



MACHINES AND EQUIPMENT
FOR THE FOOD PROCESSING
AND PRODUCTION HYGIENE



We have developed our network of traders, direct sales and distributors in over 70 countries on all continents, thus providing professional worldwide support.

The Power of New Technology

Ladies and Gentlemen,

Metalbud NOWICKI is a manufacturer with over 40 years of experience in the food industry and provides effective integrated solutions for any food processor. Metalbud NOWICKI puts a particular emphasis on providing top quality products and the most advanced technological solutions. We are flexible in supplying custom-made systems, reliable in quality and service. Our main goal is to satisfy the customer's needs at the highest level.





ABOUT US

We are here to serve you

Highly-skilled and experienced specialists (scientific research engineers, engineers – designers, technologists, operating personnel of CNC machines, technicians and managers) are able to implement even the most difficult and complex tasks resulting from constantly changing customer's needs. The crucial aim of the Metalbud NOWICKI's activity is to satisfy the customer's needs at the highest level.

Machines for meeting your needs

Metalbud NOWICKI is a manufacturer of approximately 20 series of types comprising almost 150 models of machines for meat and food processing as well as complete, technological lines for individual applications. We have developed our network of traders, direct sales and distributors in over 70 countries on all continents, thus providing professional worldwide support.

The highest quality for you

Our production is based on up-to-date, highly advanced technologies of cutting, machining, plastic



forming as well as on repeatable assembly operations. All of them are carried out with professional, digitally operated machines which are supervised by the computer quality control system; for example machines for water cutting ("Water Jet"), for plasma cutting, laser cutting, machines with numerical control: turning lathes, CNC millers, advanced semi-automatic welding machines and assembly stations.

Quality control for you

Every step of production process is subject to quality control which begins with raw materials delivery (testing of hardness, testing of conformity of material composition and dimensions), include all manufacturing operations and it is finished with final quality control of ready machines in operation. All the quality control system is supervised by a computer system which eliminates defective materials, components and semi-finished products so that the highest quality elements are directed to the assembly lines.

Future for you

Metalbud-NOWICKI's designing office, technological department and R & D department are equipped with professional construction and laboratory- tools. They are oriented for a permanent development of our existing products for their better performance and to forecast future demand of the market.





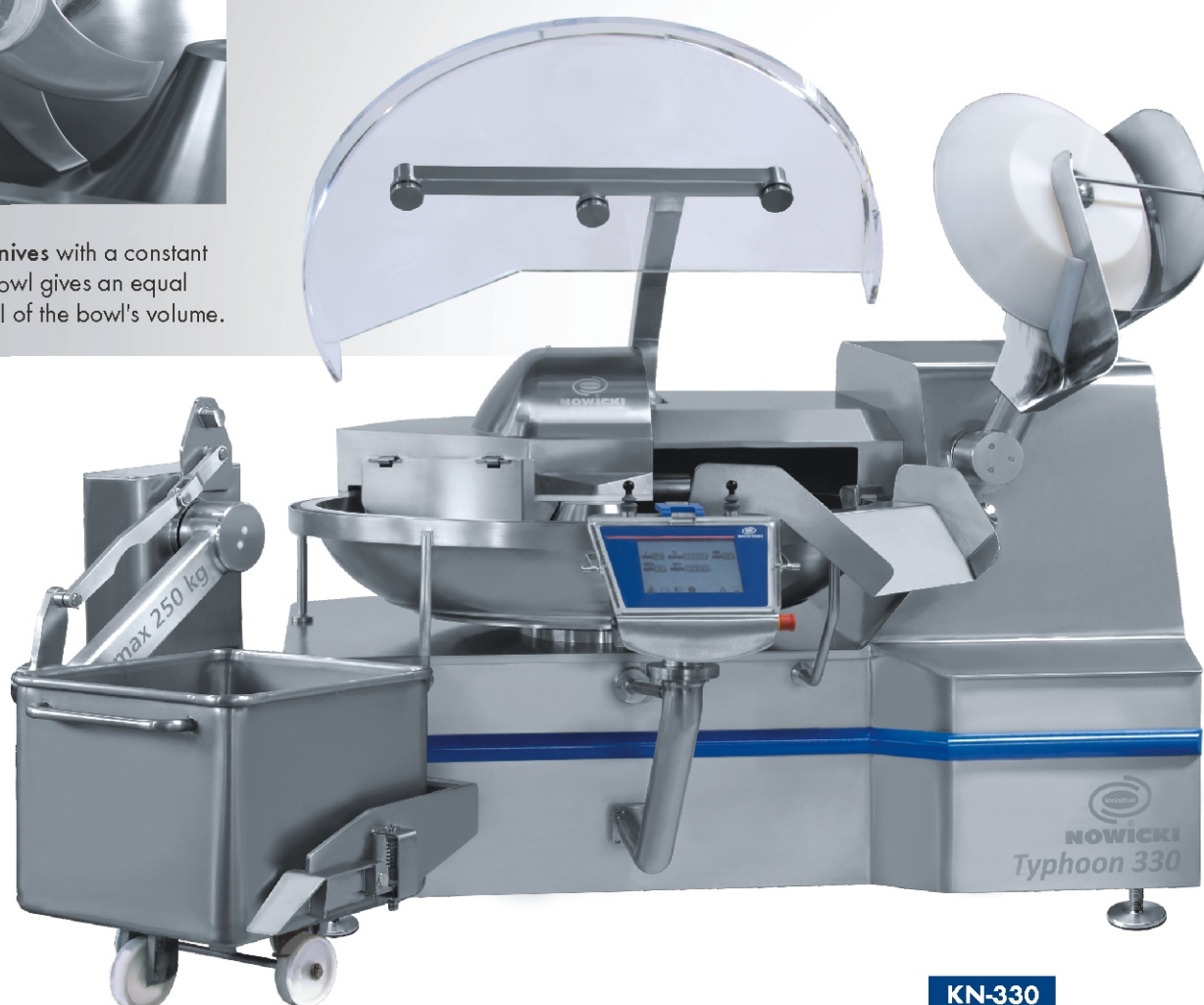
HIGH-SPEED ROTATION CUTTERS TYPHOON

High-speed rotation cutters TYPHOON

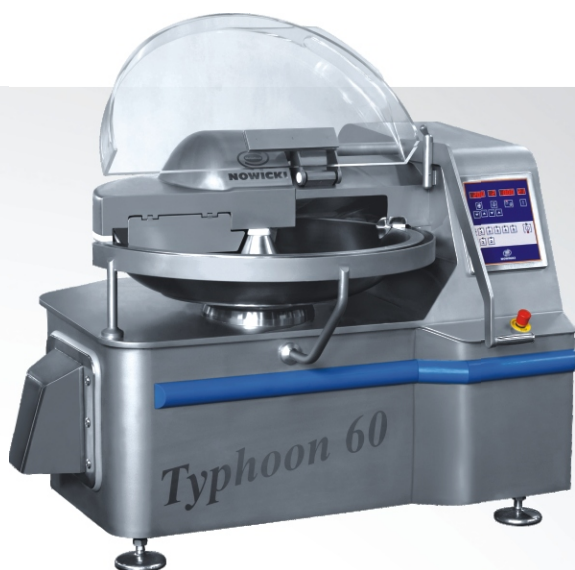
designed to produce all kinds of meat stuffing with different degrees of crumbling and fat emulsions, also from raw skins.



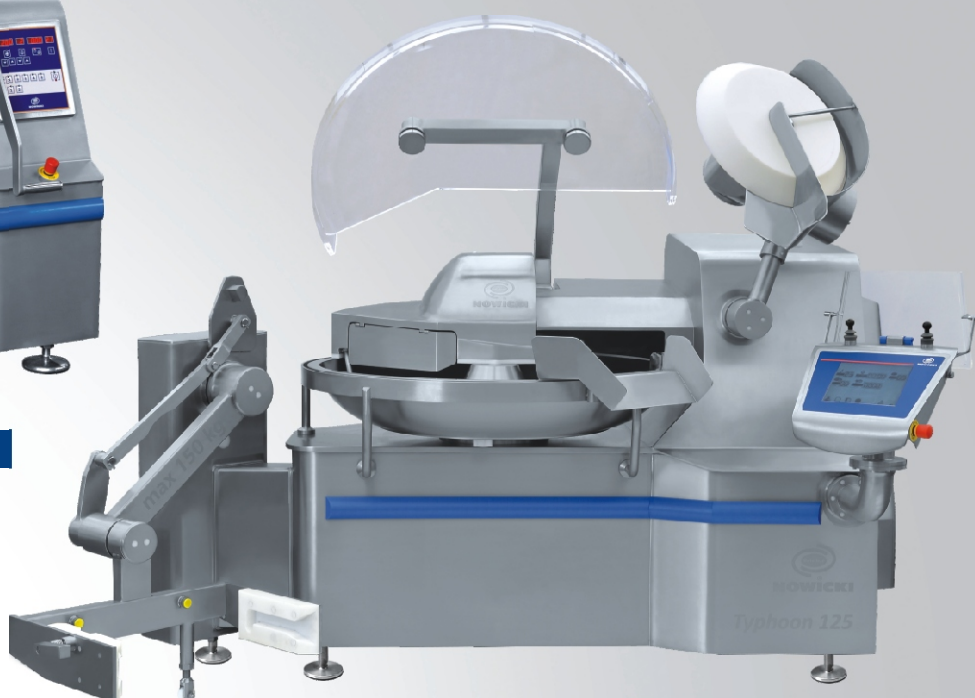
System of cutting knives with a constant distance from the bowl gives an equal stuff crumbling in all of the bowl's volume.



