

When accuracy counts. Count on Schenck Process.



Precise weighing, feeding and measuring solutions for the
Pharmaceutical Industry.



we make processes work

Schenck Process are global market leaders of solutions in measuring and process technologies in industrial weighing, feeding, measuring and automation. The combination of know-how, field proven technology and 125 years of experience enables Schenck Process to offer customers within the pharmaceutical and nutraceutical industries tailor-made solutions in hygienic design.

In recognition of outstanding product and service quality, Schenck Process are the proud recipients of the 2006 Frost & Sullivan 'Product Line Leadership' Award.



Excellence in hygienic weighing, feeding and

Accuracy, constancy and reliability.



Serving the pharmaceutical industry for over 30 years, Schenck Process' weighing, feeding and measuring systems have been the products of choice for pharmaceutical processes worldwide. Whether it is tablet coating, multi-ingredient batching, intermediate bulk packaging or jet milling, Schenck Process has the right bulk metering solution.

We know that pharmaceutical and nutraceutical processes involve a wide range of materials, material characteristics and feed rates. Additionally, active ingredients, fillers, coatings etc. vary widely in bulk density, particle size and flowability. Therefore, Schenck Process offers an extensive range of weighing and feeding technology especially designed to operate to the most exacting of application conditions.

Key Success Factors

Based on a platform of repeatedly satisfied customers, the following are our key success factors:

- ❖ Global network of 24 national companies co-operating to improve our customer's processes and results
- ❖ Core competencies in bulk solids handling, weighing, feeding, measuring and automation
- ❖ Sales, technical support and service close to the customer
- ❖ Best-in-Class and unrivalled range of weighing, feeding and screening equipment designed to optimally handle the widest possible range of materials
- ❖ Excellence in project management
- ❖ Best-in-Class design, manufacturing and assembly

and measuring technology.

The challenge.



The solution.



Technological Leadership through a commitment to R&D

With technological leadership and innovation being central to our business, R&D plays a pivotal role in our success. Following this philosophy, we work closely with our customers to ensure that our products, used to satisfy their applications, exceed expectations in terms of accuracy, consistency and reliability.

Through these close working relationships, we have continually excelled at inventing and advancing award-winning product and system designs that feature the quality, versatility, cleanability and performance that is required by today's pharmaceutical and nutraceutical processes.

Applying our core competencies in weighing, feeding and measurement technologies, we are pleased to introduce our latest innovations: PureFeed® AP and PureFeed® DP dry solids feeders especially designed to satisfy applications in the pharmaceutical and nutraceutical industries.

Innovation Award

At the POWTECH 2007 Exhibition, in the Apparatus Construction and Process Components category, Schenck Process won the special innovation award for our new PureFeed® DP feed system.



How did we create the best pharmaceutical-grade dry solids feeders? Simple. We asked an international group of pharmaceutical manufacturing and process experts to help us define what today's processes require. Then, with their guidance, we developed new patented technology to deliver it for jet milling, blending, extruding, packaging, coating and formulating applications. The results – the new PureFeed® dry solids feeders.

PureFeed®

Excellence in Hygienic Metering Technology



Material discharge:
Feeding disc
(patent pending).



PureFeed® DP

Innovative technology especially designed to excel in handling low feed rates.

Application Parameters

- ❖ Ideal for low feed rates: 20 g/hr to 2 kg/hr
- ❖ Particle Size: 3 µm to 250 µm
- ❖ Bulk Density: ≤ 1,400 kg/m³
- ❖ Material Characteristics:
Free-flowing to difficult to handle

Characteristics of PureFeed® DP Disc Feeder

- ❖ Pulsation-free feed principle utilising a patented ceramic feed disc
- ❖ Low vertical accelerations
- ❖ No dynamic seal in direct contact with the feed material
- ❖ Easy disassembly for COP cleaning
- ❖ Dust containment system for transportation of the unit to a COP area
- ❖ Gravimetric operational mode

Both feeders feature:

- ❖ 316L Stainless Steel material pc
- ❖ Ra 0.8 μm interior finishes (Ra 0.4 μm optional)
- ❖ Completely enclosed motors
- ❖ Sanitary quick release clamps
- ❖ Easy disassembly and cleaning in minutes
- ❖ Smooth wipe down friendly surfaces
- ❖ Explosion proof configurations (optionally available)

Application examples:

