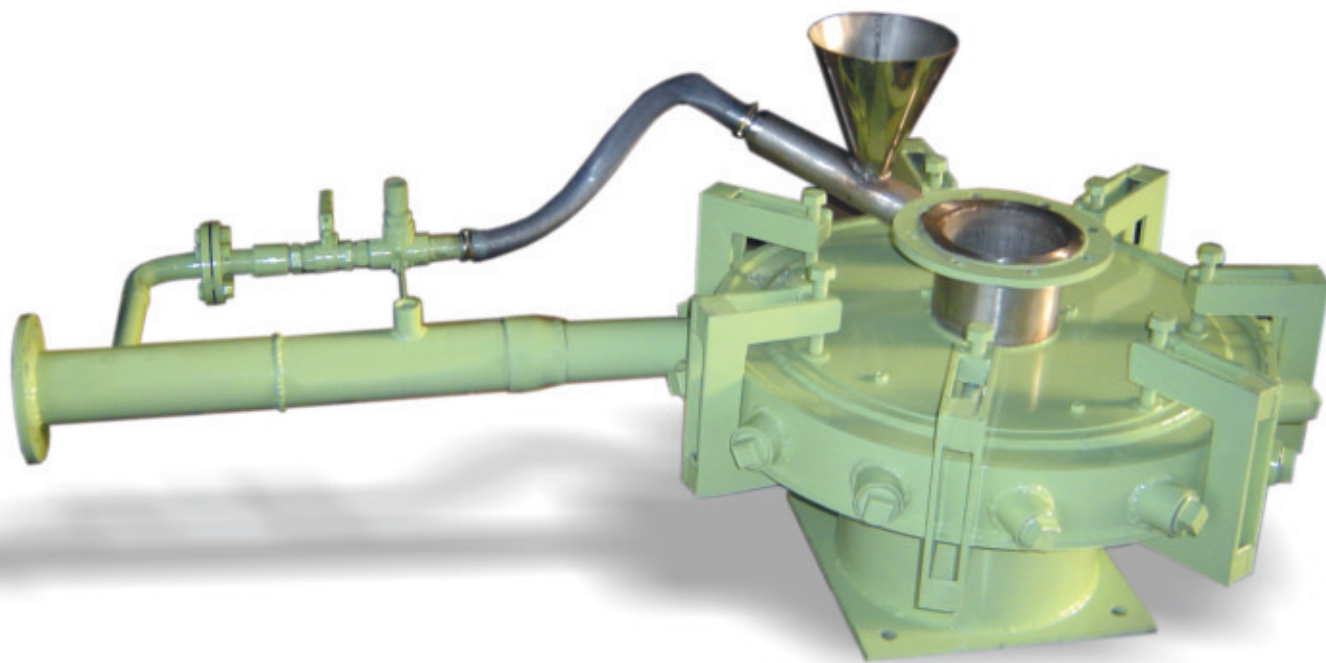


# JET MILLS

(FLUID ENERGY MILLS)

*Mills for Fine Micronizing of Solids*

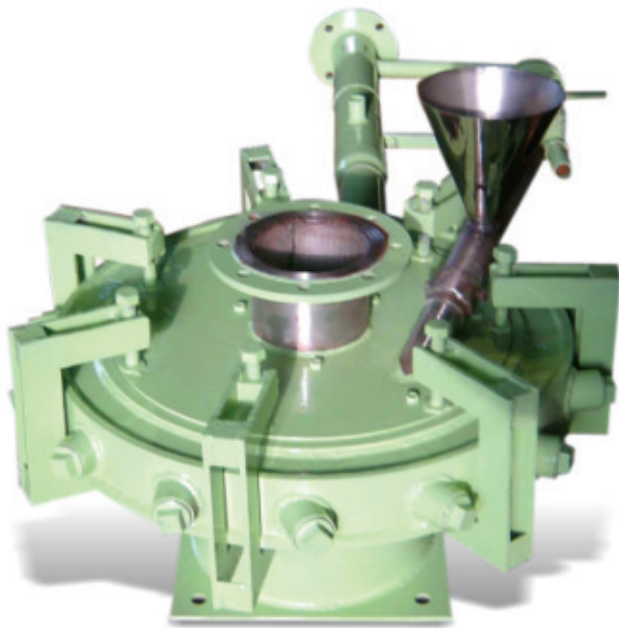


**Micronizing of solids of chemicals, pigments, pharmaceuticals, minerals, agrochemicals, thermoplastics and others like heat sensitive, corrosive and abrasive materials.**



ISO 9001:2000 CERTIFIED ORGANISATION





Jet Mills (Fluid Energy Mills) are used for micronizing of solids of agro-chemicals, chemicals, pigments, minerals, pharmaceuticals, thermoplastics and other like heat sensitive, corrosive and abrasive materials.

Jet Mills operate in compressed air, gas or high pressure superheated steam. These mills have no moving parts, thereby eliminating contamination due to contact with external grinding media. No attritional heat is generated during grinding making it the ideal process to grind heat-sensitive and waxy substance.

