PPDS Heavy-Duty Classifier Mill (HDCM)



- Versatile air-swept swing hammer mill
- Robust design and construction
- Simultaneous drying and grinding
- Feed size up to 50 mm
- Dynamic classifier for products down to 99% <75 µm
- 8 models to suit a range of throughputs



manufacture

Having worked in the Atritor Department of Alfred Herbert Limited for many years, Bernard Rowledge formed Sardon International in 1980. Putting his knowledge and experience to work, Bernard developed the Saxifrage Mill, now the PPDS Heavy-Duty Classifier Mill (HDCM).

With over 50 years of hands-on involvement in minerals processing, Bernard continues to have an active role in the design and manufacture of the mill.

Having identified the potential of this machine, PPDS are delighted to add the Heavy-Duty Classifier Mill to our portfolio.

System Operation

Incoming material is introduced to the mill at a controlled rate by the feeder.

Size reduction is achieved as the swing hammers strike the incoming feed material against the grinding track. The mill is air-swept and the gases can be heated to facilitate simultaneous drying and grinding.

A dynamic classifier allows material of the required fineness to leave the mill while rejecting over-sized particles, which return to the grinding chamber for further size reduction.

Where customers require a single product the classifier can be driven through the main mill motor using a lay-shaft arrangement. Where the flexibility to produce a range of products is required, the classifier has an independent drive arrangement for inverter control.



Cross-section arrangement of the PPDS Heavy-Duty Classifier Mill

Materials that have been successfully processed with the PPDS Heavy-Duty Classifier Mill include:

- Gypsum - Bentonite
- Dolomite - Chalk
- Calcium CarbonatePhosphate Rock
- Barytes
- Coal



Two No.5 PPDS HDCMs supplied to South Africa for operation in parallel in boiler firing application



No.7 PPDS HDCM supplied for processing of lateritic clay with feed moisture content of 20%



No.4 PPDS HDCM supplied to Indonesia for a food additive application

The PPDS Heavy-Duty Classifier mill is available in a range of sizes to match your throughput requirements:

Model	Installed Power (kW)	Max Speed (rpm)	Standard Airflow (m³/hr)	Max. Evaporative Capacity (kg/hr H ₂ O)	Typical Throughput of CaCO ₃ milled to 85% <75μm (kg/hr)
3	22	2270	3000	350	1750
4	37	1860	5000	600	3000
5	75	1450	8500	1000	5000
6	110	1250	15000	1750	7500
7	200	1030	25000	3000	12000
8	315	875	45000	5000	20000

Note: Smaller mill sizes are available on enquiry.

The PPDS HDCM can be operated either in a 'once-through' or 'closed-loop' air system, allowing for highly efficient **simultaneous drying and grinding** using a gas, oil or electric heater. The mill can be fed using a belt, screw, vibratory or rotary feeder. Both the feed arrangement and air system are selected to best suit the characteristics of the material being processed (i.e. feed size, moisture content). As with any high-speed impact mill, it is essential that tramp material is prevented from entering the system; a magnet/metal detector is therefore usually incorporated into the feed arrangement.



Once-through air system



Closed-loop air system



The HDCM can be supplied with a custom built PLC/ HMI or SCADA based control system. PID loops are used to ensure optimum performance in both drying and grinding. For added control, PPDS can offer online particle size measurement to guarantee product quality.



The PPDS Heavy-Duty Classifier Mill Test Plant utilises a No.3 model for trials on a customer's specific feed material. The plant is also available for drying and grinding toll processing on enquiry.

About Powder Process Design Services Ltd

Specialising in the design, supply and installation of powder processing solutions using a combination of new and secondhand refurbished equipment, PPDS has supplied systems worldwide for the following sectors:

- Industrial Minerals
- Chemicals Ceramics
- Recycling



ACM75 & ACM100 Air Classifier Mill systems supplied for processing calcified seaweed



Milling and drying system to produce Limestone powders and grits supplied with state-of-the-art control system



Polysius Table & Roller Mill supplied to Saudia Arabia for Calcite processing



Ball Mill/Classifier System for the processing of cement additives



Ball Mill supplied to customer in the UAE to grind silica sand in the Arabian Desert.



Raymond Mill with divorced classifier to process Bentonite clay



S/hand Refurbished LM16/2 Lopulco Mill supplied with new classifier system to process Calcium Oxide



ACM50 Mill system for toll-processing chemicals

Above are just a few examples of the many systems PPDS have supplied in recent years. For more information on what we do, or to learn how we can support your business, do not hesitate to contact us.

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