- ❖ Regulating material supply to size reduction equipment
- ❖ Feeding active and excipient ingredients into batch and continuous mixer/blenders
- ❖ Extrusion and compounding
- ❖ Tableting and tablet coating
- ❖ Multi-ingredient feeding
- ❖ Inter-process packaging
- ❖ Blister Pack Filling

Feed Material examples:

Aerosil, Calcium Carbonate, Cellulose, Kieselguhr, Lactose and Magnesium Stearate

Accuracy Statement

2 Sigma, 60s sample:

Subject to full application details, material characterisation and application trials, PureFeed® is capable of achieving accuracies within the range of $\pm 0.25\%$ to $\pm 1.0\%$ gravimetric and $\pm 1.5\%$ to $\pm 2.5\%$ volumetric. For feed rates between 20 g/hr to 100 g/hr, PureFeed® DP is capable of achieving an accuracy of ± 1.0 g/hr.

Embracing International Standards:

USDA (3-A USDA)
FDA
EHEDG Recommendations
DIN-EN Standards
EU Machinery Directive
UL
ATEX
GAMP
cGMP

Material discharge:
Established Auger and "Wire Helix"
(patent pending).

Feed Hopper:
Flexible and disposable.



PureFeed® AP

Extension of our core competence in auger metering.

Application Parameters

- ❖ Ideal for high feed rates: 500 g/hr to 150 kg/hr
- ❖ Particle Size: 3 μm to 5 mm
- ❖ Bulk Density: $\leq 1,400 \text{ kg/m}^3$
- ❖ Material Characteristics: Free-flowing to difficult to handle

Characteristics of

PureFeed® AP Auger Feeder

- ❖ Pulsation-reduction feed principle utilising a patented "Wire Helix"
- ❖ Disposable flexible feed hopper manufactured from FDA Approved EPDM reduces the need for cleaning and swab testing
- ❖ External, non-intrusive agitation of the flexible feed hopper
- ❖ Easy disassembly for COP cleaning
- ❖ Dust containment system for transportation of the unit to a COP area
- ❖ Volumetric and gravimetric variants

**Validation-Ready
Documentation: GAMP
Compliant**

The provision of the correct validation documentation is at least as important as the choice of the correct process equipment. That is why we make sure the supply of our equipment is cost effectively supported with the appropriate levels of validation documentation: certificates of conformity, IQs, OQs, PQs, SOPs and FATs – we understand their significance.

Metering Performance and Accuracy

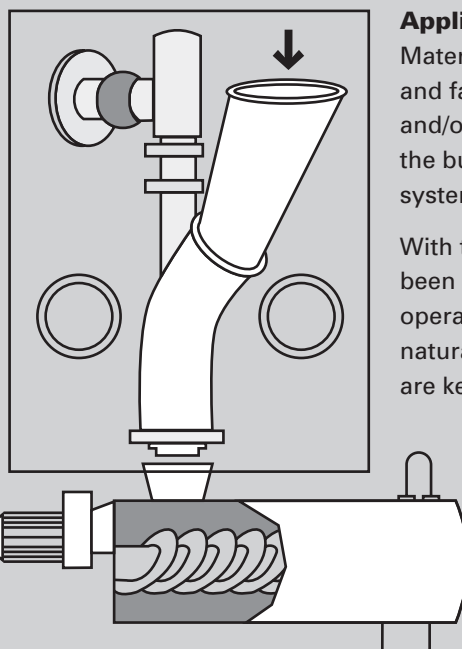
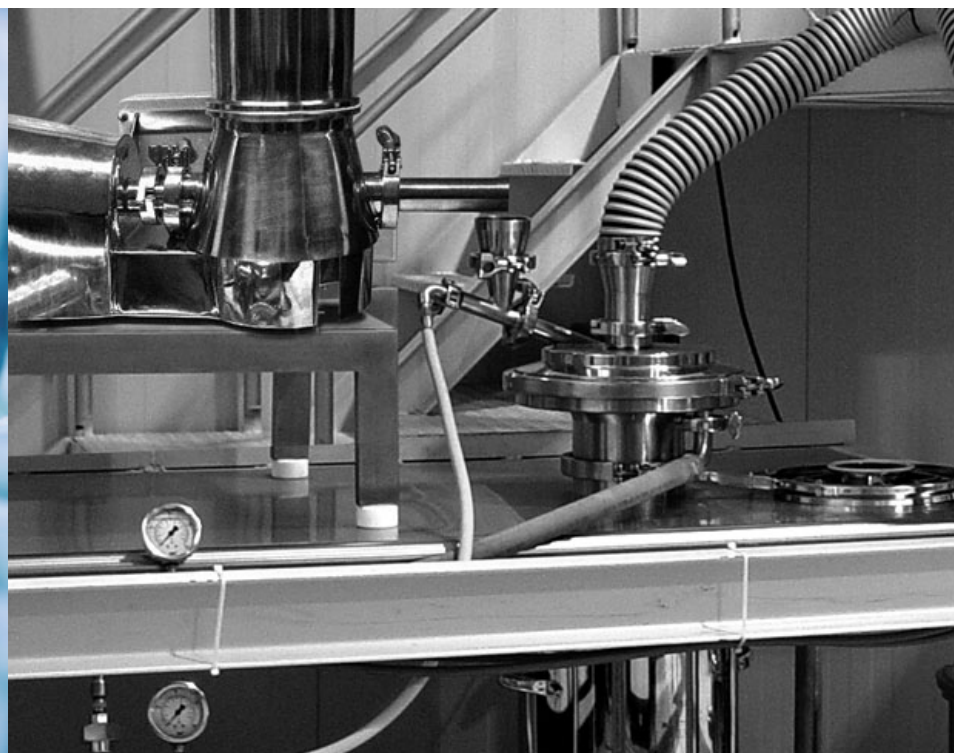
Versatility is also evident in the control packages supplied by Schenck Process – volumetric or gravimetric, batch or continuous.

