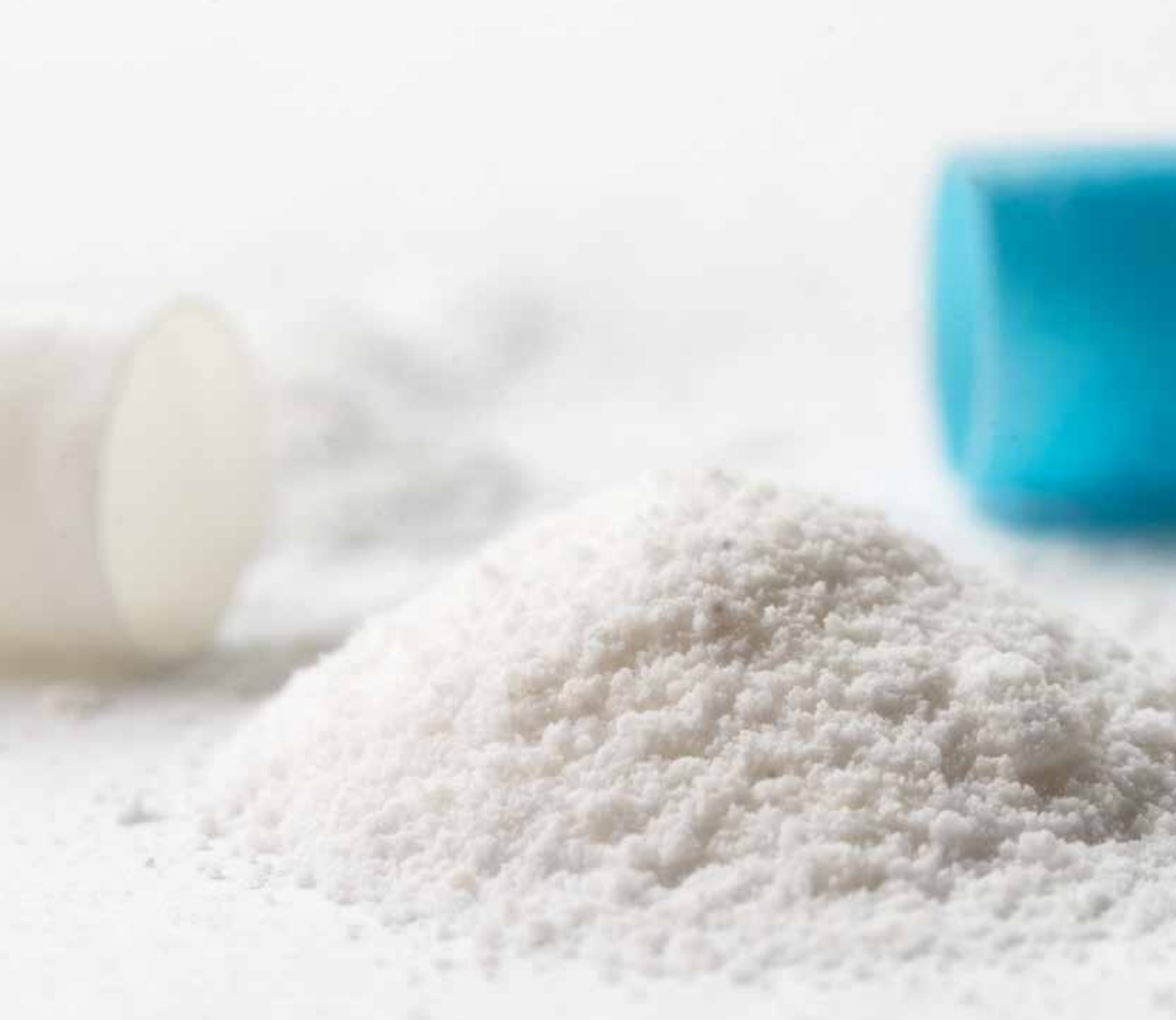
hanningfield



Application Ideas

Optimising capsule and tablet manufacturing in the pharmaceutical and nutraceutical industry.

