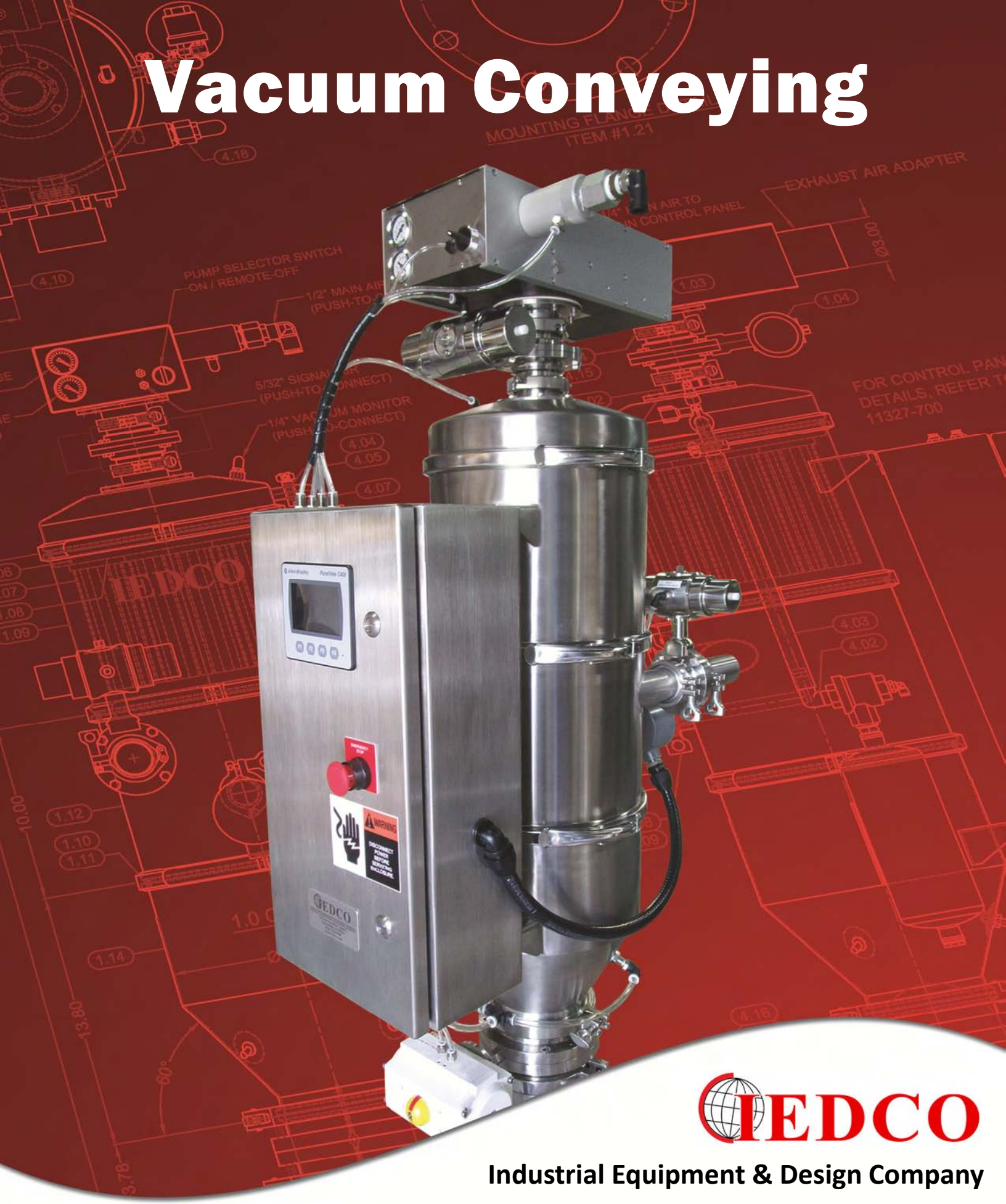
Vacuum Conveying

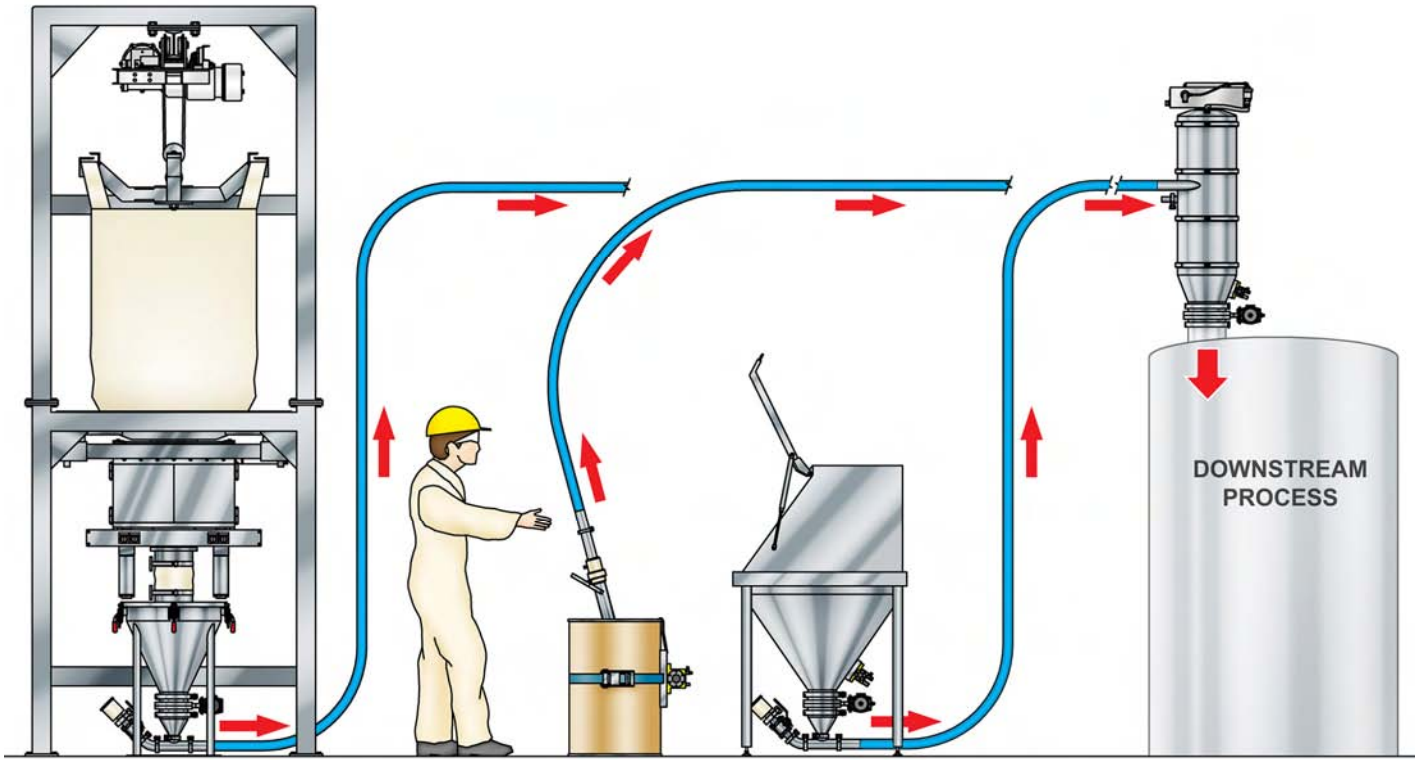


EDCO

Industrial Equipment & Design Company

...a world of experience in powder handling

Vacuum Conveying Systems



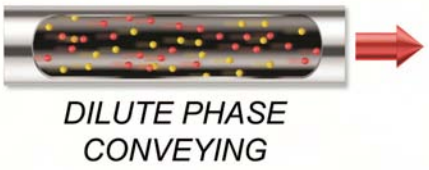
What is Vacuum Conveying?

