



***GENTLE
VACUUM
COATER
GVC***

For best quality in the refinement
of pellets and extrudates

GENTLE VACUUM COATER GVC

INTRODUCTION OF LIQUIDS DEEP INTO THE PORES

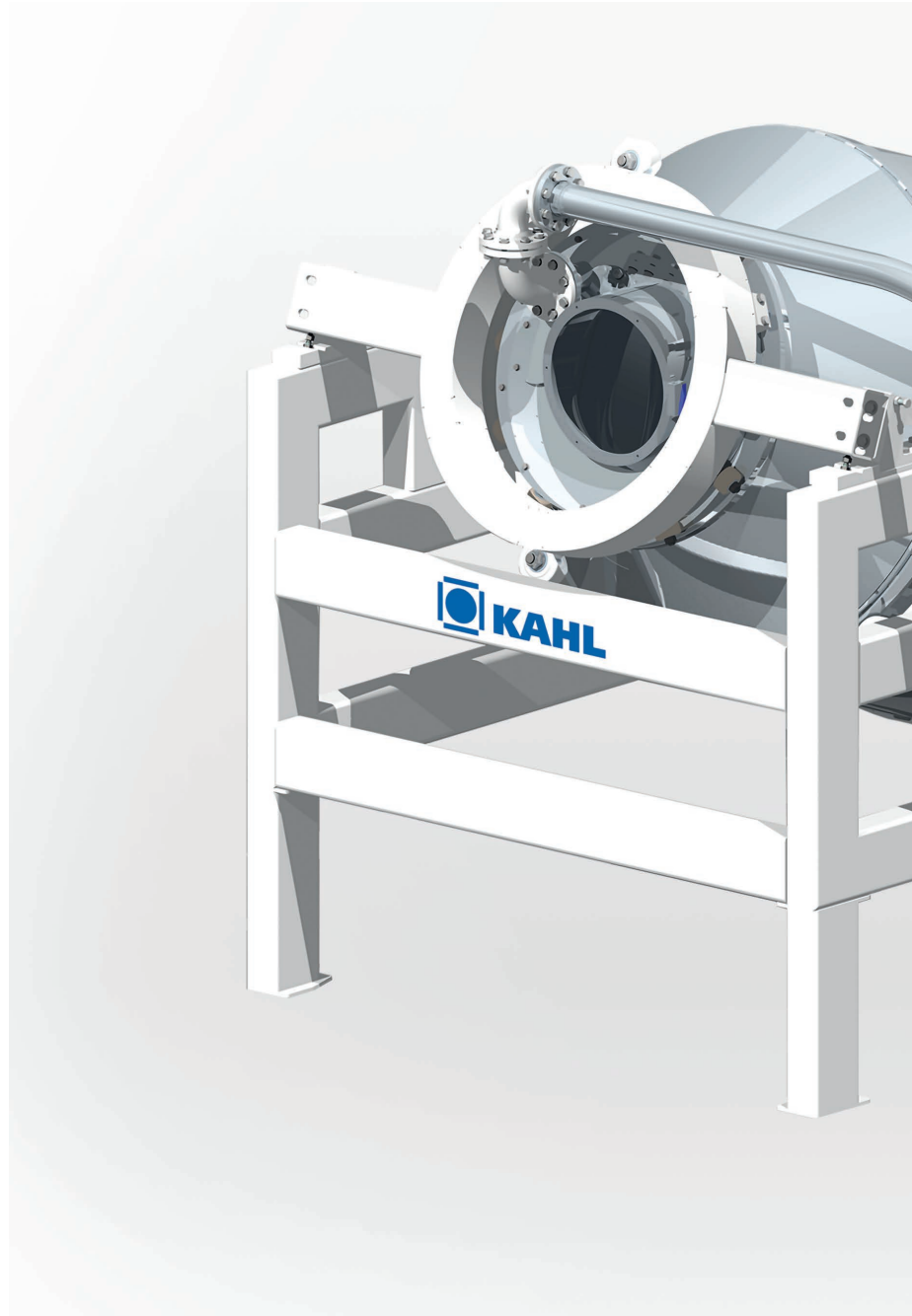
Vacuum coating is a process with which liquids can be introduced subsequently in extruded feed, pellets or porous products. This is done by the product being sprayed with fat/liquid during the vacuum. Then the vacuum breaks and the liquid is forced into the interior of the product.

