



ENG



**FOOD
PROCESSING
EQUIPMENT**



CATALOG

NO  IN MIXING

N&N[®]
NADRATOWSKI

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IN MIXING



COMPANY



Family owned, modern manufacturer of food processing machinery.

N&N Nadratowski Food Processing Equipment, established in 2001. We are based in Bielsk, in Poland. We are a family owned company and we believe in high standards and high quality of the machinery that we manufacture just as well as in the personal approach to our customers in order to satisfy their needs and requirements.

We have a highly skilled engineering team and are not afraid of challenges. We can manufacture bespoke machines to suit and cope with the very demanding food industry. Our narrow area of specialisation, experience, flexibility and attention to detail has helped us to gain many customers but also allowed us to become one of the leading manufacturers of mixing machinery in the world. Thanks to our extensive network of reliable representatives, the majority of our machines are exported overseas, increasing our credibility and recognition on every continent.

We put a lot of pressure on the continuous development of existing products, but also on new projects and new product ideas. Whatever your requirements we are able to meet them!



N&N Nadratowski – There's no better way to mix!

MIX

NO 1

N&N paddle mixers

MIX series



INFO

N&N MIX series - these high-performance mixers have intermeshing shafts with 180 to even 8000 liters volumes. In combination with a square mixer hull geometry, these intermeshing paddle shafts gently and efficiently mix all kinds of products, regardless of viscosity or stickiness. It is ideal for pure beef burgers, case ready ground meat, raw sausage meat but also for many other applications.

EVEN MIXING IN LESS THAN 2 MINUTES

The Mix series of N&N mixers enables a gentle and effective mixing of certain types of products, such as meat, poultry, cereals, vegetables and sandwich fillings. The mixing time can take less than two minutes.

SHORT AND EFFECTIVE DISCHARGE TIME

The **N&N MIX** series has a quick discharge time and leaves minimal product within the mixing bowl. The level of the displacement between the two mixer halves provides fast discharge to the large outlet door which helps to ensure corner-to-corner mixing.

SANITARY CONSTRUCTION

The body and the shafts of the MIX series of the N&N mixers are constructed in 100% of the stainless steel. All corners of the hopper and bowl are curved and surfaces are expertly ground and bead blasted or polished to facilitate thorough cleaning. A three zone construction of the drive, hygiene and mixing helps to keep the machine in a clean and tidy condition, not allowing creation of bacteria, as well as easy control of the condition of seals.

PROGRAMMABLE OPERATION

The N&N mixers MIX series can be equipped optionally with colour touch-screen and PLC for user-friendly operation. The software enables up to 100 mixing programs to be saved, each with up to 5 programmable steps.

COOLING SYSTEM

The MIX series of **N&N** mixers can be optionally equipped with a cooling system: Liquid N2 or CO2. Cooling ensures viscosity and plasticity, which helps and strengthens forming, thus maintaining the product shape during further processing. In addition, cooling reduces development of bacteria and prolongs the storage period of the mixed product.

PERFORMANCE BENEFITS

- Easy programmable mixing for excellent consistency of a wide range of products
- Robust, reliable and easy-to-clean construction
- Easy operation, handling and cleanliness
- Ideal for fresh and frozen mixtures (separate or together)
- Quick and effective mixing times
- Gentle treatment of materials
- Quick discharge time
- Minimum product residue and cross-mixing of batches
- Excellent distribution and absorption of liquids, spices and additives

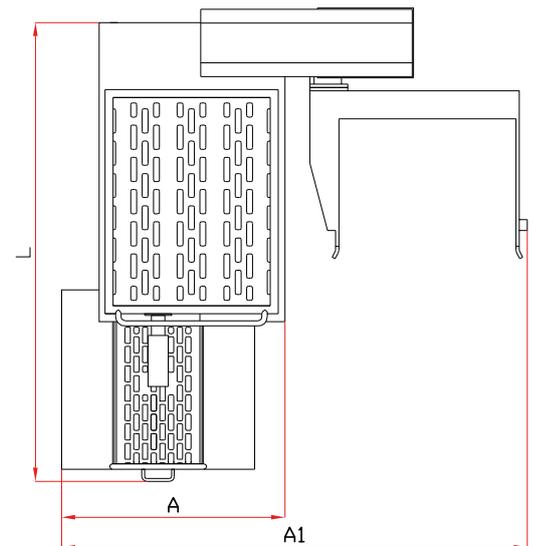
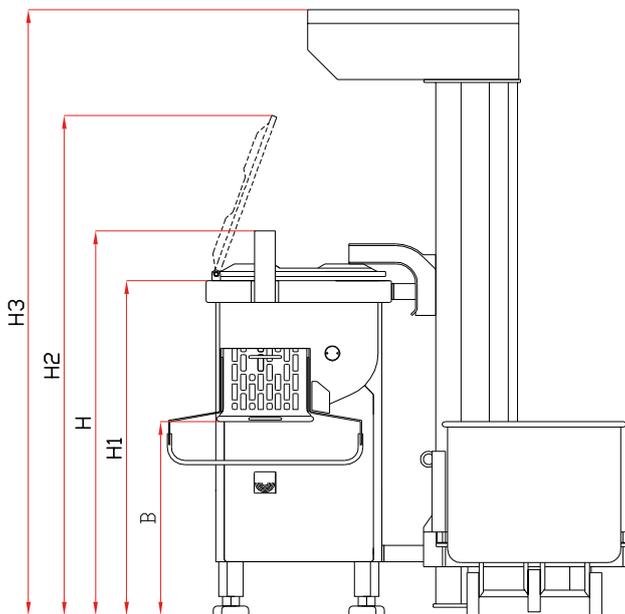
In order to satisfy all of your production needs, it is possible to equip the mixer with the following options:

