AUTOTHERM®

The best solution

Tailormade solutions for artisan businesses and industrial producers

Welcome / Content

Vorwort

Cordially welcome to AUTOTHERM !

„The best solution" is our way of greeting you in our current product brochure.

More than 65 years' successful work at a high quality level – is what AUTOTHERM stands for.
With customers who are always satisfied as our most important goal, AUTOTHERM has steadily developed to supply basing on our experience, competence and quality outstanding solutions to our customers worldwide.
This dependability is what our customers appreciate!

Qualified advice, good partners, working together on projects – many customers worldwide trust in this and opt for AUTOTHERM.

Now in the third generation as a purely privately owned and managed company, AUTOTHERM can look back on an uninterrupted development history, which provides our customers security of knowing that they are certainly getting the best solution with their future investments.

An overview of our current products is given on the following pages. Contact us, so that an AUTOTHERM employee or one of our competent partners can help you to put together a solution that precisely suits your special requirements.

We look forward to meet you!

Your

AUTOTHERM TEAM

Content:

PROFESSIONALS CHOOSE AUTOTHERM STEAM SMOKE CHAMBERS

The steam-smoking method further developed by AUTOTHERM is especially suitable for effective production of hot-smoked products.

The transfer of smoke by means of condensation on the products to be treated achieves fast and uniform smoking with incomparably low weight losses.

The smoke colour of the products treated with STEAM-SMOKE is extremely colour stable and cannot be washed off either with water or with steam.

The steam and smoke mixture is sootfree and carcinogenic benzo(a)pyrene and other PAHs (Polymers Aromatic Hydrocarbons) are hardly detectable.

The lower weight loss compared to traditional smoking methods makes this process extremely economical and the payback period extremely short. These advantages have also been confirmed by independent institutes.

The short smoking times enable a steam smoke generator to be connected to up to three smoking units (with max.4 trolley); this cuts the investment costs. The microprocessors controls the smoke supply to the three units fully automatically. All units are available with waste gas cleaning systems (catalytic afterburner, filtersystem or condenser).

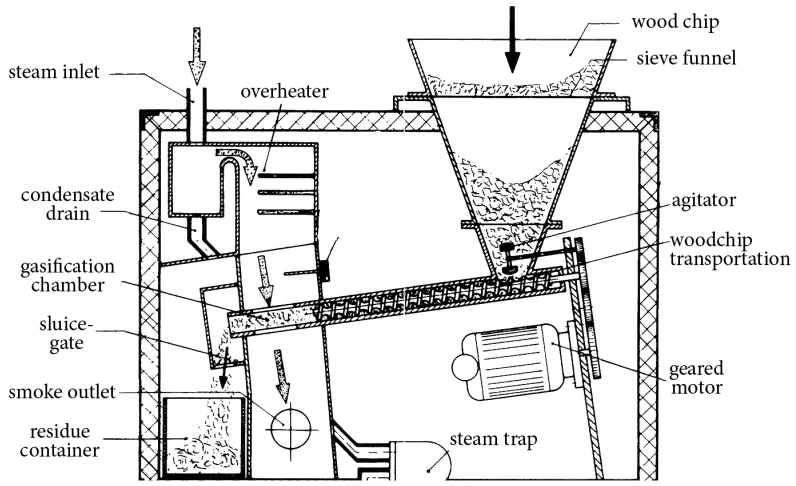
AUTOTHERM customers worldwide value the advantages of the steam smoke system.

The steam-smoke generator principle

Steamsmoke is procuced by means of superheated steam, which penetrates the wood chips. All color and flavoring ingredients of the chips are extracted and conducted into the chamber as steam smoke.

Steam-smoke:

- *fast*
- *color proof*
- *minimal weight loss*
- *accurate regulation*



Measurable profits ... day by day!

Due to the extremely short smoking times of the AUTOTHERM steam-smoke process and the natural moisture, the steam-smoke reduces smoking times by up to 40% and weight losses by up to 3% compared to conventional smoke systems.

Example:

3 trolleys
AUTOTHERM steam smoke chamber

3 x 200 kg = 600 kg/batch

8 h/day= 4 batches x 600 kg = 2400 kg

with 3% less weight loss, this means:

3% of 2,400kg = 72kg/days x 2.50 €/kg

= 180.00 €/day = 3,865.00 €/month

= 45.360,00 €/year

Applications:

- cooked or boiled sausages
- Hot-smoked meat and sausage products such as Frankfurters, Lyoner, Wiener and Knacker sausages
- Kassler (gammon), cooked ham

Process steps:

- Reddening
- Drying
- Smoking
- Cooking

Temperature range:	+45°C to +90°C	as standard
Relative humidity:	up to 99%	
Other values possible on request!		

Technical information

Unit:	Steam-smoke units
Heater:	Electric Steam Oil/Gas
Humidification:	Water/Steam
Voltage:	230/400V 50 Hz
Trolley size:	100 x 102 x 198 cm
Trolleys per unit:	1 – 10
Capacity per trolley:	approx. 200 –250 kg
Type:	Stainless steel panels
Control:	Microprocessor
Waste gas cleaning:	condenser Catalytic after-burner (gas or electrically heated)

On the customer's request the units can be equipped with electronic speed control, an additional electric heater for baking up to 150°C, a shower system and automatic door opener

AUTOTHERM
UNIVERSAL SMOKING CHAMBERS

The all-rounders among the smoking units are AUTOTHERM's UNIVERSAL smoking and cooking chambers.

They reflect the experience acquired by the company over more than 65 years. Both, small artisan businesses as well as industrial producers values the diverse possibilities provided by these chambers. Suitable smoke generators are available for every application.

With universal chambers it is possible to process virtually the whole product range within a temperature range from 18°C to 90°C.

Equipping the units with cooling enables high-quality ham, salami or other cold-smoked and cured products.