Depending on the process parameters, almost all pores can be filled with liquid. Extrudates with a larger pore volume absorb more liquid than comparatively dense pellets.

STANDARD PROCESS FOR THE PRODUCTION OF FISH FEED

Vacuum coating is a standard process in the production of fish feed. Depending on the feed type or fish species, 4 to 40 % oil are subsequently applied to the extruded fish feed.

Also in the field of dry dog and cat food, this method is being increasingly used, since this is the only way to reach a superior product quality.



RANGE OF APPLICATION



SHRIMP &
FISH FEED



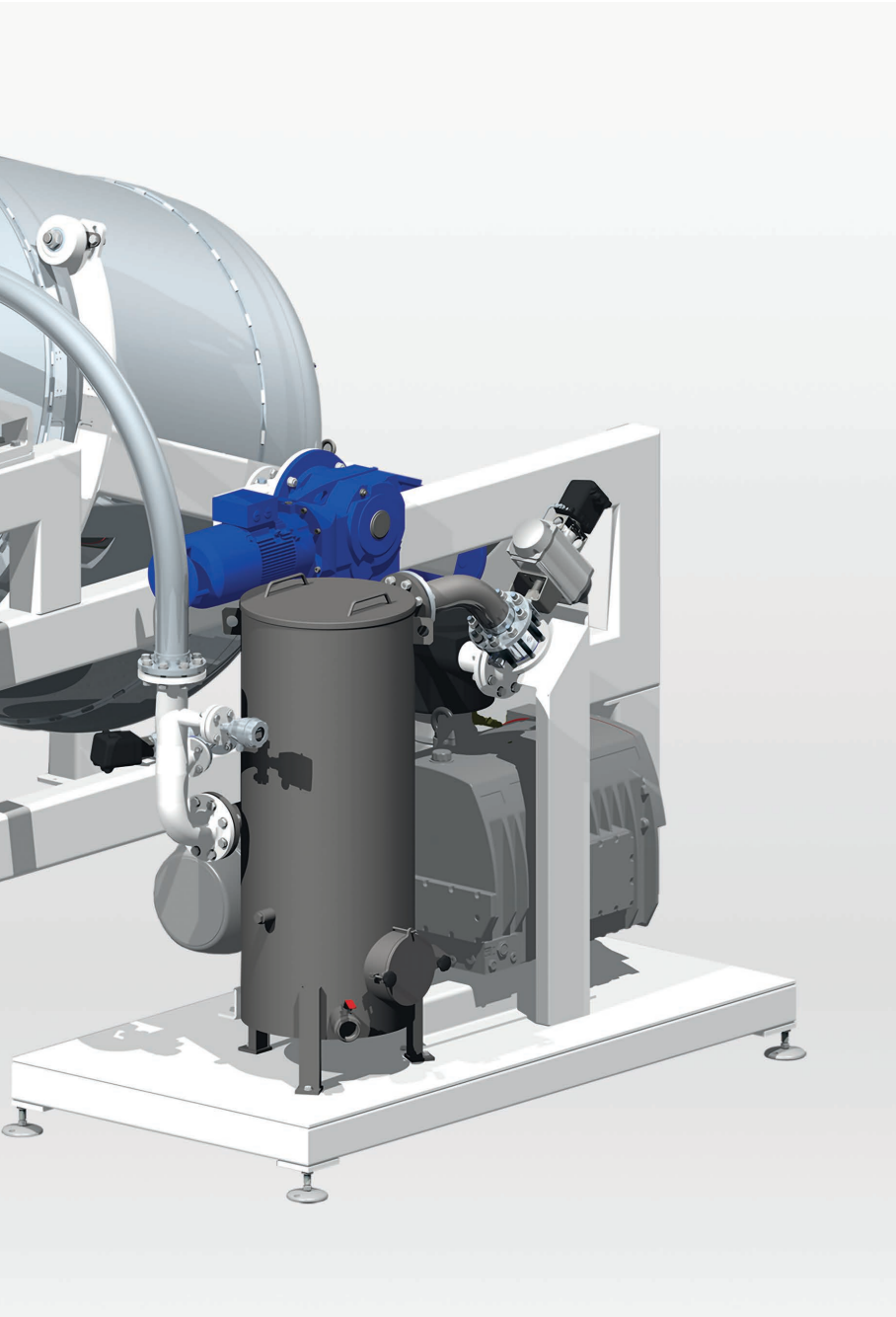
PELLETS &
EXTRUDATES



POULTRY FEED



PETFOOD



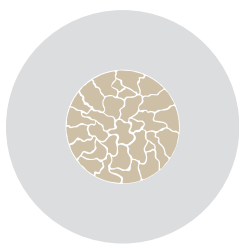
SUBSEQUENT APPLICATION OF SEVERAL LIQUIDS

Different liquids can be applied one after the other. This has the advantage that the first liquid is inside the product and is surrounded by the second liquid in the pellet. Thus, sensitive additives can be protected, for example, or their taste can be masked. Since this vacuum coating process is carried out after the actual manufacture of the product, the defined addition of heat-sensitive additives is no problem.

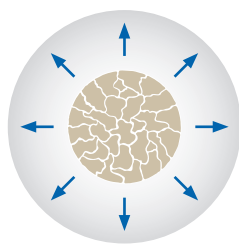
