

Media Agitation Wet-type Ultra Fine Grinding Machine

NEW

# MSC-MILL

PAT-P

Minimum 0.015mm Micro Beads Applicable



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MITSUI MINING CO., LTD.



## High Performance Pulverizer & Dispersor For Ultimate Nano Scale Technology

# MSC-MILL PAT-P

### Feature

- 0.015mm-0.2mm micro-beads are available.
- Our unique design makes stable use of micro-beads.
- By using short L/D of the tank and cylindrical rotor, it enables to give uniformed and efficient pulverize/disperse force to the micro-beads.
- Simple structure makes very easy to clean and maintain. Additionally, the whole pulverizing tank can be rotated to whatever position you may wish for your easy access.

### Centrifugal Separating System

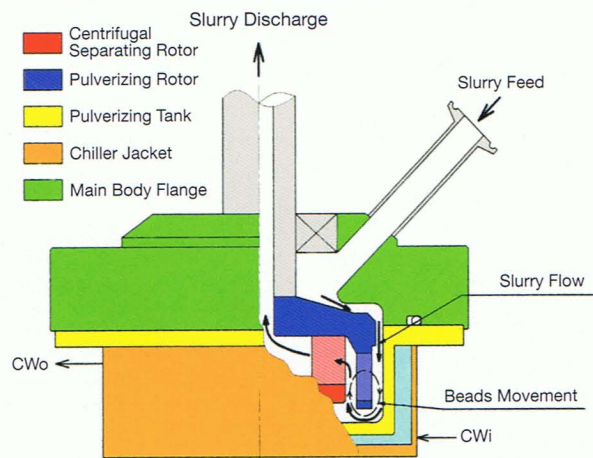
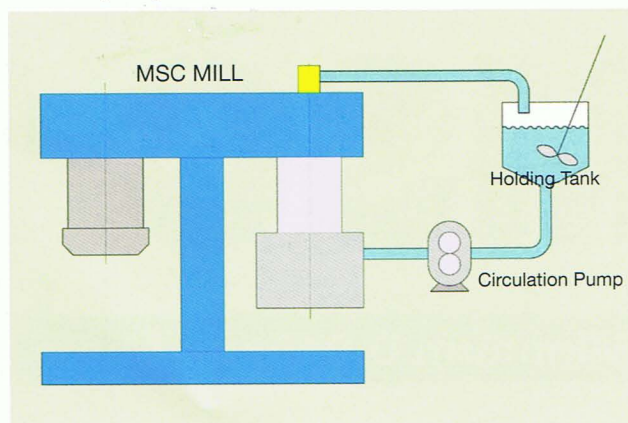
There are more demands for mills which can use smaller (less than 1mm) micro-beads at stable state as nano scale process has advanced rapidly in recent years. Conventional way of separating the micro-beads and slurry are using slit or screens. This method have problem with clogging which would restricts the size of the beads. MSC-Mill uses unique centrifugal separating system which unlimits the size of the beads and also by placing separating rotor at inside of the pulverizing rotor, the micro-beads will not congregate inside separating system and enables to separate the slurry and the micro-beads more successfully.

### Smaller L/D (Lengths of the tank/Dimension of the tank)

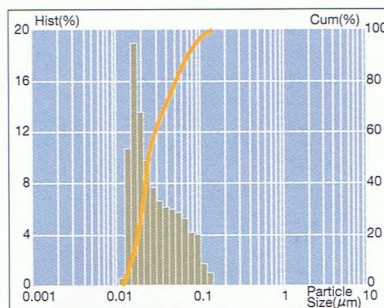
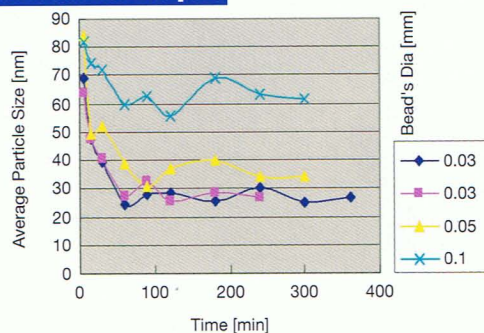
Nano scale disperse requires soft and uniformed process. Conventional and common mill using bigger L/D (more than L/D=1) have problem when using smaller beads which tends to have irregular congregation and excessive force especially at the discharge side. This makes secondary cohesion to the materia and often fail to bring micro-beads ability into full play. Where as MSC-Mill has only L/D=1/3. Compareto conventional mill, the L/D has been reduced dramatically and with special pulverizing rotor, it accomplished uniformed disperse.

### Equipment Composition (TYPE:MSC100)

Tank Capacity: 0.32L Flow Rate: 0.5-2L/min  
Motor Capacity: 3.7kW Default Holding Tank Capacity: 5L



### Process Example



TiO<sub>2</sub> Particle Size Distribution

TiO<sub>2</sub> is one of the typical material that requires nano disperse. As you can see from left chart, it shows that the disperse performance and final particle size it can be reach depends on diameter of the micro-beads. MSC-Mill uses 0.03mm micro-beads and it can be disperse the primary particles as well.

## [Application]

Submicron, Nano scale pulverize and disperse for Common Inks, Specific Inks (Resist Inks), Paint, Pigment, Colour Toner, PZT, ITO, TiO<sub>2</sub>, Various Metal, Oxidized Material. Glass and many more.

Model	MSC50	MSC100	MSC150	MSC220
Tank capacity [liters]	0.064	0.32	1.1	3.1
Speed (standard) [min <sup>-1</sup> ]	3200	1600	1070	800
Speed range [min <sup>-1</sup> ]	1000-6000	1000-3000	650-2000	500-1500
Holding tank [liters]	0.5-1	3-20	5-50	20-200
Motor capacity [kW]	0.4	3.7	7.5	15
Weight [kg]	30	300	500	800

## MITSUI MINING CO., LTD.

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