Powder Recovery

The Hanningfield Uni-Dust cyclone is specifically designed for the recovery of waste powder from pharmaceutical and nutraceutical OSD processes such as compression and encapsulation, typically capturing between 90 – 99.9% of waste powder.

To perform particle capture, cyclones use vortex separation causing the solid particles to hit the outside wall of the cyclone, de-accelerate and fall to the catchpot at the base of the cyclone. This allows 'clean' air to pass downstream to the dust extraction source.

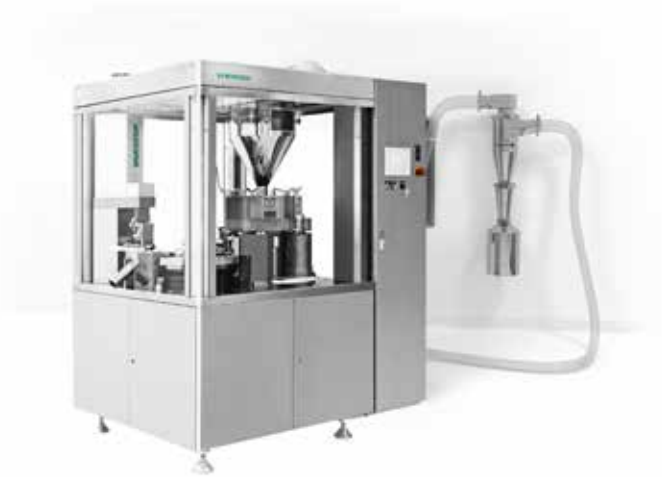
With no filters and no moving parts, the Uni Dust features a sanitary GMP stainless steel construction, assembled using only Tri-Clamps for fast and easy dismantling.

Capture Powder from Encapsulation

The cyclone can be connected to the extraction line of a capsule filling machine, as well as connecting to a capsule polisher via a manifold.

Recovered powder can be reintroduced, where protocol permits, to minimise material loss and save money.

Uni-Dust cyclones have been successfully installed to Syntegon (Bosch), IMA, and numerous other process machines.



Capture Powder from Compression / Tabletting

The cyclone is designed to be connected to the extraction line of a tablet press. For connection to the tablet deduster, the cyclone can also be supplied with a manifold.

Recovered powder can be reintroduced, where protocol permits, to minimise material loss and save money.

Uni-Dust cyclones have been successfully installed to Fette, Manesty, Korsch, and various other compression machines.

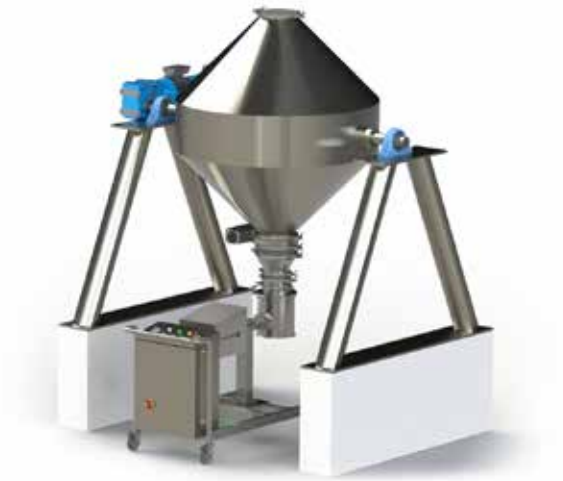
Milling and Sifting

In-Line Milling and Sifting before Blending

The Kwik-Sift serves the dual function of de-lumping bulk solid ingredients while capturing tramp and other foreign substances.

Sifted material prior to blending / mixing significantly improves mix integrity, while reducing blend times. Integrated systems available for both direct vacuum filling as well as indirect filling for non-vacuum rated processing vessels.

