

**New  
Product**

# **HOSOKAWA MICRON** **Three in One Dryer, DRYMEISTER® DMR-H**



Process Technologies for Tomorrow

**HOSOKAWA MICRON CORPORATION**

# POWDER AND PARTICLE PROCESSING

## Drymeister

## THREE OPERATIONS IN ONE UNIT / GRINDING, CLASSIFYING AND DRYING



### SUMMARY

Applicable for drying slurries and solutions as well as wet powder and pasty cake.

Air classifier integrated flash dryer for every segment of industries.

The combination of the intensive dispersion mechanism with high performance classifier brings the stable product quality ; particle size & moisture content.

Intensive dispersion effect on material in small drying chamber leads the high thermal capacity coefficient and the compact system design.

DMR-1H

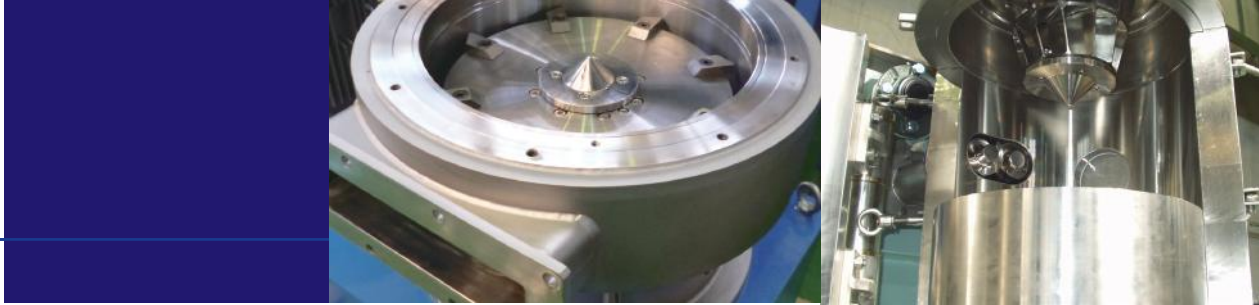


### FEATURES

- High dryability and No adhesion inside  
High speed rotor generates strong vortex which disperses the wet material and conducts rapid heat transfer. There is no stage for wet material sticks on machine interior.
- Fine and Dry product  
Intensive dispersing mechanism with high speed classifier performs three unit operations within seconds and produces the fine and dry product.
- Control of Particle size  
Classifier speed directly determines the particle size of the product
- Control of Moisture content  
Outlet gas temperature determines the moisture content of the product, although classifier speed influences the resident time of the material in dryer
- Compact Installation  
Superior dispersion leads high thermal capacity coefficient which realizes compact system design. Smaller system represents much better maintenanceability. Less than half of spray dryer space.
- High Energy Efficiency  
Saving energy by 50-70% less than spray dryer/rotary dryer. Inlet gas temperature of 600 degC gives even better energy efficiency.
- Non Adhesion measure  
Heated grinding track has no adhesion on surface
- Options
  - +Construction material of ceramics for the powder contact parts
  - +Guide ring
  - +Specially designed screw feeder for cakey material

### APPLICATION

- Retardant  
Magnesium Hydroxide, Aluminium Hydroxide, Nickel Hydroxide
- Battery  
Lithium Cobaltite
- Mineral  
Precipitated Calcium Carbonate(PCC), Calcium Phosphate, Calcium Hydroxide, Chromium Hydroxide, Silica, Gypsum
- Food  
Okara, Mulberry , Cellulose, Sweetner, Sugar Ester, Rice, Kale, Tea, Spirit residue, Dough, Beer Silica
- Others  
Polymer, Washing powder, Pesticide, Di-penta Elythritol, Amino acid Surfactant, Rubber Chemical, Magnesium Hydroxide, Barium Sulfate, Cyanin Blue, Iron Oxide, Ceramic Pigment Cuporus Oxide, Pigment



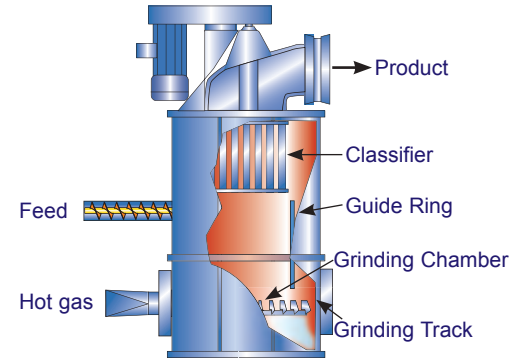
## STRUCTURE

Inside of Drymeister-H is shown in the picture.

