SIZE REDUCTION

Process of reducing drugs into smaller pieces, coarse particles or fine powder

Importance of size reduction

- To increase rate of solution
- To allow rapid penetration of solvent
- To get a uniform powder
- To increase rate of absorption of a drug
- To improve stability
- To help in process of separation

Factors affecting size reduction

- Hardness
- Toughness
- Stickiness
- Material structure
- Moisture content
- Softening temperature
- Purity required
- Physiological effect
- Ration of feed size to product size
- Bulk density

Methods of size reduction

- Cutting
- Compression
- Impact
- Attrition
- Combined impact and attrition

Hammer Mill

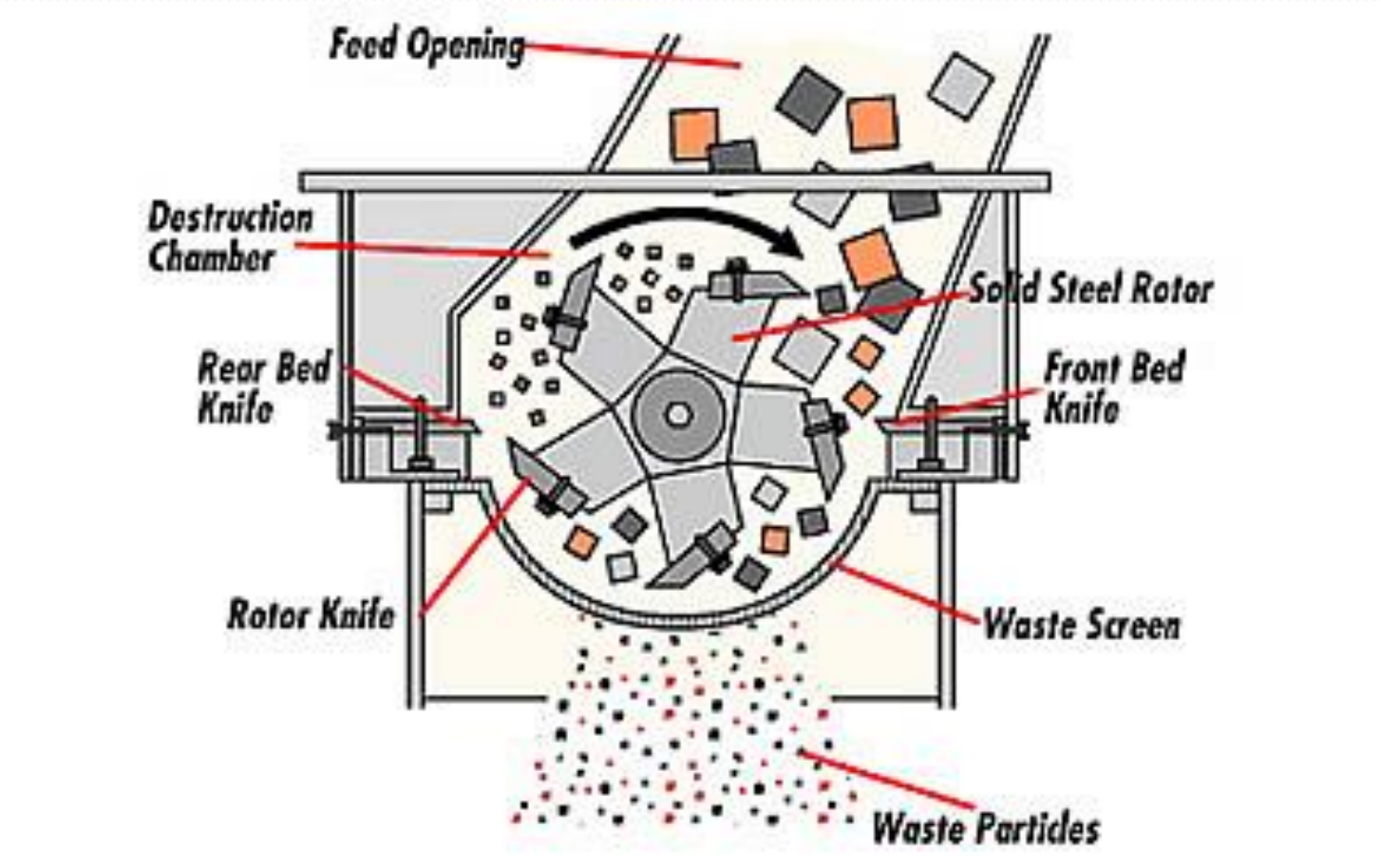
- Principle: Impact
- Construction: Stout metal casing with shaft to which hammers are attached
- Working:

Hammer mill working animation HD.mp4

Disintegrator

- Principle: Impact
- Construction: Steel drum having a shaft which contains a disc on which four beaters are fixed.

Working


Feed Opening
Destruction Chamber
Solid Steel Rotor
Rear Bed Knife
Front Bed Knife
Rotor Knife
Waste Screen
Waste Particles

Ball Mill

- Principle: Impact and attrition
- Construction: Hollow cylinder which contains balls that occupy 30-50% of mill volume. Cylinder and balls of metal.
- Working:

Ball Milling Method.mp4

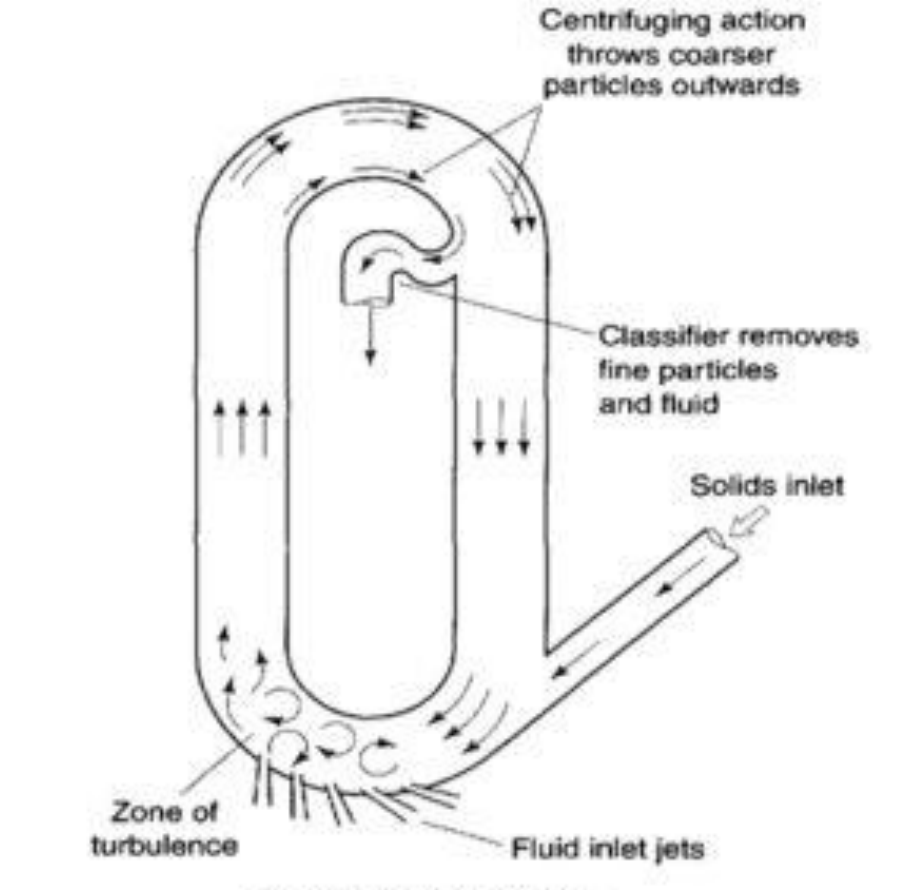
Fluid energy mill

- Principle: Impact and attrition
- Construction: A loop of pipe which has a diameter of 20 to 200 mm, height of about 2 m.

  An inlet for feed and series of nozzles for inlet of air or inert gas.

  An outlet with classifier

Working



FLUID ENERGY MILL

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