Finishing Process after Mixing / Blending / Drying



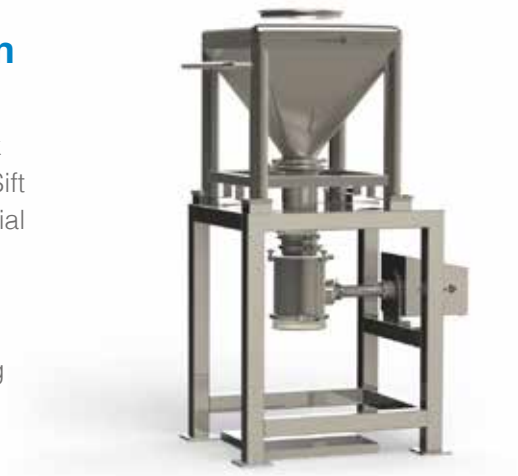
The Kwik-Sift easily integrates with a mixer, blender, and dryer discharge. In many cases, the Kwik-Sift can process the mixed materials as quickly as the mixer discharges. Agglomerations occur in the mixing process as liquid ingredients such as fats, oils, water-based colourants, and other liquid ingredients are introduced into the mixer process.

The Kwik-Sift solution to finishing dried and mixed materials fits in most process streams by virtue of its small footprint and small head space without the additional ancillary equipment. All the process material is “finished” perfectly homogenised, and nothing is wasted.

Fill and Weigh Dispensary / Pack-Off Station

Bulk powders stored in either rigid IBCs or flexible IBCs can pick up moisture and create agglomerations. Integration of the Kwik-Sift in a gain in weight pack-off station can render the process material agglomeration free while capturing foreign extraneous matter.

Conditioned powders are accurately dispensed in a variety of container types while maintaining dust containment and ensuring high weighing accuracy.



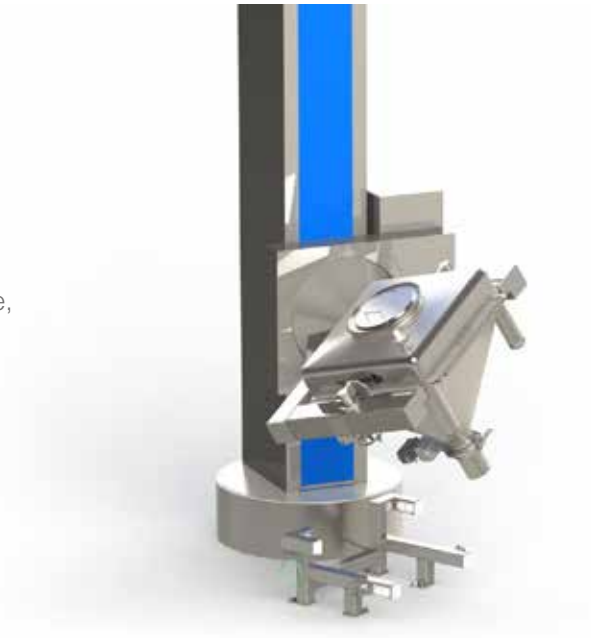
Blending and IBCs

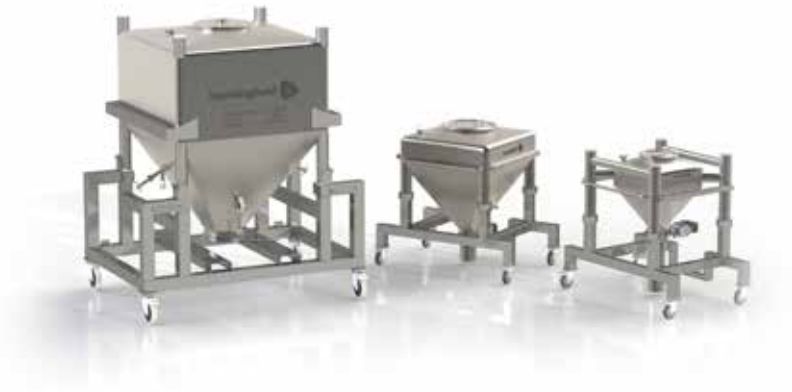
IBC Blending

Blending in an IBC offers many advantages over traditional blending methods (e.g. V-blender, double cone blender).

