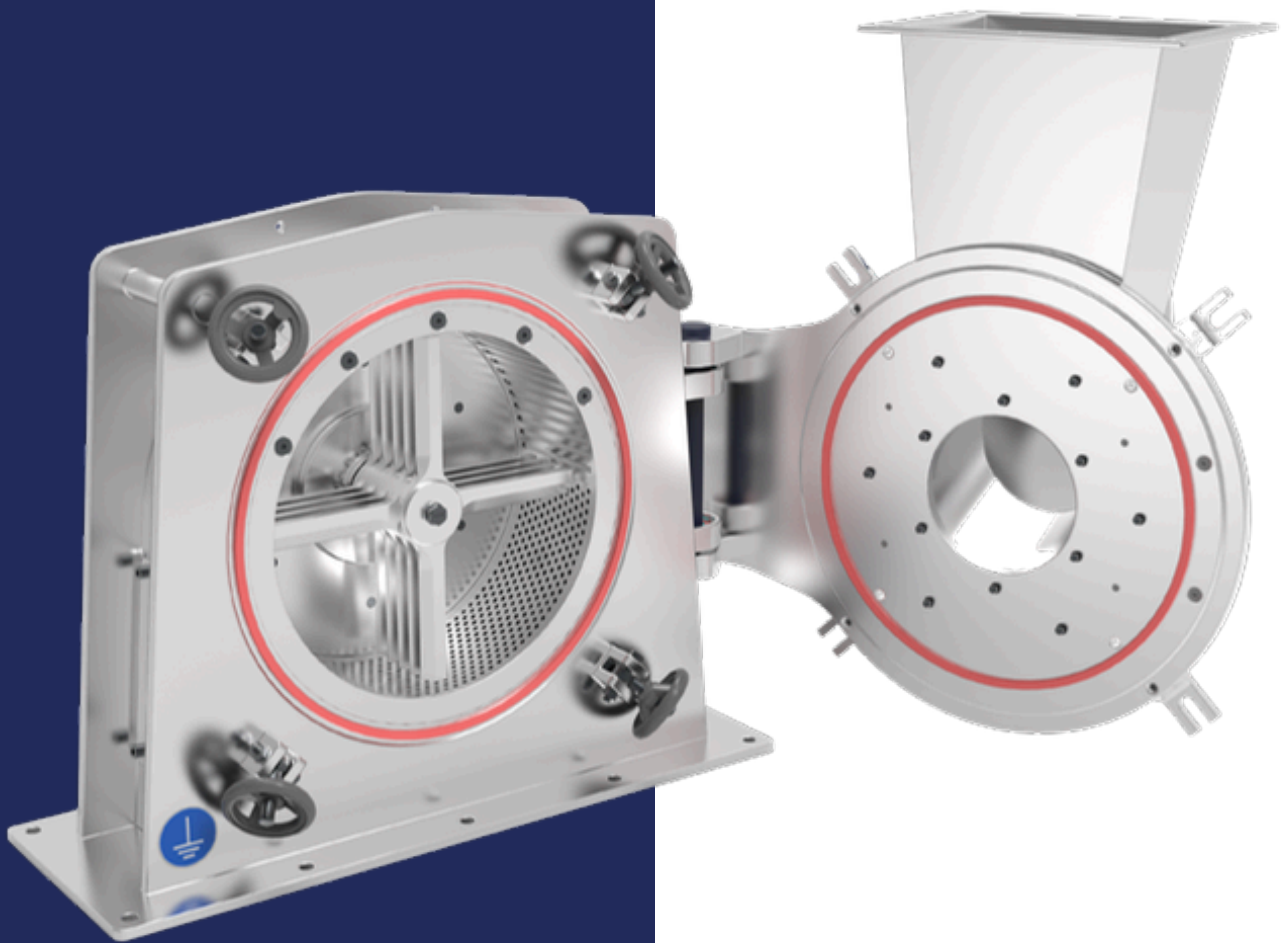




DP Pulveriser®
since 1962



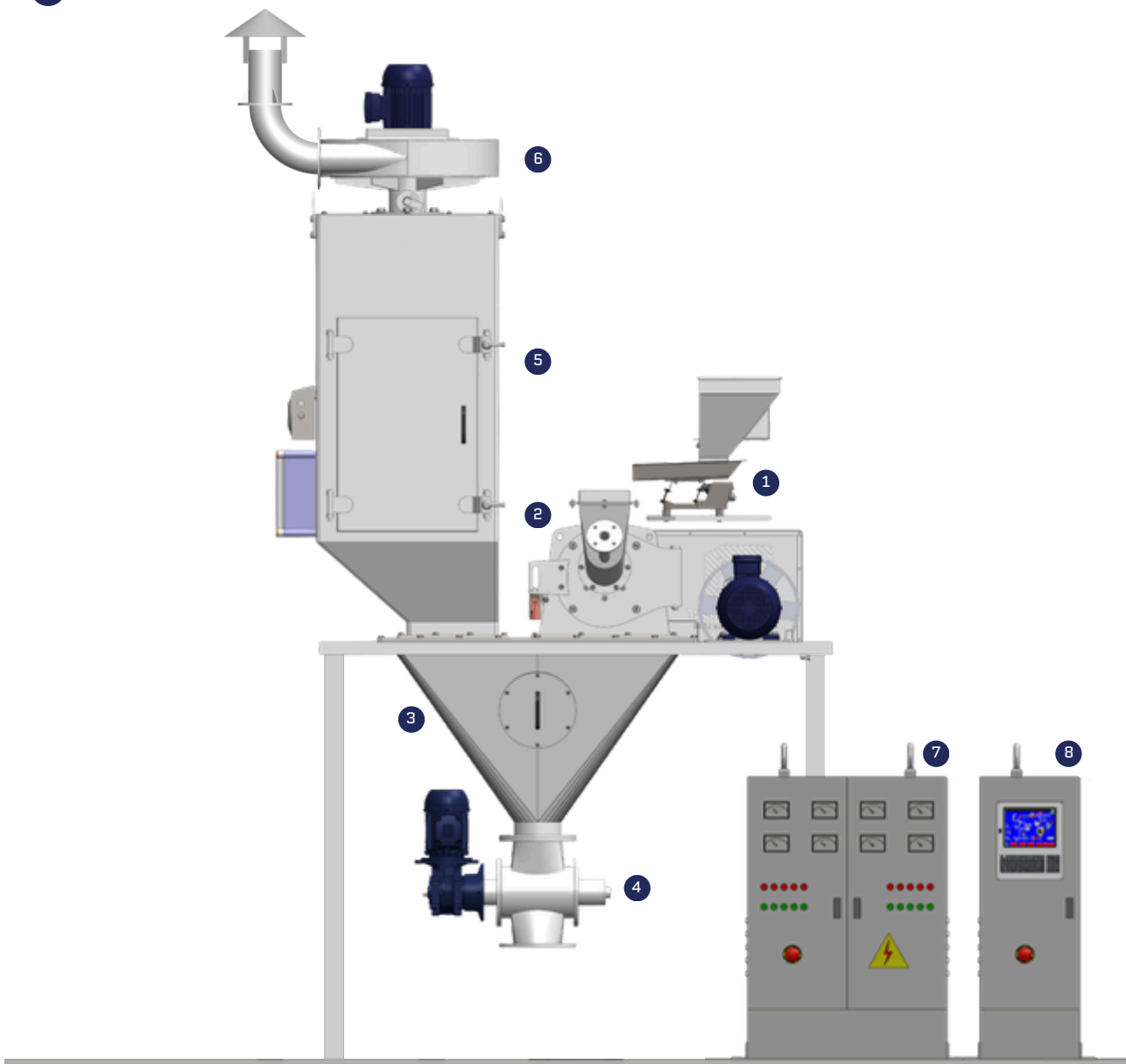
DP® UNIVA Series Rigid Knife Rotor Mill

Universal Mill

Introduction

The DP® Rigid Knife Mill is designed for coarse to medium size reduction using high-speed rigid knife rotors with screens and liners. Grinding occurs through cutting and impact action, making it suitable for processing tough, fibrous, elastic, and heat-sensitive materials. It delivers efficient particle size control with high throughput for a wide range of industrial and recycling applications.