With its U 1-1-50 model AUTOTHERM offers its smallest universal chamber that is ideally suited for use, for example, in butcher technical colleges, vocational colleges, universities, catering and also for the laboratories of large sausage manufacturers as well as spice and casing producers.

The features and functions of this small AUTOTHERM smoking chamber offers you all the characteristics and process options necessary for successful small-scale production and for testing small batches.

This means that large chambers and daily production can continue as usual.

With AUTOTHERM you opt for a reliable partner with more than 60 years' experience in the production of smoking and controlled climate storage technology

We offer:
- Customer-focused and project-orientated advice
- Individual project planning
- Factory assembly by our own service team
- Ready-to-use handover and employee familiarisation
- High-quality workmanship for interruption-free production
- Reliable service

Highest flexibility!

Single trolley chambers in 3 different sizes are available especially for small and medium-sized businesses. The choice of chamber size depends on the required production capacity and the space available. The chamber can be adapted to local circumstances; individually made chambers enable optimum integration in your production.
All chambers can be equipped with an additional baking heater, shower system, automatic door opener and cooling.

Multitrolley units can be supplied with one or several rows for up to 10 trolleys. On request we can also supply tunnel type units, an integrated transport system or connection to overhead monorail equipment.

Application:
- Cooked and boiled sausages
- Hot-smoked meat and sausage products such as Frankfurters, Lyoner, Wiener and Knacker sausages
- Kassler (gammon), cooked ham
- Black sausage and liver sausage, bacon
- Mettwurst, salami, raw ham

Process steps:
- Reddening
- Drying
- Cold smoking (with cooling)
- Warm and hot smoking (without cooling)
- Cooking

Ripening and smoking salami, raw ham and other cold-smoked products requires the installation of a cooling system.

	without cooling	with cooling
Temperature range	+30°C to +90°C	+18°C to +90°C
Relative humidity	up to 99%	up to 99%
Other values possible on request!		

Technical information

Unit	Universal chamber
Heating	Electric Steam Oil/Gas
Cooling	Freon Ammonia Brine/Glycol
Humidification	Water/Steam
Voltage	230/400V, 50Hz
Trolley size	100 x 102 x198 cm
Trolleys per unit	1 – 10
Capacity/Trolley	Approx. 200kg – 250kg
Chamber types	Stainless steel panels
Control	Microprocessor
Waste gas cleaning	Catalytic or thermal after-burning, electrically or gas heated

On the customer's request the units can be equipped with electronic speed control, an additional electric heater for baking up to 150°C, a shower system and automatic door opener.

AUTOTHERM
COOKING, BAKING, PASTEURISATION AND COOLING

AUTOTHERM UNITS
FOR COOKING AND PASTEURISING

The high-quality AUTOTHERM cooking chambers have all features necessary for optimised cooking processes.

Depending on the product you can choose between timed cooking in several steps, cooking to core temperature, delta-T cooling or Fc-value cooking.
In this way, all products are treated gently and energy use is reduced to a minimum.

AUTOTHERM INTENSIVE COOLING CHAMBERS

AUTOTHERM intensive cooling chambers are suitable for cooling hot-smoked, cooked or baked meat, sausage and cold meat products as well as ready-to-eat meals. The faster cooling in intensive cooling chambers provides significant advantages compared to the slower cooling process in normal cold storage chambers.

Less water discharge
LESS WEIGHT LOSS!

Less bacterial exposure due to the rapid completion of the temperature range favourable to germ formation
LONGER PRODUCT SHELF LIFE!

The products can be packaged immediately after the cooling process
SAVES ON COLD STORAGE CAPACITIES!

Accelerated product turnover
LESS CAPITAL COMMITMENT!

Always the right choice!

AUTOTHERM BAKING UNITS

AUTOTHERM baking chambers can be used to process pies/pâtés, roast beef and other products with temperatures up to 240°C.

Insulation:
Mineral wool 100 to 120 mm

The horizontal ventilation system with alternating air direction ensures uniform product treatment even of products that are laid flat.

	Cooking chamber	Intensive cooling	Baking chamber
Applications	• All cooked products • Ready-to-eat meals	• All hot-smoked and cooked products	• Roast beef, pies/pâtés, turkey breast
Process steps	• Boiling • Pasteurising	• Showering • Cooling, with and without shower	• Baking • Roasting • Cooking
Heater	Electric, steam		Electric, gas, oil, Superheated steam/Electric
Humidification	Water / Steam	Water	Superheated steam/Electric
Voltage	230/400 V, 50 Hz	230/400 V, 50 Hz	230/400 V, 50 Hz
Smoking trolley size	100 x 102 x 198 cm	100 x 102 x 198 cm	100 x 102 x 198 cm
Capacity per trolley	approx. 200 – 250 kg	approx. 200 – 250 kg	approx. 200 – 250 kg
Type of chamber	Stainless steel panels	Stainless steel panels	Stainless steel panels
Microprocessor	Microprocessor	Microprocessor	Microprocessor

On the customer's request the units can be equipped with electronic speed control, a shower system and automatic door opener.

AUTOTHERM
COLD SMOKING CHAMBERS

AUTOTHERM
Cold smoking chambers

AUTOTHERM cold smoking chambers can be easily installed in existing rooms.
The air treatment takes place outside the chamber, optionally behind, next to or on the chamber ceiling.
A continuous air-reversing flap ensures a constantly alternating air supply between the two especially designed and adjustable supply air ducts. The intake through a return air duct ensures uniform and optimum air circulation.
This concept ensures absolutely uniform ambient conditions – which are required for top quality products.
Energy saving technology such as the external air control (CES) , processor controlled process optimisation (AEC) and speed control for the air circulation fan can be installed on request.
The units are also equipped with an automatic cleaning system for the interior and smoke ducts.
A microprocessor controls the whole program sequence and the process parameters.
Various smoke generators from the AUTOTHERM product range are available. Exhaust air cleaning systems can be added to eliminate the smoke.