Since the blending occurs inside the container itself, 'blending in the bin' can significantly reduce downtime, by enabling fast changeover between batches. Since cleaning of the blender itself is no longer required (clean the bin rather than the blender), it removes blending as the process bottleneck. This is especially useful for changeover between critical products e.g. halal, kosher, gluten-free, nut allergen-free etc.

IBC blending also allows various batch sizes to be performed on a single blender, since you can switch from a small IBC to a large IBC, all while using the same mechanical blending device.





IBCs (Intermediate Bulk Containers)

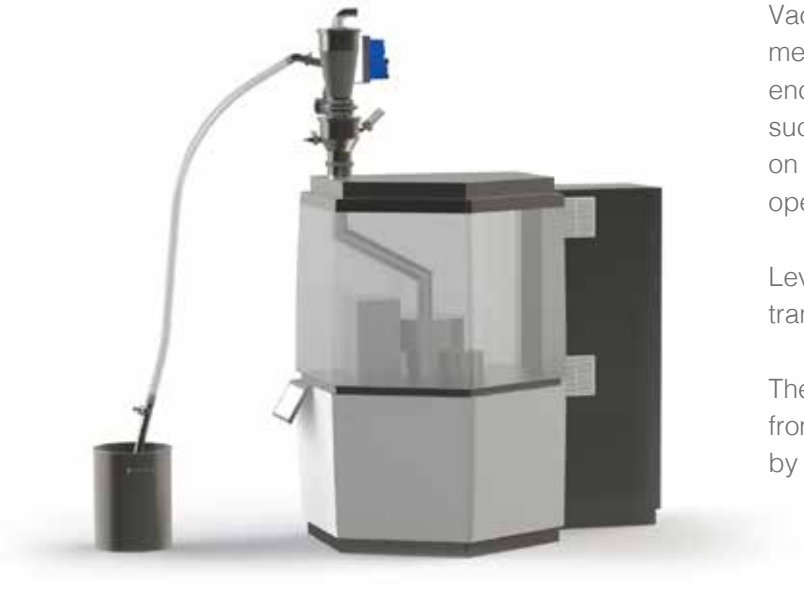
IBCs can be used to completely re-think the philosophy of powder handling in the plant.

IBCs can significantly improve the lean handling of products, by reducing double handling. In the dispensary, material can be pre-screened and pre-weighed into IBCs (replacing traditional 'kits' on pallets). The IBC is then ready to blend, any day, any time. After blending, the same IBC can be used to feed the downstream compression or encapsulation machine, using either gravity feed or vacuum transfer.

For maximising storage space, IBCs can be supplied with feet for stacking. IBCs can be supplied with standard washing solutions to validate cleans every time (washing sequence, detergent / solution, time of cycle etc.).

Vacuum Transfer

Vacuum Loading of Capsule Filling Machine or Tablet Press



Vacuum transfer is an ergonomic and efficient method of loading powder into a compression or encapsulation machine. The finished powder can be sucked from ground floor into the receiving hopper on the process machine. Once full, the outlet valve opens and discharges the material into the machine.

Level control can be integrated into the vacuum transfer unit to prevent overfilling of the feed hopper.

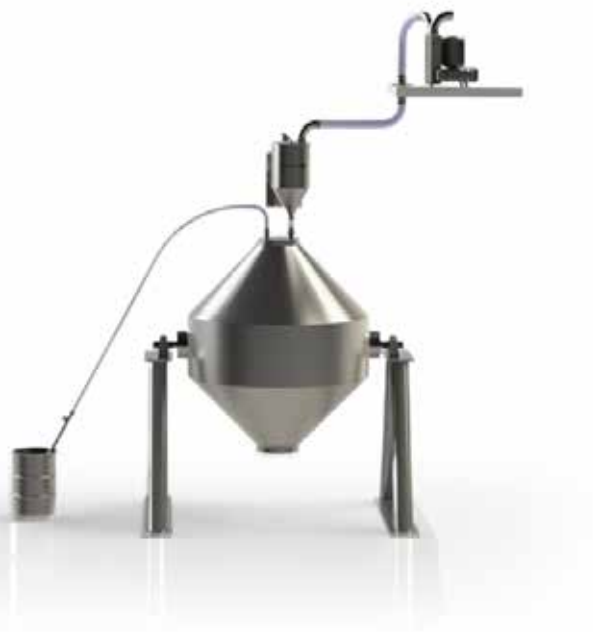
The transfer is dust-tight and prevents the operator from needing to climb a ladder and scoop material by hand.

