

Vacuum Conveying Cuts Product Loss; Time and Money Saved — Environmental Regulations Met

Confronted by a labor-intensive production process and concerns over environmental compliance, Novamet Specialty Products Corporation, a maker of nickel and stainless steel metal powders, turned to Vac-U-Max for a series of pneumatic conveying systems. The goal: cut in-house manufacturing costs and product waste while meeting state and federal environmental regulations.

Information received from Vac-U-Max at the annual Powder & Bulk Solids show in Chicago, coupled with assistance from a local Vac-U-Max sales representative, helped make Novamet's decision to go with a pneumatic vacuum conveying system an easy one. Benefits of the system include a fully enclosed, dust-free design, simple operation and low maintenance.

Previously . . .

Novamet, relied on the strength of its employees to get the job done. Literally! Most of the work was done by hand, including lifting heavy drums filled with metal powders and scooping these powders from drums for processing and separation. It was a backbreaking and lengthy process.

The old operation was tiring and dusty. Metal powder, when highly refined, has a small particle size making it difficult to work with. Drifting dust, product waste and worker safety were major concerns.

"Scooping metal powders is very labor intensive," said Novamet President Lou Koehler.

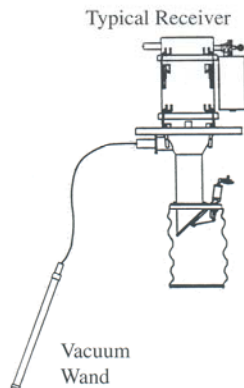
Today . . .

Novamet technicians let three separate conveying systems bear the brunt of the heavy work. The first system transfers the metal powder to one of four receivers for separation by particle size. A second

conveying system removes any oversize particles from the first system. A third system feeds the company's rotary kilns.



A technician uses vacuum wand to convey material into receiver.



Systems Operation...

Novamet uses the first conveying system to separate oversize particles from its stainless steel and nickel powder production. Using a sequence control panel, the technician operating the pneumatic vacuum conveyor electronically selects the proper receiver to transfer the metal powder to. This enables the operator to screen different metal powders without accidentally mixing them.

The Vac-U-Max system transfers metal powders with a bulk density of 25 to 250 pounds-per-cubic-foot up 10 vertical feet at a rate of 600 pounds per hour.

Each of the four receivers discharges into a vibratory screen to remove oversized metal particles. Typically, twenty pounds of metal powder



Material is drawn into receiver then discharged into kiln.

is conveyed into a receiver for screening in 15 to 20 minute intervals. A technician loads the hopper using a lightweight vacuum wand, a process previously done by hand scooping.

Once material is transferred, the control panel switches the vacuum to atmosphere. Simultaneously, the receiver's filter is automatically cleaned by its pulse jet cleaning system. Any accumulated material is discharged with the product. The fine metal dust is then screened, weighed, and dropped into a drum for shipment.

At this time, any oversize metal particles left on the vibratory screen are conveyed through tubes by vacuum pressure to the second system. To reach the receiver the material must travel both vertically and horizontally and make a few 90° turns. The metal particles are then collected, discharged into a drum and removed for further processing. The procedure of separating the oversized particles, enables Novamet to precisely determine that the powders are properly sized to meet customer requirements.

One five-horsepower vacuum pump powers both the first and second conveying system. Utilizing just one pump for this operation is a cost and operational advantage for Novamet.

In a separate operation, Novamet employs a Vac-U-Max vacuum conveying system to feed their rotary kilns. A technician inserts a vacuum wand into the drums. The conveyor draws the material 10 feet vertically into a receiver. The material then discharges at a preset rate into a high temperature kiln for processing. Novamet uses the kilns to oxidize nickel powders. Before they installed the Vac-U-Max system, the kilns were loaded by hand. This was a painstaking operation for the workers.

"Now the technician lets the conveyor do the work," said Koehler.

With the benefit of Vac-U-Max vacuum conveying systems, Novamet can cut product loss, eliminate manual loading and meet environmental regulations.

"The Vac-U-Max conveying systems eliminate dusting and material handling," says Dave Croan, Novamet Technical Manager, who designed the system, recalling the old days when drums were filled by hand and the screens were hand cleaned.

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