

# Drum Coating Systems

**GC MASTER**

FILM COATING

SUGAR COATING

GC MASTER



# Drum Coating Systems

**Glatt. The global market leader through pioneering achievements.**

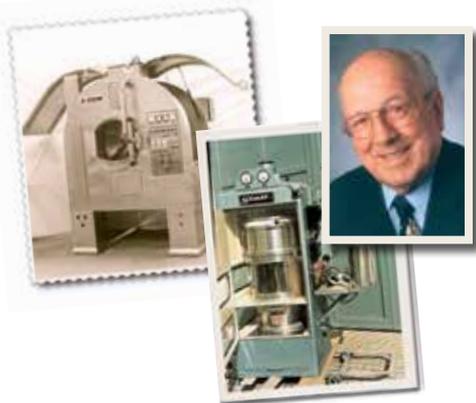
Glatt stands for the highest competence in coating and fluid bed technology. The unique reputation of the dynamic Glatt group is based on over 50 years of experience in plant engineering.

Today the Glatt group is the world leader in the market for coating and fluid bed systems and has over 1500 employees in 20 enterprises around the globe. The Glatt coaters are manufactured in Pratteln, Switzerland.

As a synergetic supplement to plant engineering, we offer our customers a wide range of product handling components and services - all from one supplier.

Glatt systems for coating, drying, granulating and pelletizing are used worldwide in the pharmaceutical, chemical and food industry. Various individual components and different construction methods allow systems to be tailored to the needs of individual customers. Glatt systems handle even critical products with solvents without difficulty. Another advantage is the dedicated control systems that can be tailored to suit customer requirements.

**Regardless of whether you are developing a product on laboratory equipment or for manufacturing large production batches - with a Glatt system you benefit from 50 years' expertise of a market leader. And you also profit from our world wide after sales service, which has become our trademark - and which you can expect from us in the future as well.**



Company founder Werner Glatt with the first fluid bed granulator and drum coater

Since its foundation, Glatt has consistently furthered the development and global use of coating and fluid bed technology. Glatt has played a decisive role in the creation of numerous innovations for this technology.



The Glatt coater GC Master with the nozzle arm extended

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Some illustrations may show optional details.



# Glatt GC Master

**Innovative coating systems series:  
Affordable perfection**

The pharmaceutical, chemical and food industries appreciate products, in which the potential for savings is exploited by standardisation, whilst at the same time still leaving room for individual requirements.

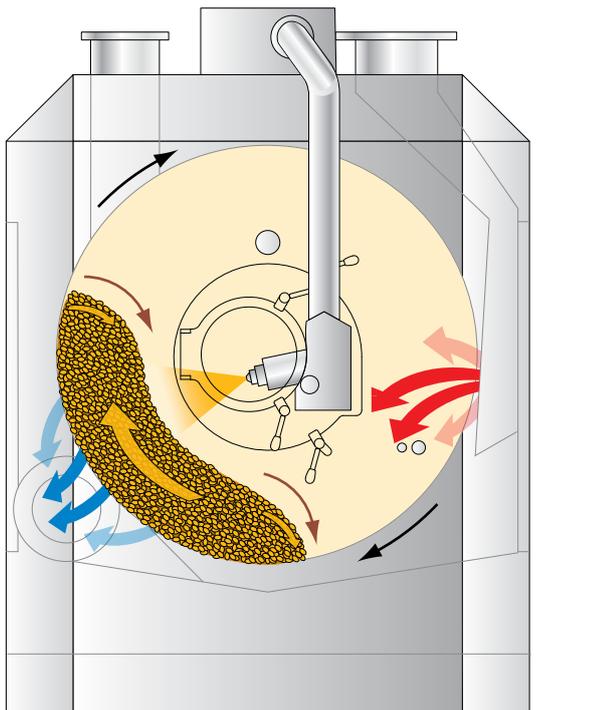
Glatt does justice to this insight with the GC Master coating series. It offers the advantages of standardization and the process engineering characteristics familiar and proven the world over, together with the flexibility of Glatt coaters with respect to application.

By implementing these characteristics logically and consistently, we have succeeded in developing a typical Glatt coater series ideally suited to the modern day demands.