AUTOTHERM cold smoke chambers in element construction system

AUTOTHERM supplies you with complete cold smoke units with surrounding walls, doors, ceilings made of stainless steel units, optionally with or without a floor. The equipment sets are also positioned according to the circumstances on site.

For best flavor!

Tailormade solutions for artisan businesses

AUTOTHERM provides cold smoke chambers with a capacity of 150 kg per batch especially for small artisan producers. These chambers are also equipped with automatic smoke generators and microprocessor controls.

Application:
- Naturally cured and smoked raw sausage products and preserved meats
- Salami, ham
- Bacon, belly

Process steps:
- Cold smoking
- Hot smoking
- Steaming
- Reddening
- Curing
- Drying

Controlled climate smoker chambers	
Temperature range	+18°C to +28°C
Relative humidity	75% to 99%
Other values also possible on request!	

Technical information

Unit	Controlled climate smoking and curing chambers
Heater	Electric Steam Hot water
Cooling	Freon Ammonia Brine-glycol
Humidification	Water/Steam
Voltage	230/400V, 50Hz
Trolley size	100 x 102 x198 cm
Trolleys per unit	1 - 40
Capacity/Trolley	Approx. 200kg - 250kg
Chamber types	Stainless steel panels or brickwork
Control	Microprocessor
Waste gas cleaning	Catalytic or thermal afterburning (electrically or gas heated)

AUTOTHERM
CLIMATISATION, RIPENING AND DRYING

AUTOTHERM controlled climate storage and maturing rooms

AUTOTHERM controlled climate storage and maturing chambers can be easily installed in existing rooms.
The air treatment takes place inside or outside the chamber, optionally behind, next to or on the chamber ceiling.

AUTOTHERM controlled climate storage and curing chambers ensure a constant climate during the ripening of the products.

Electronic registration of temperature and rel. humidity ensures perfect program sequences, easy operation, low energy consumption and flexibility.

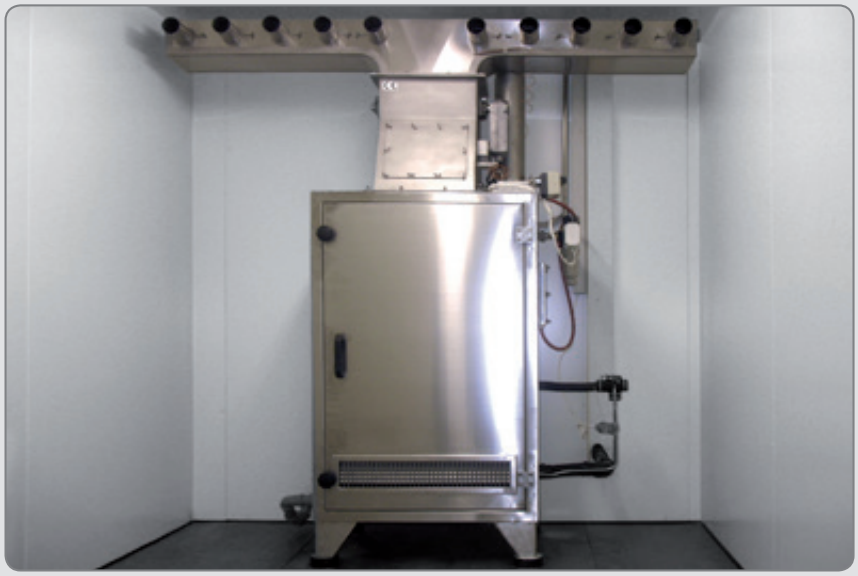
A triplex duct is mounted onto the ceiling of the chamber.

This duct consists of 3 individual ducts (2 x supply air, 1 x return air). A continuous air-reversing flap ensures a constantly alternating air supply.

This produces a constant change in airflow direction. In addition, the discharge velocities also change with the changing air pressure.

This means that all areas of the storage room chamber are treated extremely uniformly.

In the AUTOTHERM controlled climate storage and maturing rooms the air circulation is absolutely uniform. The air conditioning units can be installed in, above or behind the chamber.

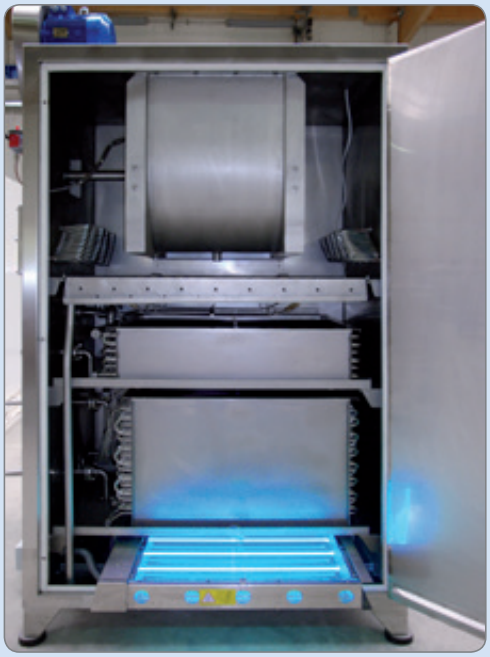


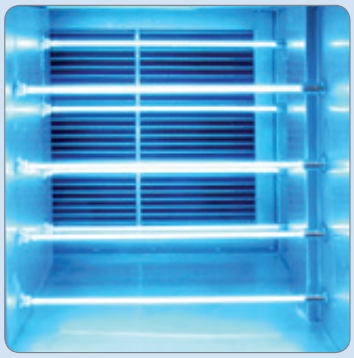
For reaching the best result!

