

## Air-conditioned chambers MAUTING



Smoke ripening chambers **KMZ**

Maturing chambers **KMD**

Universal air-conditioned chambers **KMU**

Defrosting chambers **KMR**



## Air-conditioned chambers MAUTING

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- ▶ They are intended for the technological process for non-heat fermented products.
- ▶ They are suitable for fermented products with starting culture.
- ▶ They are suitable for technology with GDL or classic production of durable sausages, ham and smoked meats.
- ▶ The innovative air circulation system ensures an even airflow throughout the chamber.
- ▶ The circulating air damper system ensures a perfect and even drying of all products.
- ▶ Circulating air control with the use of fresh air, enthalpy and control according to the absolute humidity allows you to reduce energy consumption by up to 30%.

*The MAUTING air-conditioned chambers ensure an optimum flow, speed, direction and circulation of the circulating air, which ensures even processing of the products throughout the chamber.*

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2 x KMZ 12 - DAF 1



KMD 256 - Classic



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## Air-conditioned chambers division:

### Smoke ripening chambers KMZ

– are primarily intended for the first stage of fermentation of non-heat-treated meat products.

- ▶ complete 1st stage of fermentation - smoking with cold smoke
- ▶ drying.

#### Standard parameters:

- ▶ Temperature range: 15 – 30°C
- ▶ Humidity range: 65 – 95(98) %
- ▶ Dehumidifying capacity for 250 kg per cart: 3% / 24h on average at 18 °C and 75% humidity.

The smoke generator can be of chip or friction type as required by the customer.

### Maturing chambers KMD

– are intended for the 2nd stage of fermentation of non-heat-treated products or drying of heat-treated products. They can be equipped with a smoke generator to create a smoky flavour for products.

- ▶ phase 2 of fermentation, maturation
- ▶ gentle drying.

#### Standard parameters:

- ▶ Temperature range: 12 – 22 °C
- ▶ Humidity range: 65 – 90%
- ▶ Dehumidifying capacity for 250 kg per cart: 1% / 24h on average at 15 °C and 65% humidity.

### KMU universal air-conditioned chambers

– are intended for fermentation of non-heat-treated durable meat products and their subsequent maturation.

– They ensure a complete cycle of fermentation and maturation of heat-treated durable meat products.

- ▶ smoking by means of a cold smoke
- ▶ ripening
- ▶ drying.

#### Standard parameters:

- ▶ Temperature range: 12 – 30°C
- ▶ Humidity range: 65 – 95(98) %
- ▶ Dehumidifying capacity for 250 kg per cart: 3% on average / 24h at 18 °C and 75% humidity and 1% / 24h at 15 °C and 65% humidity.

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## Air-conditioned chambers are equipped with:

- ▶ Climate aggregate made of stainless steel. Depending on the type of chamber, it can be placed in the chamber, behind the chamber, or on the ceiling of the chamber.
- ▶ Circulation fan made of stainless steel with a smooth speed control.
- ▶ By electric, hot water or steam air heating.
- ▶ By air cooler – medium ammonia, freon, antifreeze.
- ▶ By a stainless steel water drop separator.
- ▶ By stainless steel air distribution.
- ▶ A controlled fresh air supply.
- ▶ A control system that regulates and automatically controls the entire process according to the set parameters.

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*All air-conditioned chambers can be designed for non-standard parameters according to individual customer requirements.*

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## The principle of energy saving:

### Absolute Humidity:

- ▶ Relative humidity is a temperature-dependent quantity. It rises with decreasing temperature and vice versa. If the chamber is controlled classically, by relative humidity, with each change in temperature, the humidity controller is forced to react because the relative humidity changes.
- ▶ Regulation of parameters in the Maturing equipment proceeds on the basis of the absolute humidity. Absolute humidity is a value that is not temperature dependent. The controller then controls two independent variables – temperature and humidity. This eliminates unnecessary controller intervention, and it – compared to conventional relative humidity control – means operating energy savings for heating and cooling by 10-20%, depending on the running program. Relative humidity, which is calculated from temperature and absolute humidity, is displayed and entered on the control panel.