Glatt coater GC Master 500 for batch sizes of up to 500 l

**The GC Master series helps save money when investing in new equipment**



Principle of the Glatt coating process in the GC Master

GC Master Highlights	
Extremely effective	✓
Outstanding GMP design for cleaning	✓
Flexible thanks to modular design	✓
Low-maintenance drum drive without chain or belt	✓
Suitable for Total Containment	✓

# Processing

**The unique drum ensures efficient and gentle mixing**

As you naturally expect from a Glatt coater, the GC Master also provides efficient processing of the tablet cores and gentle product handling with its special perforated drum. The perforation allows efficient heat exchange and optimised air flow in the coater. It also provides an optimum basis for the subsequent cleaning process.

Inside the drum, baffles of various types and sizes can be mounted, guaranteeing that the product bed is mixed homogeneously - optimally adapted to batch sizes and product characteristics.



The unique Glatt drum



Perforated drum, version with drilled holes (exterior view)



The tablet cores are processed gently and efficiently



## GC Master Highlights

Fully perforated drum	✓
Horizontal air flow	✓
Fully welded housing	✓
Cantilever mounting – no front support	✓

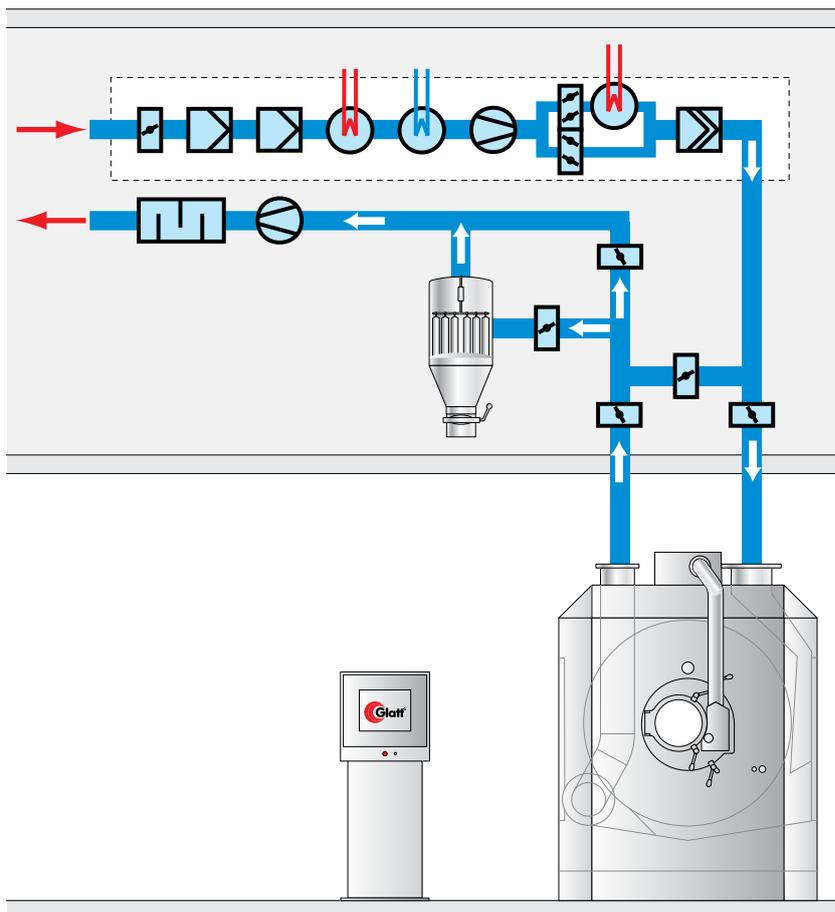
# Air processing

**Fresh air is valuable.  
Optimum air quality  
is our objective**

As in all Glatt systems, we make every possible effort to achieve a perfect quality of inlet and outlet air with the Glatt coater. The temperature, purity and volume of the inlet air should be maintained at a constant level and be reproducible.

We have also made provisions to meet more complex requirements. For this reason, alternative components are in a modular system to meet your specific needs. Some examples: Frost protection heater, dehumidifying, increased heating power, HEPA filter - almost anything is possible.

Exhaust air processing provides safety and protects the environment. Secondary dust extractors with automatic dedusting and HEPA filters as police filters guarantee lowest amounts of dust in the exhaust air. A silencer can reduce the noise level of the fan unit. If organic solvents are used, the current emission regulations must be observed. For these requirements, washers, adsorption systems, combustion or other methods can be used.