EFFECTIVE REFINEMENT OF COMPOUND FEED BY VACUUM COATING

In the field of compound feed production, particularly poultry feed, the vacuum coating process is increasingly integrated into existing production plants. The aim is to produce a high-quality, high-energy feed. By the subsequent addition of fat, the energy content of the feed is increased in a simple manner. The high-fat compound feed components in the formulae can be reduced accordingly, which decreases the costs for the raw materials. Low-fat feed pellets often have significantly better qualities (e.g. abrasion resistance). By the subsequent addition of fat by means of vacuum coating this high quality is preserved.

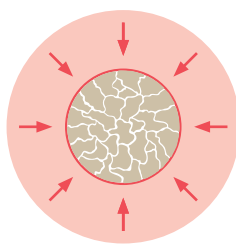
THE PROCESS



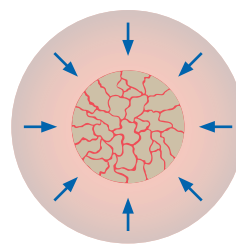
INPUT PRODUCT



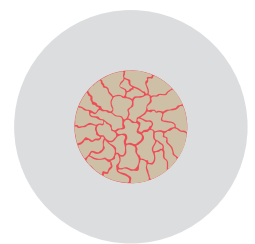
GENERATING THE VACUUM



COATING

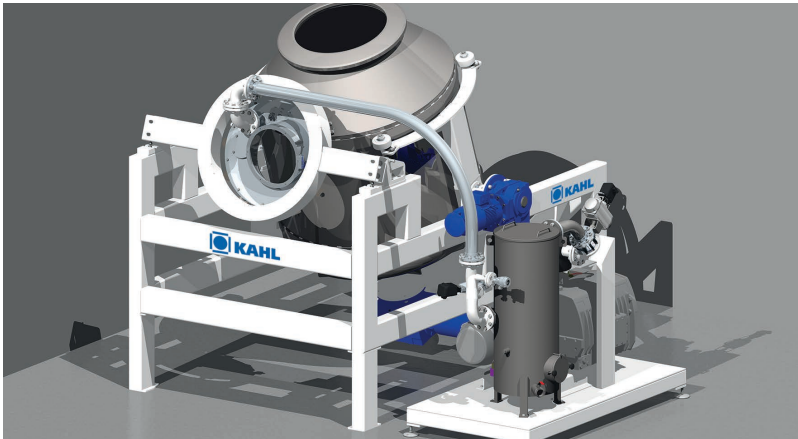


BREAKING THE VACUUM



TREATED PRODUCT

FUNCTIONAL PROCESS STEPS



FILLING

The drum is filled with the product to be processed. Weighing and proportioning are carried out by high-precision load cells integrated in the vacuum coater. The drum swings into working position and rotates.



