



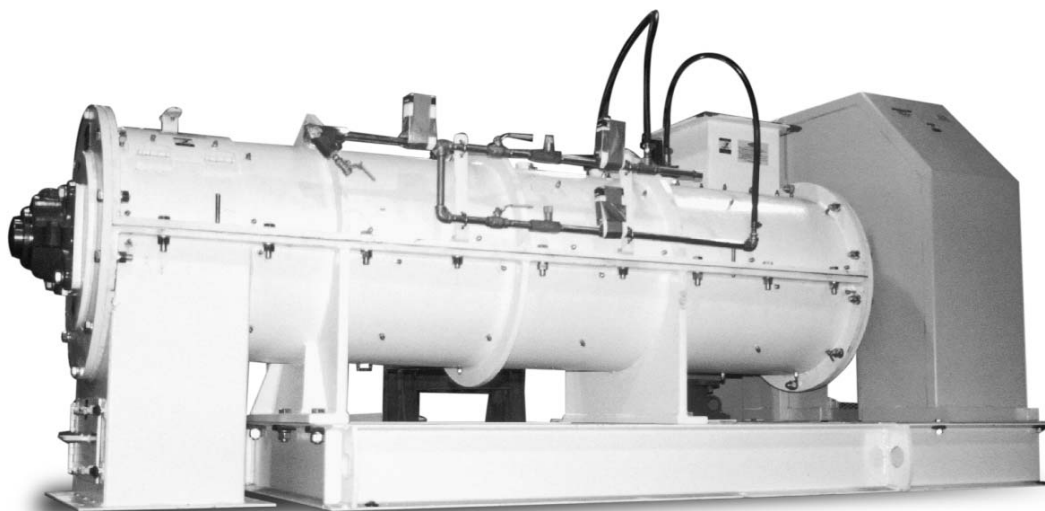
***Advanced
Pin-Type
Micro-
Pelletizing
Device***

MARS MINERAL

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Division of Woodward, Inc.

Pin Mixer



The Mars Mineral **Pin Mixer** is a pin-type solids processor designed for applications requiring high energy input to materials for mixing or micro-pelletizing. It is a high speed, conditioning and micro-pelletizing device that converts dust into small agglomerates through the action of a high speed rotor shaft and pin assembly and the addition of liquids such as water, binders, oil or surfactants.



Pin Mixer

Other Products by



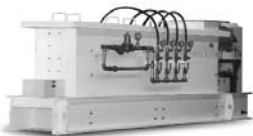
Disc Pelletizer is ideal for micro-pelletizing a wide range of materials. Available in various sizes from 3 ft. to 25 ft. diameter. Provides 20° angle adjustment.



Drum Pelletizer is an inclined, deepdrum unit featuring an integral, rear-mounted auger feeder. It is ideal for densification and production of large diameter pellets.



DP14 Agglo-Miser laboratory pelletizer is a multi-depth, bench-scale unit that permits a wide range of batch and/or continuous tests for powder and dust pelletizing. Multi-depth, benchscale unit that permits a wide range of batch and/or continuous tests for powder and dust pelletizing.



Ampel horizontal pelletizer/conditioner is utilized in applications requiring dedusting or conditioning of dust, fine powders and other minerals for disposal.

The Pin Mixer is ideally suited for applications requiring extreme micropelletizing, mixing-conditioning with small pellet size control and preparation of a feed mixture for further processing in a pelletizer. Materials agglomerated in the Pin Mixer include: carbon black, cement kiln dust, pigments, coal dust, pesticides, electric furnace baghouse dust, limestone fines, graphite, coke, petroleum coke fines, bauxite and silica fume.

- Straight-forward dedusting/dust wetting
- Solids-liquid mixing
- Micro-pelletizing
- Preconditioning
- Chemical reaction

The Mars Mineral Pin-Mixer features a cylindrical, stationary shell with a length-to-diameter ratio of between four and five. Inside the shell is a replaceable rubber liner and a shaft with radially-extending rows of pins on a helix pattern. There is a close tolerance between the tips of the pins and the inside of the mixer shell.

Shaft rotational speed, and therefore tip speed, is high (several hundred RPM), which is higher than the speed of traditional paddle mixers, pugmills and Ampel conditioners.

The material enters at one end of the cylinder and is whipped by the pins as it moves from the inlet, through the shell and to the bottom outlet. As a fine spray of liquid is added at the entry section and distributed throughout the powder, fine mixing and micro-agglomeration will occur. The end result is a wetted, agglomerated and densified micro-pellet.



Detail of typical Mars Mineral Pin Mixer chamber assembly. Pins are arranged in a staggered, overlapping double helical pattern to insure uniform working of all particles.

Pin Mixer Specifications

Model	Diameter	Length	Capacity	HP	Length	Width	Height	Shipping Weight
8D32L	8	32	10	15	4'-6"	3'-3"	2'-5"	1,300
12D54L	12	54	40	25	6'-7"	4'-5"	2'-5"	2,350
16D80L	16	80	100	40	9'-3"	4'-6"	3'-1"	3,500
20D90L	20	90	180	50	10'-2"	5'-3"	4'-3"	5,300
22D90L	22	90	225	75	10'-2"	5'-3"	4'-6"	5,500
30D120L	30	120	550	100	13'-1"	7'-8"	4'-9"	7,900
40D160L	40	160	1300	150	16'-4"	8'-5"	6'-3"	18,000
48D190L	48	190	2200	200	19'-6"	9'-11"	7'-0"	26,000

CAPACITY IN CUBIC FEET PER HOUR THROUGHPUT, BASED UPON FREE FLOWING MATERIAL. SPECIFICATIONS AND DIMENSIONS ARE FOR GENERAL USE ONLY.