Glatt coater with the once-through principle with inlet and outlet air treatment

**In the basic version, the air is prefiltered, warmed up by means of a heat exchanger and filtered through a fine filter.**



Inlet air processing for the GC Master

## GC Master Highlights

Modular air processing system for a multitude of options



Solvent recovery possible



# Spray system

**The sophisticated technique of atomisation with the unique Glatt spray nozzles**

The heart of a GC Master is the spray system. Our decades of experience in the area of spray systems have allowed us to perfect the technique of atomisation. This applies to both aqueous and organic media, as well as to sugar syrups.

The specially designed nozzles distribute the coating suspension onto tablets as effectively as onto pellets. The spray system can be designed for low-pressure or high-pressure processes depending on the requirements.

The liquid-conveying systems are also selected to suit the spray solution. Depending on the application area, peristaltic or rotary piston pumps are used in this process.



Versatile binary nozzles for aqueous and organic film coating



The new GCSD jet. An exclusive Glatt development.



Conventional distribution rake for sugar coating

**The ABC nozzle cap ensures that the coating material is applied to where it belongs: to the product, not to the nozzle cap**

\*pat. pend.



GC Master Highlights	
GCSD nozzles with extremely robust ABC caps	✓
Tool-free nozzle maintenance	✓
Film coating and sugar coating	✓

# Spray system

**Each product requires a specific type of coating and preparation**

Film coating, for example, requires different equipment than sugar coating. Both processes can be carried out on a GC Master, simply by exchanging the spray system. The design in accordance with cGMP standards allows a rapid change of products as well as quick and thorough cleaning.



Tube feed-through for spray media

**The ingenious concept behind the GC Master allows quick and simple product changes**



Glatt coater GC Master with horizontal drum, equipped for film coating



Open operating door



Innovative Glatt airless nozzles for sugar coating

## GC Master Highlights

Nozzle arm can be removed and swivelled away



100 % – 30 % batch volume



# Product charging

**Front or lateral charging – the ideal system for every situation**

The product flow generally determines which option is required for the system. The material flow concept depends on constructional conditions such as the floor space and room height. Product characteristics such as flow properties, friability or abrasion, and toxicological data also play an important role, of course. You can basically choose between two kinds of material flow that cover almost every application:

## Vertical product flow

The vertical product flow with automatic charging from above and closed front discharging allows a totally closed system (total containment).

## Horizontal product flow

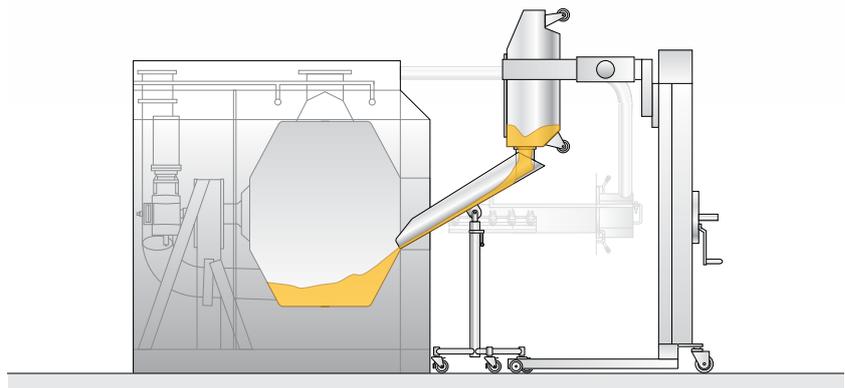
The horizontal product flow allows manual charging as well as charging with a post hoist. Discharging can be carried out either manually using the patented SmartScoop® discharging system or automatically using the integrated front discharging feature. In specific cases, a combination of the two systems can also be useful.

## Front charging

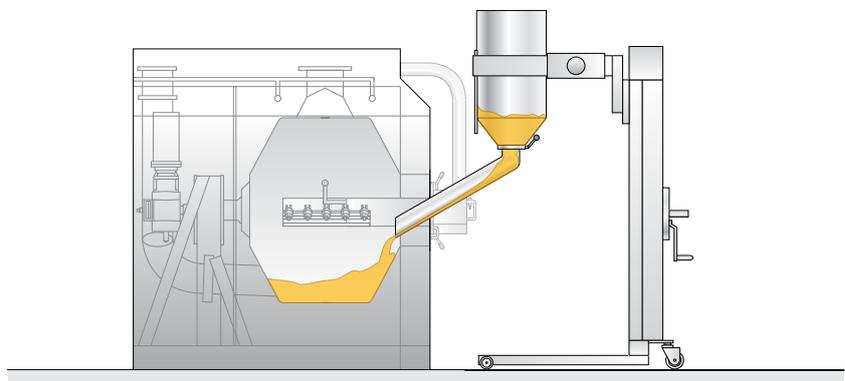
Front charging can be carried out manually as well as with the corresponding lifting devices. Even extremely heavy bins can be coupled to the system with ease thanks to the handling equipment developed by Glatt.