### Outdoor Air Energy Use:

- ▶ Maturing chambers can be equipped with an outdoor air energy system. The regulator can only operate with fresh air without the use of a cooler, or the outside air can be treated with a cooler.
- ▶ By using this system, the energy consumption in the chamber varies depending on the outdoor conditions. In summer, fresh air consumption is reduced to a minimum and the regulator only works with air in the chamber. In the spring and autumn, fresh air is used in limited quantities to reduce energy consumption and virtually eliminate the need for cooling in winter.

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### Defrosting chambers KMR

**They are intended to thaw frozen raw materials, such as blocks of meat, fish, vegetables or fruits, before they are further processed.**

- ▶ They are designed similarly like ripening chambers of the Classic type.
- ▶ The defrosting process is based on a program that regulates the temperature, the amount of circulating air and its humidity.
- ▶ The defrosting process takes place according to the program so that the raw material is not damaged by a high surface temperature.
- ▶ The defrosting process minimizes microbiological contamination of raw materials.



KMD 60 – DAF 1



KMD 84 CrossFlow



KMZ 20 – DAF 2



KMZ 20 – DAF 2

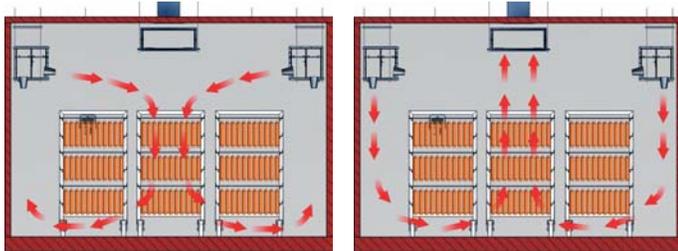


## DAF1, DAF2, CrossFlow alternating air flow system:

The innovative alternating airflow system consists in regular changing the airflow direction through the products from top to bottom and bottom to top. As a result, the risk of over-drying the surface of the product is greatly reduced, the most even possible processing of the products throughout the chamber is ensured, and the entire drying process is accelerated. The air-conditioned chamber equipped with an alternating flow system will also better cope with the risk of growth of undesirable microorganisms on the surface of products.

### 1. DAF 1 (Dual Air Flow System 1)

- ▶ **vertical phase** – the air enters the chamber through the vertically positioned nozzles, passes through the product trolleys and is sucked out through the ducts located above the trolleys.
- ▶ **horizontal phase** – the air enters the chamber through the top nozzles and enters the product trolleys from above. Then it is sucked out by the ducts above the carts.

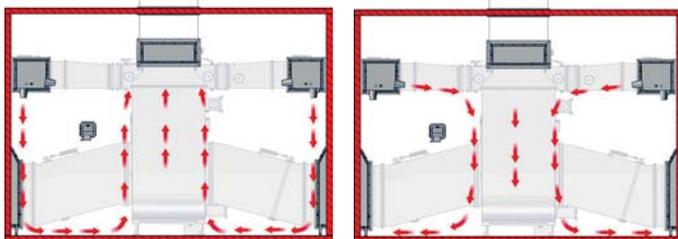


The amount of air from the left and right side changes smoothly from minimum to maximum in both phases.

**DAF 1 system** is suitable for chambers especially for KMD chambers up to 6 carriages.

### 2. DAF2 System (Dual Air Flow System 2)

- ▶ **vertical phase** – the air enters the chamber through the vertically positioned nozzles, passes through the product trolleys and is sucked out through the ducts located above the trolleys.
- ▶ **horizontal phase** – the air enters the chamber through the top nozzles and enters the product trolleys from above. It is then sucked out through lower channels located in the bottom of the chamber along the walls.



The amount of air from the left and right side changes smoothly from minimum to maximum in both phases.

**DAF 2 system** is suitable for chambers especially for KKM or KMM chambers up to 4 carriages and KMD for up to 6 carriages. It is very suitable for products with greater dehumidification and for trucks over 2m.



