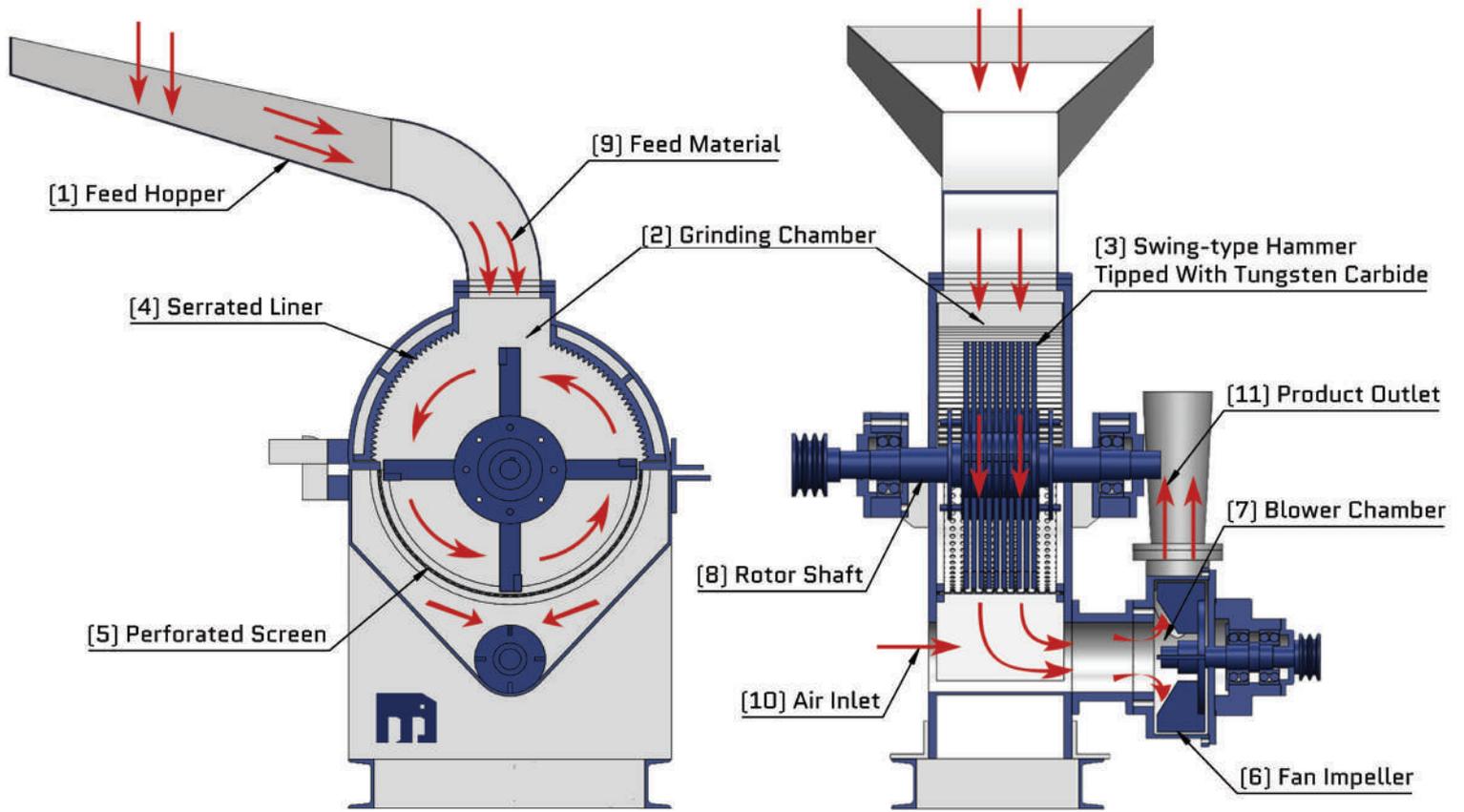
- ▶ Hammer mill built with robust construction
- ▶ Improved grinding efficiency
- ▶ Capable of fine reductions down to 50 microns or 300 mesh
- ▶ Low specific power consumption
- ▶ Durable long life [Some 1970s and 80s models are still in use today]
- ▶ Accurate & consistent product grinding
- ▶ Low temperature rise for heat sensitive materials
- ▶ Available in abrasion resistant design for materials up to 6-7 Mohs hardness
- ▶ Reliable operation due to robust design
- ▶ Cool and gentle grinding due to high airflows
- ▶ Time proven design for decades