Front charging with a chute



Front charging with a chute



Front charging with an inlet pipe

### GC Master Highlights

Freely accessible drum opening	✓
Multifunction front door	✓
Contained charging possible	✓

# Product discharging

**Completely convincing discharging even for special demands**

As with charging, Glatt also offers a variety of different discharging devices. You will therefore have no problem selecting the ideal solution for your specific application.

## Front discharging

During open front discharging, the SmartScoop® discharge scoop mounted specifically for discharging is used to remove the product while the drum is turning.

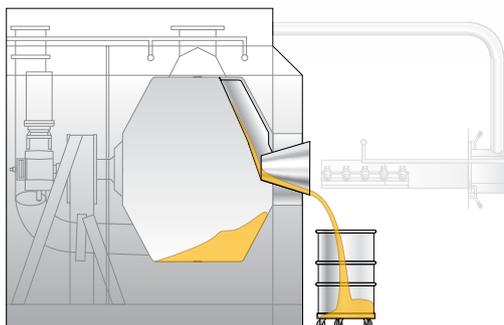
Closed front discharging is designed for automated processes. In these processes, the product is discharged over a fixed discharge scoop through a closed system into a transport bin.



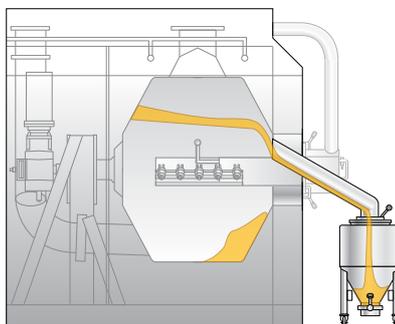
Open front discharging using the SmartScoop® discharging system



Patented SmartScoop® discharging system



Open front discharging using the SmartScoop® discharging system



Closed front discharging into a container for an automatic process

## Handling

As with all of our products, the product charging devices allow great flexibility through solutions which are tailored to your specific needs. The illustrations show typical applications.



### GC Master Highlights

Patented SmartScoop® discharge system: low weight, simple to install	✓
Fast and effective discharge	✓
Contained discharging possible	✓

# Control systems

**With GlattView, you are automatically in control of the best product quality!**

The demands on state-of-the-art control systems are very high: Process steps are to be individually configured and critical parameters automatically monitored. Manual, semi-automatic and fully automated processes have to be handled equally effectively. All data and sequences relevant for the process must be documented and administrated reliably. Often a control system must be integrated into an existing network, even with third-party systems. To be able to meet all the various demands of our customers, we develop our own generic control systems. For nobody knows a Glatt system better than our specialists do!

Using the latest technology, highly qualified specialists from Glatt develop, plan and build the entire hardware and software for the control systems, thus providing the highest possible level of flexibility and reliability for the customer. Examples of our competence in this area are: integration into existing control systems, process visualisation and/or explosion-proof control systems.

**Detailed documentation for validation, qualification and calibration is available on request**



Touch-Screen



Swivelling operator control panel



Touch screen, additional keyboard optionally available



Through-the-wall mounting

**Perfect ergonomics. Intuitive graphical operating system.**

Swivelling operator control panel. Intelligent touch-screen control. Self-explanatory graphical operating philosophy. Generous 19" touch screen. 22" or 24" available on request. Explosion-proof version available.