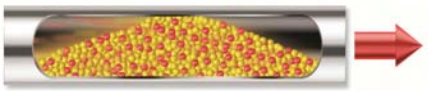
Vacuum Conveying uses suction to transfer dry materials (powders, granules, etc.) from one location to another within a processing area. This is typically used to transfer powders from containers (drums, bag dump stations, bulk bag unloaders, feed hoppers, etc.) to a receiving vessel for further processing.

There are two types of Vacuum (or Pneumatic) Conveying: Dilute Phase & Dense Phase

During Dilute Phase Conveying, the powder is transferred within the air stream at a very high rate. This type of conveying is perfect for when there is no concern for segregation within the material.

Dense Phase Conveying transfers the powder in slugs of material at a slightly slower rate. This is the best choice for powder blends as segregation of the product is eliminated.


DILUTE PHASE CONVEYING


DENSE PHASE CONVEYING

Advantages of Vacuum Conveying

There are several advantages to using Pneumatic Conveying vs. other mechanical powder transfer systems:

- Provides a dust-free, contained transfer of material
- Extremely gentle to the material during transfer
- Vacuum Conveying Systems are highly reliable
- Very low maintenance and easily cleaned
- Quick and simple installation and control
- cGMP and Hygienic design
- Very small footprint compared to mechanical transfer systems
- Can be 100% air powered for hazardous environments

Vacuum Conveying Systems

IEDCOveyor Vacuum Conveying Systems

IEDCO has been a leader in designing and supplying custom Pneumatic Conveying Systems for over 25 years.

Our expertise in this field is the result of over two decades of experience supplying successful powder & dry solids transfer systems to the Food, Pharmaceutical, and Fine Chemical industries. From batching pharmaceutical actives and excipients to transferring fine metal powders and chemicals, we know a thing or two about vacuum conveying powders from Point A to Point B.

IEDCO's success has been attributed to our continuous development and innovative approach taken to satisfy the ever increasing variety of applications for vacuum technology.

Our IEDCOveyor Systems are custom designed to suit a wide range of duties and have set new benchmarks in relation to economy, quality and cost-performance-ratio.

The IEDCOveyor Conveying Systems transport the most diverse materials, including: powder, dust, pigments, granulated material, tablets, capsules, small parts, etc.

Custom Designed Systems

Every powder handling challenge is unique, which is why IEDCO specializes in supplying a custom designed vacuum conveying system to suit your project's specific requirements. These are just a few of the powder handling challenges we have successfully overcome:

- Limited Headroom
- Accurate Feeding of the Material
- Hazardous Environments
- Multiple Ingredient Transfer
- Difficult to Move Powders
- Nitrogen/Argon Blanketing

Let us use our 25 years of vacuum conveying experience to provide you with the perfect solution to your powder handling challenges.

Vacuum Conveying Systems

IEDCO In-Line Vacuum Screener

The IEDCO In-Line Vacuum Screener is designed to be directly connected into a pneumatic conveying line and capable of screening with a wide range of mesh sizes.

Its sanitary construction is ideal for use with food, chemical and pharmaceutical powder processes, and perfect for scalping lumps and unwanted contaminates from the product stream.

Operation and cleaning is quick and easy, making this screener perfect for all processing industries and can be tailored to suit your exact needs.

IEDCO Porta-Batch System

Designed to batch product from bulk containers (drums, gaylords, etc.), the IEDCO Porta-Batch System allows operators to use a single system to accurately batch product into smaller containers in different areas within a processing facility.

The Porta-Batch comes with a full Vacuum Conveying System, Rotary Valve and Controls, as well as an integrated scale system for precise dosing.

A convenient roller track system allows for ease of loading/removal of virtually any small container.

Specifically developed to eliminate operators scooping product from container to container and all the safety & ergonomic issues that involves.

IEDCO Porta-Lift

The IEDCO Porta-Lift is a pneumatic column lift (on which a vacuum conveyor can be mounted) that is configured with a counterweighted base, casters, and outriggers.