- Column loaders
- PLC and HMI
- Variable speed control
- Weighing system
- Water dispenser
- Temperature sensor
- Liquid N2 or CO2 cooling with bottom- or top-mounted nozzles
- "Easy clean" system – a special system of monolithic seals, that allows thorough cleaning inside the machine. This is achieved through quick and easy disassembly (5 minutes)
- Double heating/cooling jacket (soups, cheeses, sauces) – **MIXCook series**
- Direct steam injection nozzles (example applications: ready meals, meat products, vegetables, baby food and petfood) - **MIXCook series**
- Scrapers - **MIXCook series**
- Ribbon shafts

Paddle Mixer MIX-180

www.nadratowski.com

Total capacity [L]	180
Max filling [L]	135
Installed Power [kW]	2,4
Loader option	PZ-2/250
Column Loader power [kW]	0,75
Standard control	Button control panel
Shaft rotation speed [rpm]	30/60 II rotation speed & left/right rotation
Mixer net weight [kg]	367
Unloading to bin DIN 9797	200 l [option 120 l]
Openning/closing lids	manually

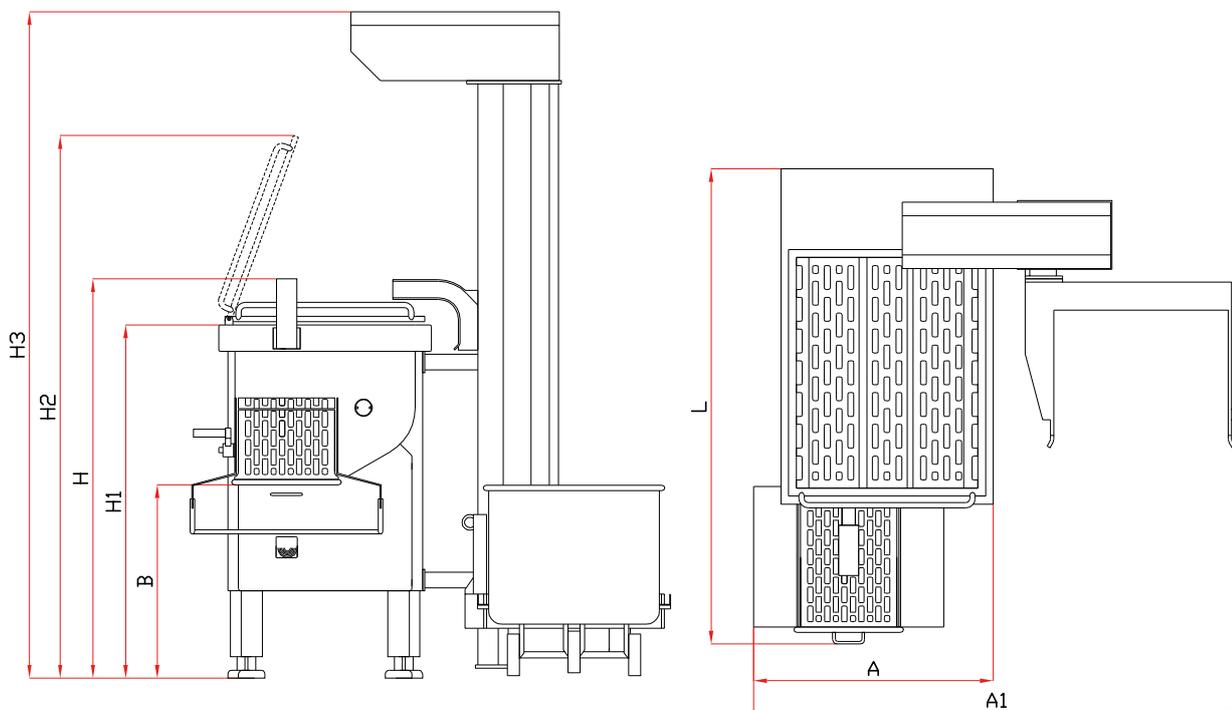


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
172	84	173	139	125	189	226	72±2



