

Innovative Circular-type Stirred Mill with High Flow

SAIOH

SC-MILL (patent pending)

**HIGH
PERFORMANCE**

**HIGH
QUALITY**

FLEXIBILITY

**HIGH
EFFICIENCY**

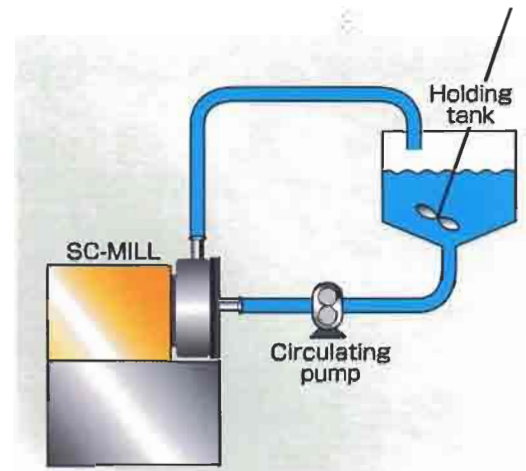


MITSUI MINING CO., LTD.

Circulating structure design ensures high-flow, smooth operation, and minimized energy loss.

SC-Mill "SAIOH" is an innovative stirred mill in which the direction of slurry flow is the same as that of the rotor centrifugal force. This epochmaking design has solved the problems of conventional stirred mill. Centrifugal force provides smooth feed of slurry into the separator provided on the peripheral portion of the rotor.

It allows uniform dispersion of slurry even when small diameter media are used, and provides stable and high flow circulation while minimizing local heat generation in the grinding chamber.



Circulating system

HIGH PERFORMANCE

Powerful grinding capacity

Adoption of small-diameter media and effective use of centrifugal force have greatly improved grinding capacity and dispersion.

Small-diameter media

Media (zirconia) shown in 5 levels of magnification

1 mm 0.2 mm

Grinding and dispersion sizes in nanometers

Grinding of calcium carbonate (Example)

Throughput: 10 kg of calcium carbonate with 10 kg of water
Speed: 800 rpm
Grinding ball: PSZ 0.3 mm 2.7 kg
Circulated volume: 15 liters/min

Increased centrifugal force

Powerful grinding and dispersion

Electron microscope photo

Before treatment After treatment

HIGH QUALITY

Stabilized quality

High flow by circulation method ensures sharp distribution of particle size and stabilized quality.

High flow by circulation method

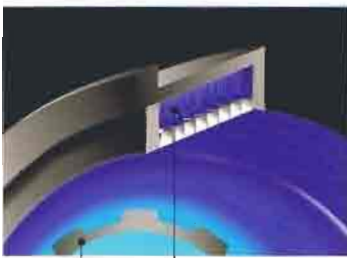
Leveling of grinding and dispersion

Sharp distribution of particle size and stabilized quality

Measurement of the distribution of calcium carbonate particle size

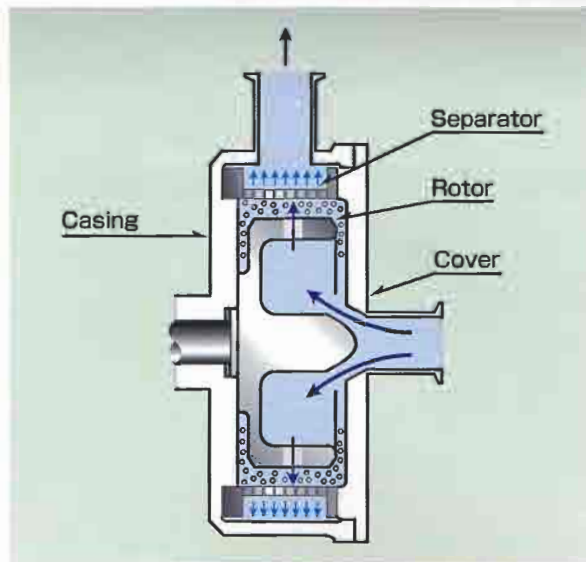
Effective use of energy provides high ball efficiency

Substantial reduction in the volume of media abrasive powder



Separator
Separates grinded slurry from media and discharges it.

Rotor
Feeds the media and slurry to the separator by means of centrifugal force generated by rotation.



Structure and principle

The SC-Mill "SAIOH" comprises an agitating rotor inside the short cylindrical grinding section, and a separator located on the periphery.

Centrifugal force is generated by rotation of the rotor, and media are pressed against the separator in layers.

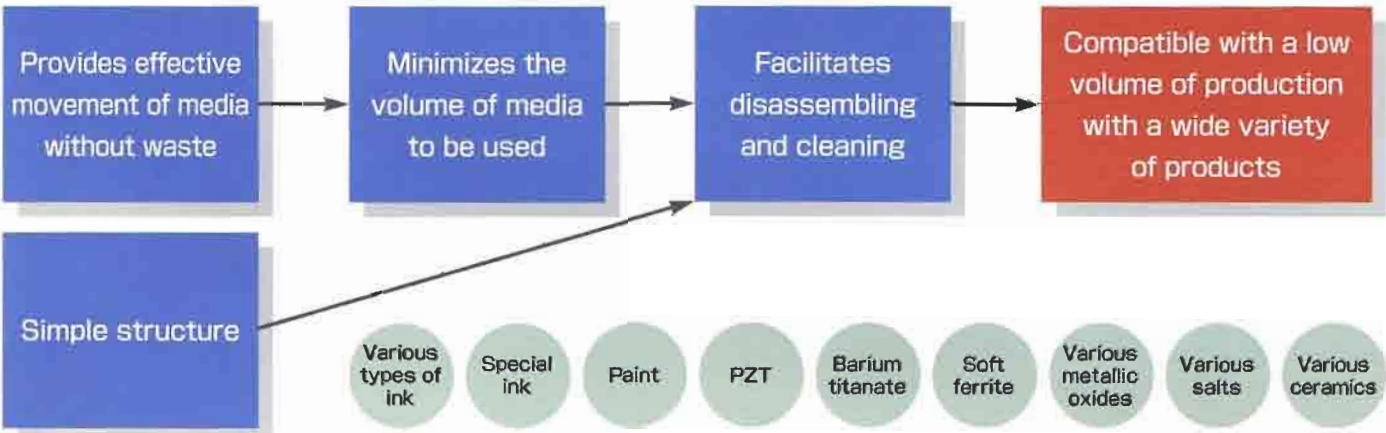
Simultaneously, the rotor rotates, thereby generating a high shearing force between the media.