GlattView Control System

## GC Master Highlights

Large screen for touch operation	✓
Intuitive operating concept	✓
Control systems can be adapted to meet individual requirements	✓

# Cleaning systems

**It's a pure pleasure.  
The Glatt cleaning  
solution!**

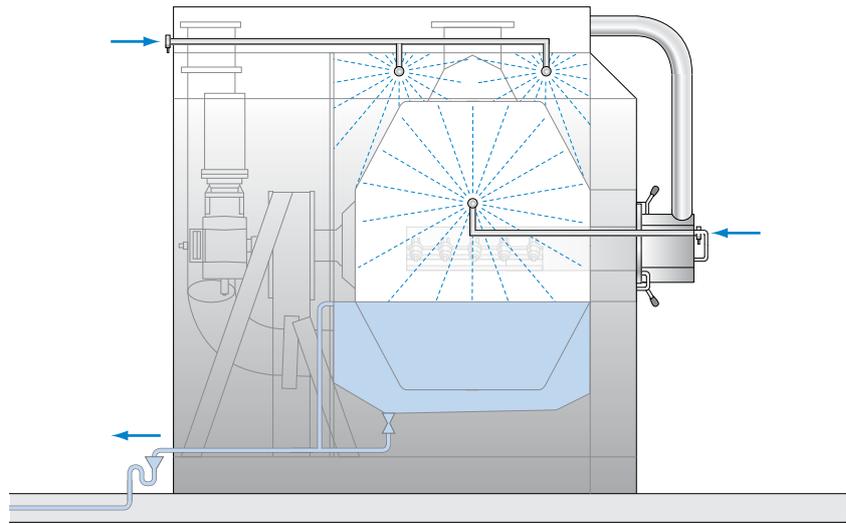
In general, many different products are manufactured in a coating system. Each time the product is changed, a considerable amount of cleaning is required, which in the case of an entirely manual version has implications for personal safety. Therefore the issue of cleaning has become an important cost factor.

The highly efficient Glatt cleaning system guarantees quick and intensive cleaning of the entire coating plant. The cleaning process can also be carried out in an automatic and reproducible way. Thus, defined cleaning results can be achieved and the process can be validated.



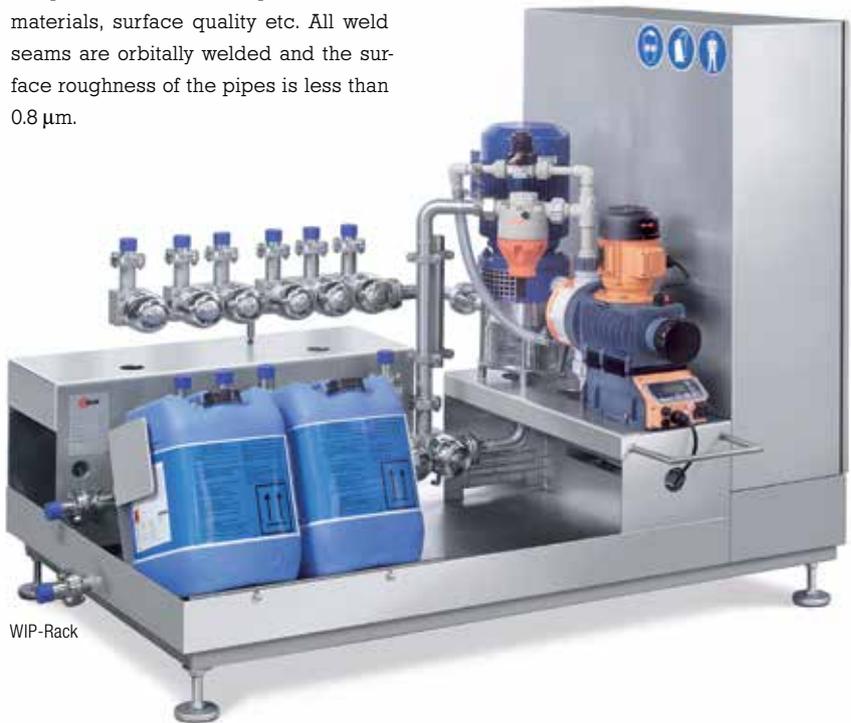
Rotating washing nozzle on the spray arm

The washing nozzles are supplied with washing liquid by a WIP rack (WIP = washing in place) which provides the correct water quantity with the required pressure and correct temperature and, if necessary, also meters the appropriate cleaning agents. WIP cleaning is normally a once-through process.



Automatic cleaning – functional principle

Recirculation systems can, of course, be used as an option too. Naturally, the rack complies with all GMP requirements for materials, surface quality etc. All weld seams are orbitally welded and the surface roughness of the pipes is less than 0.8 µm.



WIP-Rack



## GC Master Highlights

WIP rack control integrated in the coater control	✓
Very good cleaning result	✓
Fully automatic cleaning process possible	✓

# Addresses

**The Glatt group employs  
over 1,500 people in  
20 enterprises**



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