Paddle Mixer MIX-300

Total capacity [L]	300
Max filling [L]	240
Installed Power [kW]	4,5
Loader option	PZ-2/250
Column Loader power [kW]	0,75
Standard control	Button control panel
Shaft rotation speed [rpm]	24/48 II rotation speed & left/right rotation
Mixer net weight [kg]	505
Unloading to bin DIN 9797	200 l
Opennig/closing lids	manually

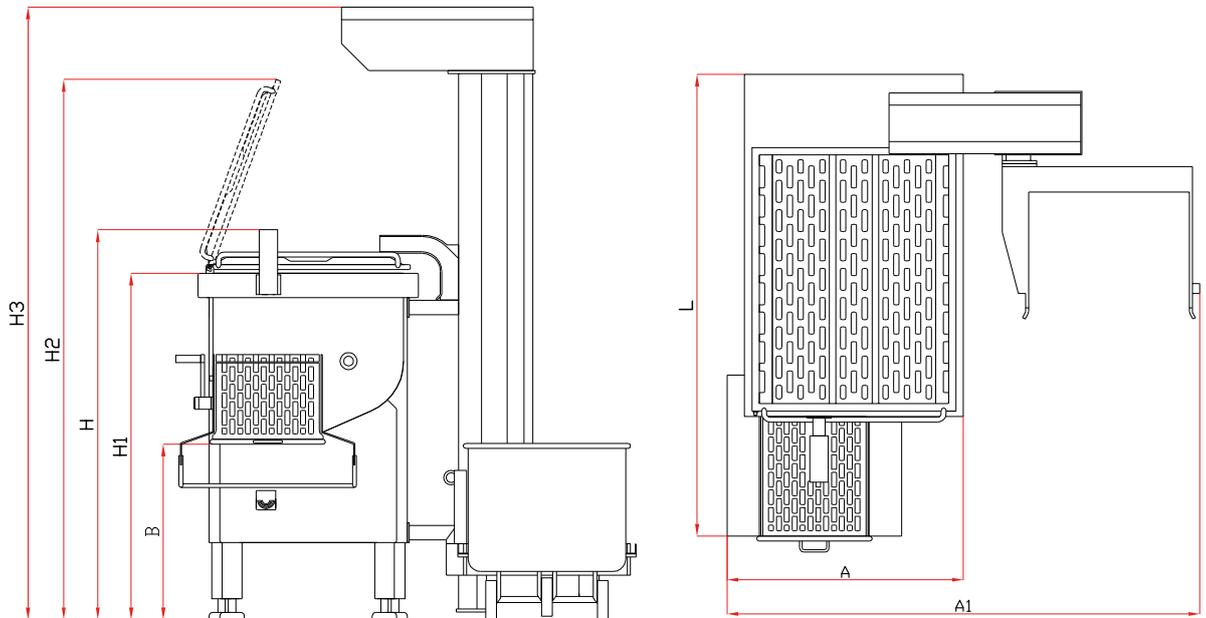


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
180	91	183	151	133	205	251	72±2

Paddle Mixer MIX-450

www.nadratowski.com

Total capacity [L]	450
Max filling [L]	360
Installed Power [kW]	4,5
Loader option	PZ-2/250
Column Loader power [kW]	0,75
Standard control	Button control panel
Shaft rotation speed [rpm]	24/48 II rotation speed & left/right rotation
Mixer net weight [kg]	556
Unloading to bin DIN 9797	200 l
Openning/closing lids	manually

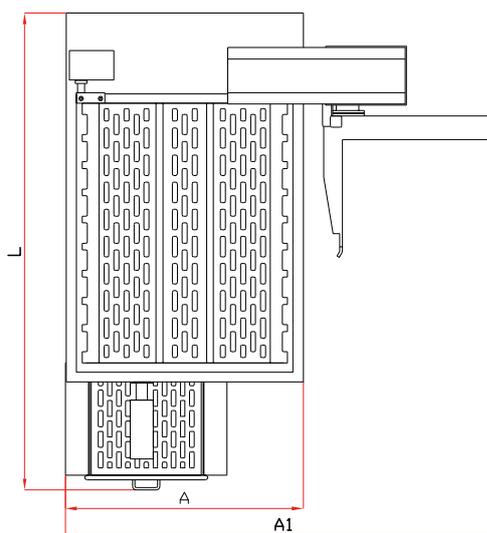
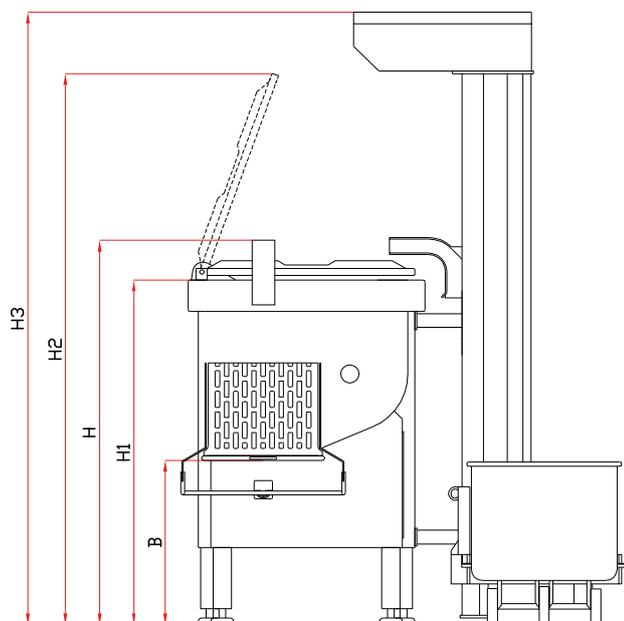