KN-330



KN-60



KN-125

Construction advantages*

- stainless steel construction
- high quality and repeatability of stuffing production
- versatility: cutting and mixing of stuffing
- high-speed rotations of knife head (cutting rotations)
- microprocessor control system
- smooth control of cutting and mixing rotations
- possibility of programming up to 40 technological programs
- possibility of changing the language of operator panel
- stuffing unloader
- automatic water dosage system
- effective noise insulation cover
- head with cutting knives not requiring regulation of distance from bowl
- equal stuff crumbling in all the bowl's volume caused by "cutting in the air"
- stuffing temperature control
- possibility to install a higher power motor for heavy stuffing production
- hydraulic loading and unloading system
- hydraulically operated front and back covers of the bowl
- monitoring system of the current machine operation, auto diagnostic and sound signaling system
- complete work safety system
- modern and ergonomic construction of the machine
- construction meets the highest hygiene requirements (flat surfaces inclined at an angle of 3 degrees)
- automatic central lubrication system
- product contact surfaces are polished
- emergency STOP for bowl drive and cutterhead drive
- online diagnostic system over the Internet

*depending on the option





HIGH-SPEED ROTATION VACUUM CUTTERS TYPHOON II

High-speed rotation vacuum cutters TYPHOON II

for production of homogenized meats. Designed to produce all kinds of meat stuffings and emulsions also from fat with different degree of granulation in a vacuum environment.



„Touch screen“ operator's panel



KN-330 V

Construction advantages

- stainless steel construction
- cutting in vacuum environment - max. 90%
- high quality and repeatability of stuffing production
- hydraulic loading system for the 200 ltr. buggies
- hydraulic stuffing unloader
- microprocessor control system
- smooth control of the cutting and mixing rotations
- smooth control of stuffing unloader rotations
- versatility: cutting and mixing of stuffing
- possibility of programming up to 40 technological programs
- possibility of changing the language of operator panel
- current monitoring system of machine's operation, auto diagnostics
- high-speed rotation of knife head (cutting rotations)
- hydraulically operated front and back covers of the bowl
- automatic water dosage system (optional)
- head with cutting knives not requiring regulation of distance from bowl
- head with 8 knives (optional)
- cutting chamber with compartment for salami (optional)
- equal stuff crumbling in all the bowl's volume caused by "cutting in the air"
- stuffing temperature control
- complete work safety system
- easy access to all cutter's elements during the washing after opening the front cover
- modern and ergonomic construction of the machine
- check opening hole in the lid
- construction meets the highest hygiene requirements (flat surfaces inclined at an angle of 3 degrees)
- automatic central lubrication system
- product contact surfaces are polished
- emergency STOP for bowl drive and cutterhead drive
- online diagnostic system over the Internet



HIGH-SPEED ROTATION VACUUM CUTTERS with cooking option

High-speed rotation vacuum cutters with cooking option

High-speed rotation vacuum cutters with cooking option are equipped with double heating system for stuffing i.e.:

- heating of the bowl jacket
- steam injection to the knife chamber

Construction and user advantages

- the cutters equipped with the precise system for temperature control
- extended range of technological applications - the cutters can be used for preparation of stuffing of homogenized sausages (technology of standard cutter), as well as for preparation of hot stuffing
- ensure increase of work effectiveness thanks to possibility of using two operations in one machine i.e. initial thermal treatment of materials and their grinding (in production process of determined assortment, pies mainly)
- provide improvement of flavour of a ready product and increase of profitability of production



KN-550 V cooking cutter





TAURUS AUTOMATIC ANGLE GRINDERS

TAURUS automatic angle grinders

designed for grinding fresh and frozen meat down to -20°C to required granulation and making other technological operations depending on used equipment.



W-160 W-130

Construction advantages

- high quality execution of stainless steel
- high quality of ground meat
- execution of pressing chamber and pressing worm in highly resistant to abrasion stainless steel
- two compatible drives of feeding worm and pressing worm ensure optimal adjustment of amount of dosed material
- smooth regulation of feeding worm (optional)
- automatic adjustment of material feeding to set load of pressing worm
- touch panel control + programs (optional)
- cutting system includes high quality cutting devices
- pressing worm equipped with an automatic pushing out system (W-160, W-200,)
- grinders equipped with peripheral device for separation of tendons and membranes (optional) and separator of poultry bones (optional)
- safety system for optimum working safety
- microprocessor controller responsible for control of all work parameters
- unique construction of pressing worms, worms in the production of CNC machining centres from a single piece of steel by machining
- a special version of the two scrolled grinding worms for heavy raw materials
- the possibility of choosing worms depending on the product range and customer requirements
- grinding system for frozen meat blocks (-20°C) (optional)
- special execution of grinders for frozen fish blocks



AUTOMATIC ANGLE GRINDER TAURUS W-280

Automatic angle grinder

Designed for grinding frozen meat blocks down to -20°C to reured granulations and making other technological operations depending on used euipment.



W-280

grinder with loading belt

Construction advantages

- high quality execution of stainless steel
- high quality of ground meat
- execution of pressing chamber and pressing worm in highly resistant to abrasion stainless steel
- two compatible drives of feeding worm and pressing worm ensure optimal adjustment of amount of dosed material
- smooth control of the feeding worm
- smooth control of the pressing worm
- automatic adjustment of the feeding speed to the set load of pressing worm
- touch screen operator panel, microprocessor controller responsible for control of all work parameters
- cutting system includes high quality cutting devices
- pressing worm equipped with an automatic pushing out system
- safety system for optimum working safety
- unique construction of pressing worm, worms in the production of CNC machining centres from a single piece of steel by machining
- different types of worms depending on the product range and customer requirements



grinders



BRINE INJECTORS

Brine injectors

designed for brine injection of meat, with bone or boneless, meat products, whole poultry and fish and fish fillets.

Construction advantages

- complete stainless steel made
- possibility of high and low injection
- system of multifunctional injection heads (1,2,3 and 4- needle)
- easy and fast change and cleaning of the injection head with needles
- injection head stroke of 200 mm as a standard (120, 250 mm is optional)
- two speeds of the injection head in a standard version
- smooth speed control (optional)
- simple and efficient power transmission system
- easy to read and operate control panel
- hand operated injection needles (optional)
- easy to clean and disassemble conveyer
- different conveyer speed controls
- highly efficient centrifugal pump made of stainless steel
- smooth brine pressure control up to 3 bar (4 bar as an option)
- functions of brine mixing and brine pumping out from the tank
- helical pump for heavy brine (optional)
- closed brine circulation system
- easy to clean multistage brine filtration system
- possibility of brine cooling by a rotary filter (option for mhm-68/204, mhm-136/408)



MHM-21/84 MHM-39/156 MHM-68/204



INJECTORS FOR FISH AND CHICKEN BREAST FILLETS MH-F/SAS

Injectors MH-F/SAS

designed for technologically advanced process of injection of fish, fish fillets and chicken breast fillets.



MH-1480 F/SAS

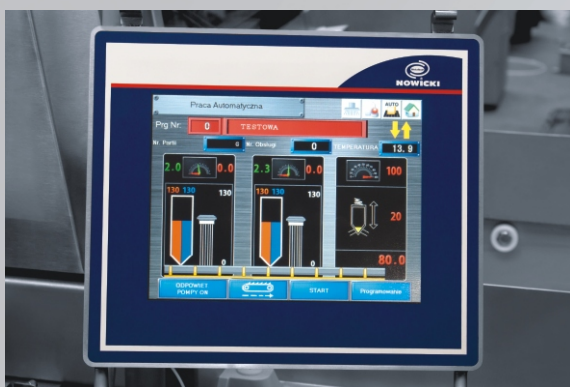
Construction advantages

- stainless steel made
- latest, easy to assemble and disassemble injection head and easy to change for injection head with Ø 1,6; Ø 2; Ø 2,5; Ø 3 mm needles (standard equipment includes injection head with one set of needles with Ø 2 mm)
- injection head and conveyor's servo-drive systems
- unique removal system of brine overflow from surface of raw material
- easy to read and operate "touch panel"
- cleaning system of inside part of injection head, which allows to avoid time-consuming injection head disassembly
- smooth speed control of injection head
- ability to inject of the raw material with different thickness from 30 to 80 mm
- control of needles height over the transporter
- programming of injection level i.e. determining the level of start and stop of layer of raw material
- smooth brine pressure control
- continuous measurement of brine temperature
- stability of parameters during work, high repeatability for low injection rates as well as high injection rates
- auto diagnostic system
- unique removal system of brine overflow from surface of raw material
- internet diagnostic system (option)
- table for wasing of the conveyor, heads and other parts of injector
- unique system of injection head hygiene, reducing to the minimum time of cleaning internal part of injection head





SINGLE HEAD AND MULTIPLE HEAD SAS** INJECTORS



Single head and multiple head SAS** injectors

greater opportunities for control of injection process. SAS SYSTEM injectors are intended to implement the most complex processes of injection covering a wide range of meat raw materials:

- muscles and elements of red meat with bone or boneless
- poultry carcasses and parts of white meat with bone or boneless
- fresh meat - white and red
- fish and fish fillets

**SAS - Servo Automatic System

Control

All injection processes are programmed and controlled using clear and easy-to-use touch panel, which allows full control over a broad spectrum of all injector's parameters.