■ Principle of Operation

The material to be ground can be fed manually into the (1) gravity feed hopper having an adjustable slide to control the feed material. Optionally, the material can be fed into a hopper placed in a trench below ground level and an attached screw feeder can feed the material into the machine hopper. The (2) grinding chamber consists of a (3) swing-type hammer tipped with tungsten carbide and rotor assembly surrounded by static (4) serrated liners. The swing type (4) hammers are mounted between the rotor plates using a rotor pin which allows it to swivel. When the material enters the grinding chamber it is impacted by the swing hammers onto the serrated liners. The serrations on the liners cause the material to rebound back onto the rotating hammers, thus forming a multiple collision impact cycle thereby reducing the size of the particles. A (5) perforated screen is placed just below the rotor assembly to screen the particles as per required size. The (6) Fan impeller mounted on the shaft in the (7) blower chamber and located right after the perforated screen creates a suction which draws out the ground material from the grinding chamber after passing through the perforated screen. The blower maintains constant air flow in the mill chamber in order to obtain a cool product and continuously cleans the screen, thus increasing output. An air inlet is provided on the bottom body of the mill below the screen for the pneumatic conveying of ground material to the cyclone separator. The material then passes through the impeller and exits the hammer mill and air-material separation takes place in a downstream cyclonic separator and dust collector. Majority of the material is received at the outlet of the cyclone and some superfine dust is received in the dust collector. Particle size of the ground material can be varied over a large range by using sieves with desired openings.