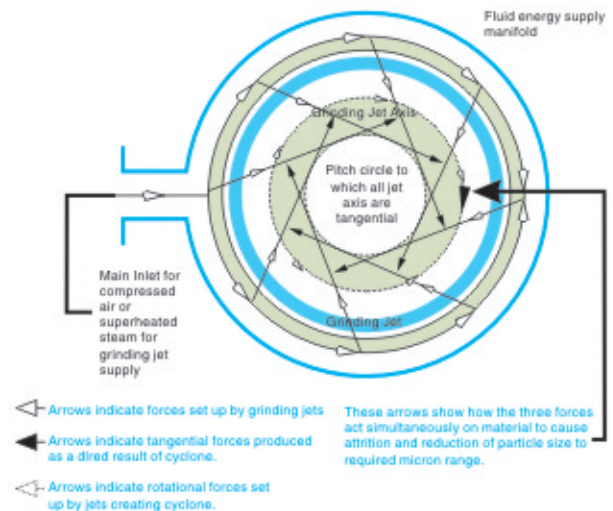
The mills are supplied with a range of auxiliary

## PRINCIPAL OF OPERATION

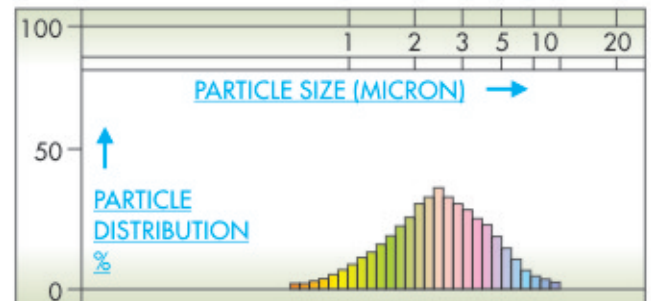
Jet Mill works on fluid energy. Micronizing and classification take place in a shallow, cylindrical chamber. High pressure air or steam is injected in this chamber through the specially designed nozzles placed at regular distance, on the peripheral wall. The axis of each jet is tangential to the circumference of a smaller, imaginary, concentric circle.

During operation, these jets generate a high speed vortex inside the chamber and the materials fed through a separate venturi system, which creates a partial vacuum to suck the material into this high velocity vortex. Strong velocity gradients near the jet cause the suspended particles of the material to

collide with each other and reduce themselves by attrition and collision. The jet fluid exits through an outlet at the center of the chamber either from top and draws the micronized particles with it to the cyclone collector system. Heavier oversized particles are held in the grinding chamber by centrifugal force, until micronized to a desired size.