Furthermore, the direction of centrifugal force is the same as that of the slurry flow; this provides uniform grinding and dispersion, and permits a large volume of slurry from the separator to be discharged. (Patent pending)

FLEXIBILITY

Compatible with a low volume of production with a wide variety of products

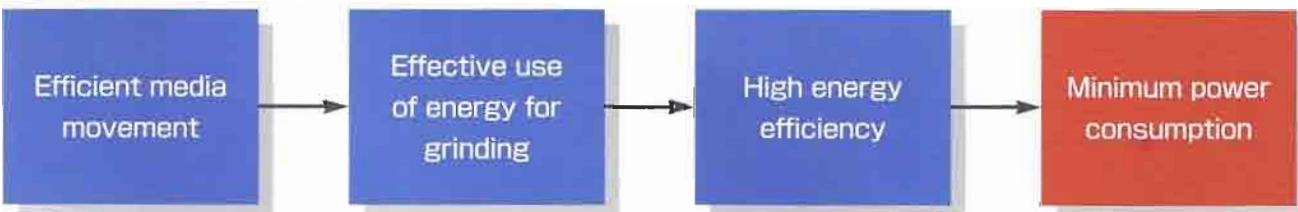
A simple structure allows easy disassembling and cleaning. Also compatible with a low volume of production with a wide variety of products.



HIGH EFFICIENCY

High energy efficiency

Efficiency is improved by uniform media movement, thereby ensuring reduced running costs.



Substantial savings in personnel costs

Treatment by circulation allows unmanned operation by timer, thereby providing a substantial saving in personnel costs.

Easy addition and dispersion of additives

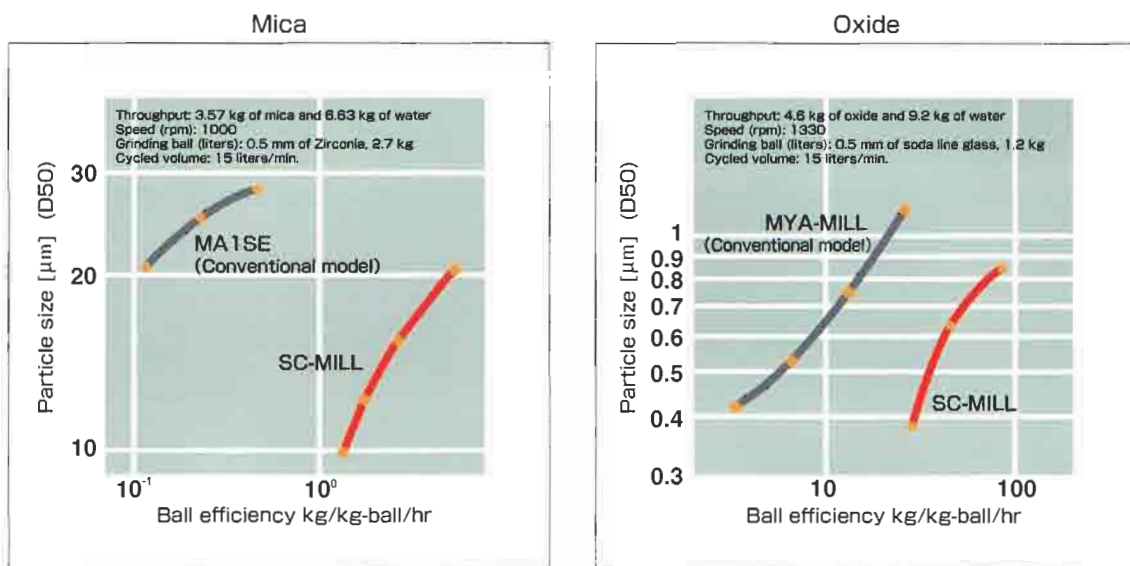
Allows addition of additives as required, while checking the actual treatment.

Specifications

Model	SC100/32	SC150/50	SC220/70	SC320/100	SC450/140
Volume of ball (liters)	0.13	0.25	0.8	2.4	6.8
Speed (rpm)	Max. 3300	Max. 2200	Max. 1500	Max. 1000	Max. 700
Motor capacity (kW)	3.7	5.5	11-15	22-30	37-55
Holding tank (liters)	5-20	10-50	50-200	100-500	200-1500
Dimensions (mm)	*1100 ^D x450 ^W x1100 ^H	730 ^D x600 ^W x1300 ^H	880 ^D x750 ^W x1300 ^H	1200 ^D x750 ^W x1450 ^H	1900 ^D x1450 ^W x1800 ^H
Weight (kg)	150	360	650	980	2300

Notes: 1. Specifications listed are standard and may vary according to adaptation.
2. Dimensions given for (*) include those for the hopper.

Comparison of Grinding Capacity



JQA-0663

Certificate of Approval
ISO 9001

Media agitator fine grinder
Double motion granulating mixer
High-speed fluidizing mixer

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