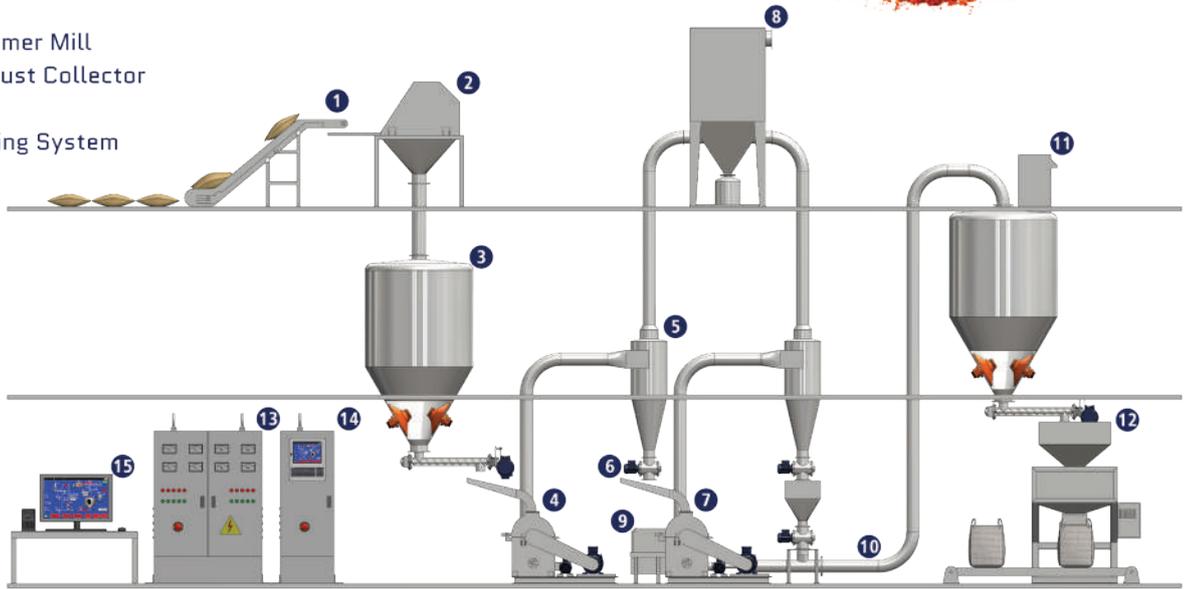




Foods & Spices - Chilli



- 1 Sack Transfer Belt
- 2 Sack Dump Station
- 3 Silo With Fluidizer & Discharge Screw Conveyor
- 4 First Stage Hammer Mill
- 5 Cyclonic Separator
- 6 Rotary Air Valve
- 7 Second Stage Hammer Mill
- 8 Totally Enclosed Dust Collector
- 9 Roots Blower
- 10 Pneumatic Conveying System
- 11 Bin Vent For Silo
- 12 Weighing & Packaging
- 13 Control Panel
- 14 PLC Panel
- 15 Desktop PC With Scada Software



▶ This is a typical set up for grinding of chilli. Sack containing raw material is transferred to the sack dump station via sack transfer belt. After emptying sacks at sack dump station, material is stored in silo and fed to the hammer mill for the first stage grinding (coarse grinding) with the help of screw feeder. Ground material is again fed to second hammer mill for the second stage grinding (fine grinding) and final product is sent to the packaging via pneumatic system.

Product	Approx. Throughput	Output Product	Machine Size
Chilli	220-250 kg/hr	30-40 Mesh	DP HM-20 & DP HM-40
Coriander	110-120 kg/hr	30 Mesh	DP HM-10 & DP HM-20
Dry Ginger	120-130 kg/hr	40 Mesh	DP HM-10 & DP HM-20
Cumin	110-120 kg/hr	30 Mesh	DP HM-10 & DP HM-20
Black Pepper	150-160 kg/hr	40 Mesh	DP HM-10 & DP HM-20
Cinnamon	50-60 kg/hr	70 Mesh	DP HM-10 & DP HM-20



▶ This is an installation of a 3 stage spice grinding plant at a major spice manufacturer's factory in West Bengal, India.

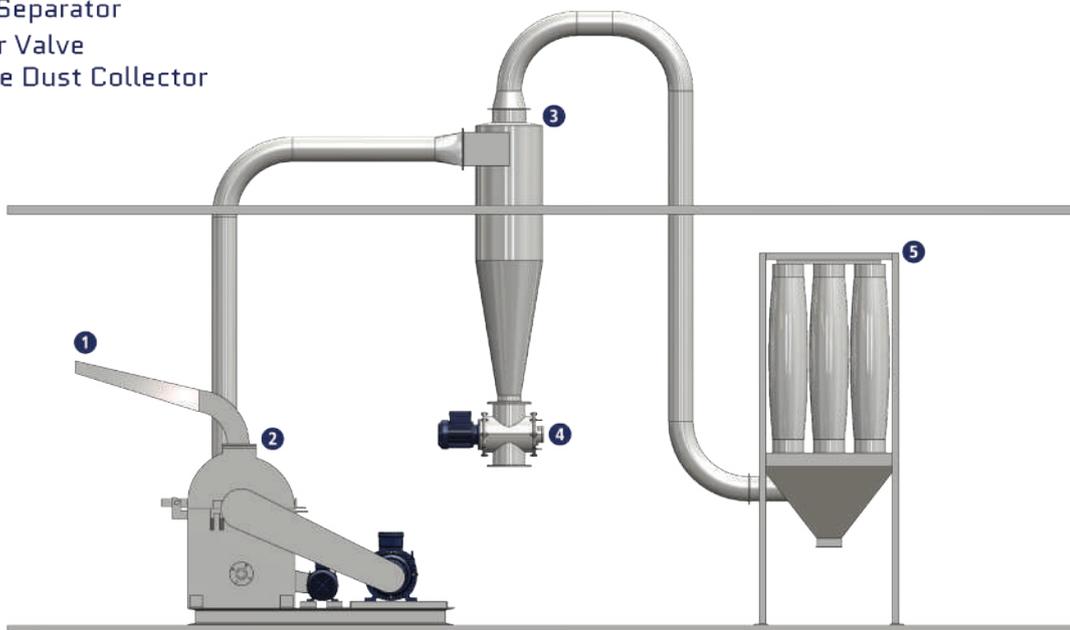


➤ This is an installation of the DP Hammer mill in china with an open type dust collector.