If the customer requires, Autotherm provides a continuously adjustable electronic speed and external air control (CES), and a process-optimising and energy-saving processor control (AEC) for optimised production.

The addition of an UVC degerminating unit to the central air conditioner unit is especially useful for controlled climate storage chambers.

It not only reduces germ infestation in all circulated room air considerably, but also prevents the growth and infestation with yeast, mould and other bacteria on the fins of the cooling evaporator. This lengthens the cleaning intervals considerably.





Anwendungen:

- Naturally cured and smoked raw sausage products and preserved meats
- Salami, ham
- Bacon, belly
- Mould cheeses and salami, dried meat

Process steps

- Curing
- Drying
- Storage

Curing chambers	
Temperature range	+12°C to +18°C
Relative humidity	70% to 85%
Other values also possible on request!	

Technical information

Unit	Controlled climate storage and curing chambers
Heater	Electric Steam Hot water
Cooling	Freon Ammonia Brine-glycol
Moistening	Water/Steam
Voltage	230/400V, 50Hz
Trolley size	100 x 102 x198 cm
Trolleys per unit	1 – 200
Capacity/Trolley	Approx. 200kg – 250kg
Chamber types	PU foam panels with stainless steel or plastic surface or brickwork
Control	Microprocessor

AUTOTHERM
FISH SMOKING CHAMBERS

AUTOTHERM
fish smoking chambers

AUTOTHERM fish smoking chambers provide you with the optimum conditions for hot-smoking, cold-smoking, drying, cooking and boiling all types of fish.

AUTOTHERM fish smoking chambers are made especially for each customer, taking into account your individual process requirements, the structural circumstances on site and the planned batch size.
Designed for uniform and fast drying processes, different types of fans and possibly speed control ensure product-optimised results.

Variable technical equipment and different types of smoke generation ensure high-quality smoked products.
Depending on the type of unit the air is circulated horizontally or vertically, through central air conditioning or with ceiling fans.

AUTOTHERM Fish Smoking chambers with horizontal air flow

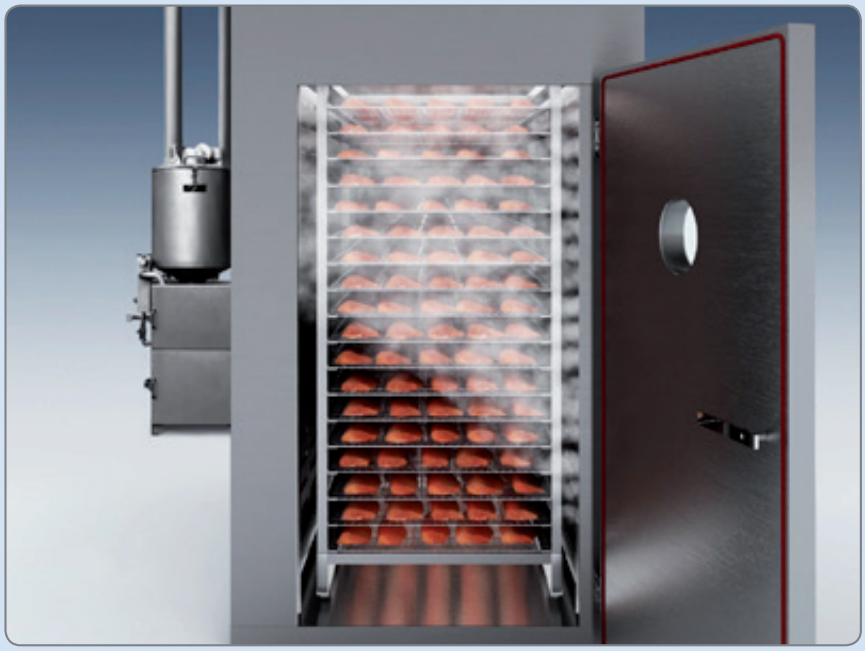
This particular design, for products laid flat only, offers you optimum utilisation of the smoker trolley capacity with simultaneously optimum process cycle.

The air is passed across the layers of the smoker trolley from the side. An air-reversing flap continuously changes the direction of the air flow. This achieves uniform drying and smoking on all levels of the smoker trolley.

Top-seller for your customers!

AUTOTHERM
fish smoking chambers
with air reversing flap system

In fish smoking chambers with vertical air flow it is possible to integrate a special air changing flap system. This enables flexible hanging products and products laid flat (up to 18 layers) to be treated optimally.



Applications:
- Trout, eel
- Mackerel, rose fish/red perch, flounder, sprats, herrings
- Salmon, trout fillets
- Halibut, etc.
- Pangasius

Process steps:
- Drying
- Heating
- Cold, warm and hot-smoking
- Cooking
- Boiling
- Baking

	Without cooling	With cooling
Temperature range:	+30°C to +90°C	+18°C bis +90°C
Other values also possible on request!		

At the customer's request the units can be equipped with electronic speed control and/or an additional electric heater for baking up to 150°C.

AUTOTHERM
DEFROSTING ROOMS

AUTOTHERM
defrosting rooms

AUTOTHERM defrosting rooms can be individually adapted and easily installed in existing locations.

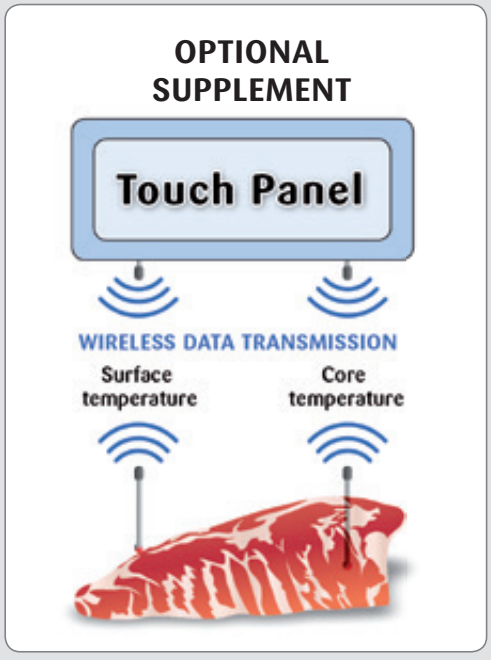
The air treatment takes place outside the chamber, optionally behind, next to or on the chamber ceiling.