## EXAMPLE OF ONE PRODUCT (MICRONIZED IN JET MILL)



### Particle Distribution

d 50 = 3 micron

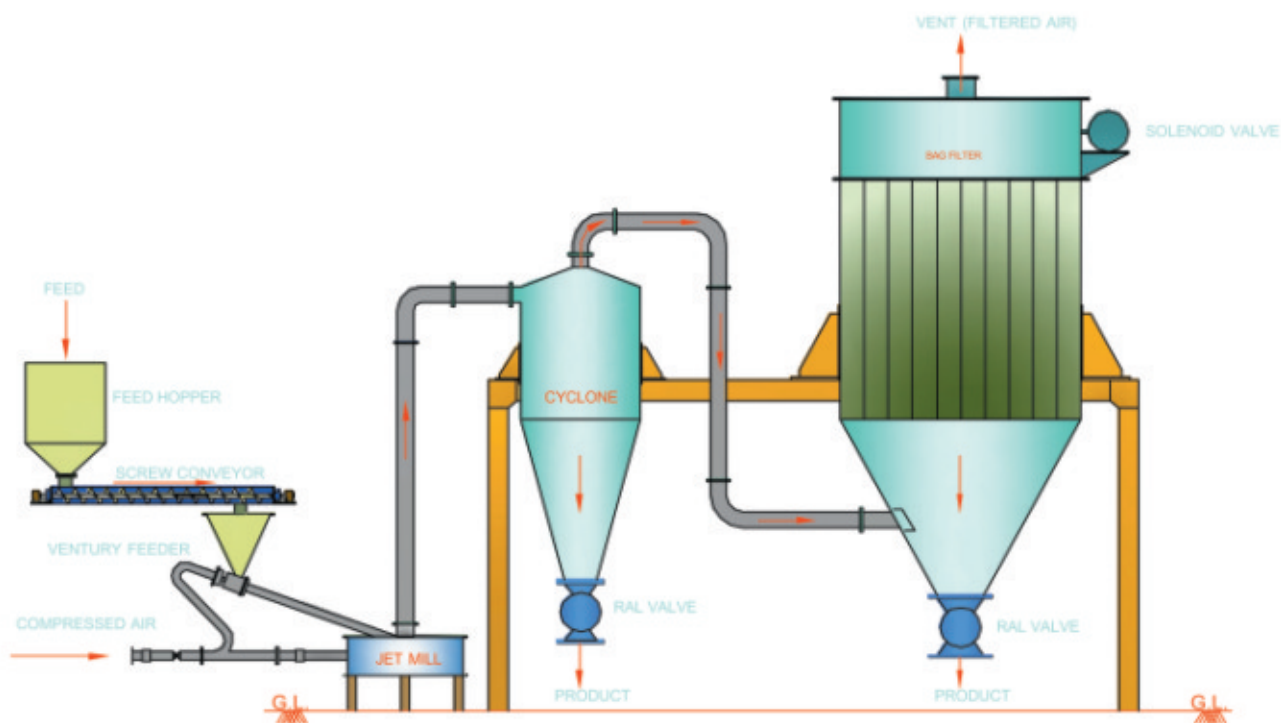
d 90 = 5 micron

d 97 = 7 micron

Maximum Particle Size = 20 micron

In general input feed size of 200 mesh with air pressure of 7kg/sq. cm, adequate quantity of air and controlled feed give better results. Setting of microfiner also plays an important role. However, final results can be derived by trial. Fineness and output depends upon material characteristics and other factors.

| INDUSTRIES             | SOME OF THE MATERIALS  |
|------------------------|--|
| <b>Agrochemicals</b>   | BHC, DDT, Deltamethrine, Carbendezim, Carbaryl, Germicide, Herbicide, Fungicide, Sulphur etc.  |
| <b>Chemicals</b>       | Adipic acid, Barium titanate, Calcium chloride, Chrome oxide, Catalysts, TCC etc.  |
| <b>Ceramics</b>        | Aluminium hydrates, Silicon carbide, Ferrites, Glass, Zirconium oxide etc.   |
| <b>Metals</b>          | Molybdenum disulphide, Noble metal, Copper etc.  |
| <b>Minerals</b>        | Bauxitem Calcite, Gypsum, Graphite, Mica, Talc, Tentalum ore etc.  |
| <b>Paints</b>          | Carbon black, Fluorescent pigments, Printing ink etc.  |
| <b>Pharmaceuticals</b> | Albendazole, Antibiotics, Aspirin, Cosmetics, Bulk drugs, Dichlofenac sodium, Glybeneclamide, Furosemide, Omeprezole, Oxfendazole etc. |
| <b>Plastics</b>        | ABS resins, PVC stabilizers, Phenolics, PTEF etc.  |
| <b>Others</b>          | Asbestos, Chocolate, Food colours, Fuller earth, Precipitated silica, Silverflake, Toner, Wax, Wolframite ore etc.                     |



LAYOUT OF JET MILL

## TECHNICAL SPECIFICATIONS

| S.No. | Model   | Air Comp.<br>KW<br>Pr. 7 Kg/cm <sup>2</sup> | Air<br>M <sup>3</sup> /Hr.<br>FAD | Capacity<br>Kg/Hr.<br>(Approx.) | Approximate space<br>required for mill at<br>bagging ht. = 1000mm<br>LxBxH (mm) |
|-------|---------|---|-----------------------------------|---------------------------------|---|
| 1.    | NJM-200 | 30  | 215                               | 22                              | 3000 x 1000 x 2000  |
| 2.    | NJM-250 | 37  | 340                               | 40                              | 4500 x 2000 x 4000  |
| 3.    | NJM-300 | 45  | 450                               | 65                              | 4500 x 2000 x 4000  |
| 4.    | NJM-400 | 56  | 650                               | 100                             | 5000 x 2000 x 4000  |
| 5.    | NJM-450 | 90  | 900                               | 160                             | 5000 x 2000 x 5000  |
| 6.    | NJM-500 | 112   | 1100                              | 210                             | 5000 x 2000 x 5000  |
| 7.    | NJM-600 | 187   | 1800                              | 400                             | 5000 x 3000 x 6000  |
| 8.    | NJM-750 | 337   | 2900                              | 720                             | 6000 x 3000 x 7500  |

- Production capacity, fineness and KW of motors are nominal only and vary from case to case depending upon several factors.
- Specifications and designs are subject to change without notice.
- Different designs can be offered for different applications.
- Average feed size of materials is 200 mesh with operating pressure in between 7-8 kg/cm<sup>2</sup>, but results widely depend on material characteristic.

## OTHER RANGE OF PRODUCT

|                                       |                                |
|---------------------------------------|--------------------------------|
| <b>CENTRIFUGES</b>                    | <b>ROTARY VACUUM DRIERS</b>    |
| # MANUAL TOP DISCHARGE                | <b>BUCKET ELEVATORS</b>        |
| # BAG LIFTING TYPE                    | <b>SCREW CONVEYORS</b>         |
| # BOTTOM DRIVEN BOTTOM DISCHARGE      | <b>RIBBON BLENDERS</b>         |
| WITH SCRAP                            | <b>BELT CONVEYORS</b>          |
| <b>REACTION VESSEL</b>                | <b>FLUID BED DRIERS</b>        |
| <b>FLUID ENERGY MILLS (JET MILLS)</b> | <b>DRUM DRIERS AND FLAKERS</b> |
| <b>AIR CLASSIFYING MILLS (ACM)</b>    | <b>ROTARY DRIERS</b>           |
|                                       | <b>ROTARY KILNS</b>            |



## NSI EQUIPMENTS PVT LTD

(An ISO 9001:2000 Certified Company)



ISO 9001:2000 CERTIFIED ORGANISATION

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