



Discovering Dec Group
... an alliance of technology
and expert knowledge

Powder Handling Excellence

Dec – Tailor Made Solutions

Committed · Innovative · Successful

Transferring

- PTS Powder Transfer System
- Transbatch
- Powderflex
- PTS Feeder

Dosing

- DosiValve
- Powderflex
- PTS Feeder
- MicroPTS

Bulk Handling

- Big Bag and Bag Filling & Emptying Stations
- UniDock System
- DCS Drum Containment System (Filling & Emptying)

Blending

- Batchmixer

Micronizing

- MC²Jetmills
- DEC MicroJet series

Sampling

- MPTS Sampling Device

Containment

- DEC Isocharge
- DEC Isotube
- DEC Isodischarge
- Pack-Off Systems
- Flexible, semi-flexible & rigid isolators



Reactor Charging

Drum Discharge

Raw Material Handling

Sampling

Filter-Dryer Discharge

Dec Solutions

Powder Transfer



PTS – Powder Transfer System

The PTS – Powder Transfer System* is an exceptionally effective and reliable method of transferring and dispensing both dry and wet powders and granules especially in the field of reactor charging. Its unique filtration concept with a flat membrane makes it the only vacuum dense-phase system available on the market today. Mobile and CIP versions available.



Transbatch

The Transbatch is a pneumatic system using vacuum to transfer powder from / to any type of receiver. Depending on the application, the system discharges with pressure or by gravity. Designed with a tubular type large filtration area membrane (PTFE or metallic), the system allows dust-free and safe handling of various powders and is particularly suited to convey difficult and large particle size products such as flakes, chips, etc. The Transbatch enables high capacity semi-dense phase transferring over long distances and can be cleaned in place (CIP) if required.



Powderflex

The Powderflex* provides continuous and precise dosing and conveying of small to medium quantities of powder for the controlled charging of powders into continuous production processes or for predetermined precision dosing.



PTS Feeder

The PTS Feeder ** allows contamination free dosing and filling of bags, drums or FIBCs. It is especially appropriated to dose difficult products such as fine, sticky and bridging powders. Simultaneously it conveys the product with a high transfer rate over larger distances.



DosiValve

The DosiValve has been especially designed to avoid typical flow and accuracy problems when using standard rotating or vibration valves as it allows for precise dosing even when handling difficult products. It works either through gravity charging for standard charging and discharging applications (drums, big bags, containers, silo, hoppers, etc.) or active powder charging, in combination with the PTS – Powder Transfer System* for longer distances in a safe and contained manner.



MicroPTS

The MicroPTS* is based on the PTS* technology and allows precise dosing of very small amounts (1 mg) of powder in less than a second, with an accuracy reaching up to 1%. High precision is achieved even with variation in bulk density, as the powder in the chamber is pre-compacted by the vacuum effect.

Dec Solutions

Filling Applications

Standard Material Handling Solutions



Container Filling

Dec proposes various solutions for filling and dosing applications from process equipment into containers.



Drum / Big Bag Charging

Dec offers standard Drum and Big Bag Filling Stations with inflatable seal connection for a dust-free process. These systems are adaptable to any size receptacle and an economical solution for a simple and fast operation.

Dec Solutions

Emptying Applications

Standard Material Handling Solutions



Drum Emptying with Suction Lance

Working with the PTS Powder Transfer System*, the suction lance is the perfect solution for dust-free emptying of drums. It can be equipped with a lump breaker for lumpy or agglomerated products.



Big Bag Discharge

For non potent products Dec supplies Big Bag emptying stations with a simple connection head with double tube and a two hand lever mechanism for a dust-free connection. Big Bag emptying stations are available with weighing systems, pneumatically operated bottom or side massaging units and suction hoppers with integrated delumper and fluidization options.



Sack Discharging

Sack discharge station for manual emptying of bags. The operator opens the sacks and pours the powder inside the chamber from where the product falls through a grid into the receiving container. These stations can be equipped with an integrated delumper, easy lateral disposal option for the empty sacks, liner compactors or with load cells for dosing applications.

Contained Material Handling Solutions



DCS Filling

The DCS Drum Containment System* provides a fully contained and safe solution for filling big bags and drums. It can be either connected to a PTS* when available height is an issue or directly below the process equipment to be emptied.



Continuous Liner System

Dec's versatile Continuous Liner Systems offer optimized GMP compliant packaging solutions with high containment levels guaranteeing both operator and product protection. In combination with the SafeSeal** clips high containment can be achieved (<math><1\mu\text{g}/\text{m}^3</math>).



UniDock System

The UniDock System** allows for simplified charging of big bags, whilst ensuring a high containment level (<math><1\mu\text{g}/\text{m}^3</math>), efficiency and reliable operation. The system is specifically designed for solvent-moist products and is compatible with standard FIBCs.

Contained Material Handling Solutions



DCS Emptying

The DCS Drum Containment System* consists of a cylindrical glove box with a glass cover and two glove ports. Highly economical in comparison with conventional isolation systems, it ensures precise, contamination free discharging of drums with a high containment level of <math><1\mu\text{g}/\text{m}^3</math>.