Wet material is fed down to grinding chamber to be dispersed and to meet hot gas.

Here, highly effective drying is taken place. Ground and dried powder is carried to classifier zone. Fine particles go through the classifying wheel and transported to bag filter. ( Please refer to the attached flow sheet) Coarse particles fall down to grinding chamber to be milled and for further drying. Particle size of the product is determined by the rotor speed of the classifier. Moisture content of the product is determined by the outlet gas temperature of the dryer. Drymeister-H drying system consist of the screw feeder, Drymeister, Heater, Bag Filter, Blower and Control Cabinet For drainage treatment, condenser and/or scrubber may be added.

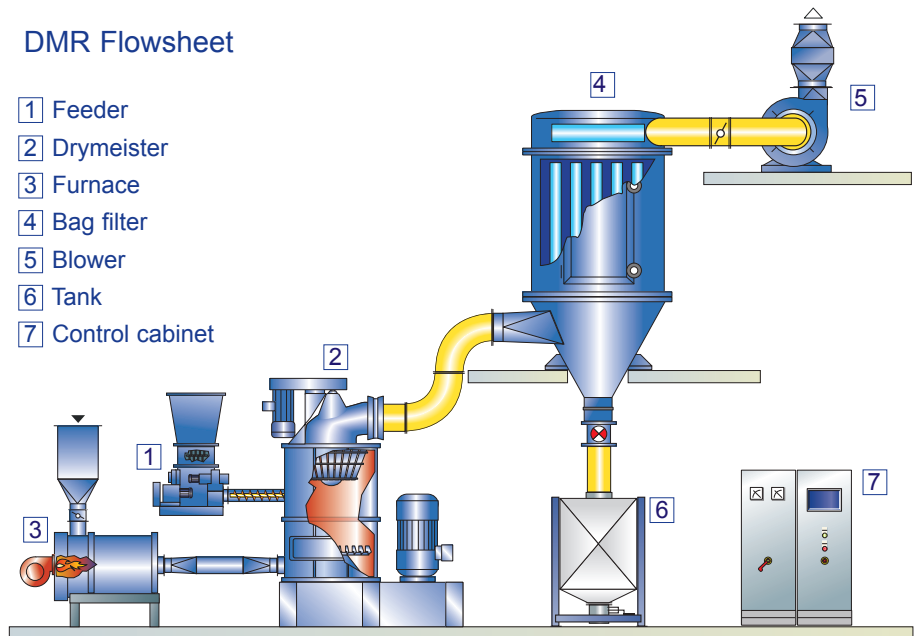
Gas circulation system of super steam flow brings good quality product and good energy saving (40% reduction)



Schematic of DMR-H

### DMR Flowsheet

- 1 Feeder
- 2 Drymeister
- 3 Furnace
- 4 Bag filter
- 5 Blower
- 6 Tank
- 7 Control cabinet



## SPECIFICATION

Model		DMR-1H	DMR-2H	DMR-3H	DMR-4H	DMR-5H	DMR-6H
Scale up Factor	(-)	1	2	4	8	16	24
Dimension H	(mm)	1750	2540	3080	3780	4490	5100
W	(mm)	1400	1770	2220	2710	3220	3850
D	(mm)	830	1240	1460	1900	2540	2800
Grinding rotor Drive	(kW)	11~22	22~45	45~90	90~200	132~280	160~355
Classifier Drive	(kW)	1.5~3.7	3.7~7.5	7.5~15	15~30	18.5~37	22~55
Standard Air Flow Rate (Dryer outlet)	(m <sup>3</sup> /min)	18~25	35~50	70~100	140~200	280~400	420~600
Inlet gas temperature(Max)	(degC)	600	600	600	600	600	600
Water Evaporation Rate*	(kg/h)	200	400	800	1600	3200	4800
Wight Approx.	(kg)	1000	2000	3300	8000	14500	25000

\* : Reference value at Inlet temp.of 600degC and outlet of 80degC



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