



Reach new height with KEFID

# Micro Powder Mill



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## Brief Introduction:

HGM series Micro Powder Grinding Mill absorbing the European advanced technology and many engineers' ripe experience, combining with the actual requirement and proposal of our 8618 customers, has been developed on the basis of our professional engineers' hard researching. It is mainly applied to grind non-inflammable, non-explosive and brittle materials with Mohs hardness under six. Such as calcite, chalk, limestone, dolomite, kaolin, gypsum, etc, totally more than 100 kinds of materials. Product fineness can be controlled between 0.047mm (47 micron) and 0.005mm (5 micron) .







## Performance and features

### 1. High efficiency

Compared with jet mill, agitation mill and ball mill, If the fineness and motor power is the same as each other, its production capacity is twice than others;

### 2. Longer lifetime of spare parts

The roller and ring are made of special material, which improve the grinding efficiency a lot. For same material and final size, the lifetime of its wearing parts can reach to more than one year, about 2-5 times as long as that of vertical shaft impact crusher and turbo-mill. Especially when handling calcium carbonate and calcite, the lifetime can reach 2-5 years.

### 3. High safety and reliability

There are no rolling bearings and bolts in grinding chamber, so problems caused by bolts shedding or wear of bearings and seal components will never happen.

### 4. High fineness of products

The product fineness can reach  $D_{97} \leq 5$  micron.

### 5. Pro-environment

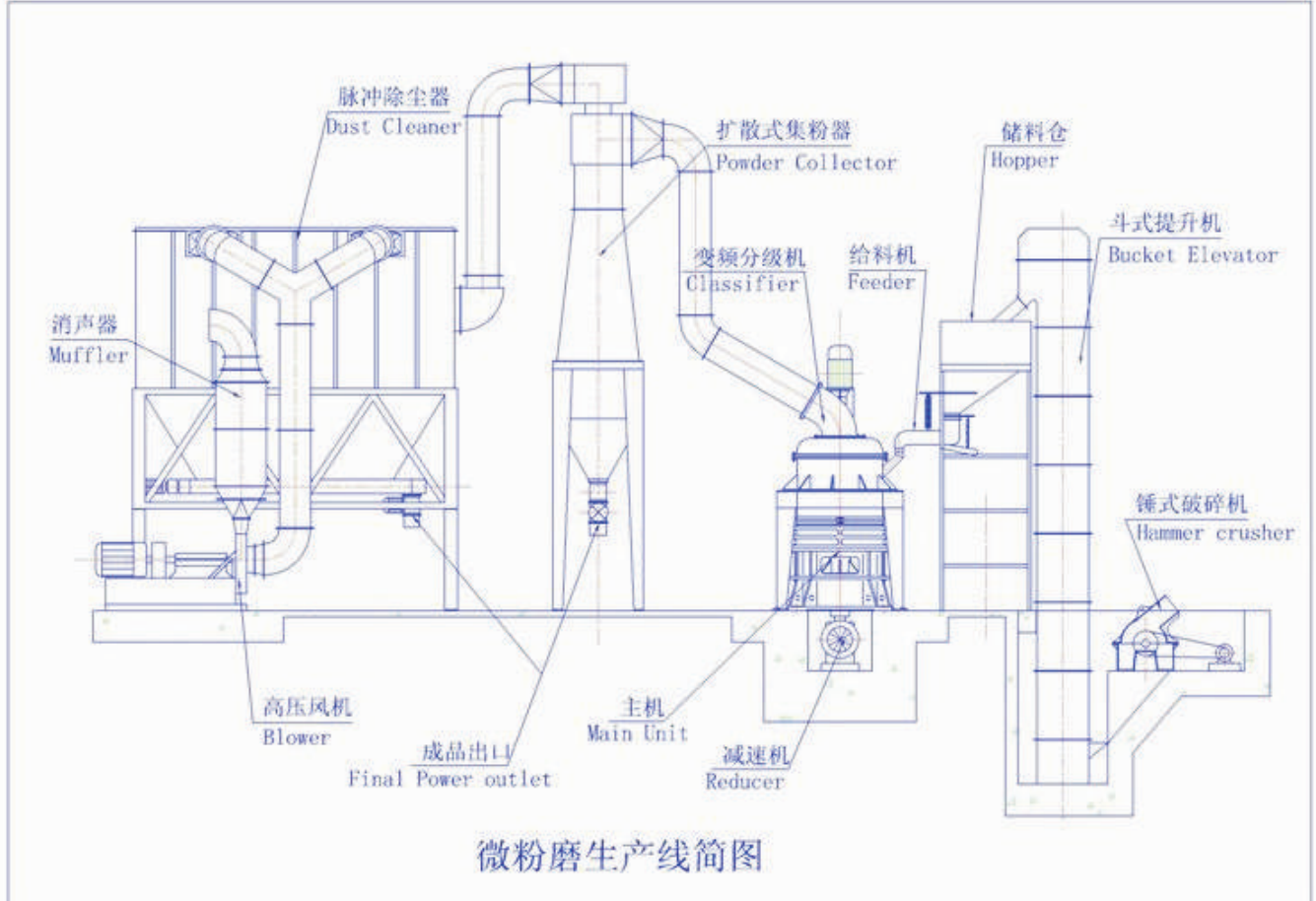
The application of pulse bag filter and muffler reduce the pollution of dust and noise, which has reached national environment protection standard.