Big Bag Discharge

For higher containment requirements, Dec's Big Bag Emptying stations are supplied with a DCS head providing both primary and secondary containment. Operators can safely manipulate the big bags within the glove box.



DEC Isocharge

The DEC Isocharge is a low cost method of both dispensing and charging bags into reactors or receiving systems via the PTS Powder Transfer System*. The Dec Isocharge combines the advantages of isolation and laminar flow technology providing high containment of <math><1\mu\text{g}/\text{m}^3</math> with an open system.

Dec Solutions

Blending · Micronizing · Pack-Off · Sampling



Blending

The Batchmixer* provides the ultimate in speed and flexibility, reducing overall process time compared to traditional systems, enabling the operator to mix powders with different characteristics in a contained environment. With applications from 2 litres to 5000 litres, the system also allows the operator to vary product volumes from 10-100%. The system has no moving parts, therefore, it is easy to clean automatically.



Micronizing

Dec's versatile and multiformat jet mills are designed to satisfy the requirements from bench (<50 mg) to large scale. Available in open and contained arrangements, they have the ability to handle difficult products. The new 4th generation DEC MicroJet series has been further developed with Computational Fluid Dynamics (CFD) analysis with new achievements in particle size distribution.



Pack-Off

Dec's Pack-Off Systems manage a range of packaging, from single inflatable seals to continuous liners integrated in a glove box if necessary. Modular packaging systems are available for different containment and process requirements, including sterile applications.



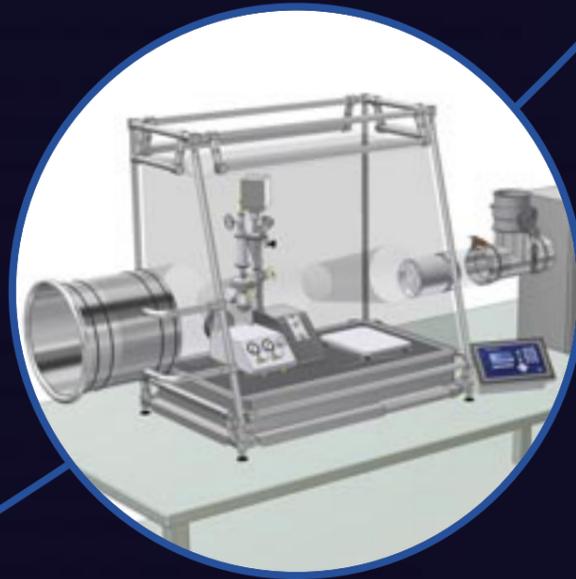
Sampling

The MPTS Sampling Device* facilitates complex sampling procedures directly from equipment, such as dryers, mixers, packaging units, etc.

The sampling procedure is simplified, whether from equipment with poor access, or where personnel are not admitted for safety reasons.

Dec Solutions

Solid and Flexible Containment



SafeFlex Disposable Containment Systems

Dec has launched a newly developed range of flexible isolators which offer improved ergonomics, effective and user-friendly operation and high levels of safety. Each system is tailored to the operator's requirements. The newly developed film is tear resistant and allows for reliable protection against cross-contamination (OEL <math><1 \mu\text{g}/\text{m}^3</math>). The isolators can be designed for use with over- or underpressure and, depending on the application, with different drum connecting systems. Easy removal and disposal of the films keeps cleaning to a minimum. Dec's improved flexible technology is cost-effective, of high quality and a reliable solution for closed processes.



Isolation Technology

Dec designs and supplies turnkey process integrated containment technology solutions for both potent and sterile compounds, from simple glove bags to micronizing isolators through to extremely complex fully integrated process isolators with dedicated air handling systems.

Dec Services

Product Testing

As an essential element of Dec's dedication to quality, we provide customers with the ability to test their products in our own laboratories. From powder handling including powder characterization to SMEPAC testing and particle size analyses. Dec have a full range of facilities and equipment as well as skilled technicians to support your needs.

Commissioning and Training

Installations can be commissioned by our experts, which is often combined with staff training.

Assembly Supervision

- Optional initial instructions for positioning and pre-assembly
- Assembly guidance
- Full equipment check-up prior to final installation

Factory Acceptance Test (FAT)

Performed in one of our facilities, an FAT can be included as part of our in-house services by our highly skilled engineers according to pre-approved protocols.

Risk Assessment

Dec organizes on site HAZOP examination sessions to identify and evaluate problems that may represent risks to personnel or equipment.

Validation

Dec has the expertise to validate both, installation and operation according to the latest guidelines. (IQ/OQ)

About Dec

Founded in 1987, Dec is a leading global provider of powder handling systems to the pharmaceutical, chemical, food and cosmetic industries. Their turnkey and custom designed solutions have been successfully integrated into complex operations in many companies worldwide, both multi-nationals and specialists.