A triplex duct is mounted onto the ceiling of the chamber.

This duct consists of 3 individual ducts (2 x supply air, 1 x return air). A continuous air-reversing flap ensures a constantly alternating air supply. This produces a constant change in direction. In addition, the discharge velocities also change with the changing air pressure.

This means that all areas of the thawing chamber are treated extremely uniformly. The intake through a return air duct ensures uniform and optimum air circulation.

This concept ensures absolutely uniform ambient conditions – which are required for top quality products.



Control and process cycle

3 temperatures are measured in the thawing chamber and are used as switching parameters : the chamber temperature, the surface temperature and the core temperature of the product

In the first step the chamber temperature is increased to the maximum (preset) value by feeding in ambient air with high humidity (preferably fresh steam).

This is maintained until the product has reached the maximum specified preset surface temperature.

From this moment the process is controlled by the surface temperature. As soon as it falls below the setpoint-value, because the colder temperature from inside the product is discharged to the outside, the heater receives a renewed start signal.

In this way, only the energy required to achieve optimum thawing is applied to the products. This avoids overheating of the outside of the product.

By establishing a very high humidity, optimum temperature exchange between the product and ambient air is possible.

Defrosting with system!

This process continues until the core of the product has reached the required defrosting temperature. Then the unit is switched off – an information signal indicates the end of the process.

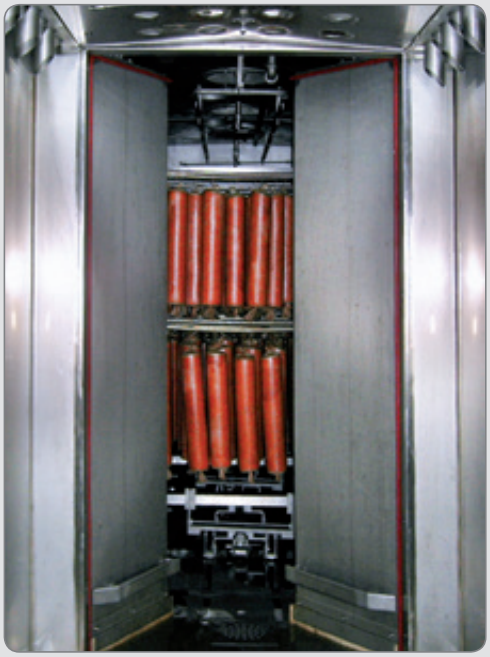
Use of this process controlled technology can significantly reduce product weight loss. Compared to conventional thawing in a water tank with weight losses between 6 – 8%, this method not only offers more uniform product treatment but also reduces the weight loss to approx. 1.5 %.

By the appropriately designed cooling evaporator which is integrated into the central air conditioner , this plant can – on demand by microprocessor - after completion of the thawing process furthermore used as cold storage room (o° C). This makes the removal of the thawed goods for the customer far more flexible.

The values required for the process are stored in a microprocessor as a program; the necessary control is then calculated and controlled automatically.

The addition of a UVC degerminating unit to the central air conditioner unit is especially useful for thawing chambers. It not only reduces germ infestation in all circulated room air considerably, but also prevents the growth and infestation with yeast, mould and other bacteria on the fins of the cooling evaporator. This lengthens the cleaning intervals considerably.