Animal Feed - Groundnut Husk

- 1 Feed Hopper
- 2 DP Hammer Mill
- 3 Cyclonic Separator
- 4 Rotary Air Valve
- 5 Open Type Dust Collector



➤ This set up is for grinding of Groundnut Husk. Groundnut husk is fed to the hammer mill via feed hopper . Final product is received at the cyclonic separator outlet through rotary air valve. Dust collector at the end of the system acts as a air filter to prevent the flow of dust to the atmosphere.

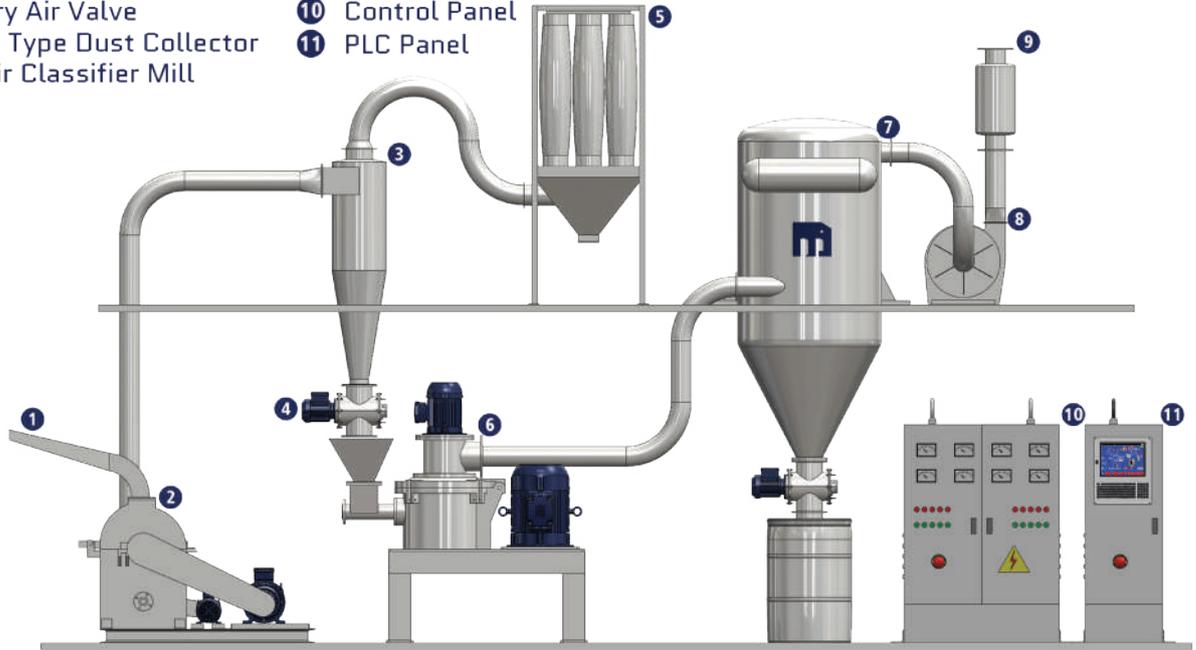
Product	Approx. Throughput	Output Product	Machine Size
Groundnut Husk	1000 kg/hr	20 Mesh	DP HM-50 (50HP)
Groundnut Husk	50-100 kg/hr	20 Mesh	DP HM-10 (10 HP)
Rice Husk	50-100 kg/hr	20 Mesh	DP HM-10 (10 HP)
Cereal Waste	1000 kg/hr	20 Mesh	DP HM-50 (50HP)