MH-516 SAS



3-heads system with tenderizing head

MH-424T SAS

Construction advantages

- high repeatability of injection level
- low injection rates up to 10%, as well as high injection rates over 100%
- latest, easy to assemble and disassemble injection head and easy to change for injection head with Ø 2; Ø 2,5; Ø 3; Ø 3,5 mm needles (standard equipment includes injection head with one set of needles with Ø 3,5 mm)
- high production rates in kg/h
- maximum speed of injection head up to 60 cycles per minute
- injection of the raw meat of different thickness without extruding brine
- possibility of pre-programming of injection moment, i.e. determining the layer of raw material which will be injected
- drive of transporter synchronized with drive of injection head enables many combinations of injection patterns
- pumps independently supplying each head*
- special pump for high viscosity brines
- individual control system for each head*
- possibility of detach of separate head*
- each head can be equipped independently with required needles or tenderizing knives
- table for washing of the conveyor, heads and other parts of injector (for MH-75 - option)

- "Touch screen" control panel
- on-line Internet diagnostic system
- easy and fast replacement of needle heads
- unique system of injection head hygiene, reducing to the minimum time of cleaning internal part of injection head
- * for multiheads injectors

Multi-stage brine filtration system

- internal filter with replaceable cartridges with different graduation
- screen filter, consisting of the three grids with different graduation, placed in rotary filter module, with possibility of cleaning without stopping the injector
- rotary filter with a slot drum for a very fine cleaning of return brine
- round and sunken suction filter which minimizes the loss of brine
- specially shaped bottom of the filter



injectors



BRINE MIXERS (MS) DUAL BRINE PREPARATION SYSTEM (ZMS)

Brine mixers

designed to prepare, cool and store brine solution for injection of muscles, meat elements and fish.

The mixers allow for quick and simple producing of homogenous brine, without deposits with the use of dry substances.

MS-1000

version with "touch screen"
control panel



Construction advantages (MS)

- complete stainless steel
- construction meeting the highest hygienic requirements
- triple mixing system of solution components (mechanical, circulating and injection agitators)
- automatic dosing of dry ingredients
- possibility of transportation of ready brine
- efficient centrifugal pump
- precise calibration of brine tank
- it is possible to integrate the machine with the injector
- short time for obtaining a homogenous brine solution
- full control of set water quantity (option)
- full control of solution temperature (option)
- smooth internal part of the hopper with the vibrating device (optional) for effective adding of dry ingredients to water
- possible to adapt the machine for the preparation of thick sauces
- membrane pump for thick brine (option)
- possibility of brine sterilization with UV lamp (option)
- easy to read and operate "touch panel"

Dual brine preparation system

is designed for preparation brine with lots of dry ingredients. The system allows for quick and effective achievement of homogenous brine used in food processing. Two tanks (preparing and storing tanks) two highly efficient pumps, a computer control system and cooling system - all of this enables to carry out further injection and massaging processes effectively. This directly affects the quality improvement of the final product.

ZMS-750





DRIPPING TUNNEL (TO)

Dripping tunnel TO-1, TO-2

is a device for the operation of separating excess of brine while closing the holes formed by needles in the injection process of meat elements and poultry. It can be used for protein activation in muscle for configurations of industrial massaging and marinating.



TO-1



T-600

Construction advantages (T-600)

- stainless steel execution
- multi-roller system based on two tenderizing shafts
- easy assembly and disassembly of shafts for maintenance and cleaning process
- upper shaft's smooth adjustment of pressure force allows for optimal working conditions for different meat elements
- possibility of use of different shaft's shapes, depending on a type of operations performed by the device
- auto adjustment of thickness of tenderized meat from a control panel
- two synchronized transport tables - loading and discharge with adjustable angle of inclination

Tenderizers

designed for tenderizing and softening of meat muscles in order to increase absorption of brine and tenderness of product. Perfect in cutting hard tissues and muscles tendons which increase the absorption surface of brine, that results in an excellent tendering of individual meat elements.



TN-700

Construction advantages (TN-700)

- stainless steel execution
- multi-knives tenderizing head
- threestage adjustment of thickness of tenderized meat, for elements with skin and without skin
- stepless adjustment of notching head speed

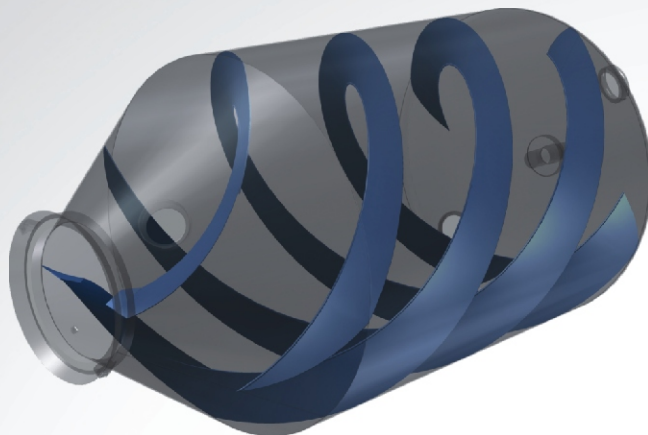




TILTED VACUUM TUMBLERS (MAH)

Tilted vacuum tumblers MAH

Vacuum tumblers MAH series for massaging in vacuum environment meat products, characterized by adjustable drum angle during both the loading and unloading as well as working time. Due to variable tilting angle the tumblers are ideal for use in modern process automation systems, loading/unloading and transportation for muscles massaging. The MAH vacuum tumblers are available with a cooling jacket and without cooling jacket.



Spiral blade system

results in significantly increased movement of meat along the circumference of the tumbler drum while moving it in a horizontal plane (front-back). At the same time it has a milder effect on massaged meat elements, which favorably affects their appearance and final process yield, particularly with regard to the most delicate meats. During massaging the meat stream flows along the spiral to the back of the drum, then the next phase of the revolution raises the meat to the top and returns it to the front according to a sinusoidal algorithm. This results in more intense rubbing of the individual elements to give a better massaging effect in a much shorter time.



system of cover's automatical opening



MAH-3200PSCH

Construction advantages

- execution of stainless steel
 - microprocessor controller
 - smooth adjustment of all massaging parameters
 - adjustable angle of tumbler's drum
 - possibility of automation of loading and unloading of muscles
 - adapted for use with automated transportation lines of meat: "brine injector-massaging tumbler" and "massaging tumbler-ready-made-products"
 - load cells weighing system*
 - automatic closing and opening of lid*
 - security system for vacuum pump
 - two technological revision holes
 - computer monitoring system of machine performance
 - innovative blade system allowing:
 - shortening of massaging time
 - improve a quality of muscle
 - ideal massaging of most delicate parts of meat
 - minimization of yield losses
- * optional

Transport systems of muscles

Using the MAH vacuum tumblers we can design modern transport solutions for muscle, tailored to the individual needs of meat processing plants. To minimize time losses and inter-operational losses, to eliminate weight errors, to minimize number of operation personnel in the departments of brine injection and meat massaging.



tumblers



VACUUM TUMBLERS (MA)

Vacuum tumblers

are designed to improve vividness of the muscles, meat elements, small meat pieces, chicken bodily sizes and elements in the vacuum environment, ensuring the high quality of meat products.

Construction advantages

- stainless steel construction
- precisely designed drum shape with helicoidal blades system of the tumbler
- microprocessor control system
- smooth control of the massaging parameters
- automatic system of vacuum control
- multistage system of vacuum pump protection
- technological port
- brine conscription valve
- pulsating vacuum
- possible massaging in a replaceable gas environment
- computer monitoring system of the machine's work parameters
- weighing system (optional)



MA-5400PSCH

Vacuum tumblers with cooling system

designed to achieve a high quality of meat products requiring to respect very strict technological rigour.

Cooling system advantages

- insulated double cooling jacket
- shortening to a minimum the massaging time
- maintaining the massaging temperature at a required level
- improving and stabilizing the natural colour of the products
- high production capacity
- high quality of products independent of pickling room conditions
- optimum protein bonding

Tumblers MA-G with heating and cooling system

For technologically advanced processes of cooking, steaming, marinating, curing and massaging in a controlled temperature environment.



MIXER-MASSAGER (MAM)

Mixer-massager

new kind of machine which connects all the advantages of a vacuum tumbler and a vacuum mixer with a cooled jacketed drum.