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
213	100	190	160	153	246	251	72±2



Paddle Mixer MIX-650

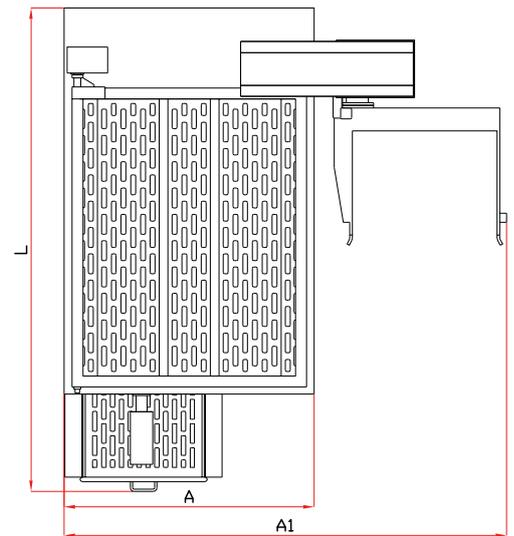
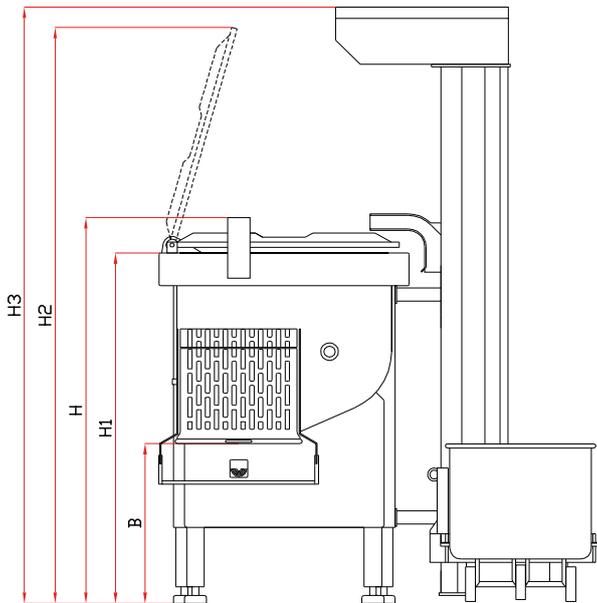
Total capacity [L]	650
Max filling [L]	520
Installed Power [kW]	8,0
Loader option	PZ-2/250
Column Loader power [kW]	0,75
Standard control	Button control panel
Shaft rotation speed [rpm]	18/36 II rotation speed & left/right rotation
Mixer net weight [kg]	980
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically



L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
213	107	195	170	153	246	271	72±2

Paddle Mixer MIX-900

Total capacity [L]	900
Max filling [L]	670
Installed Power [kW]	11,0
Loader option	PZ-2/250
Column Loader power [kW]	0,75
Standard control	Button control panel
Shaft rotation speed [rpm]	16/32 II rotation speed & left/right rotation
Mixer net weight [kg]	1100
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically

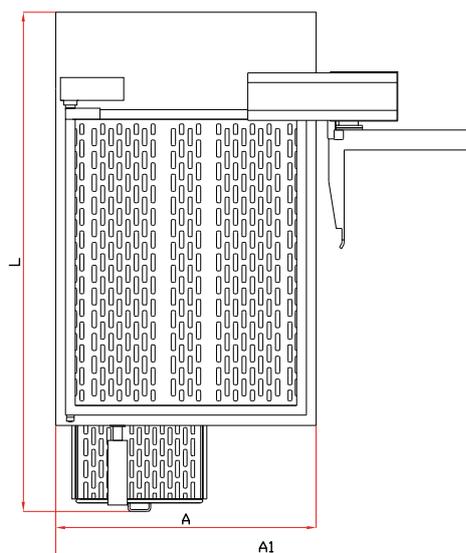
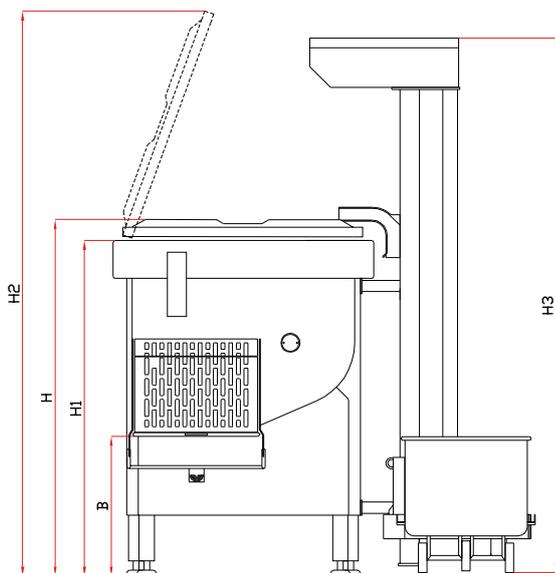


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
221	113	200	177	160	263	271	72±2



Paddle Mixer MIX-1500

Total capacity [L]	1500
Max filling [L]	1200
Installed Power [kW]	16
Loader option	PZ-2/250
Column Loader power [kW]	0,75
Standard control	Button control panel
Shaft rotation speed [rpm]	14/28 II rotation speed & left/right rotation
Mixer net weight [kg]	1955
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically

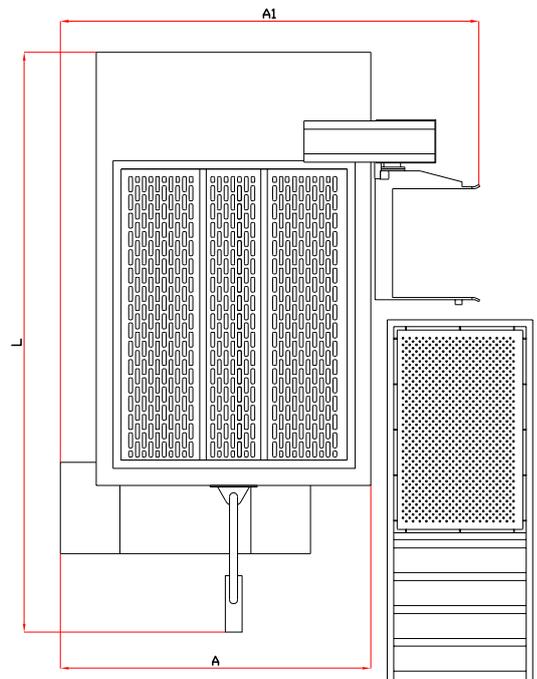
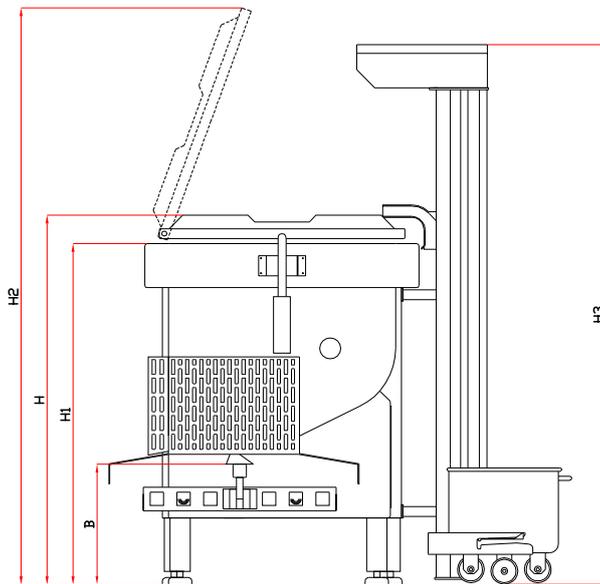


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
264	137	225	189	177	300	282	72±2

Paddle Mixer MIX-2400

www.nadratowski.com

Total capacity [L]	2400
Max filling [L]	1900
Installed Power [kW]	22
Loader option	PZ-2/250 or PW-2/1000
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	3 – 25 Variable speed
Mixer net weight [kg]	2950
Unloading to bin DIN 9797	2 x 200 l
Opennig/closing lids	pneumatically

