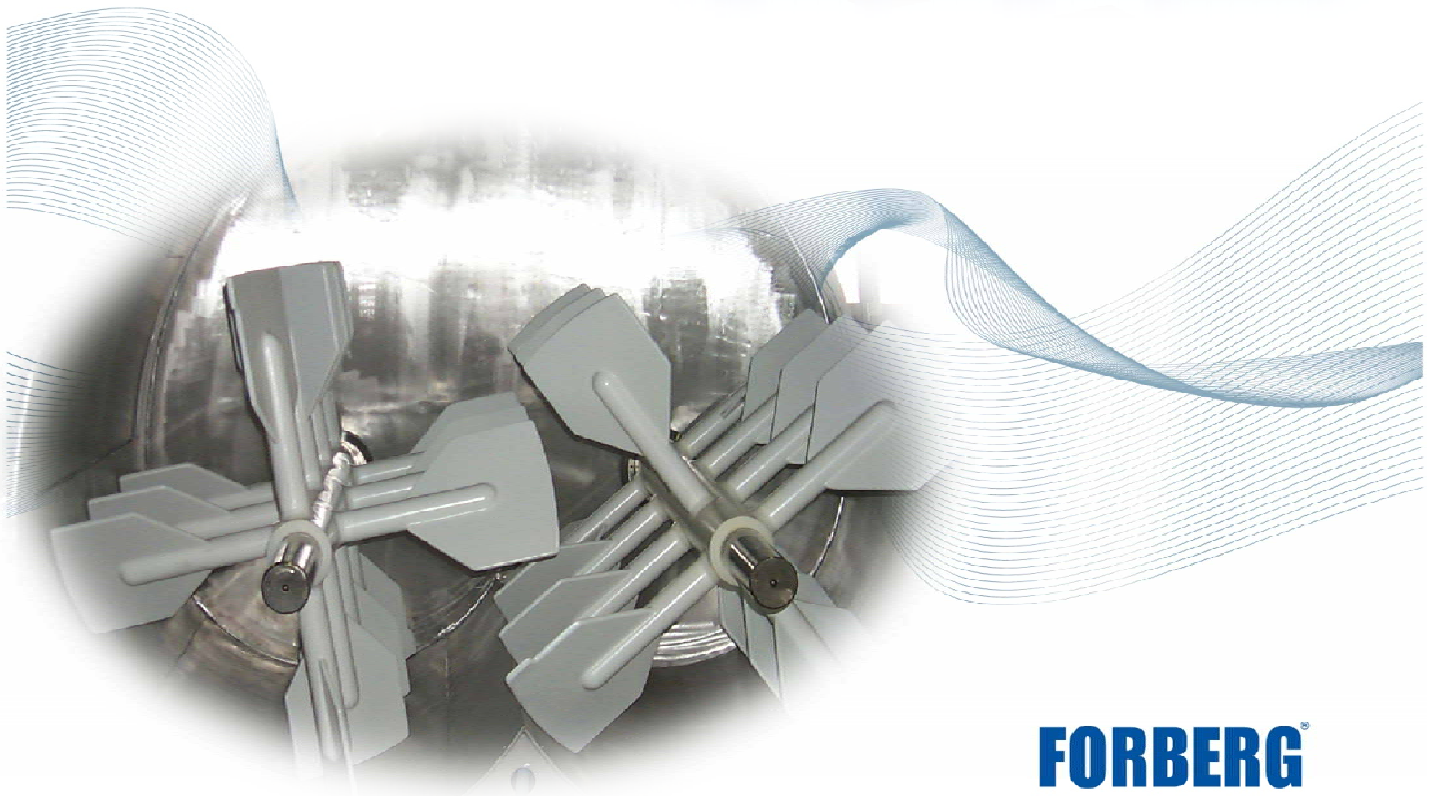
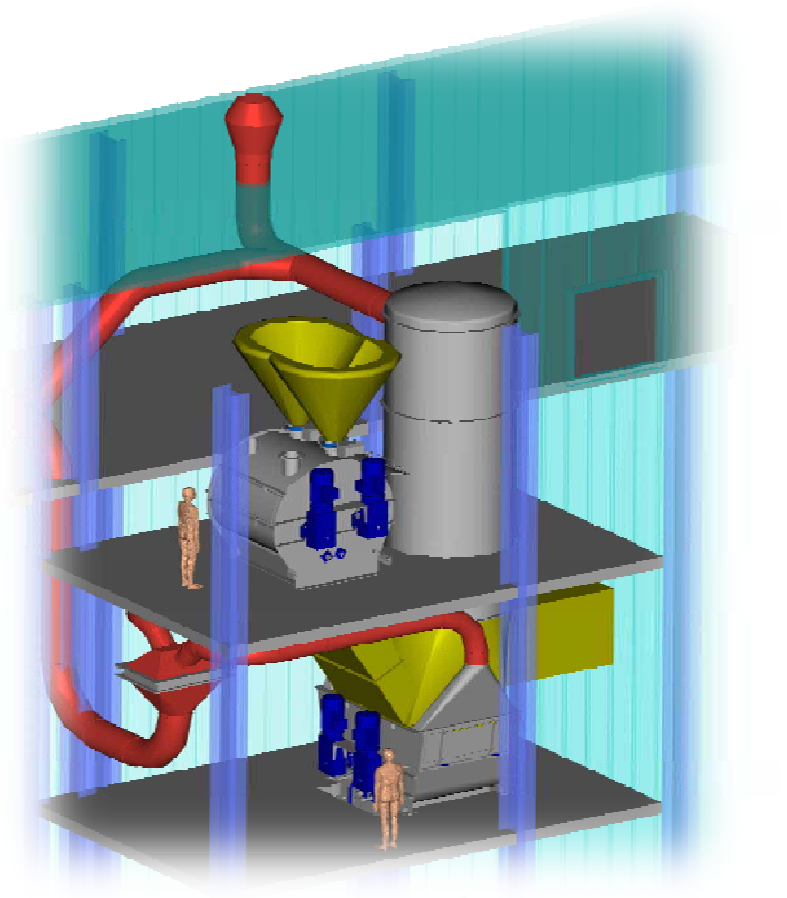