For weight-based continuous feed applications, batching applications or packaging applications our DISOCONT® measuring and supervisory controls deliver 24 million counts of resolution, refill control, statistical process control (SPC) and DeviceNet, Profibus, Modbus or EtherNet upstream and downstream communications capability.

When it comes to Title 21 CFR Part 11, we are able to provide pertinent process information in the format that works best for you.

Application – Size reduction

Our volumetric and gravimetric feeders routinely meter materials into jet mills used for fine grinding. By accurately and consistently charging the jet mill, the milling process and particle size uniformity are optimised.



Application – Feeding in a glovebox

Material properties influence equipment and facility design. A high potency and/or toxicological profile requires that the bulk solid is processed in a contained system e.g. a glovebox.

With this in mind, the PureFeed® has been designed to be located and operated in a glovebox arrangement – naturally ease of use and disassembly are key features of the PureFeed®.

Schenck Process – Committed to quality, versatility, performance, service and the lowest cost of ownership in the industry.



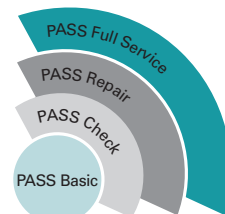
PASS: Process Advanced Service System



Return on investment (ROI) is an important consideration when selecting capital equipment. Given the unique R&D, pilot production, ramp-up and validation costs associated with pharmaceutical and nutraceutical manufacturing, in no other industries is ROI more important. That is why our focus has been on maximising your ROI by supplying high quality, high performance and versatile dry solids metering equipment that is easy to install and performs flawlessly for years. For ROI and the lowest cost of ownership in the industry, Schenck Process is your best choice.

Customised to meet your requirements, our comprehensive Process Advanced Service System provides you with the best service:

- ❖ Service around-the-clock
- ❖ Over 30 service points
- ❖ Over 180 service specialists
- ❖ Expert training for customers



To make the lives of our customers as simple as possible, our service products have been split into 4 levels that reflect the various stages of the product life cycle and enable us to provide a targeted customer service.

Excellence in hygienic weighing, feeding, measuring and automation.

Weighing and feeding technology from Schenck Process.



continuous

AccuRate® **Volumetric Feeders**

Compact, flexible and easy to integrate. Already proven more than 30,000 times over as a cost-effective solution.

MechaTron® **Gravimetric Feeders**

The modular dosing system for a wide range of dry bulk solids, with integrated measurement, control and regulation electronics.

MechaTron® **MC 3-A-S Feeder**

USDA/3-A accepted feeder for volumetric and gravimetric applications with integrated measuring and control electronics. Quick and easy dismantling for cleaning and product change.

SolidsFlow® **In-line Vibratory Feeders**

Volumetric and gravimetric dosing of the latest design. For sensitive materials that must not be damaged e.g. flakes and fibres.