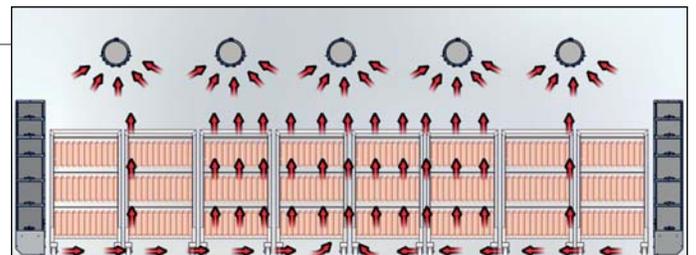
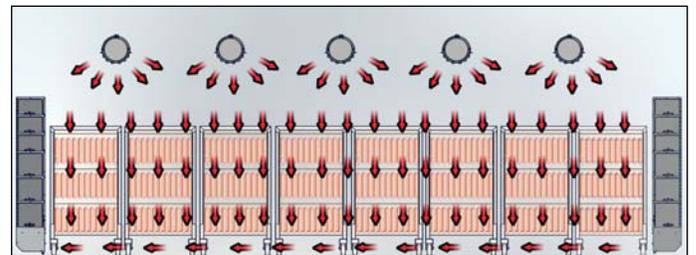
2 x KKM 12 – DAF 1



KMD 40 – Classic

### 3. CrossFlow System

- ▶ **The direction of flow from top to bottom** – the circulating air is fed into the chamber from above by means of ducts located above the trolleys and sucked out through the ducts located along the chamber walls.
- ▶ **Bottom upward direction** – Circulation Air is fed into the chamber from below through channels along the walls and sucked out through the ducts above the carts. The amount of air from the left and right side changes smoothly from minimum to maximum in both phases.



**The CrossFlow system** is suitable for larger KMD chambers with a width of 7 trucks. It is very suitable for products with greater dehumidification and for carts over 2m.



KMD 150 – CrossFlow



6 x KMD 84

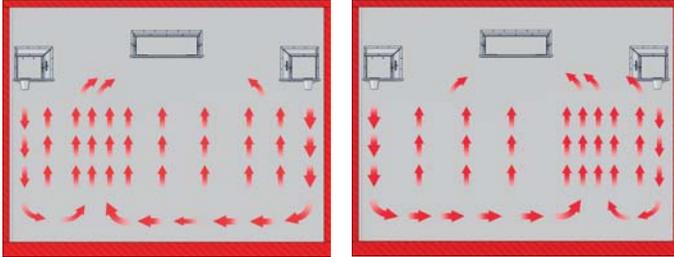


KMD 21 – Classic

## Classic AirFlow Systems

Conventional airflow systems are simpler than alternating ones. They are particularly suitable for products with low average dehumidification up to 1% / 24h.

**1. Classic System** – Circulation air is supplied to the chamber vertically through ducts located along the walls and sucked out through ducts located above the carts. The amount of air on the left and right side varies smoothly from minimum to maximum.

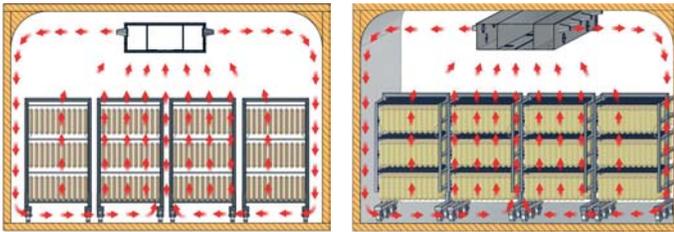


**Recommended use:**  
For KMZ, KMD and KMR air-conditioned chambers.



KMD 220 – Classic

**2. Central System** – Circulation Air System is distributed through a central 3-chamber channel located above the carts. The central part of the channel serves to extract air from the chamber, the side parts serve to horizontal distribution of air into the chamber.