The Dec range covers every facet of powder handling, including:

- Transferring
- Filling
- Emptying
- Dosing
- Blending
- Sampling
- Micronizing
- Milling
- Containment

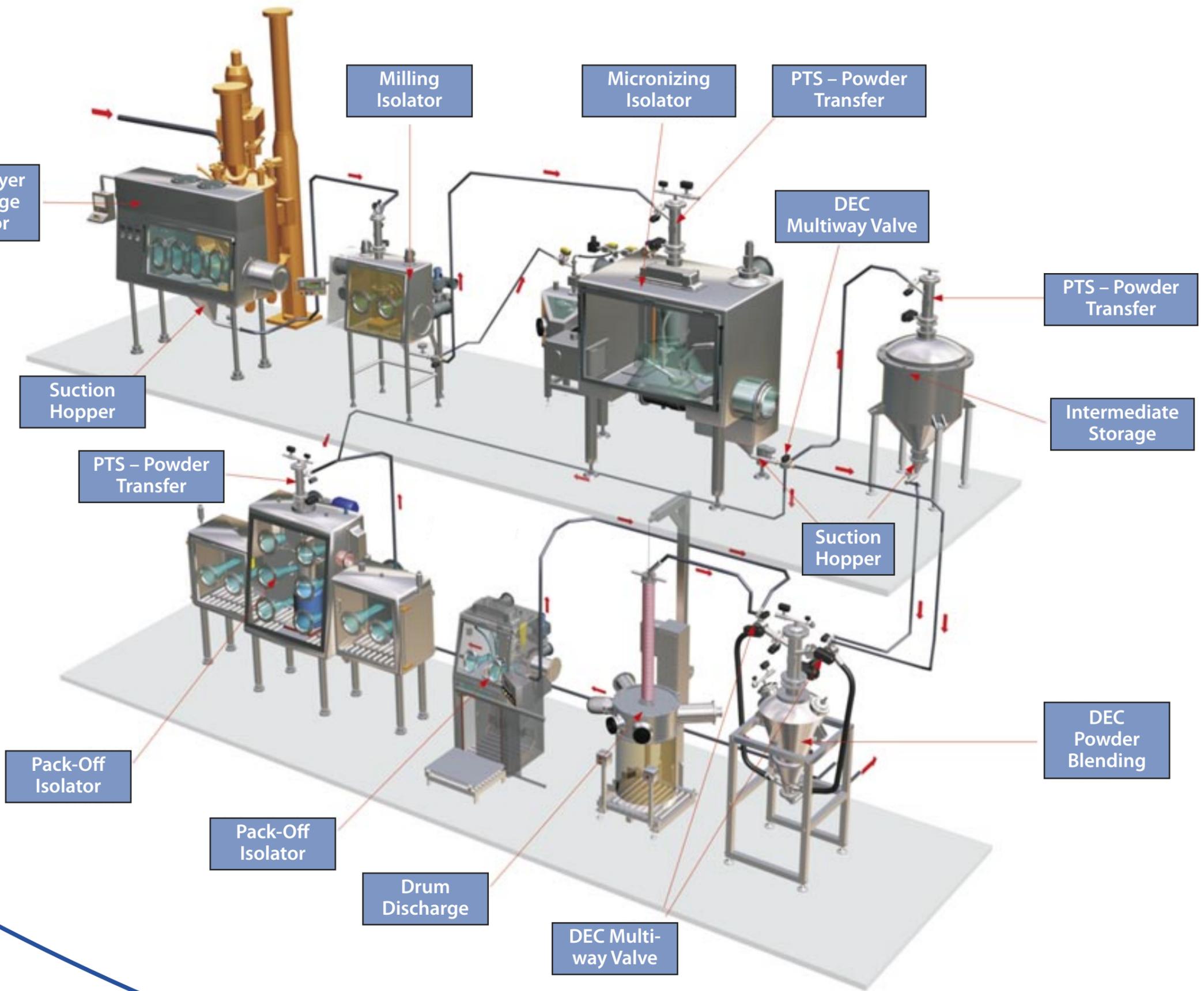
Without exception, Dec products are of the highest quality. The options are infinite to suit the requirements of a diverse customer base, turnkey and custom built, and modified as required. All systems are modular to ensure simple integration into existing processes.

Over the years Dec has enhanced its global presence by opening subsidiary offices in Europe, America and Asia, creating a genuinely global organization providing full local support. In 2008 Dec acquired the Jetpharma product range, which includes micronizing and containment systems.

Dec are established experts – innovators with an unparalleled depth of knowledge in their field. Their products are of the highest quality, at times challenging convention, always providing unique, effective solutions for forward thinking organizations.

Dec – Core Activities

- Powder handling and process containment systems
- Standard equipment and spare parts sale
- Process integrated turnkey systems
- Consultancy for process/system development including R&D
- Front End Engineering Design (FEED) activities to determine a project's feasibility and develop cost estimates





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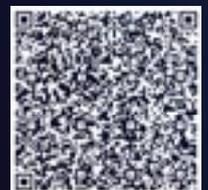
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