## Production Line Configuration

The whole set HGM Micro Powder Grinding Mill consists of (see sketch 1) hammer crusher, bucket elevator, storage hopper, vibrating feeder, main unit, inverter classifier, cyclone, pulse bag filter system, high pressure positive blower, air compressors and electrical control systems.



## Working Principle:

The main motor drives main shaft and every layer rotating by reducer. Turnplate drives numbers of rollers rolling and rotating in the ring by pintles.

Big materials are crushed into smaller particles by hammer crusher. Then they are sent to storage hopper by bucket elevator. The electro-magnetic vibrating feeder feeds the materials evenly to the distribution plate which is on the upper turnplate. Under the function of the centrifugal force, the materials scatter to the side of the circle and fall into the ring to be pressed, crushed and milled into pieces by rollers. After the first crush, materials fall into the second and the third layer. The pumping of the high-pressure centrifugal blower put the outside air into the machine. The coarse powder will be brought into the classifier.

The rotating turbine in the collector makes the coarse particles fall back for regrinding. The fine particles will come into the cyclone collector with the airflow and discharged by the discharging valve on the bottom of the collector. They are the final products. The airflow with little dust will be discharged through blower and muffler after being purified by the cyclone collector.



## Technical parameters:

Item	HGM80	HGM100
No. of Roller(pcs)	21	27
Ring diameter (mm)	Φ800	Φ1000
Layer of ring (pcs)	1x3	1x3
Rotary speed of main shaft (r/min)	180-250	150-200
The Max. Feeding Size (mm)	<10	<10
Output size (micron/mesh)	5-47/300-3000	5-47/300-3000
Capacity (kg/h)	500-3500	900-6500
Overall dimension (m)	12.4×3.5×5.8	14.5×5.0×8.6

Specification	Item	Unit	HGM80	HGM100
Motor of main unit	Model	KW	Y250M-4	Y315L1_6
	Power		55	110
Motor of classifier (Frequency modulation motor)	Model	KW	Y2VP180M-4	Y2VP200L_4
	Power		18.5	30
Motor of bucket elevator	Model	KW	Y100L-4	Y100L-4
	Power		3	3
Motor of blower	Model	KW	Y225M-2	Y280M_2
	Power		45	75-90
Motor of hammer crusher	Model	KW	400x300	600x400
	Power		11	18.5
Motor of vibrating feeder	Model	KW	GZ1F	Y100L1_4
	Power		0.06	2.2
Motor of discharging valve	Model	KW	ZJD200	ZJD200
	Power		0.75	0.75
Motor of Pulse bag filter	Model	KW	DMC120	DMC184
	Power		0.1	0.2





## Result Analysis Report

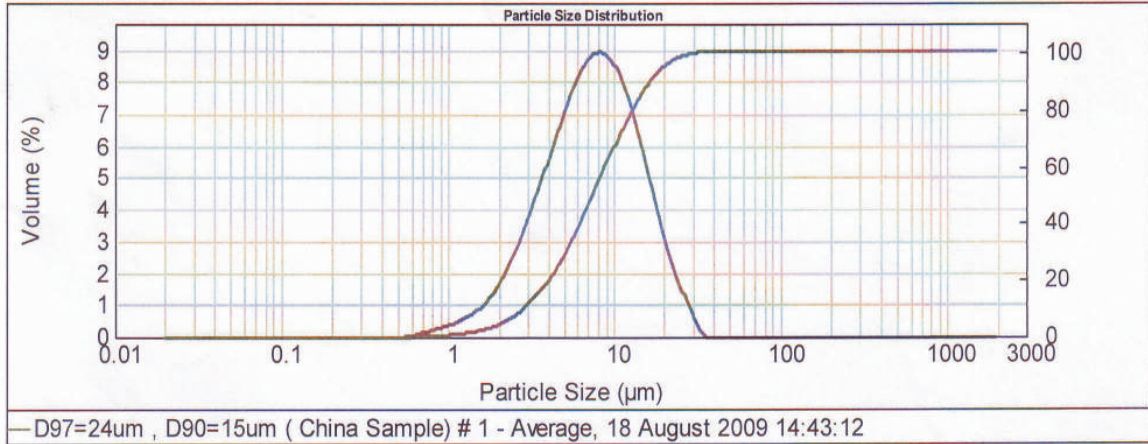
<b>Sample Name:</b> D97=24um , D90=15um ( China )	<b>SOP Name:</b> Calcium Carbonate	<b>Measured:</b> 18 August 2009 14:43:12
<b>Sample Source &amp; type:</b> Factory	<b>Measured by:</b> Ajyad	<b>Analysed:</b> 18 August 2009 14:43:14
<b>Sample bulk lot ref:</b>	<b>Result Source:</b> Averaged	