- | | |
|-------------------------------------|-----------------|
| ① Feed Hopper With Vibratory Feeder | ⑥ Blower |
| ② DP® Rigid Knife Rotor Mill | ⑦ Control Panel |
| ③ Material Discharge | ⑧ PLC Panel |
| ④ Rotary Air Valve | |
| ⑤ Dust Collector | |



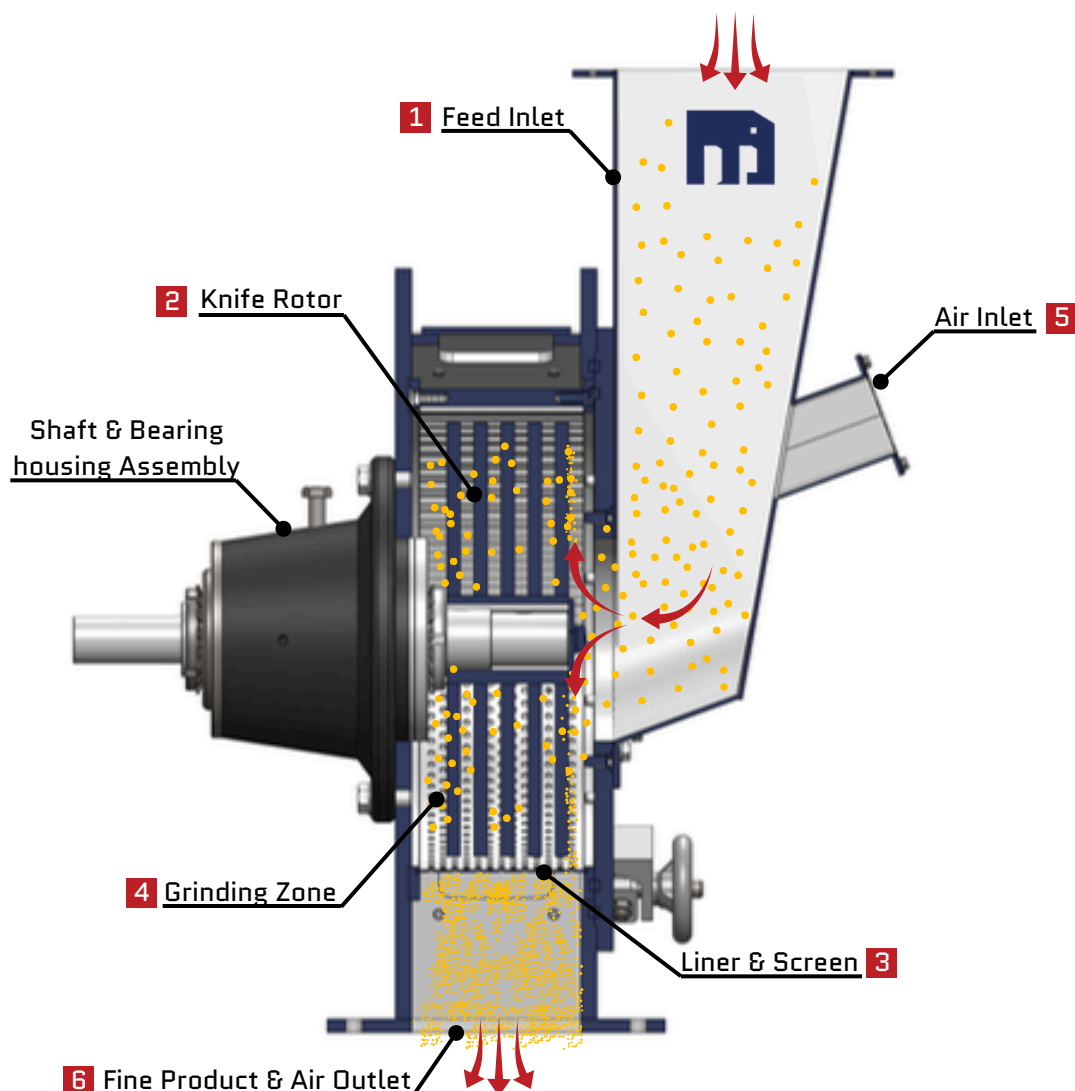
► Typical process flow diagram of a standard Rigid Knife Rotor Mill

Working Principle

The DP® Rigid Knife Mill operates on the principle of high-speed cutting and impact using rigid knife rotors with a liner & screen assembly. Material enters through the **feed inlet (1)** and is directed into the **grinding zone (4)** by gravity or controlled feeding systems. Air can be introduced through the **air inlet (5)** to assist in cooling, material transport, and efficient product discharge during the grinding process.

Inside the grinding chamber, the **knife rotor (2)** rotates at high speed to generate powerful cutting and shearing forces on the material. The particles are repeatedly reduced against the **liner & screen (3)**, where further size reduction occurs through cutting, impact, and controlled retention within the grinding zone. The grinding fineness can be controlled by selecting the appropriate screen size and adjusting the rotor speed.

This system is ideal for coarse to medium grinding of tough, fibrous, elastic, and heat-sensitive materials. The finely ground product, along with process air, exits through the **fine product & air outlet (6)** for collection or pneumatic conveying.