AUTOTHERM
CHAMBERS WITH TRANSPORT SYSTEM

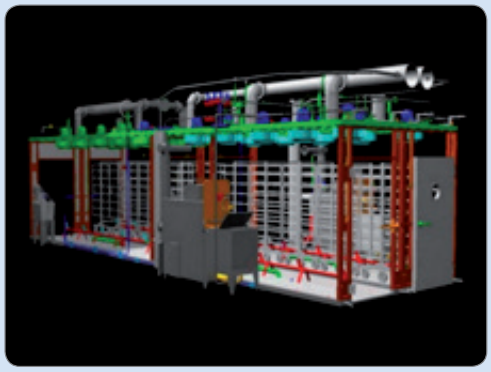


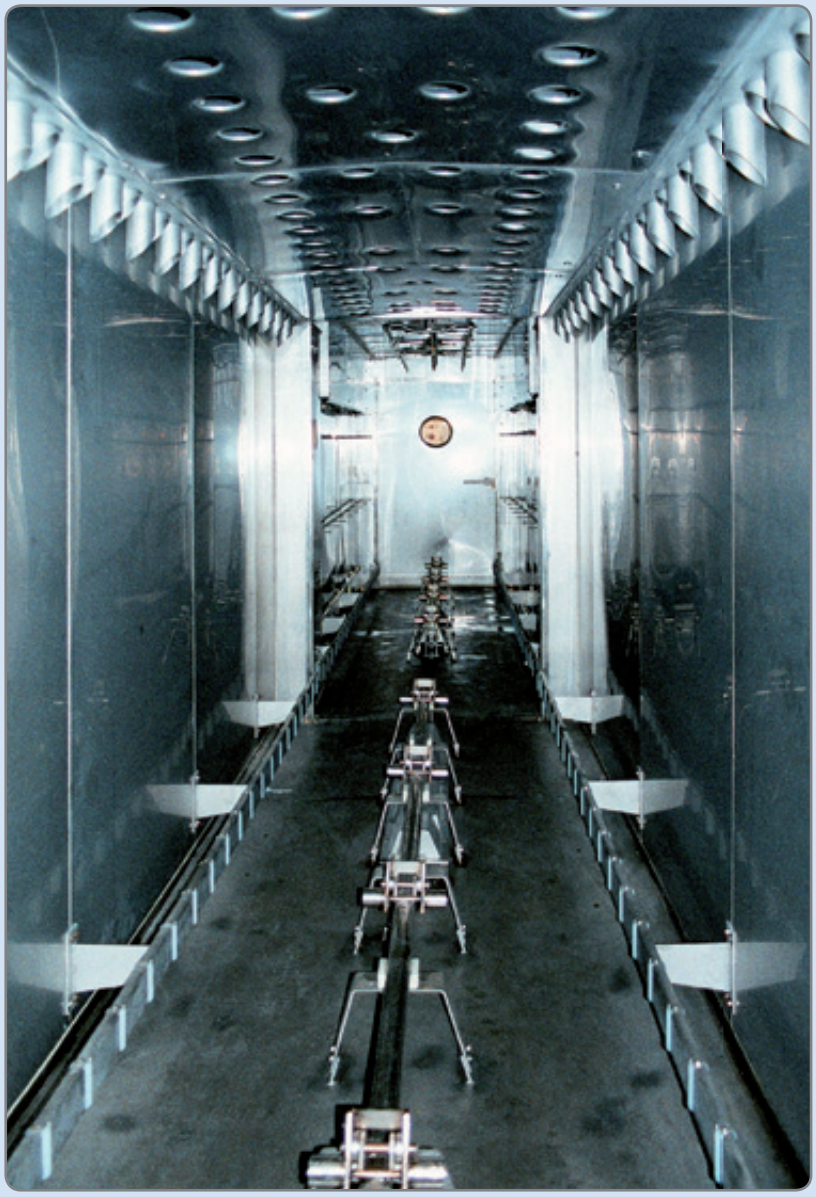
AUTOTHERM
chambers with transport system

AUTOTHERM intensive cooling chambers are to be combined with smoking and cooking chambers. The result is an automatic continuous process unit, in which the DRYING, SMOKING, COOKING and COOLING steps are run through fully automatically.
Cooling is automated and takes place, without any loss of time, immediately following the cooking. This prevents contamination with germs and bacteria from the ambient air.

After cooking the smoke trolleys are pushed into the cooling zone by a hydraulic conveyor system. An automatic door hermetically seals the cooling zone and the cooling process starts.

Always in motion!





At the same time, the smoking zone can be reloaded. These chambers are very flexible, as standard floor-running smoke trolleys are used and all kinds of different products can be treated consecutively.

This effective combination of 2 process steps can also be used for a cooking and/ or pasteurising chamber with an intensive cooling chamber.

On the customer's request the chamber can be equipped with electronic speed control, a shower system and automatic door opener.

AUTOTHERM
CONTROLS

Controls

AUTOTHERM offers the right microprocessor control for every chamber. The microprocessors are especially configured for the respective units.

Particular attention is paid to ensuring the controls are easy to handle for users.

AM 3033, Touchpanel TP, F 3000

These controls are suitable for our universal smoking and steam-smoke chambers.

The model AM 3033 is equipped with a 7" TFT-display. The TP-model have an 10,4" TFT-display. Programs with up to 1980 steps can be programmed.
The controls display the setpoint and the actual value.

AM 3033

Touchpanel TP

F 3000

The chamber temperature, relative humidity, core temperature, F value, C value and the step time can be entered as the setpoint value. The F 3000 control and the touchpanel TP can display the progress of the program graphically on the screen. Many special functions can be freely configured in all controls.

AM 1312

The AM 1312 control is used in defrosting rooms, cooking and baking chambers, intensive cooling chambers, cold-smoking chambers and climatic storage rooms.

The unit is equipped with a 7"TFT-display and several interfaces.
The setpoint and actual values and the program name are displayed alternately in a text field.

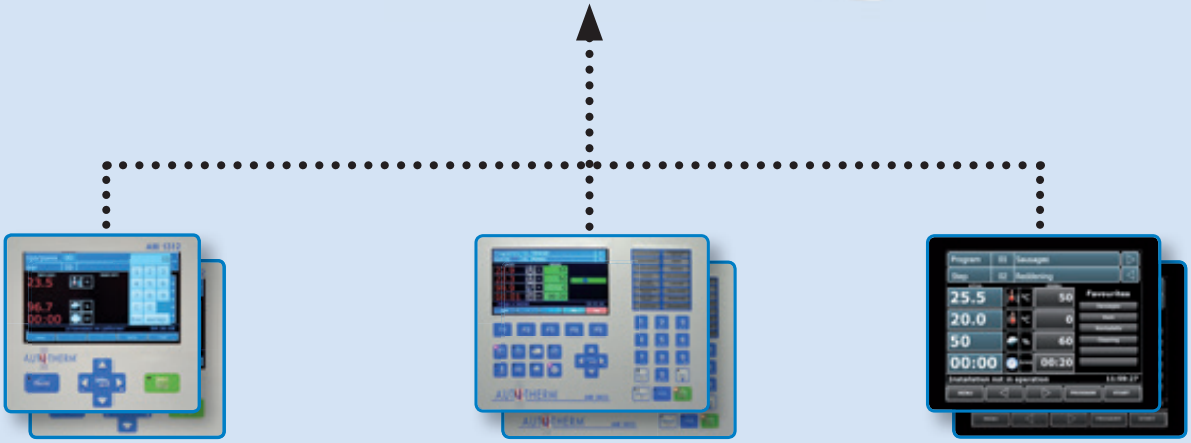
The following can be entered: chamber temperature, relative humidity, core temperature, outside temperature, (surface temperature in thawing units) F value, C value and the step time. All controls can be connected to a central visualisation device.