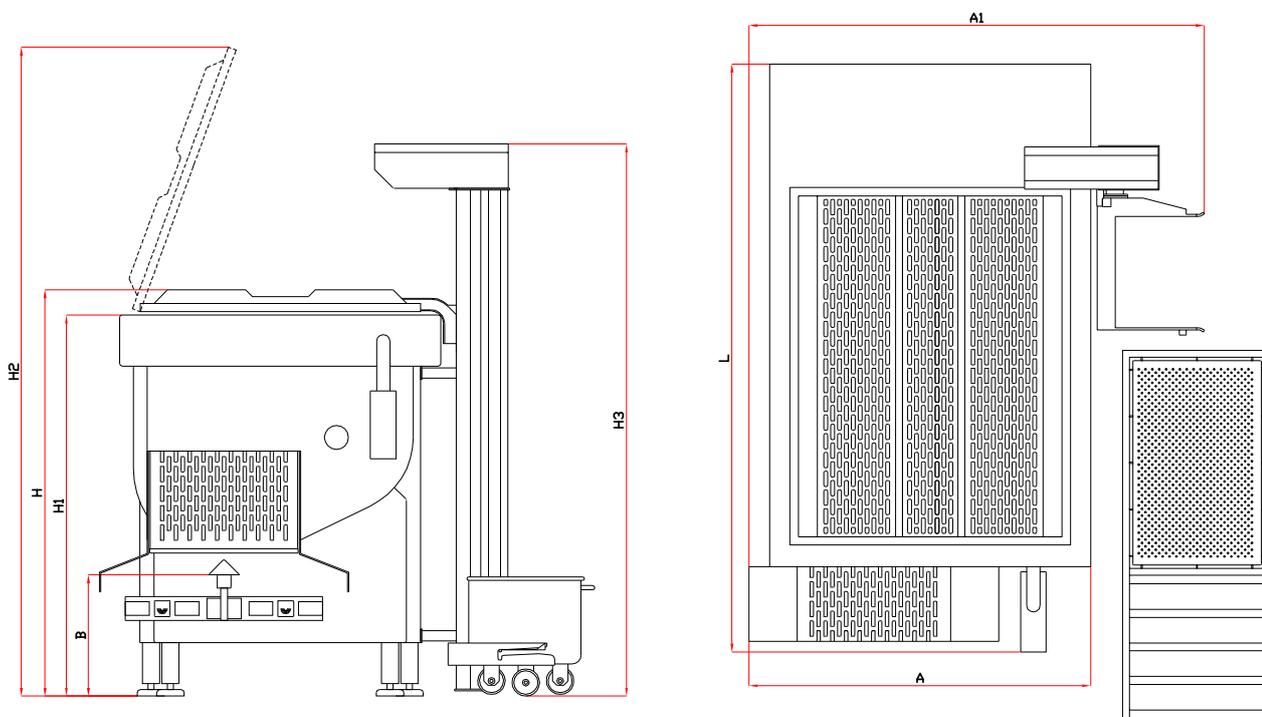


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
356	185	270	222	205	350	325	72±2



Paddle Mixer MIX-3600

Total capacity [L]	3600
Max filling [L]	2800
Installed Power [kW]	37
Loader option	PZ-2/250 or PW-2/1000
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	2 – 20 Variable speed
Mixer net weight [kg]	4800
Unloading to bin DIN 9797	2 x 200 l
Opennig/closing lids	pneumatically

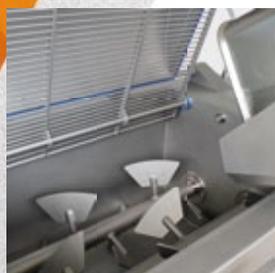


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
406	200	275	240	224	385	330	72±2

MIX
V

NO 1

N&N vacuum paddle mixers
MIX V series



INFO

The **N&N MIX-V** vacuum twin-shaft mixers are ideal for applications that need air evacuation prior to emulsifying, stuffing or forming. With optional cooling, it is also excellent for extended shelf life products such as meatballs, luncheon meat and patties. The effective mixing action with high peripheral wing speed gives good protein extraction and uniformed distribution of spices, additives and liquids.

VACUUM SYSTEM

The domed lid and walls of the chamber of the N&N MIX-V are reinforced to allow a vacuum of up to 98% (20mm Hg). The vacuum improves curing, protein extraction and enables control of the pre-mix density. Vacuum can be provided by a BUSCH vacuum pump in standard or any other make (dependent on customer choice).

EFFICIENT MIXING EFFECT AND SHORT DISCHARGE TIME

Thanks to a square mixing bowl, geometry and carefully balanced ratio between the paddle area and paddle pitch, the N&N MIX-V series have a highly efficient mixing action. The mixing paddle wings are driven by a strong motor and programmable variable speed as standard. The minimal clearance between mixing paddle wings and the bowl ensures that powders and other additives are thoroughly mixed without product damage. N&N MIX-V mixers are equipped with a large outfeed door, have a quick discharge time and leave minimal product residue between batches.

OPTIONAL COOLING

With optional liquid CO₂ or liquid N₂ cooling, this mixer is suitable for extended shelf life and formed products. Cooling provides the correct viscosity and product crystallization for forming, thus maintaining the product shape during further processing. Cooling also reduces bacterial growth and extends the shelf life of the mixture.