MAM-600



Construction advantages

- direct drum cooling jacket system
- possibility of operation of mixer-massager in not-cooled rooms
- rotating massaging and mixing arms providing delicate processing of meat pieces and exact mixing of stuffing
- possibility of drum loading from 10 to 75% of its volume
- supply of brine and other pickling marinades during execution of a technological program
- integrated, automatic loading unloading system for standard 200 ltr. euro-bins
- stable and durable stainless steel construction
- easy to clean

Mixing of batches

- application of mixer-massager as a vacuum mixer
- mixing and venting of stuffing using vacuum
- increased density of stuffing after mixing
- better colour of ready product
- mixing of various kinds of products: meat, fish, seafood, fresh and frozen vegetables, cereals, etc.
- short time of mixing meat stuffing-approx. 10 minutes

Massaging of meat batches

- significant reduction of massaging time
- application for the whole muscles (loin, ham, shoulder) and small, delicate pieces of meat (poultry elements, meat components for structural stuffing)
- excellent absorbing and bonding of brine mixture
- excellent final yields of products





VACUUM TUMBLERS MAH-PS/D WITH DEFROSTING SYSTEM



Vacuum tumblers MAH-PS/D

designed for a technologically advanced processes of thawing blocks of meat, poultry, seafood and others. The blade system allows for a gentle massaging and achieving the high quality of thawed products. Machines are equipped with control systems which allow for a total control of the defrosting process.

- quality of defrosted products comparable to a quality of fresh meat
- significant reduction of defrosting time
- the blade system allowing for a gentle massaging performance
- processes are performed under accurate control and monitoring
- reduced drip-losses containing proteins
- reduced manual handling between processes
- steam generator





LOADING SYSTEMS OF TUMBLERS



BC

loading conveyor



WP-1

mechanical loading unit



WP-2

system loading unit



WP-3

vacuum loading system



loading systems
of tumblers



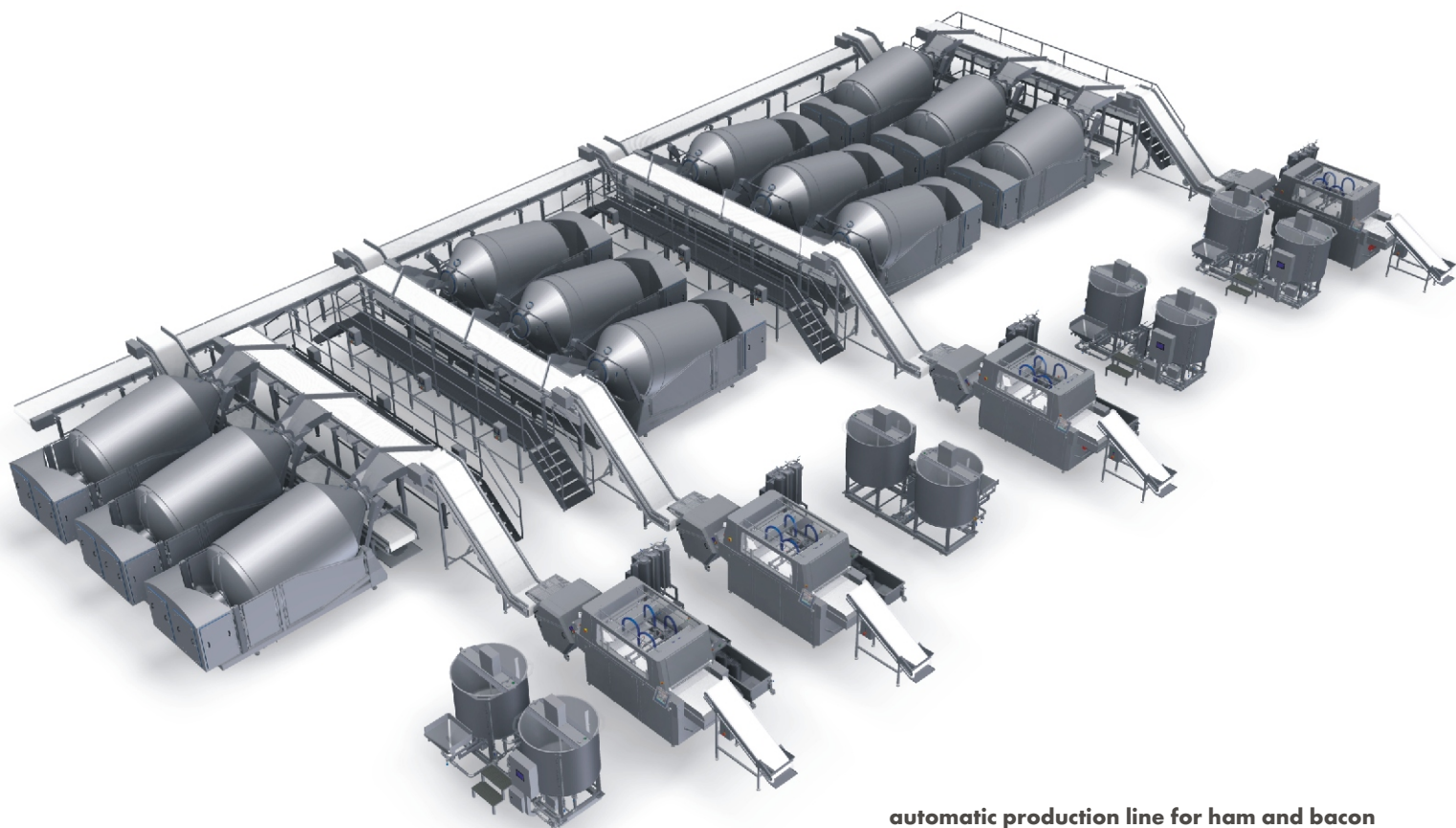
COMPLETE AUTOMATIC INJECTION AND TUMBLING LINES



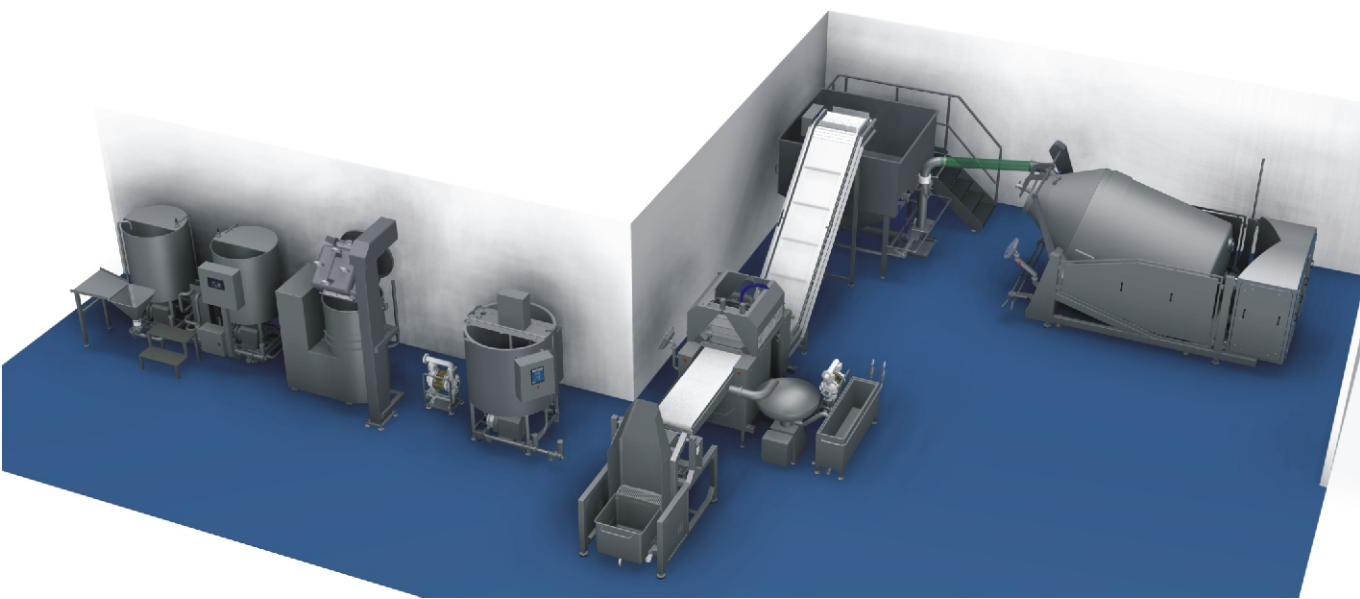
loading and unloading systems



660 MM/C industrial line
for injecting chicken breast, chicken nuggets
and chicken-strips with chicken meat emulsion



automatic production line for ham and bacon



meat in meat injection line





NOVOTHERM SMOKE HOUSES

Smoke houses "NOVOTHERM"

Designed for thermal treatment of meat products, fish and cheese. Depending on the option selected they are designed for conducting processes of cold smoking and hot smoking, smoking by smoke with steam, steaming, drying, baking and cooling.