Forberg® Steam Heat Treatment System

- Production of hygienized mash feed
- State of the art technology for the feed industry



FORBERG®
The smartest solutions

Forberg® Steam Heat Treatment System

Introduction

The Forberg® Steam Heat Treatment System is a combined mixing- / drying- / cooling system for treatment of mash feed.

In Europe and in an increasing number of other countries around the world, diets are changed to allow for a coarser structure, and this reduces feed cost and improves feed utilization.

The Forberg® Steam Heat Treatment System is the answer to the high requirements of the feed industry.

Intelligent steam heat treatment combines efficiency, quality and high capacity with the possibility to add heat sensitive additives at the latest stage of the process.

Cross contamination is reduced to a minimum.

The results

Hygienized mash feed

Optimal nutritional value

Low temperature treatment keeps the healthy micro organisms alive

Natural structure of the feed

Improved flow properties compared to traditional mash feed

Perfectly and gently mixed – always.

Nutritional enhancers and additives can be added without any risk of destruction.

State of the Art mixing plant and State of the Art Steam Heat Treatment in one system

Energy and cost saving process

Process

In the first step of the process the conditioner/ mixer is charged with the feed, which has to be treated. The feeding can take place out of a single bin or different components can be mixed with the Forberg® high speed mixing process. Then the steam is injected into the mixer to heat up the product to the desired temperature. Now the temperature is maintained over a certain period of time to eliminate salmonella and unhealthy micro-organisms.

In this stage of the process liquids, which are not initially hygienic, like molasses for example, can be treated as well.

After the steam heat treatment the mixer discharges directly into a dryer/ cooler. The mixer and the chutes are heated to maintain a temperature over the dew point at all surfaces. As soon as the dryer is charged the conditioner can already produce the next batch.

In the dryer, warm air is first introduced to extract some moisture from the product. In the second step ambient air is blown in to reduce the product temperature further. After the product has reached the desired temperature and moisture content, additives such as vitamins, enzymes, flavours, pharmaceuticals, etc., which are sensitive to heat, can be added. The additives can be applied in powder or liquid form.



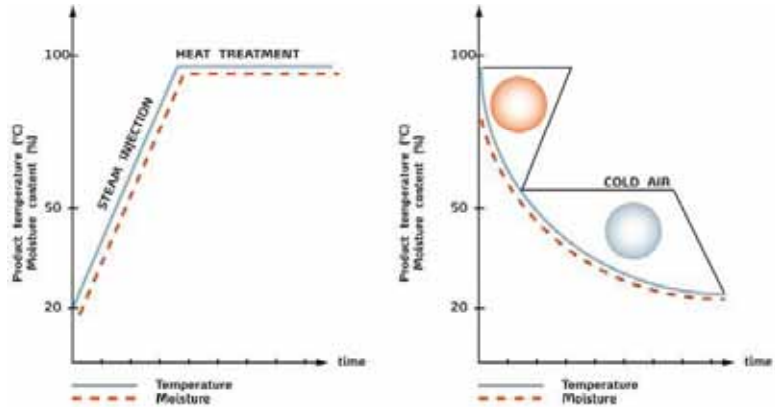
Forberg® Steam Heat Treatment System

Homogeneous drying:

- No local overheating
- No local overdrying
- Gentle drying
- Low drying temperature possible
- Good correlation between product temperature and exhaust temperature
- The integrated mixing technology always ensures a homogeneous batch

Capacity:

- High thermal capacity
- Can operate close to the products maximum temperature, increasing the drying efficiency
- Constant and controlled air supply
- No change of fresh air
- Increased total thermal efficiency with the optional use of a heat pump
- Batch or continuous drying
- Possible drying to absolute dryness



For production of
hygienized mash
feed



State of the art
technology for
the feed industry



Inertgas drying:

For special applications Forberg® offers the drying system with inertgas as a drying medium.