► A cross-sectional view of the Rigid Knife Rotor Mill

Features & Benefits

- Efficient cutting and impact grinding using high-speed rigid knife rotors for coarse to medium size reduction.
- Suitable for tough, fibrous, elastic, and heat-sensitive materials across plastics, chemicals, food, and recycling applications.
- Rigid knife design provides aggressive cutting action for processing bulky and difficult-to-grind materials.
- Liner & screen configurations for flexible control of particle size and throughput..



➤ Gravity bunker discharge arrangement



➤ Pneumatic conveying discharge arrangement

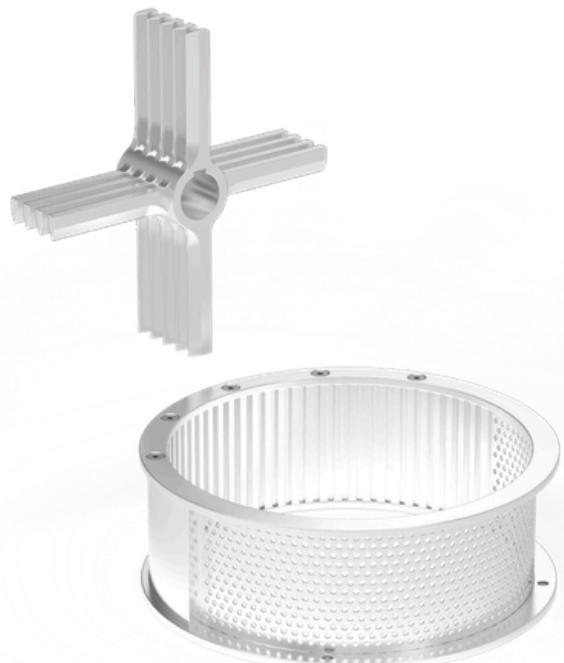
- Capable of handling coarse granulation and controlled particle size reduction with consistent product quality.
- Grinding chamber and knife assemblies designed for easy access, quick cleaning, and simplified maintenance.
- Compatible with ambient and cryogenic grinding applications for temperature-sensitive materials.

Options and Accessories

- **Explosion Protection:** Can be engineered with pressure shock-resistant housing to comply with dust explosion safety standards, supporting overpressure resistance up to 10 bar.
- **Metal Separation:** Can be fitted with inline magnetic separators or metal detectors to maintain product purity and protect equipment.
- **Reversible Knife Configuration:** Rigid knife rotors can be configured with sharp cutting edges for cutting applications or blunt impact edges for coarse impact grinding, providing flexibility for processing different material characteristics and particle size requirements.
- **Feeding & Discharge Systems:** Compatible with screw feeders, vibratory feeders, gravity feed hoppers, pneumatic conveying, and gravity discharge systems..
- **Instrumentation & Monitoring:** Can be equipped with temperature probes, vibration sensors, and safety interlocks for process control and equipment protection.
- **Variable Speed Drive:** Optional frequency-controlled drive system for precise adjustment of rotor speed and particle size.



► DP® UNV-320PD-EX in Explosion Resistant design upto PSR 11 bar



► Knife Rotor and Screen Basket

Machine size

Model	Rotor drive	Mill speed [Max.]	Max. air flow rate	Scale-up factor
UNV	kW	rpm	m ³ /h	-
105	1.5	15000	-	0.06
180	5.5	12000	-	0.25
255	11	8300	1050	0.5
320	18.5	7100	1500	1
510	37	4500	3200	2
640	75	3500	5200	3.6
805	90	2800	7500	4.5
1020	110	2400	10000	6.3
1280	250	1850	12500	9



► DP® UNV-320KR UNIVA Series Rigid Knife Rotor Mill System

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. 60+ years, 7500 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 60+ 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

Built for durability and low maintenance even after years of service, Our core strength lies in Size Reduction and Air Classification. We offer a wide range of machines to meet 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
- Germany
- Mexico
- New Zealand
- South Africa
- Qatar
- Canada
- United Arab Emirates
- Bangladesh
- Ghana
- Hongkong
- Iran
- Nepal
- Singapore
- Nigeria
- Bhutan
- China
- Tanzania
- Oman
- Philippines
- Switzerland
- Uruguay
- Zambia
- Kenya
- Estonia
- Egypt
- Mauritius
- Madagascar
- Guatemala
- Indonesia
- Sri Lanka
- Bremen

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