User advantages

- shortening of technological process
- energy saving
- minimal weight losses
- high and repeatable quality of products
- even temperature distribution

Construction advantages

- manufactured using high-quality stainless steel in the form of panels which comprise a module
- powered by steam, electricity, electric-steam, fuel oil or gas
- closed or pass through configuration
- touch panel based system for full control and monitoring of thermal processing
- automatic chamber washing system reduces device maintenance requirements
- individual smoke feed and extraction system as well as drying and humidification in every module, reduces process times
- special air and smoke distribution system inside the chamber minimises temperature loss and ensures uniform temperature distribution through the entire chamber
- walls and doors thermal insulation made using high-quality polyurethane foam
- floor made as a monolithic elements regardless of the number of chamber trolleys
- chamber doors equipped with locks with a facility for opening from the inside (opening to the left or right)
- AV-1 series hermetic smoke generators optimise the smoke cloud generation process using smoking woodchips





Intensive cooling house

is used for intensive cooling of products directly after heat treatment.

- minimal temperature of smoke house 2-4°C
- cooling factors - water spray and cold air
- simultaneous or alternating dosage of cooling factors depending on kind of product
- air moistening system preventing webbing on casing during the cooling process

Steam house

designed for steaming processes.

- efficient heating system
- steam supply to a collector electronically controlled by system of valves
- temperature measurement system and relative humidity system
- temperature measurement system inside of product

Convective baking/cooking oven

designed for conducting baking processes in temperatures up to 250°C in conditions of controlled humidity.

- uniform cooking of products by means of horizontal distribution system of hot air
- humidity control system

Smoke afterburner DDW-2 (Thermal)

is used for the reduction of emission into the atmosphere of harmful substances in smoke, especially carbon monoxide.

- possibility to connect up to three chambers working simultaneously
- efficiency of after-burning from 80% to 100% depending on the number of simultaneously working chambers



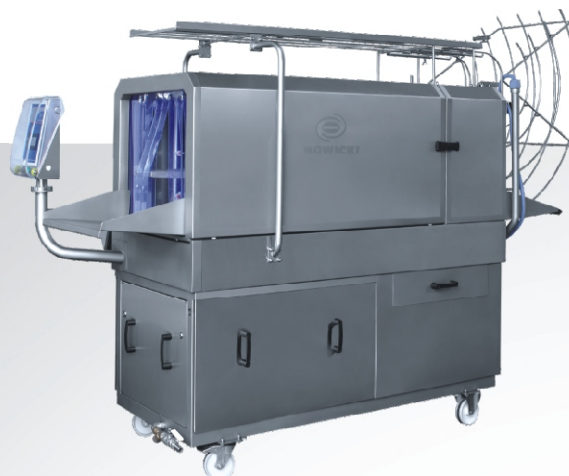
MP MPP
MPU

CONTAINER WASHERS

Container washers

designed to wash all kinds of plastic containers, covers of containers, euro-pallets*, giving optimal washing effectiveness. The MP-300, MPU-600 container washers are available in a modular version (with possibility of extension of the pre-wash module and/or the air blow-off module).

* MPU-600



MPP-150



MPU-600



MP-300

Construction advantages

- stainless steel construction
- closed water circulation system
- continuous washing system
- stainless steel centrifugal pump
- water heating systems: electric, steam, electric-steam, gas, oil and hot water
- high efficiency - up to 600 containers per hour (for MPU-600)
- regulation and distribution of rinsing water in terms of: intensity of rinsing, refreshing of tank water, overflow
- guiding mechanism for washed containers*
- mechanical conveyor for containers transport with a speed regulation (chain conveyor)
- effective water filtration system:
 - filter with perforated sieve and clarifier
 - self-cleaning rotating filter with impurities separator (optional)
- high pressure nozzles with adjustable angle for optimum results
- system of cutting off rinsing*
- chemical dosing
- clean container discharge chute*
- counting of containers (optional)*
- optional devices available, i.e. pre-wash and air blow-off modules
- vapour extraction system (optional)
- overhead rails for single operator use (MPP-150, MP-300)
- working time counter (option)
- electromagnetic lock of covers (optional)

* refers to MP-300, MPU-600



MODULAR CONTAINER WASHERS



Universal modular container washers

modular tunnel construction allows for universal connection of each module used in the container washing process.



MW-600 + MW-600 + MPU-600 + SO-600

Pre-wash module (MW)

is designed to wash food industry containers up to (length/width/ height) of 1200/800/420 mm for MW-600 and 600/450/420 mm for MW-300. The pre-wash module is mechanically and electrically compatible with the main washing module.

Construction advantages

- stainless steel construction
- high quality of washing (increasing of washing efficiency even up to 100%)

Air blow-off module (SO)

designed to remove water from the surface of the containers and other packages after washing and disinfection processes in container washers. It is compatible with others modules of the washing line.

Construction advantages

- stainless steel construction
- high efficiency
- limit water consumption in the washer (directing of recovered water to a tank)
- individual drive of a conveyor with a smooth speed regulation
- regulation of intensity of air stream (fast change of distance of nozzles from container surface)





AUTOMATIC INDUSTRIAL CONTAINER WASHER

type MPA-1200

Automatic industrial container washer type MPA-1200

a tunnel washer designed to wash containers of dimensions max. L x W x H 700x600x400 mm), of efficiency 1200 containers an hour. It provides effective washing and disinfection process with very low media consumption. Equipped with extremely efficient container air blow-off system. The container washer is easily adaptable for use with an automatic warehouse of containers.



MPA-1200

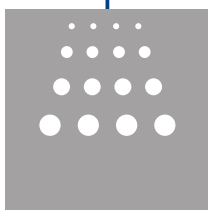
Construction advantages

- constructional realization completed of stainless steel based on CE directives
- work mode: pre-wash section, washing section, rinsing, steaming (optional) and air blow-off system
- plate link chain
- closed water circulation system with filtration system, self-cleaning rotating filter as an option
- output on plastic containers: 1200 per hour (dim. 400x600mm)
- two water tanks with 450 l. capacity
- automatic chemical dosing pump with concentration display
- stainless steel nozzles with easy to disassemble washing manifolds, numbers of nozzles
- water heating systems: electric, steam, steam-electric, oil, gas, water or steam exchanger
- automatic water temperature control system
- gravitational, self-regulating pressure top rail
- air blow-off module with 8 ventilators (option)
- opening up the side guards

Touch screen control panel

- colour touch panel 5,7"
- regulation and control of washing temperature
- on/off detergent pump
- auto mode and manual mode of work
- setting of time/date
- service mode
- alarms display on control panel
- water protection cover for control panel
- safety switches
- containers counter
- scada monitoring system (option)
- water consumption counter (option)





BUGGY WASHER BOX PALLET WASHER PALLET WASHER SMOKE STICK WASHER

Buggy washer MWF

Box pallet washer MPD-1 chamber type

designed to wash standard 200 ltr and /or 300 ltr buggies / dolav containers (MPD-1). It allows achieving maximum washing and disinfecting effectiveness.



MWF-1



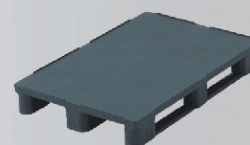
MPD-1

Pallet washer

for washing pallets that are no larger than: 1000 mm x 1200 mm x 150 mm (length x width x height); the washer gives optimal washing and disinfection effectiveness.



MEP-100



MB-300 Smoke stick washer chamber type

is designed to wash smoke sticks, slaughter hooks and all other small metal tools used in food processing. The washer has a compact drum construction giving durability of the machine and optimum washing results.



MB-300

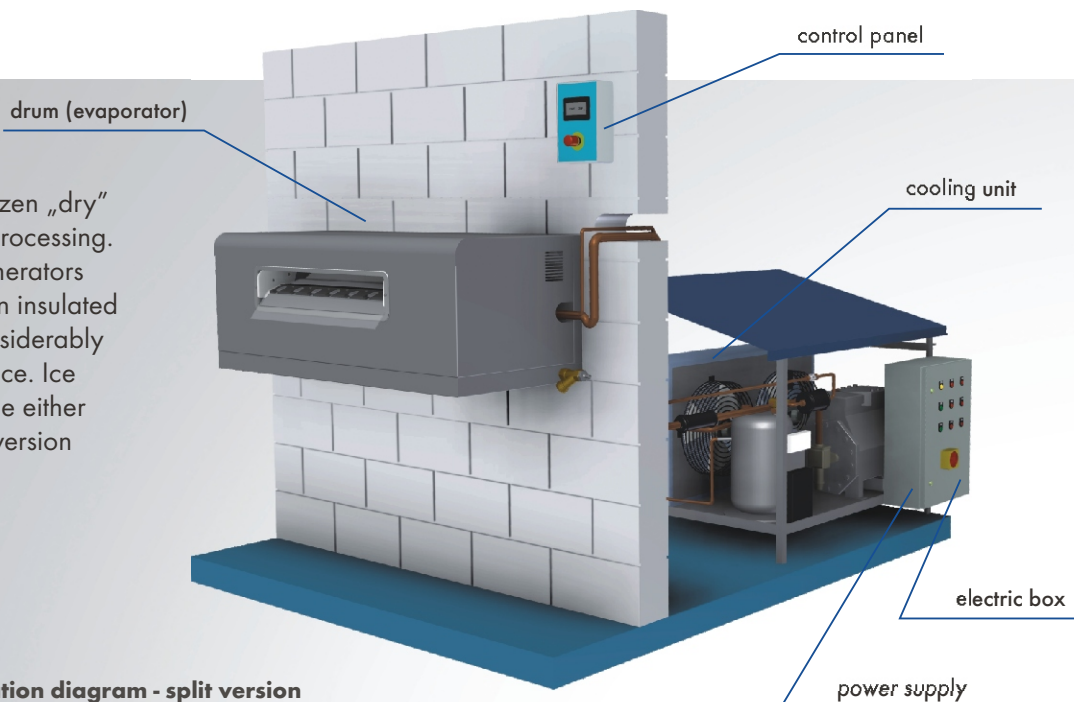




ICE GENERATORS

Ice generators

designed to produce frozen „dry“ ice flakes used in food processing. All models of the ice generators can be equipped with an insulated ice container, which considerably extends storage time of ice. Ice containers are applicable either for the compact or split version of ice machines.