**Recommended use:**  
For KMD and KMR air-conditioned chambers in atypical shape rooms.



KMD 120 – Central

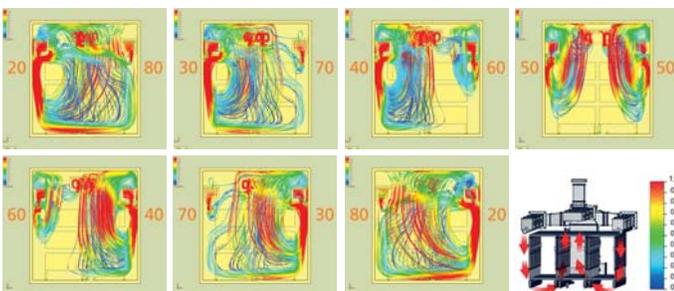


KMR – Classic



KMR 16 – Central

## TRAJECTORIES – AirFlow



## SMOKE GENERATOR



Friction  
smoke generator  
– HORIZONTAL

Friction  
smoke generator  
FVK – VERTICAL

Smoke generator  
VK 02

Smoke generator  
VK 03

## Microprocessor control system

Microprocessor control system serves for an automatic control of:

- ▶ Smoke ripening chambers KMZ
- ▶ Maturing chambers KMD
- ▶ Universal air-conditioned chambers KMU
- ▶ Defrosting chambers KMR

## Programmable controller B&R PP 420 with touchscreen TouchScreen

### B&R control system

Programmable controller PP 420 (PLC) serves for monitoring, control and visualization of technological processes in the chamber. Process control is based on the principle of absolute humidity.

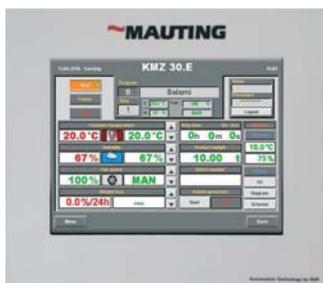
- ▶ It provides data archiving from technological processes. The PLC includes a 10.4" display and control panel with a touch screen.
- ▶ The display shows all values and data needed to control and set the controller parameters. They are controlled by the touch buttons displayed on the display.
- ▶ The controller can contain up to 100 programs.

- ▶ Each program has its own unique name.
- ▶ The desired chamber temperature, humidity, fan speed, fan run mode and step length can be programmed at each step. These values, along with the actual values, are displayed on the control unit display.
- ▶ Based on temperature information, relative humidity in the chamber, the temperature of the air blown into the chamber, the temperature behind the cooling exchanger, and the temperature and humidity of the fresh air, the controller controls.

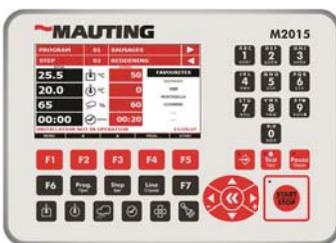
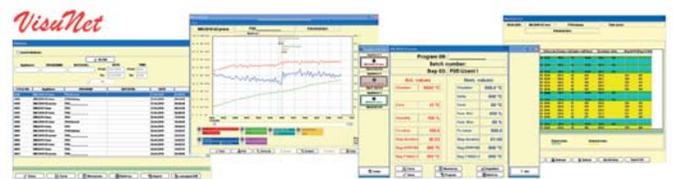
The control unit allows monitoring and archiving of all chamber parameters by managing fault conditions, remote control, over LAN, or the Internet, thus adapting the setting to the user.

### MauntingNet - software for data collection and diagnosis.

- ▶ The program is designed for data collection, storage, identification, retrieval, printing and back-up of temperature, humidity and other chamber parameters in the process of product processing.
- ▶ At the same time, the program allows remote control, diagnostics of traffic data and diagnostics of chamber fault conditions.