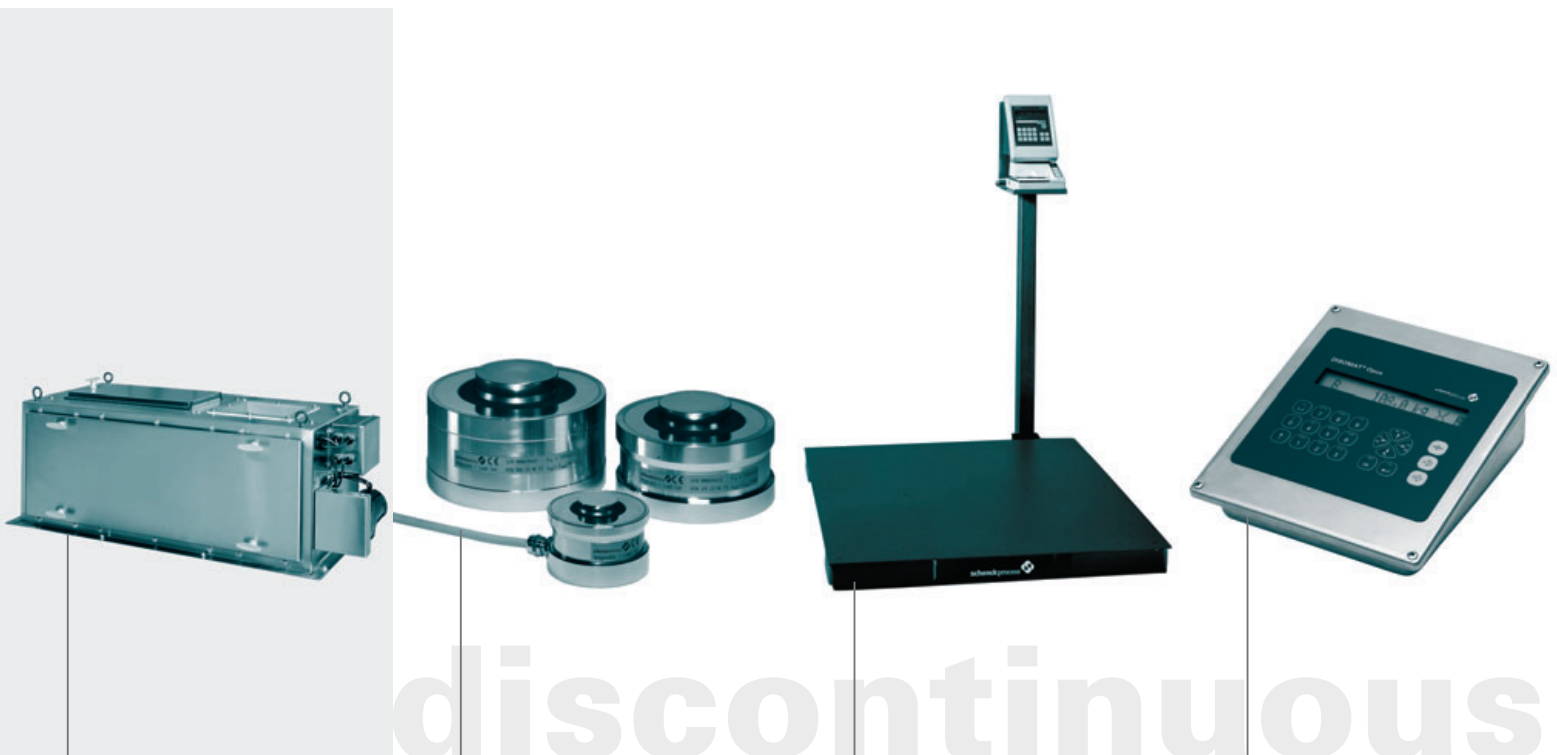
When accuracy counts. Count on Schenck Process.

You have the optimum recipe – we have the right weighing and feeding solution for even your most complex tasks.

The combination of know-how, field proven technology and many years of experience enables Schenck Process to offer customers within the pharmaceutical and nutraceutical industries tailor-made solutions in a hygienic design.

In continuous production systems, the additives are frequently fed to a mixer, kneader or extruder using the gravimetric dosing process. This requires both high dosing accuracy and consistency.

In discontinuous operating systems, Schenck Process weighing and measuring systems determine and control the exact composition of recipes. Therefore, ensuring consistent quality in exact accordance with the recipe.



MULTIDOS® L
Mass Flow Determination

Weighbelt for continual gravimetric measurement, wild flow totalisation, batching applications and feeding.

Load Cells

Extremely wide range of applications. For example used to reliably and very accurately check the filling of valuable bulk material with $\pm 0.05\%$ accuracy.