WL installation diagram - split version

Construction advantages

- frame and housing in stainless steel
- efficient cooling system accurately chosen for different models
- split version of the machine (P) - allows for mounting of evaporator outside e.g. on external side of the wall of production hall
- automatic water drain
- UV disinfection of supply water (optional)
- possibility of using insulated container
- good ice parameters:
 - „dry“ flake shape - thickness of approx. 1 mm
 - low temperature (down to -9 °C) and large flake surface
- heat recovery from compressor (optional)
- a special version with TROPICAL version of cooling unit for use in tropical climates (optional)
- a special version with cooling unit for use in low ambient temperatures (optional)
- automatic ultrasonic cleaning system (optional)

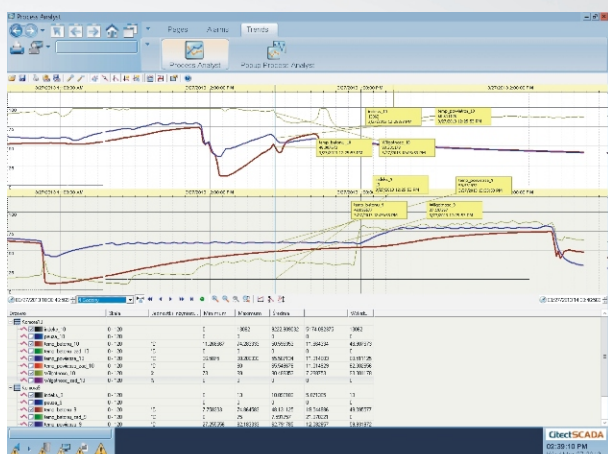
Automatic control system with touch panel

- auto-diagnostic functions
- auto-start function
- auto-diagnostics system with information on defects
- hours of operation
- sensor of ice level in storage tank (optional)

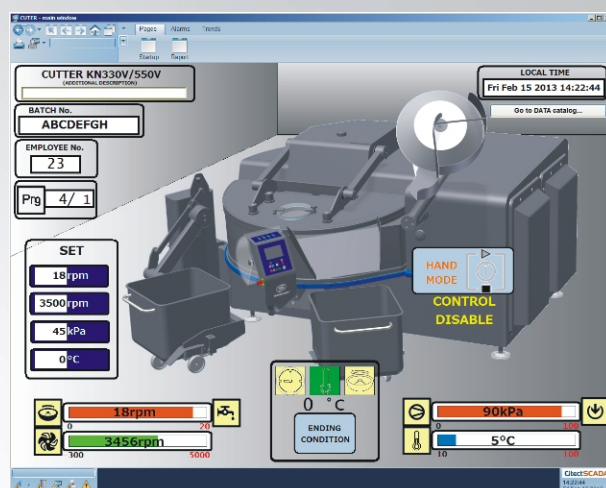




MONITORING SYSTEM SCADA



diagrams of stuffing temperature, knives and bowl speed, vacuum and water quantity in time-function



screen view with parameters

The SCADA Monitoring system

enables to monitor operation of cutters, vacuum tumblers, injectors and smokehouses. With the program it is possible to observe remotely on a screen and to save on a PC computer, all technological data of machines work. Monitored data can be displayed in a form of an interactive window or a diagram of work in time-function. All monitored data can be saved as a file in a memory of a computer. In the event of an emergency the data can be retrieved by the monitoring program. It's also possible to print a diagram of parameters in time-function as a documentation of a technological process.



screen view with parameters





TECHNICAL DATA

Cutters KN

Type		KN-60	KN-125	KN-200	KN-330	KN-550	KN-750
Bowl capacity	dm ³	60	125	200	330	550	750
Cutterhead speed /working (adjusted)/	rpm	200÷6000	200÷5000	200÷4800	200÷4500	200÷3800	200÷3500
Bowl speed (adjusted)	rpm	2÷15 ± 3%	2÷20 ± 3%	2÷20 ± 3%	2÷20 ± 3%	2÷15	2÷15
Dimensions L/W/H	mm	1650/1310/1190	2650/2000/1850	2820/2550/2080	3070/2530/2160	3530/2970/2400	3850/3080/2650
Weight	kg	1350	2400	3600	4200	5650	7930

Vacuum Cutters KN-V

Type		KN-200 V	KN-330 V	KN-550 V	KN-750 V
Bowl capacity	dm ³	200	330	550	750
Cutterhead speed /working (adjusted)/	rpm	100÷4800	200÷4500	100÷3800	100÷3500
Bowl speed (adjusted)	rpm	2÷20 ± 3%	2÷20 ± 3%	2÷15 ± 3%	2÷15
Cutting cycle vacuum	%	40÷65 (90*)	40÷65 (90*)	40÷65 (90*)	40÷90
Dimensions L/W/H	mm	3075/2900/2060	3250/3160/2180	3975/3510/2400	3980/3960/2650
Weight	kg	4900	7100	9400	13900

* option for stainless steel front lid

Angle grinders

Type		W-130	W-160	W-200	W-280
Diameter of throat	mm	130	160	200	280
Capacity of hopper	dm ³	360	360	450	650
Max. power of pressing worm drive motor	kW	13,5/20	25/34 or 28/38	37/53	156
Power of drive motor of loader	kW	1,1	1,1	1,1	1,1
Output	kg/h	up to 3000	up to 9000	up to 12000	up to 21000
Dimensions L/W/H	mm	2310/1750/3000	2650/1940/3250	3110/1990/3280	33545/2525/3610
Weight	kg	1500	2300	3100	5500

Brine injectors MHM

Type		MHM-21/84	MHM-39/156	MHM-68/204	MHM-136/408 2-heads
Number of sockets	pcs.	21	39	68	136
Maximum number of needles	pcs.	up to 84	up to 156	up to 204	up to 408
Conveyor width	mm	326	376	525	525
Maximum output	kg/h	500÷2000	500÷3500	500÷6000	500÷7500
Injection height stroke	mm	200	200 (250 ¹)	200 (250 ¹)	200
Dimensions L/W/H	mm	1400/760/1840	1770/840/2000	1820/990/1970	2310/1000/2080
Weight	kg	330	430	490	630

¹ option for meat without bones

Brine injectors SAS					
Type		MH-75 SAS	MH-117 SAS	MH-212 SAS	MH-336 SAS
Heads quantity	pcs.	1	1	1	1
Number of needles	pcs.	75	117	212	336
Conveyor width	mm	370	450	750	750
Maximum output	kg/h	up to 3000	up to 5000	up to 6000	up to 7000
Volume of injection	%	5÷100	5÷120	5÷120	5÷120
Dimensions L/W/H	mm	2300/2000/2100	2440/2040/2200	2980/2550/2200	2900/2550/2200
Weight	kg	1200	1440	1530	1530

Brine injectors SAS						
Type		MH-424 SAS	MH-516 SAS	MH-424T SAS	MH-660 F/SAS	MH-1480 F/SAS
Heads quantity	pcs.	2	2	3	1	2
Number of needles	pcs.	424	516	424	660	1480
Conveyor width	mm	750	1050	750	600	1050
Maximum output	kg/h	up to 10 000	up to 20 000	10 000	up to 5000	up to 7000
Volume of injection	%	5÷100	5÷100	5÷100	5÷100	5÷100
Dimensions L/W/H	mm	3225/2420/2170	3960/3060/2170	3825/2485/2165	3430/2420/1830	3245/2860/1950
Weight	kg	2190	2160	2440	1000	1880

Brine mixers MS						
Type		MS-250	MS-400	MS-1000	MS-1500	MS-2000
Container capacity	dm ³	250	400	1000	1500	2000
Installed power	kW	2	2	4,5	4,5	6
Dimensions L/W/H	mm	1380/1050/1850	1380/1150/1930	1790/1420/2100	2020/1600/2190	2595/1810/2655
Weight	kg	140	180	370	470	600

Brine mixers MS-CH					
Type		MS-400CH	MS-1000CH	MS-1500CH	MS-2000CH
Container capacity	dm ³	400	1000	1500	2000
Installed power	kW	2,5	5	5	6,5
Cooling yield of cooling unit	kW	4,3	8,9	15,2	20
Total installed electric power of refrigerating unit	kW	~2,5	~4,3	~8,2	~13
Dimensions L/W/H	mm	1700/1150/1950	2110/1650/2230	2430/1830/2230	2595/1935/2655
Weight	kg	390	740	870	1120