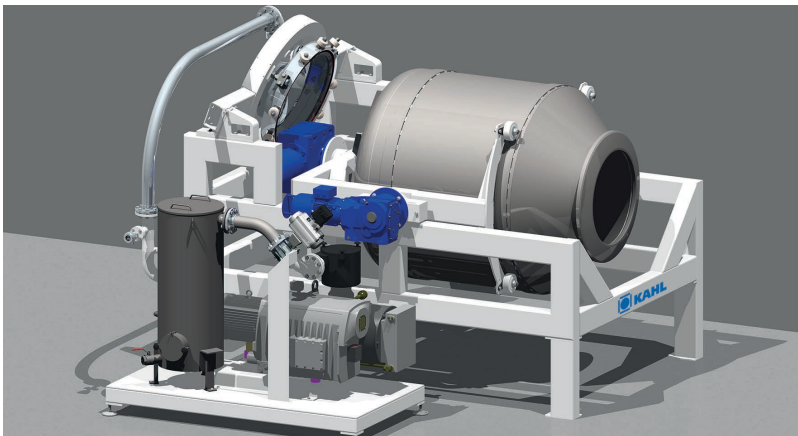
WORKING

In the working position, the vacuum is generated, and then one or more liquids are sprayed one after the other onto the product. (Nozzles and liquid addition are not shown.) The vacuum is broken in a defined way.