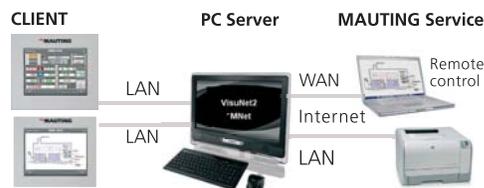
PP 420



MAUTING M2015



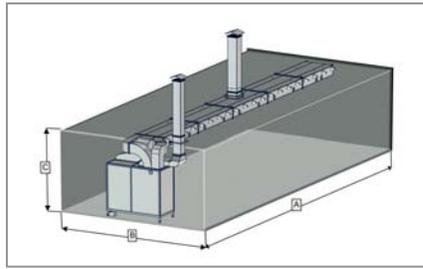
MAUTING M2016



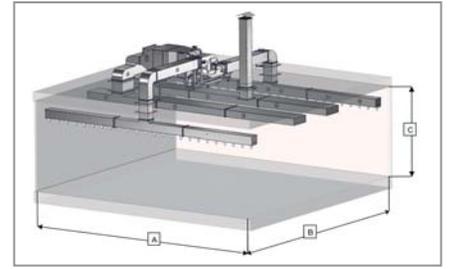
## Technical data

### KMD

No. of trolleys	(A)	(B)	(C)
2 x 5 = 10	5 350	2 700	2 700 - 2 900
3 x 6 = 18	6 400	3 800	2 700 - 2 900
4 x 7 = 28	7 450	5 000	2 700 - 2 900
5 x 8 = 40	8 500	6 000	2 900 - 3 000
6 x 9 = 54	9 600	7 150	2 900 - 3 000
7 x 10 = 70	10 600	8 200	2 900 - 3 000
8 x 20 = 160	21 300	9 300	3 000 - 3 100
9 x 25 = 225	26 600	10 400	3 000 - 3 100



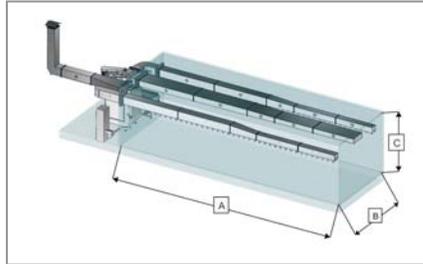
KMD - Central (Technology inside)



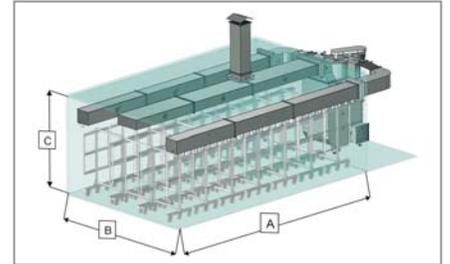
KMD - Classic (Technology on the Top)

### KMZ / KMU

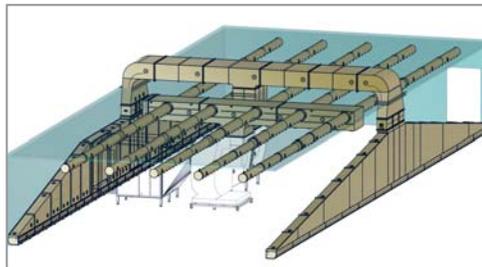
No. of trolleys	(A)	(B)	(C)
2 x 4 = 8	4 350	3 000	2 900 - 3 000
2 x 8 = 16	8 500	3 100	2 900 - 3 000
3 x 6 = 18	6 400	4 100	2 900 - 3 000
3 x 7 = 21	7 450	4 100	2 900 - 3 000
3 x 8 = 24	8 500	4 100	2 900 - 3 000
3 x 10 = 30	10 600	4 100	2 900 - 3 000
4 x 10 = 40	10 600	5 200	2 900 - 3 000
4 x 12 = 48	12 800	5 200	2 900 - 3 000



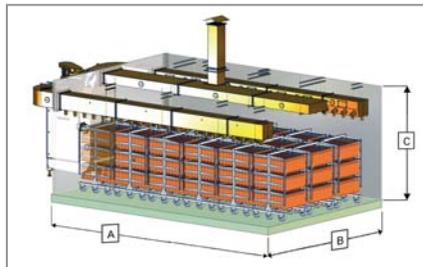
KMZ - Classic (Rear Technology)



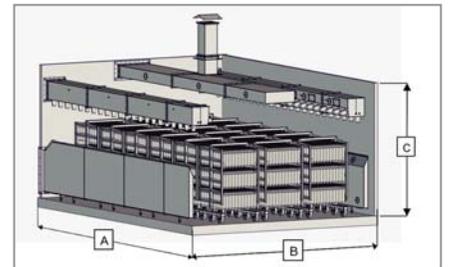
KMZ - Classic (Rear Technology)



KMD - CrossFlow (Technology inside)



KMZ - DAF 1 (Rear Technology)



KMZ - DAF 2 (Rear Technology)

## MAUTING produced



**MAUTING**  
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