TECHNICAL DATA

Dual brine preparation system ZMS

Type		ZMS-750	ZMS-1000	ZMS-1500	ZMS-2000
Tank capacity	dm ³	2x750	2x1000	2x1500	2x2000
Installed power	kW	3	8	8	11
Dimensions L/W/H	mm	3250/1590/2320	3300/2100/2450	3850/2300/2450	4070/2280/2500
Weight	kg	900	1100	1200	1650

Tenderizers

Type		TN-700	TN-1000	T-600
Number of cutting knives	pcs.	833	1026	—
Output	kg/h	4000	5000	—
Number of revolutions	rpm	17÷34	15÷50	—
Number of cutting shafts	pcs.	—	—	2
Number of knives on a shaft	pcs.	—	—	69
Max. height of tenderized meat	mm	160	160	180
Tenderizing width	mm	600	1050	600
Dimensions L/W/H	mm	1700/1120/1950	1650/1550/1460	1820/1305/1300
Weight	kg	570	1300	650

Dripping tunnel TO

Type		TO-1	TO-2
Length of drum	mm	3500	2500
Inclination of drum		0÷5°	0÷5°
Drum revolutions	rpm	0÷25	0÷25
Dimensions L/W/H	mm	4000/1270/2080÷2340	3370/1270/1810÷2000
Weight	kg	1380	1165

Tilted vacuum tumblers MAH

Type		MAH-3200 PS MAH-3200 PS/D	MAH-5200 PS MAH-5200 PS/D	MAH-7200 PS MAH-7200 PS/D	MAH-10200 PS MAH-10200 PS/D
Drum capacity	dm ³	3200	5200	7200	10200
Maximum load	kg	~2000/~1000*	~3100/~1500*	~4300/~2200*	~6100/~3000*
Drum speed	rpm	0÷12/0÷9*	0÷11/0÷8*	0÷10/0÷7*	0÷9/0÷7*
Max. installed power	kW	~9,1	~10,4	~12,1	~14,1
Dimensions L	mm	4260	4480	4800	5260
W	mm	2360	2370	2390	2710
H	mm	2500÷2860	2500÷2960	2500÷3170	2600÷3400
Weight	kg	3000	3500	4400	5700

*for model PS/D

Tilted vacuum tumblers MAH					
Type		MAH-3200 PSCH MAH-3200 PSCH/D	MAH-5200 PSCH MAH-5200 PSCH/D	MAH-7200 PSCH MAH-7200 PSCH/D	MAH-10200 PSCH MAH-10200 PSCH/D
Drum capacity	dm ³	3200	5200	7200	10200
Maximum load	kg	~2000/~1000*	~3100/~1500*	~4300/~2200*	~6100/~3000*
Drum speed	rpm	0÷12/0÷9*	0÷11/0÷8*	0÷10/0÷7*	0÷9/0÷7*
Max. installed power	kW	~11,5/9,3	~14,8/11,6	~17,6/13,2	~21/15,2
Type of cooling unit		ZCh-3	ZCh-3	ZCh-4	ZCh-4
Dimensions L	mm	4260	4480	4800	5260
W	mm	2360	2370	2390	2710
H	mm	2500÷2860	2500÷2960	2500÷3170	2600÷3400
Weight	kg	3000	3500	4400	5700

* for model PS/D

Vacuum tumblers									
Type		MA-500 PS	MA-1000 PS	MA-1500 PS	MA-2000 PS	MA-3600 PS	MA-5400 PS	MA-7200 PS	MA-10000 PS
Drum capacity	dm ³	500	1000	1500	2000	3600	5400	7200	10 000
Maximum load	kg	~250	~500	~750	~1000	~1800	~2700	~3600	~5000
Drum speed	rpm	0÷14	0÷12	0÷8	0÷8	0÷7	0÷6	0÷5	0÷5
Installed power	kW	2,3	2,3	3,4	3,4	4,7	6,8	8,4	10,4
Dimensions L	mm	2060	2580	2750	3150	3750	4100	4220	4900
W	mm	1180	1260	1340	1340	1890	1960	2170	2240
H	mm	1580	1570	1720	1720	2050	2250	2480	2480
Weight	kg	450	640	1050	1100	1700	2900	3200	3600

Vacuum tumblers with cooling system									
Type		MA-500 PSCH	MA-1000 PSCH	MA-1500 PSCH	MA-2000 PSCH	MA-3600 PSCH	MA-5400 PSCH	MA-7200 PSCH	MA-10000 PSCH
Drum capacity	dm ³	500	1000	1500	2000	3600	5400	7200	10 000
Maximum load	kg	~250	~500	~750	~1000	~1800	~2700	~3600	~5000
Drum speed	rpm	0÷14	0÷12	0÷8	0÷8	0÷7	0÷6	0÷5	0÷5
Installed power	kW	2,7	2,7	3,8	3,8	5,4	7,5	9,1	11,2
Type of cooling unit		ZCh-1	ZCh-2	ZCh-2	ZCh-2	ZCh-3	ZCh-3	ZCh-4	ZCh-4
Dimensions L	mm	2050	2500	2750	3150	4020	4350	4480	5120
W	mm	1250	1280	1400	1400	1800	1960	2170	2240
H	mm	1580	1600	1750	1750	2050	2280	2480	2480
Weight	kg	640	770	1350	1550	2550	3400	3800	4300

Mixer-Massagers				Tilted tumblers			
Type		MAM-300	MAM-600	MA-200 PS	MA-200 PSCH	MA-300 PS	MA-300 PSCH
Drum capacity	dm ³	300	600	200	200	300	300
Maximum load	kg	~225	~450	~120	~120	~180	~180
Mixing arm speed	rpm	0-25	0-25	—	—	—	—
Drum speed	rpm	—	—	0÷15	0÷15	1÷15	1÷15
Installed power	kW	~4,5	~5,5	1,6	2,4	~0,7	~3
Dimensions L/W/H	mm	2110/1380÷1820 /1900÷3080	2300/1510÷2270 /2100÷3200	1700/1180 /1540	1700/1180 /1540	1800/1200 /1520	1800/1260 /1550
Weight	kg	1200	1600	370	490	410	500





TECHNICAL DATA

Tumblers MA-G i MAH-G									
Type		MA-G-500 PSCH	MA-G-1000 PSCH	MA-G-1500 PSCH	MA-G-2000 PSCH	MA-G-3600 PSCH	MA-G-5400 PSCH	MA-G-7200 PSCH	MA-G-10000 PSCH
Drum capacity	dm ³	500	1000	1500	2000	3600	5400	7200	10000
Maximum load	kg	~250	~500	~750	~1000	~1800	~2700	~3600	~5000
Drum speed	Rpm	0÷14	0÷12	0÷8	0÷8	0÷7	0÷6	0÷5	0÷5
Installed power	kW	2,7	2,7	3,8	3,8	5,4	7,5	9,1	11,2
Type of cooling unit		ZCh-1	ZCh-2	ZCh-2	ZCh-2	ZCh-3	ZCh-3	ZCh-4	ZCh-4
Dimensions	L	mm	2050	2500	2750	3150	4020	4350	5120
	W	mm	1250	1280	1400	1400	1800	1960	2240
	H	mm	1580	1600	1750	1750	2050	2280	2480
Weight	kg	640	770	1350	1550	2550	3400	3800	4300

Tumblers MA-G i MAH-G						
Type		MAH-G-3200 PSCH	MAH-G-5200 PSCH	MAH-G-7200 PSCH	MAH-G-10200 PSCH	
Drum capacity	dm³	3200	5200	7200	10200	
Maximum load	kg	~2000	~3100	~4300	~6100	
Drum speed	rpm	0÷9	0÷8	0÷7	0÷7	
Installed power	kW	11,5	14,8	17,6	21	
Type of cooling unit		ZCh-3	ZCh-3	ZCh-4	ZCh-4	
Dimensions	L	mm	4260	4480	4800	5260
	W	mm	2360	2370	2390	2710
	H	mm	2500÷2860	2500÷2960	2500÷3170	2600÷3400
Weight	kg	~3000	~3500	4400	5700	

Container washers				
Type		MPP-150	MP-300	MPU-600
Efficiency	containers/h	up to 150	up to 300	up to 600
Pump's motor power	kW	3	5,5 (7,5) *	7,5
Heating element's power*	kW	18 (27) *	27 (3 phases x 9 kW)	27 (36) * (3 phases x 9 (12) kW)
Steam supply	110-135°C	3/4" max.; (0,15-0,3 MPa)	1" max.; (0,15-0,3 MPa)	1" max.; (0,15-0,3 MPa)
Water supply	40-45°C	3/4" max.; (0,3-0,6 MPa)	3/4" max.; (0,3-0,6 MPa)	3/4" max.; (0,3-0,6 MPa)
Tank's capacity	l	200	340	380
Dimensions L+L1/W/H	mm	2550/1040/1604	3630+2300/1210/2004	4100+2400/1510/1985
Weight	kg	460	600	740

*depending on version

Automatic industrial container washer

Type	MPA-1200	
Efficiency	containers/h	up to 1200
Steam connection	110-135°C	1"; 0,15-0,3 MPa
Water connection	40-45°C	3/4" 0,3-0,6 MPa
Compressed air		0,5÷0,8 MPa
Tank's capacity	l	2x450
Total power installed with air blow-off module	kW	~57,5
Washer dimensions with air blow-off module L/W/H	mm	11775/2075/2029
Weight	kg	2800