VISUALISATION AND DOCUMENTATION

AUTOTHERM VISUNET
for AM 1312, AM 3033 und touchpanel

The **AUTOTHERM VISUNET** log program can be used to connect up to 48 units to a central PC workstation via LAN.

AUTOTHERM VISUNET enables operating, programming, displaying, recording, monitoring and logging from a central PC and therefore establishes the basis for quality assurance to EN ISO 9000.



VISUNET is used to register and record centrally all process data for each individual batch. The recorded data of each individual batch can be call up on the screen of the PC as a coloured chart or can be printed out.

AUTOTHERM SVS for F 3000

The SVS 3000 visualisation software can be adapted to all customer wishes.

The software operates on LON-bus basis, is freely configurable and fully network compatible.

Application examples are linked program, product and user tables or the connection of barcode scanner systems.

AUTOTHERM
SMOKE GENERATOR

AUTOTHERM SMOKE GENERATOR

AUTOTHERM has the right smoke generator for every application. The individual series are available in different finishes and graduations.

Suitable for:

- every application
- every chamber size
- every product
- every customer requirement

AUTOTHERM
STEAM-SMOKE GENERATOR
AD 54 / AD 56 / AD 66

The steam-smoking process developed by AUTOTHERM to perfection offers advantages, especially for hot-smoked products (e.g. Frankfurters), which are not achieved by any other smoking system.
The smoke is not generated by smouldering wood chips, but by superheated steam, which is pressed through the chips and in doing so absorbs all colouring and taste-giving constituents. This steam-smoke is fed into the chamber, where it condenses on the product. The smoking times are therefore extremely short.
Steam smoke is very colour stable and cannot be washed off, either by water or by steam. It is also soot-free and is significantly less contaminated with carcinogenic benzo(a)pyrene and other PAHs (Polymers Aromatic Hydrocarbons) than conventional smoke.
The high humidity during smoking means that the products do not dry out and therefore reduces weight losses

The high humidity and temperature further increases the temperature in the core of the products during smoking. This shortens the following cooking process.

Due to the extremely short smoking times it is possible for one steam-smoke generator to supply up to three chambers (max of 4 trolleys/ chamber).

Here a summary recap of the outstanding advantages of the AUTOTHERM smoke-steam system:

- Higher effectiveness due to reduced weight loss. The producer gets a "more" of ready to sell products with the same product input.
- Higher effectiveness due to shorter process times for smoking and cooking. Enables an additional 1 to 2 batches per day, depending on the process times.
- On condensing the steam-smoke penetrates the sausage casing and the meat. The colour is retained even after showering and is more stable
- healthier production for smoker operating personnel and product due to significantly lower contamination with contaminants such as polymer aromatic hydrocarbons (PAH) - the values achieved now are already lower than the EU values mandatory from 2014.

We deliver colour and taste!

AUTOTHERM
SAW DUST SMOKE GENERATOR
AW 1 / AW 2 / AW3 / AW4

The AUTOTHERM AW series saw dust smoke generators are especially good for all cold-smoked products.
Moistened sawdust is ignited on a burning plate by a heating element. After the sawdust has been ignited a slight and controlled air draught enables it to continue to glow, just like in days gone by.

A stirrer system provides a continuous supply of sawdust. The quantity of smoke produced can be adjusted by optionally adjusting the stirring intervals.

The fine glow smoke is mild and natural; ideal for salami and ham.

All smoke generators are positioned to the chamber by taking into consideration the customer's requirement and the circumstances on site.
A liquid smoke generator is also optionally available.

AUTOTHERM
WOOD CHIP SMOKE GENERATOR
AWS 1 / AWS 2 / AWS 3 / AWS 4

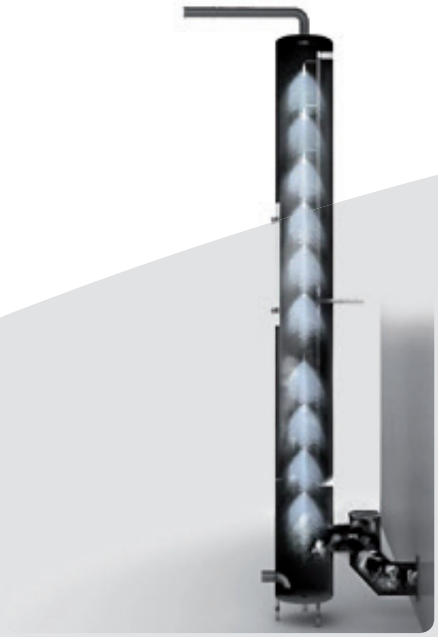
Wood chip smoke generators can be used for both hot smoking and for cold smoking. They are therefore particularly suitable for connecting to universal chambers.

Coarse wood chips are ignited in a wood chip bed by a heating element. A continuously controlled air supply maintains the glowing process. An agitator removes the ashes and adds new chips. The smoke intensity can be increased by adjusting the stirring interval. This generates a more intensive smoke, which lends the product an aromatic taste and a good colour.

Technical Data

Smoke generator	Height A	Width B	Depth C	Electric kW	Steam 0,5 bar	Connection sockets ∅
AD54	1660	1280	600	7,55	20 kg/h	150 mm
AD56/66	1660	1280	600	8,55	25 kg/h	150/200 mm
AW 1	1555	720	370	0,78	-	150 mm
AW 2	1800	720	470	0,97	-	150 mm
AW 3	1800	870	620	1,22	-	150 mm
AW 4	1900	950	690	1,42	-	150 mm
AWS 1	1280	330	585	1,09	-	150 mm
AWS 2	1490	450	620	1,06	-	150 mm
AWS 3	1855	600	800	1,09	-	150 mm
AWS 4	1855	750	900	1,67	-	200 mm

AUTOTHERM
ENVIRONMENTAL TECHNOLOGY



The demands for contemporary production are becoming continuously more stringent. The focus is increasingly shifting onto environmental and energy aspects – many of these measures are not only advantageous for the environment but also for producers.