A single air connection is all that is required and all lift and conveyor controls are integrated compactly into the counterweight base.

The IEDCO Porta-Lift design can provide the following advantages:

- Easily transported for use with multiple applications throughout the plant.
- Facilitates ease of cleaning for either the process or the conveyor.

Failsafe Braking System

Our Porta-Lifts are fit with Pneumatic Clamping Modules that act as a failsafe break system. These modules hold the lift arm in place and prevent it from falling in the event of sudden air loss.

A separate air cylinder (located in the counter balance) will provide enough air to maintain the breaking system even when plant air has been lost.

Vacuum Conveying Systems

Vacuum Pumps

The heart of any Vacuum Conveying System is the Vacuum Pump, which creates the suction that moves the material from its source to the collection container. Depending on the application, we use two different types of vacuum pumps: Compressed Air Driven or Motor Driven.

Most conveying systems can be provided using a compressed air driven pump, which makes the system inherently explosion-proof, if required.

Compressed air driven pumps have the advantage of being virtually maintenance free and whisper quiet, all while not emitting any heat. In addition, they are easier to control and react very quickly. The pump only runs during the suction period and is at rest at other times, saving energy.

For more complex powder transfer systems or long distances, we utilize a motor driven pump that can be stored in another area of the plant, if necessary. These pumps generate a lot of power and are highly efficient, especially when an advanced transfer system is required.

Filters

When the material, together with the conveying air, enters the collection container, most particles are separated out, due to a drop in velocity. A small amount of fine particles follow the air to the filters, where they are collected. The clean air continues through the vacuum pump exhaust.

The filter material used can be of a number of choices depending on specific applications: Polyester PTFE, Stainless Steel, HEPA, or UHMWPE (Polyethylene).

Feeder Valve

In order to create a vacuum and to then discharge the conveyed product, the vacuum conveyor collection container is fit with a sanitary butterfly valve. If the conveyor is part of a batching system, a sanitary rotary valve is used as a highly accurate discharge feeder.

Valve Features:

- 4”, 6”, 8”, 10” or 12” diameter
- Tri-clamp fittings (ANSI flanges and/or spigot also available)
- 316 Stainless Steel construction w/ mirror polished rotor
- Variety of gaskets available: Silicone, EPDM, Viton, and PTFE Encapsulated Silicone (All FDA Compliant)
- Bolt together or clamp together body styles available

Vacuum Conveying Systems

Control System

All pneumatic conveying systems require a control system. This may be designed in many different configurations in order to suit the application and environment. To satisfy these demands, controls may be fully pneumatic, fully electrical or a combination of both.

Systems may incorporate multiple conveying units requiring independent control, or be part of an integrated control system where slave units receive signals from a client's management system. IEDCO can design the controls to meet your application specific needs.

UL LISTED

All of our panels are built in our UL certified panel shop and will carry the UL label ensuring their safety and quality.

Vacuum Feed Wand

A Vacuum Feed Wand is furnished as the standard method of feed of the product into the vacuum transfer system from a drum or other similar container. A Vacuum Feed Lance Holster can also provided and comes in handy for a convenient place to store the wand, in the upright position, when not in use.

For a more contained means of using the Vacuum Feed Wand, we can supply a fabric drum cover through which the wand can access the powder. Covers come with a clear window to allow the operator to still see into the drum.

Feed Station Hopper

As an alternative to a Vacuum Feed Wand, **IEDCO** can provide a feed station hopper of any size or configuration to introduce the product into the conveying stream.

This configuration allows for optimum material conveying and offers full adjustability. Further, it allows for additional system automation and reliable feed of material into the system.

Fluidization (vibration, fluidizer discs, etc.) can be provided for difficult to flow materials. This can help prevent bridging and provide for enhanced particle movement.

Scale systems can also be included in order to provide a loss-in-weight transfer system.