<b>Particle Name:</b> CaCO3, 1.6, 0.01	<b>Accessory Name:</b> Hydro 2000G (A)	<b>Analysis model:</b> General purpose	<b>Sensitivity:</b> Normal
<b>Particle RI:</b> 1.600	<b>Absorption:</b> 0.01	<b>Size range:</b> 0.020 to 2000.000 um	<b>Obscuration:</b> 21.01 %
<b>Dispersant Name:</b> Water	<b>Dispersant RI:</b> 1.330	<b>Weighted Residual:</b> 0.611 %	<b>Result Emulation:</b> Off

<b>Concentration:</b> 0.0158 %Vol	<b>Span :</b> 1.843	<b>Uniformity:</b> 0.572	<b>Result units:</b> Volume
<b>Specific Surface Area:</b> 1.09 m <sup>2</sup> /g	<b>Surface Weighted Mean D[3,2]:</b> 5.496 um	<b>Vol. Weighted Mean D[4,3]:</b> 8.779 um	

**Mean**                      **d(0.1): 2.866 um**                      **d(0.5): 7.458 um**                      **d(0.9): 16.613 um**

**D(0.95) : 20.10 um**                      **D(0.97) : 22.46 um**                      **D(0.99) : 26.68 um**                      **D(1.00) : 33.32 um**



Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %	Size (µm)	Vol Under %
0.020	0.00	0.142	0.00	1.002	0.65	7.096	47.14	50.238	100.00	355.656	100.00
0.022	0.00	0.159	0.00	1.125	0.95	7.962	53.81	56.368	100.00	399.052	100.00
0.025	0.00	0.178	0.00	1.262	1.33	8.934	60.52	63.246	100.00	447.744	100.00
0.028	0.00	0.200	0.00	1.416	1.81	10.024	67.09	70.963	100.00	502.377	100.00
0.032	0.00	0.224	0.00	1.589	2.44	11.247	73.32	79.621	100.00	563.677	100.00
0.036	0.00	0.252	0.00	1.783	3.26	12.619	79.06	89.337	100.00	632.456	100.00
0.040	0.00	0.283	0.00	2.000	4.33	14.159	84.16	100.237	100.00	709.627	100.00
0.045	0.00	0.317	0.00	2.244	5.72	15.887	88.52	112.468	100.00	796.214	100.00
0.050	0.00	0.356	0.00	2.518	7.48	17.825	92.09	126.191	100.00	893.367	100.00
0.056	0.00	0.399	0.00	2.825	9.69	20.000	94.90	141.589	100.00	1002.374	100.00
0.063	0.00	0.448	0.00	3.170	12.39	22.440	96.99	158.866	100.00	1124.683	100.00
0.071	0.00	0.502	0.00	3.567	15.65	25.179	98.46	178.250	100.00	1261.915	100.00
0.080	0.00	0.564	0.00	3.991	19.50	28.251	99.42	200.000	100.00	1415.892	100.00
0.089	0.00	0.632	0.02	4.477	23.95	31.698	99.92	224.404	100.00	1588.656	100.00
0.100	0.00	0.710	0.09	5.024	29.00	35.566	100.00	251.785	100.00	1782.502	100.00
0.112	0.00	0.796	0.22	5.637	34.60	39.905	100.00	282.508	100.00	2000.000	100.00
0.126	0.00	0.893	0.41	6.325	40.69	44.774	100.00	316.979	100.00		

Operator notes:



## Result Analysis Report

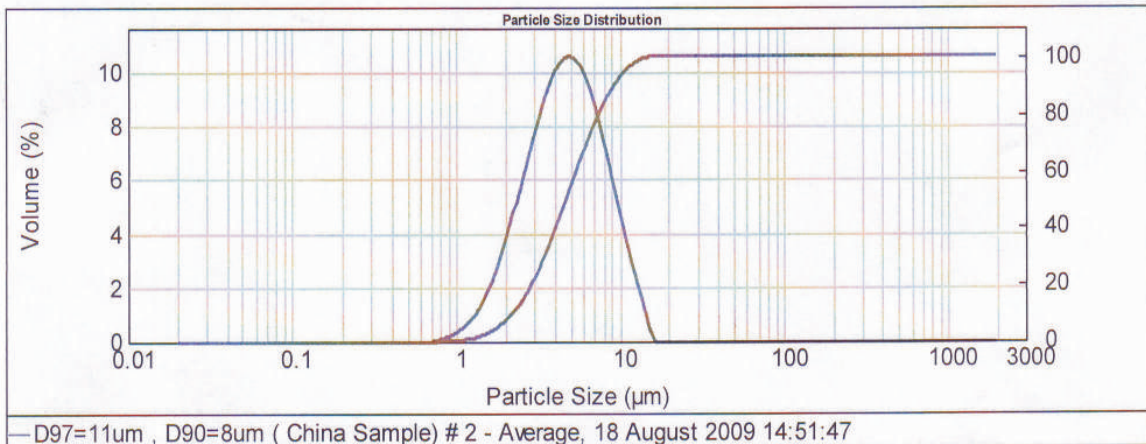
<b>Sample Name:</b> D97=11um , D90=8um ( China Sample)	<b>SOP Name:</b> Calcium Carbonate	<b>Measured:</b> 18 August 2009 14:51:47
<b>Sample Source &amp; type:</b> Factory	<b>Measured by:</b> Ajyad	<b>Analysed:</b> 18 August 2009 14:51:49
<b>Sample bulk lot ref:</b>	<b>Result Source:</b> Averaged	

<b>Particle Name:</b> CaCO <sub>3</sub> , 1.6, 0.01	<b>Accessory Name:</b> Hydro 2000G (A)	<b>Analysis model:</b> General purpose	<b>Sensitivity:</b> Normal
<b>Particle RI:</b> 1.600	<b>Absorption:</b> 0.01	<b>Size range:</b> 0.020 to 2000.000 um	<b>Obscuration:</b> 20.19 %
<b>Dispersant Name:</b> Water	<b>Dispersant RI:</b> 1.330	<b>Weighted Residual:</b> 0.552 %	<b>Result Emulation:</b> Off

<b>Concentration:</b> 0.0104 %Vol	<b>Span :</b> 1.508	<b>Uniformity:</b> 0.466	<b>Result units:</b> Volume
<b>Specific Surface Area:</b> 1.53 m <sup>2</sup> /g	<b>Surface Weighted Mean D[3,2]:</b> 3.919 um	<b>Vol. Weighted Mean D[4,3]:</b> 5.270 um	

**Mean**                      **d(0.1): 2.208 um**                      **d(0.5): 4.674 um**                      **d(0.9): 9.254 um**

**D(0.95) : 10.85 μm**                      **D(0.97) : 11.86 μm**                      **D(0.99) : 13.52 μm**                      **D(1.00) : 15.70 μm**



Size (μm)	Vol Under %	Size (μm)	Vol Under %	Size (μm)	Vol Under %	Size (μm)	Vol Under %	Size (μm)	Vol Under %	Size (μm)	Vol Under %
0.020	0.00	0.142	0.00	1.002	0.31	7.096	77.36	50.238	100.00	355.656	100.00
0.022	0.00	0.159	0.00	1.125	0.63	7.962	83.48	56.368	100.00	399.052	100.00
0.025	0.00	0.178	0.00	1.262	1.15	8.934	88.63	63.246	100.00	447.744	100.00
0.028	0.00	0.200	0.00	1.416	1.95	10.024	92.75	70.963	100.00	502.377	100.00
0.032	0.00	0.224	0.00	1.589	3.16	11.247	95.88	79.621	100.00	563.677	100.00
0.036	0.00	0.252	0.00	1.783	4.90	12.619	98.07	89.337	100.00	632.456	100.00
0.040	0.00	0.283	0.00	2.000	7.31	14.159	99.47	100.237	100.00	709.627	100.00
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0.056	0.00	0.399	0.00	2.825	19.53	20.000	100.00	141.589	100.00	1002.374	100.00
0.063	0.00	0.448	0.00	3.170	25.38	22.440	100.00	158.866	100.00	1124.683	100.00
0.071	0.00	0.502	0.00	3.557	32.01	25.179	100.00	178.250	100.00	1261.915	100.00
0.080	0.00	0.564	0.00	3.991	39.31	28.251	100.00	200.000	100.00	1415.892	100.00
0.089	0.00	0.632	0.00	4.477	47.05	31.698	100.00	224.404	100.00	1588.656	100.00
0.100	0.00	0.710	0.00	5.024	55.00	35.566	100.00	251.785	100.00	1782.502	100.00
0.112	0.00	0.796	0.02	5.637	62.88	39.905	100.00	282.508	100.00	2000.000	100.00
0.126	0.00	0.893	0.12	6.325	70.43	44.774	100.00	316.979	100.00		

**Operator notes:**





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