Suitable smoke cleaning technology is used according to the regulations applicable on site and the smoke generator used.

Smoke cleaning by a **condenser:**
For chambers with a steam-smoke generator the waste-gas steam-smoke mixture can be washed by a condenser. The exhaust gas is passed through a water curtain generated by spray jets, which washes out the smoke constituents from the steam-smoke mixture. In this way any odour pollution into the environment can be completely avoided without the use of chemicals. The remaining gaseous component of total C is only a fraction – which also means significantly less impact on the environment.

Exhaust smoke cleaning by a **thermal – catalytic after-burner:**
The thermal – catalytic after-burner cleans the smoke by combustion. The catalytic converter supports and accelerates the chemical reaction. Due to the high-quality catalytic converter, coated with a precious metal alloy, temperatures of approx. 450°C are sufficient to clean the exhausted smoke. In addition, the reaction in the catalytic converter produces heat, which in turn reduces the energy required for heating.

Exhaust smoke cleaning by **thermal after-burner:**
The thermal after-burner is heated by means of an oil and gas-fired burner to approx. 700°C, in order to clean the waste air. Several units can be connected to one thermal after-burner.

PFE Prepare - Fresh - Exhaust - System

Use: All AUTOTHERM universal and steam-smoke chambers
Use the outgoing heat from your chambers for energy saving during drying

We developed the Prepare – Fresh – Exhaust (PFE) system to optimise the energy efficiency of the AUTOTHERM universal and steam-smoke units. Drying products, in particular, is very energy intensive!

The energy present in the outgoing air is used by means of a heat exchanger, in order to preheat the drawn in fresh air. The preheated fresh air saves heating energy and can accelerate drying.

The P-F-E system reduces the energy required for drying by up to 20 %.

The AUTOTHERM P-F-E system can be retrofitted to almost all AUTOTHERM universal and steam-smoke chambers.

For clean future!

On customer wishes, thermal - catalytic after-burners and thermal after-burners can be equipped with heat recovery systems. These produce hot water or are used to preheat the waste air to be cleaned.

CES Clima – Energy – Saving - System

Use:
All AUTOTHERM cold-smoking chambers and controlled climate storage rooms
Use the ambient air to reduce energy costs

With the AUTOTHERM C-E-S system it is possible to specifically use the drawn in fresh air in order to save the energy used to heat, cool, humidify and dehumidify.

To this end, the fresh air to be drawn in is measured outside the unit by means of sensors. A microprocessor compares these parameters with the values inside the unit with regard to temperature and relative humidity.
Only if the fresh air is suitable for positively affecting the required parameters in the chamber does the flap open and fresh air is drawn in.

If this air is not suitable, because it is too moist or too dry, too cold or too hot, no fresh air is drawn in and the required parameters are established by switching on heating, cooling and/or humidification.
This prevents, e.g. too cold or too moist air from getting into the air conditioning system which then, in addition to the air inside the unit, has to be conditioned to the required parameters with a high energy cost.

AEC Air - Efficiency - Control - System

Use:
All AUTOTHERM cold-smoking chambers and controlled climate storage rooms
Use state of the art control and process technology to optimise energy use

The A-E-C system optimises the drying process and prevents drying errors such as drying rings or the formation of mould.

Air circulation plays a decisive role during drying in the controlled climate storage or curing chambers and during cold smoking.
The circulating air is primarily responsible for ensuring that the product in the whole chamber dries uniformly.

The A-E-C system takes these factors into account and controls the circulating air velocity depending on the actual value - setpoint ratio of the relative humidity in the chamber. As a result more intensive drying is achieved when necessary and less intensive drying when possible.

This enables optimised drying, which in turn enables the products to be produced effectively and without drying errors (neither mould nor drying rings).
This not only optimises drying but also saves energy

Dimensions and Data
Using the example of the AUTOTHERM universal units

Single row

TYPE	Dimensions in mm			Heater			Connected load approx.	Number of trolleys
	Width A	Depth B	Height C	Electric kW	Kg/h Dampf 3-6 bar	Gas/Öl kW	Motoren KW	
U-1-1-1	1620	1250	2950	24	42	24	2,4	1
U-1-1-2	1620	2300	2950	48	84	48	5,55	2
U-1-1-3	1620	3350	2950	72	126	72	7,75	3
U-1-1-4	1620	4400	2950	96	168	96	9,95	4
U-1-1-5	1620	5450	2950	120	210	120	12,15	5

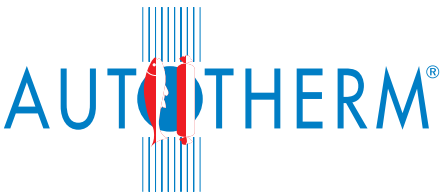
All types also available as drive-through units with entry and exit doors.
On request, all chambers can be made with customised dimensions.

The team for your success - Your AUTOTHERM Team !

Two rows

TYPE	Dimensions in mm			Heater			Connected load approx.	Number of trolleys
	Width A	Depth B	Height C	Electric kW	kg/h steam 3-6 bar	Gas/Oil kW	Motoren KW	
U-2-2-2	3120	1250	2950	48	84	48	4,65	2 x 1
U-2-2-4	3120	2300	2950	96	168	96	10,20	2 x 2
U-2-2-6	3120	3350	2950	144	252	144	14,60	2 x 3
U-2-2-8	3120	4400	2950	192	336	192	19,00	2 x 4
U-2-2-10	3120	5450	2950	240	420	240	23,40	2 x 5

Thanks to our flexible production technology we are also able to produce the chambers for other smoking trolley dimensions. Special sizes as well as adapted overhead conveyor solutions are possible.



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