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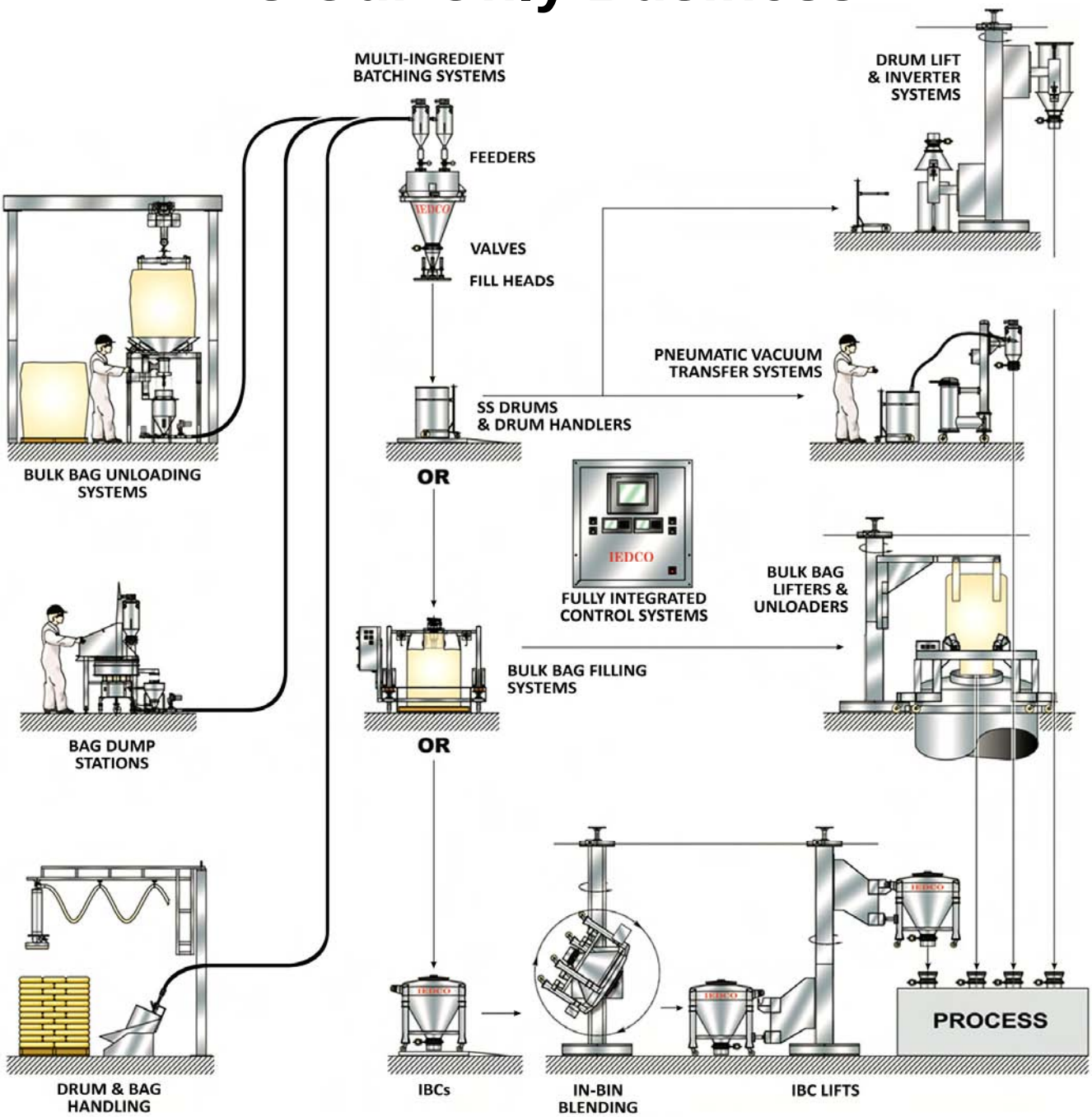
Getting Powder & Tablets From Point "A" To Point "B" Is Our Only Business



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