Vacuum Loading of Blenders

Direct blender loading offers major advantages over the manual charging of blenders. A direct loading system offers greatly improved efficiency over traditional 'suck and dump' systems, using the blender itself to pull a vacuum and draw material from ground level.

Direct loading reduces the number of moving parts and improves efficiency by reducing convey times, as the system operates via continuous transfer (with no discharge or backwash sequence). Material charges directly and continuously into the inlet port on the blender.

A second port connects to the vacuum source, with an in-line precautionary filter hopper for capturing minimal product carryover. Once the loading procedure is complete, simply remove the connecting pipes, cap-off the ports and begin blending.



Capsule Transfer

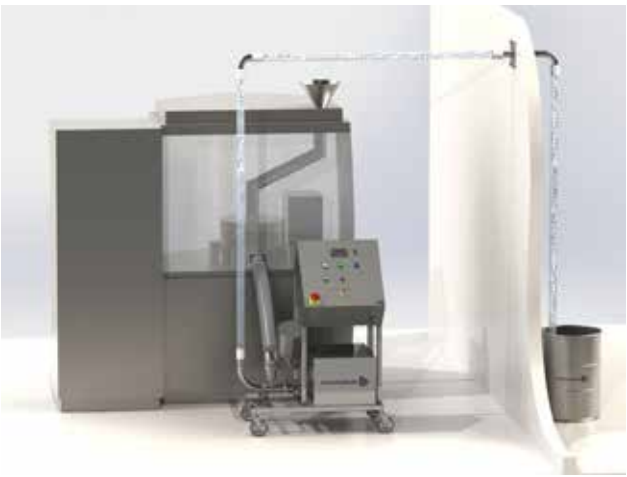
Empty Capsule Transfer (into Encapsulation Machine)

Empty capsules are manually loaded into a large diameter, low height capsule storage hopper.

When in operation, a tangentially discharged airflow from a multistage fan is forced through a patented venturi. The empty capsules in the storage hopper are gradually picked up by the suction created by the venturi and gently conveyed in a low-pressure, high-volume airflow through the pipework to the receiving hopper on the capsule filling machine.

A fully adjustable optical sensor controls the level of capsules in the receiving hopper on the capsule filling machine, by automatically starting and stopping the convey cycle.

Filled Capsule Transfer (Post-Encapsulation)



The Filled Capsule Conveyor (FCC) features a compact design enabling it to be located adjacent to the capsule filling machine within the process room. This allows the feed chute on the FCC to be positioned directly beneath the outlet of the capsule filler or capsule polisher. From here, filled capsules are gravity fed into the system, where the specially designed venturi creates a cushioning airstream in the pipework, to gently transport the capsules downstream to a bulk container (or similar).

The system uses an easy-clean design, primarily assembled using Tri-Clover clamps; allowing the system to be quickly dismantled without the need for special tooling.

Product Portfolio

Milling and Sizing

Conical Mills (Under-Driven)

Conical Mills (Over-Driven)

Pre-Breakers / Crushers

Sifters

Conveying and Transfer

Vacuum Transfer Systems

Bag Dump Stations

Capsule Transfer

Lifting and Handling

Hoists / Post Lifts

Blenders

Drum Tumblers

IBCs

Containment, Control and Capture

Cyclones

Dust Control Caps

Silicone Compensators

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