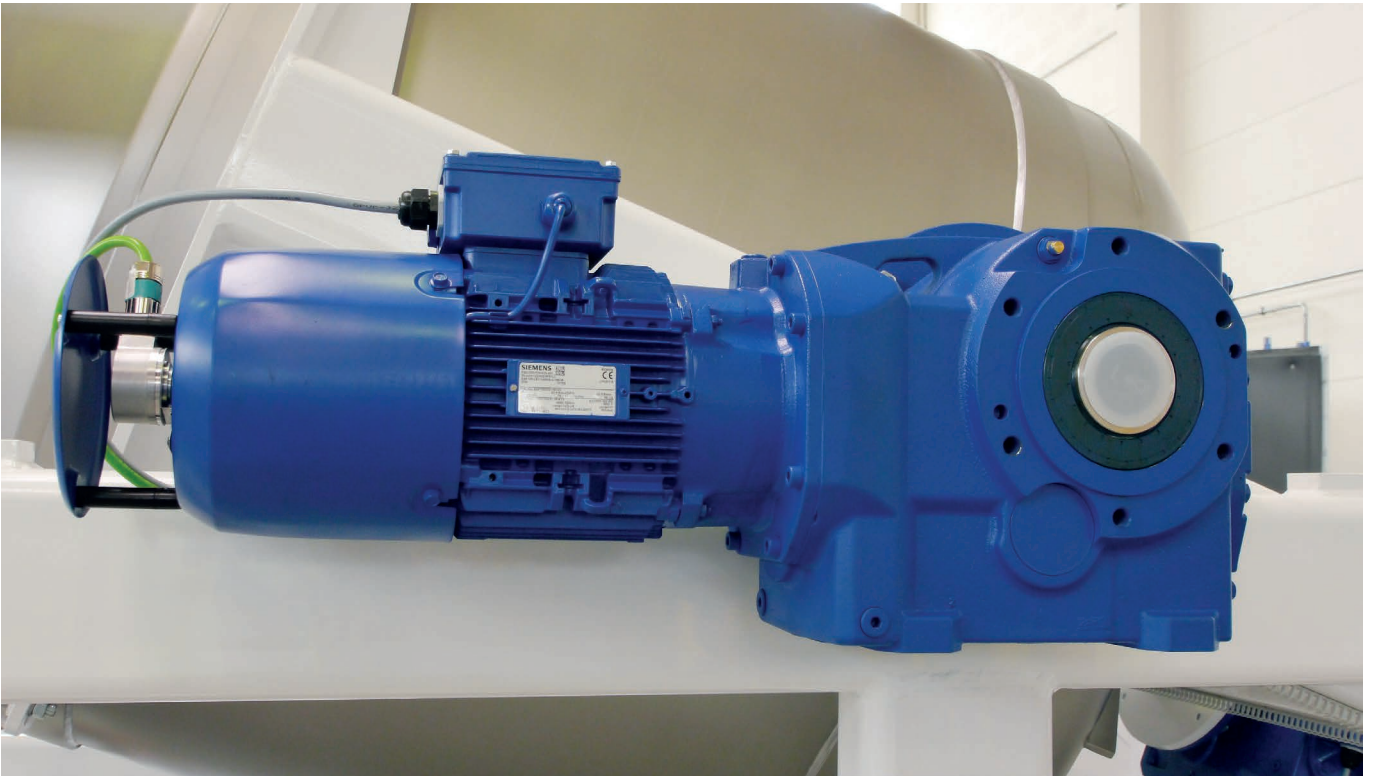
EMPTYING

The drum is emptied by a pivoting movement downwards. The drum continues to rotate meanwhile. Complete emptying is ensured.