Fibrous Materials - Pine Wood Chips



- 1 Feed Hopper
- 2 DP Hammer Mill
- 3 Cyclonic Separator
- 4 Rotary Air Valve
- 5 Open Type Dust Collector
- 6 DP Air Classifier Mill
- 7 Pulse Jet Dust Collector
- 8 External Conveying Fan
- 9 Silencer
- 10 Control Panel
- 11 PLC Panel



► This set up is for grinding of Fibrous materials. Raw material is fed through hopper to the hammer mill where grinding takes place. Ground material is fed to typical air classifying system followed by pulse jet dust collector and blower. Final product is collected at the dust collector outlet of the ACM system through rotary air valve.

Product	Approx. Throughput	Output Product	Machine Size
Pine Wood Chips	60-80 kg/hr	< 3 mm	DP HM-20 (20HP)
Saw Dust	1000 kg/hr	20 Mesh	DP HM-50 (50HP)
Jute Stalks	50-100 kg/hr	20 Mesh	DP HM-10 (10 HP)



► This image shows an installation of the DP Hammer mill being used to grind Fibrous medicinal materials.



DP Hammer Mill - HM sizes

Machine Size	HM	10	20	30	40	50	80
Main Drive Motor	HP	10	20	30	40	50	80
Rotor Speed	RPM	10000	8000	7500	6000	4000	3000
Scale-up Factor	F	0.25	0.5	1	1.8	2	4.2
Airflow	m3/hr	510	1350	1800	2700	5400	9000

Design Options

Broad Chamber					●	●	
Heavy Design				●	●	●	
GMP				●	●	●	
External Fan				●	●	●	●



Options

- Machine Contact and Non-Contact Parts available in Cast Iron, Carbon Steel, 304, 304L, 316, 316L
- Wearable parts available in hard materials like Forged Alloy Steel, Welded Hard Facing, Hard Alloy Steel Casting, Cast Iron
- Internal fan available in single or two-piece design
- Available in external fan design where airflow control is required
- Liners available in water jacketed design to provide cooling in the grinding chamber

➤ Spare parts available 24x7 in a variety of different wear resistant materials.

Who are WE?

We are DP Pulveriser Industries and have been designing and building size reduction equipment in India since 1962. We believe in using the materials of the highest grade to build our equipment because we understand your need for a machine that will perform - without breakdown - day in and day out.

58 years, 7000 installations and 32 countries later we now hold the reputation of being one of India's finest manufacturers of size reduction equipment. Regardless of the industry you operate in, DP can optimize, innovate and automate your entire process with tailor made solutions and expertise that is backed by 58+ years of experience.

We are a young bunch of passionate engineers excited to work on your next challenging project.



What do we DO?

DP Pulveriser Industries' offerings are broadly classified under 3 segments:



Powder Processing Equipment

DP Pulveriser's machines are widely known for their rugged, tough built and low maintenance even after years of service. Our major forte is Size Reduction and Air Classification. We have a wide range of machines to cater to all your particle size requirements.

Testing and Other Services

We offer various services such as material trials of our equipment, grinding and air classification of your material on a contract basis and even particle testing and analysis at a fully equipped laboratory on the campus of our partner IIT Gandhinagar.



Turnkey Systems & Plant Automation

Thanks to our decades of experience, we understand what processing technologies and equipment are best suited for your application and industry. This means we can be your one stop solution for setting up complete powder processing plants carefully tailored to your needs.



Our Global Footprint

Australia Bahrain Bangladesh Bhutan Canada China Estonia Egypt Bremen Ghana
Hongkong Iran Indonesia Kenya Mauritius Mexico Malaysia Madagascar Newzealand Nepal
Nigeria Oman Philippines Qatar Saudi Arabia South Africa Singapore Switzerland Sri Lanka Tanzania
Uruguay U.A.E. Zambia



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