PROGRAMMABLE OPERATION

The **N&N** mixers MIX-V series are programmable and have a colour touch-screen for user-friendly operation. The software enables up to 100 mixing programs to be saved, each with up to 5 programmable steps.

SANITARY CONSTRUCTION

The body and the shafts of the MIX-V series of the N&N mixers are constructed in 100% of the stainless steel. All corners of the hopper and bowl are curved and surfaces are expertly ground and bead blasted or polished to facilitate thorough cleaning. A three zone construction of the drive, hygiene and mixing helps to keep the machine in a clean and tidy condition, not allowing creation of bacteria, as well as easy control of the condition of seals.

PERFORMANCE BENEFITS

- Air evacuation prior to emulsifying stuffing or forming
- Versatile pre-blender for emulsions
- Ideal for recipe mixing for wieners and franks
- Effective mixing action with high peripheral wing speed
- Good volume utilization with short mixing and discharge times
- Excellent distribution and absorption of liquids, spices and additives
- Very fast defrosting
- Easy programmable mixing for excellent consistency of a wide range of products
- Robust, reliable and easy-to-clean construction
- Easy operation, handling and sanitation

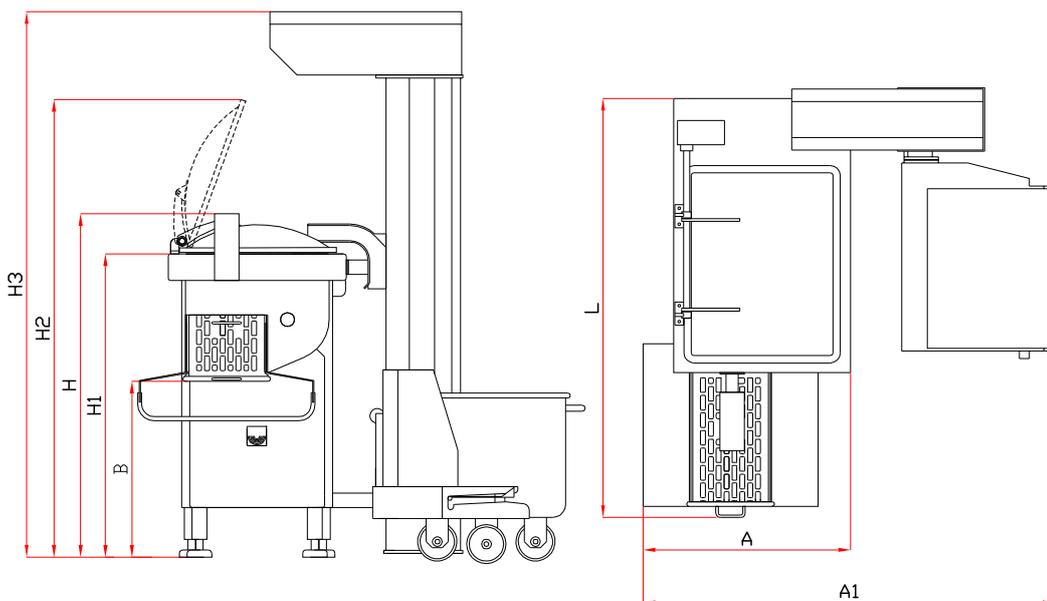
In order to satisfy all of your production needs, it is possible to equip the mixer with the following options:

- Column loader
- PLC and HMI in standard
- Variable speed control in standard PLC
- Weighing system
- Water dispenser
- Temperature sensor
- Liquid N₂ or CO₂ cooling with bottom- or top-mounted nozzles
- Additional grid allows processing with the vacuum lid opened
- Double heating/cooling jacket (soups, cheeses, sauces) – **MIX Cook series**
- Direct steam injection nozzles (example applications: ready meals, meat products, vegetables, baby food and petfood) - **MIX Cook series**
- Scrapers - **MIX Cook series**
- Ribbon shafts

Vacuum Paddle Mixer

MIX-180V

Total capacity [L]	180
Max filling [L]	120
Installed Power [kW]	3,0
Loader option	PZ-2/250
Vacuum pump	BUSCH 21m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	6 - 60 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	485
Unloading to bin DIN 9797	200 l [option 120 l]
Opennig/closing lids	pneumatically