Platform and Pallet Scales
For universal use

Schenck Process scales are robust, maintenance-free and naturally approved for use in accordance with exacting calibration requirements.

Weighing and Feeding Electronics

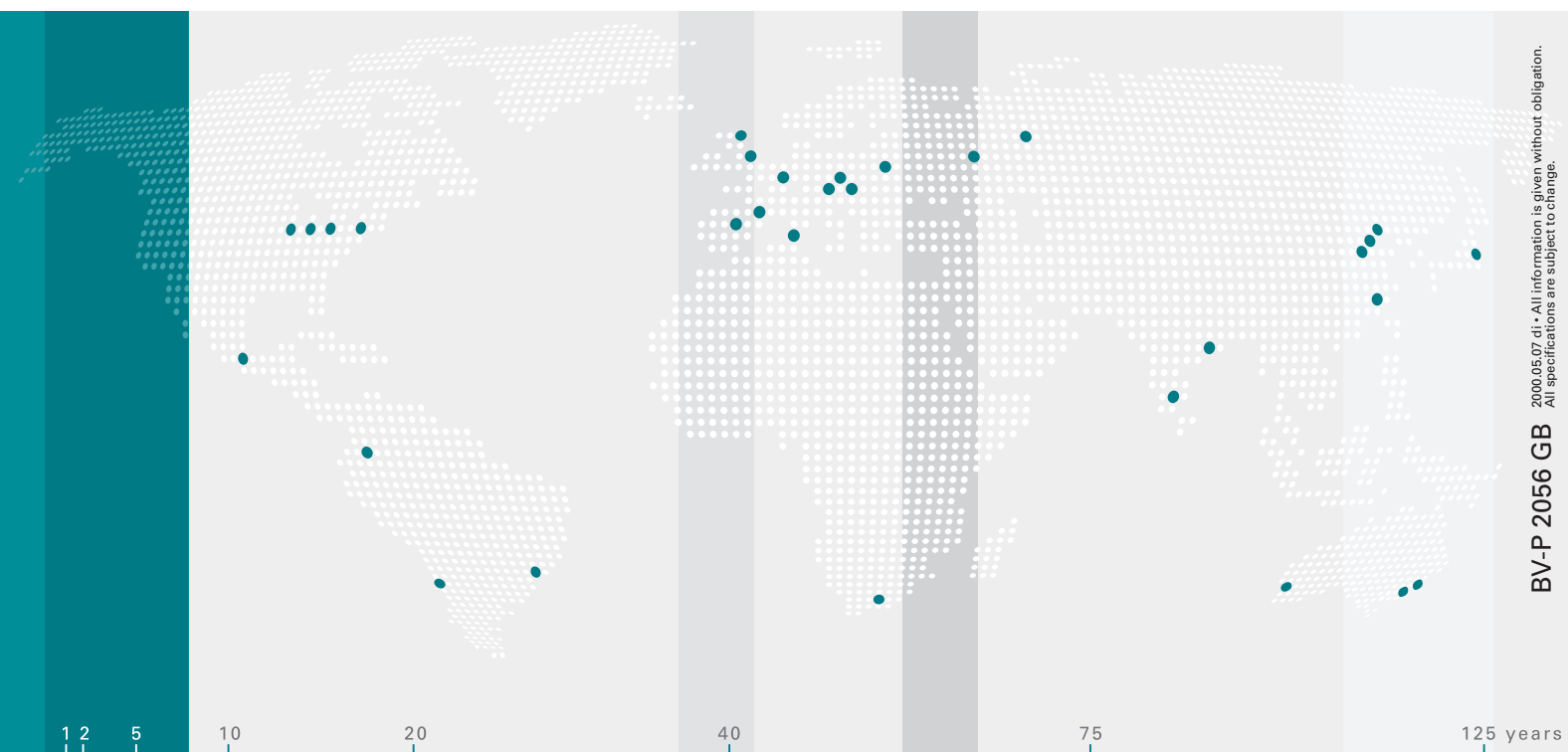
Developed by the scale experts for all standard requirements and any other tasks no matter how specialised.

weighing

feeding

measuring

automation



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All specifications are subject to change.

Schenck Process is the global market leader of solutions in measuring and process technologies in industrial weighing, feeding, measuring and automation.

Schenck Process develops, manufactures and markets a full range of solutions, products and turnkey systems on the basis of combining process engineering expertise, reliable components and field-proven technology.

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we make processes work