Advanges are:

- Prevents oxidation of the product
- Drying of solvent based products
- Reduces the possibility of explosion
- Closed loop reduces inertgas consumption

Closed loop:

- No odour to the environment
- Constant drying conditions
- No effluent gases or dust
- Condensation of water vapour
- Energy saving due to recuperation of heat
- Inertgas drying as an option
- Open system as an option

Control system:

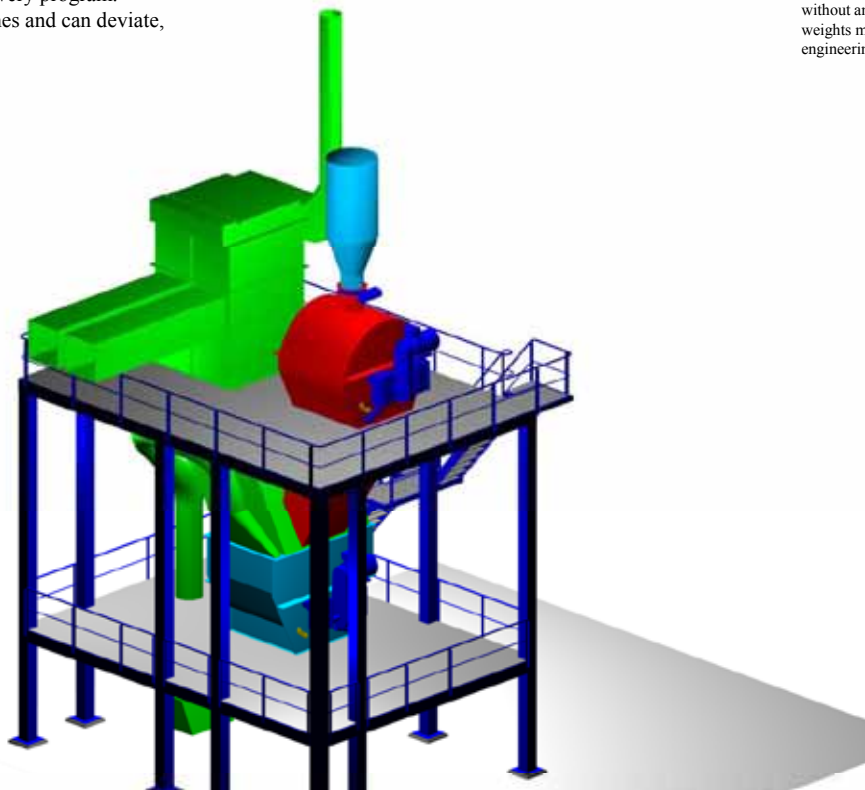
- Customized control system
- Temperature monitoring, together with homogene mixture avoids variations
- Easy definition of stop parameters for batch process
- Overfilling and overdrying are automatically avoided
- Filter cleaning and monitoring give no effluent dust
- Automatic operation possible

Dimensions of the Forberg® Steam Heat Treatment System

Model volume	Motor size (kW) mixer	Motor size (kW) dryer	Air flow m3/h	Fan motor kW	Filter area m2	Heating * kW	Length (mm)	Width (mm)	Height (mm)
F-20-HT	1,1	2,2	250	0,25	3	11	2000	700	2400
F-60-HT	3	2x2,2	850	1,1	11	37	2900	2500	2300
F-120-HT	4	2x3	1400	2,2	18	60	3400	2400	3300
F-200-HT	2x3	2x4	2400	3	30	105	3600	3900	3500
F-350-HT *	2x4	2x5,5	3300	4	40	144	3600	4200	3900
F-500-HT *	2x5,5	2x7,5	4800	5,5	60	210	3800	4300	4200
F-750-HT	2x7,5/2x11	2x11	6300	7,5	80	275	4000	4400	4800
F-1000-HT *	2x11/2x15	2x15	9300	15	120	407	5800	4500	5300
F-1500-HT *	30-37	45	12400	22	160	540	8900	6100	6000
F-2000-HT *	37-45	75	15500	30	190	680	9600	6800	6900
F-2500-HT	37-45	75	16500	30	210	720	11000	7200	7500
F-3600-HT *	45-55	90	24000	45	300	1050	13000	7600	7900
F-5000-HT *	55-75	110	27000	55	340	1180	15500	8100	8500

Models marked * are our standard delivery program.
Measures and powers are only guidelines and can deviate, depending on application.

Technical data can be changed without any notice. Measures and weights must not be used in engineering.



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