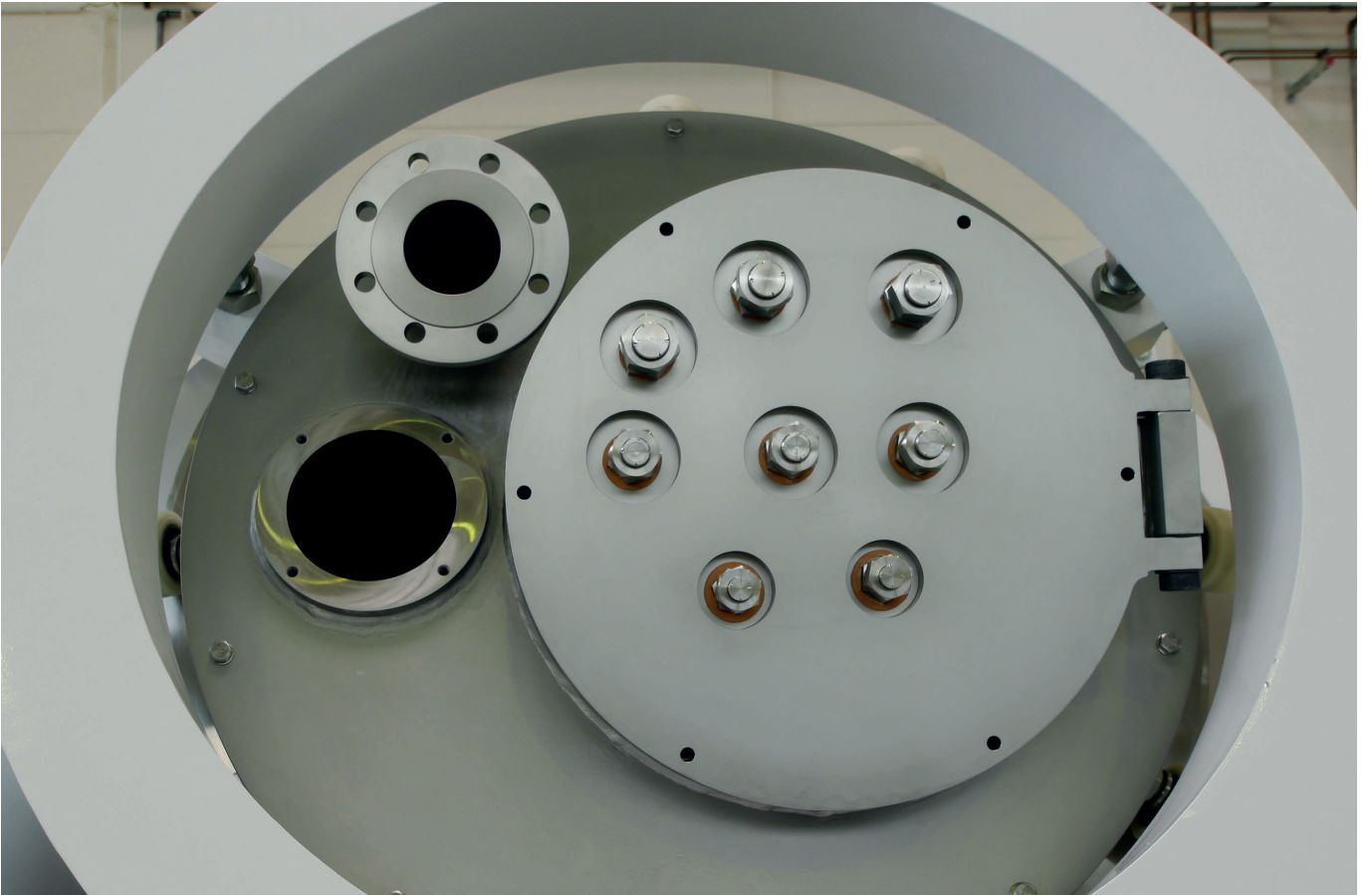
CLEANING

For cleaning and inspection, the drum can be completely pivoted toward the rear side, so that the best possible access is given.