Initial washing module (MW-300, MW-600) Air dry module (SO-300, SO-600)

Type		MP-300+MW-300	MP-300+MW-300 +MW-300	SO-300	MPU-600+MW-600	MPU-600+MW-600 +MW-600	SO-600
Pump's motor power	kW	5,5 (7,5*) 5,5 (7,5*)	5,5 (7,5*) 5,5 (7,5*) 5,5 (7,5*)	—	7,5 (11*) 5,5 (7,5*)	7,5 (11*) 5,5 (7,5*) 5,5 (7,5*)	—
Fan's motor power	kW	—	—	3x4; 4x4	—	—	4x4 (5x4**)
Heating element's power	kW	18 (27) 18 (27)	18 (27) 18 (27) 18 (27)	—	27 (36) 27 (36)	27 (36) 27 (36) 27 (36)	—
Installed power	kW	48 (70)	71 (104)	~12,5; ~16,5	68 (91)	100 (135)	16,2 (20,2**)
Steam supply		1" 0,15-0,3 MPa 110-135°C			1" 0,15-0,3 MPa 110-135°C		
Dimensions L	mm	5520	7440	3170	5810	8450	3300
W	mm	1210	1210	1010	1510	1510	1370
H	mm	2010	2010	1834	1985	1985	1825
Weight	kg	600+590	600+590+590	420	740+700	740+700+700	1000

* possibility of using a pump of higher power

** option - 5 fans installed

Chamber washers

Type		MWF-1 MWF-1-300	MWF-2	MPD-1
Efficiency	containers/h	up to 60	up to 90	up to 30
Steam consumption	kg/h	~80	110	—
Power of electric heater	kW	27	—	54-72 (E)
Power of washing pump	kW	7,5	11	11
Power of rinsing pump	kW	—	1,5	0,55
Water connection	40-45°C	3/4" (0,3-0,6 MPa)	1" (0,3-0,6 MPa)	1" (0,3-0,6 MPa)
Steam connection	110-135°C	3/4" (0,15-0,3 MPa)	1" (0,15-0,3 MPa)	1" (0,15-0,3 MPa)
Dimensions with brine filter L/W/H	mm	2060/1880/2060 3350/1880/2250*	3960/2790/2300	4620/2350-G (2100-EP)/2860
Weight with brine filter	kg	850	1410	1600

* dimensions MWF-1-300

Smoke stick washer

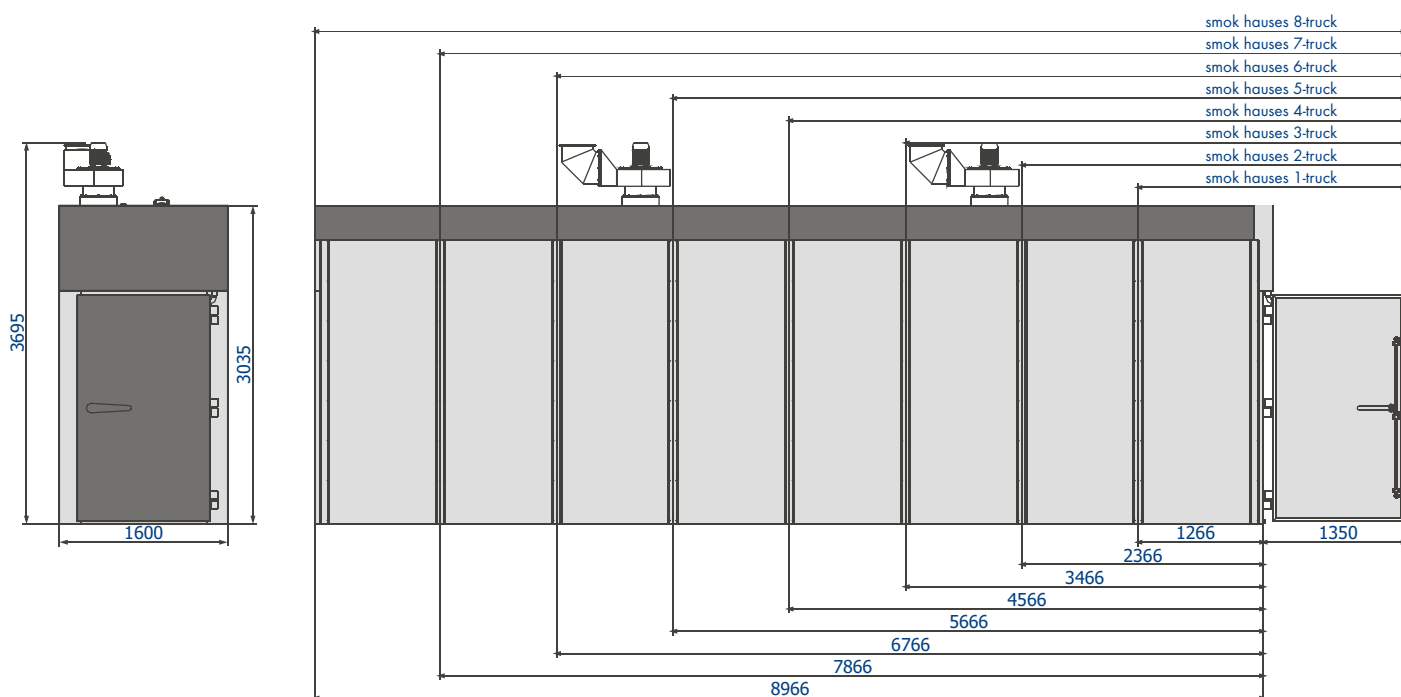
Type	MB-300	
Efficiency		up to 300 smoke sticks for 30 min
Dimensions L/W/H	mm	1780/970/1410
Weight	kg	260





TECHNICAL DATA

Smok houses - dimensions



Multifunctional universal smoke house Novotherm									
Type	Steam - P			Electric - E		Oil - O		Gas - G	
	Heating steam 0,4-0,8 MPa (kg/h)	Moistening steam 0,05-0,15 MPa (kg/h)	Power installed (kW)	Power installed (kW)	Average energy consumption (kW/h)	Power installed (kW)	Average oil consumption (kg/h)	Power installed (kW)	Average gas consumption (m/h)
1 truck	45	50	5,9	41,9	33,5	7	3,7	6,9	5
2 truck	90	100	11	83,0	66,4	11,5	7,5	11,4	10,4
3 truck	135	150	15,4	123,4	98,7	16,2	11	16,2	15
4 truck	180	200	19,8	163,8	131,0	20,8	15	20,6	20,8
5 truck	225	250	24,2	204,2	164,0	—	—	—	—
6 truck	270	300	30,9	246,8	197,5	—	—	—	—

Intensive cooling house KSS

	Refrigeration power	Water for shower 0,4-0,6 MPa	Water for moistening 0,4-0,6 MPa	Power installed	Average energy consumption
	kW	l/min	l/min	kW	kWh
1KSS 1 truck	19	21	1	15,9	15,9
2KSS 2 truck	32	42	2	26,3	24
3KSS 3 truck	40	63	3	34,7	34
4KSS 4 truck	56	84	4	47,1	47,2
5KSS 5 truck	63	105	5	60,3	54,8
6KSS 6 truck	77	125	6	69,7	66,4

Ovens PKE

Type		PKE 1	PKE 2	PKE 3	PKE 4
Oven capacity		1 truck	2 trucks	3 trucks	4 trucks
Max temperature in oven	°C	250	250	250	250
Installed electric power	kW	62	122	182	242
Dimensions L/W/H	mm	1256/1637/3586	2306/1637/3586	3356/1637/3586	4406/1637/3586
L - length with opened door	mm	2550	3600	4650	5700
Weight	kg	1760	2815	3870	4925

Ice generators

Type		WL-250 WL-250P*	WL-500 WL-500P*	WL-1100 WL-1100P*	WL-2200/ WL-2200P*	WL-3100P*	WL-6200P* WL-6200H
Ice production capacity (ambient temp. 20°C, water temp. +5-+15°C)	kg/24h	up to 250	up to 500	up to 1100	up to 2200	up to 3100	up to 6200
Cooling power	kW	1,7	3,1	6,5	13	19	35
Installed power	kW	1,4	1,9	4,3	9	12	23
Dimensions L	mm	930/550*	1035/550*	1265/550*	1575/550*	580*	730*/1400
W	mm	870/750*	870/845*	995/1005*	1325/1285	1355*	1355*/1560
H	mm	1050/470*	1225/470*	1225/485*	1240/485*	515*	1300*/1590
Weight	kg	260/100*	300/120*	440/140*	630/180*	210*	480*/1500

* refers to split version





PL 96-200 Rawa Mazowiecka
Podlas 3
tel. +48 46 814 55 00
fax +48 46 814 22 15
e-mail: metalbud@metalbud.com
www.metalbud.com



The Metalbud Nowicki company informs that individual differences may appear between the machines shown in this catalogue and those offered for sale due to either design changes or the individual orders of our customers.