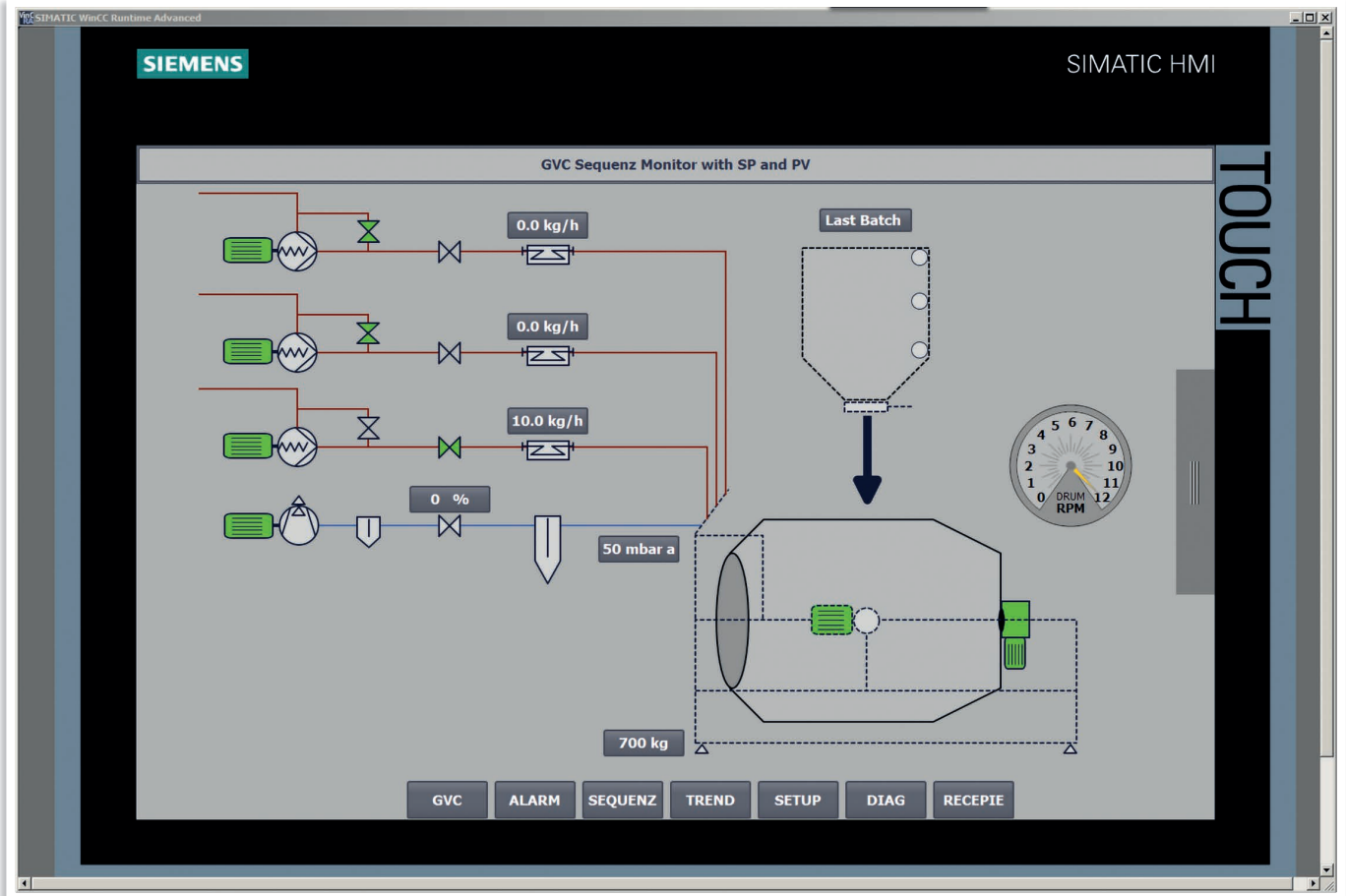


▲ Controlled exact positioning

▼ Simple nozzle accessibility



DECISIVE ADVANTAGES



▲ Main screen of the GVC

NO MECHANICAL STRESS OF PELLETS AND EXTRUDATES

The various inconveniences of the vacuum coaters available on the market are known. For example, the product to be coated is subjected to high mechanical stress, resulting in an increased amount of fines. Nonbroken product is mechanically predamaged to such an extent that it comes to increased breakage under load (during loading, transport and distribution of the feed). Another disadvantage is the poor cleanability of the commercially available vacuum coaters.

EFFECTIVE REFINEMENT BY THE NEW KAHL COATING PROCESS

In the new development of this machine, the focus was on the elimination of these disadvantages and on an attractive machine price. The vacuum coater newly developed by Amandus Kahl and the FôrTek Institute in Norway has many advantages over the coaters currently on the market. The mixing movement is not caused by externally driven mixing tools, but by the

rotation of the mixing drum itself. This principle, on which the coating drums of the food or pharmaceutical industry base, has been transferred for the first time to a vacuum coater on an industrial scale. Special flights located inside the mixing drum ensure that the product is lifted very gently and sprayed during the vacuum phase of the process by the defined movement very evenly with the liquid to be coated. This means that both very low and very high liquid addition quantities are possible in one coater. Studies have demonstrated the excellent uniformity of the coating and the extremely gentle handling of the product during this process. The cycle times of the batch operation and the size of the individual batches are comparable to the coaters on the market. A subsequent replacement of older machines by the new KAHL GVC is possible.

ADVANTAGES

- *No moving mixing tools*
- *Extremely gentle product movement, thus almost no wear*
- *Easy cleaning*
- *Latest, integrated control components*
- *Full system diagnostics*
- *Remote maintenance option*
- *Widely proven control concept*

TURN-KEY FACTORIES WORLDWIDE



WORLDWIDE ON THE ROAD TO SUCCESS.

AMANDUS KAHL builds complete feed mills all over the world. Compound feed mills as well as plants for the production of petfood and fish feed have already been implemented worldwide.

The core components are always own machines produced in Germany.

Made in Germany.

▲ Complete feed mill ▼ Fish feed plant in North Africa





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