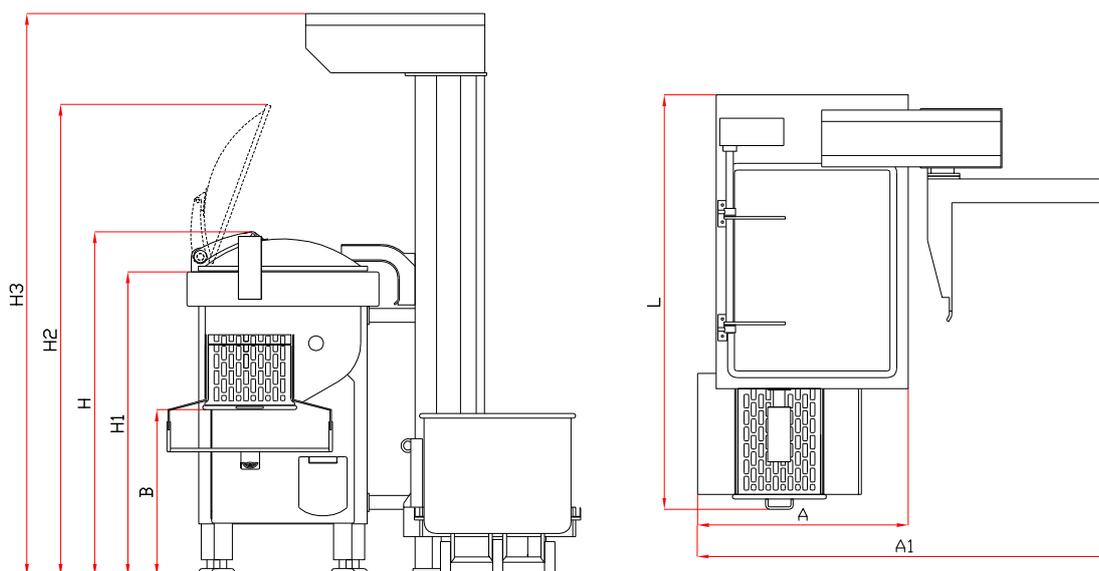


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
172	85	169	140	125	188	226	72±2



Vacuum Paddle Mixer MIX-300V

Total capacity [L]	300
Max filling [L]	240
Installed Power [kW]	4,7
Loader option	PZ-2/250
Vacuum pump	BUSCH 21m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	5 - 48 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	662
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically



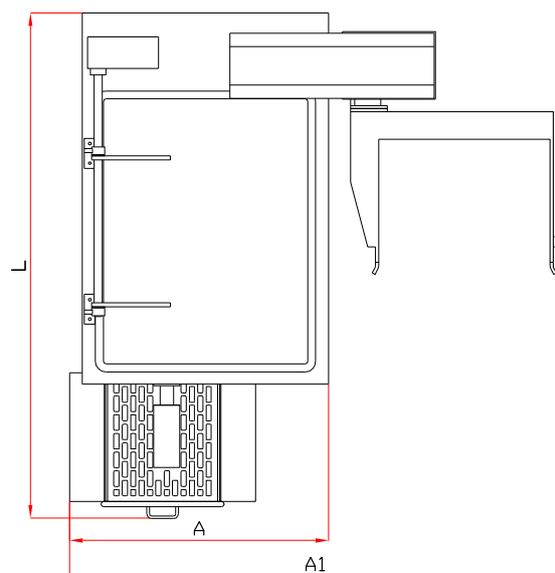
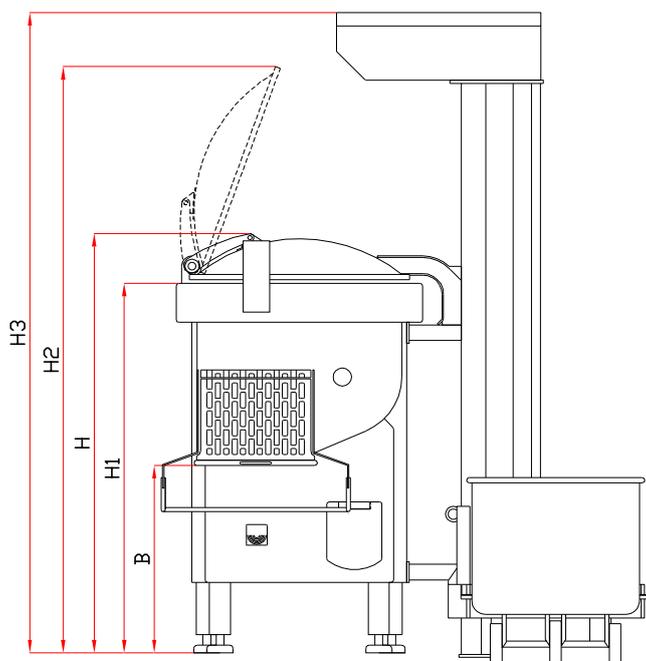
L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
180	93	181	152	133	207	251	72±2

Vacuum Paddle Mixer

MIX-450V

www.nadratowski.com

Total capacity [L]	450
Max filling [L]	360
Installed Power [kW]	6,2
Loader option	PZ-2/250
Vacuum pump	BUSCH 21m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	5 - 40 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	760
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically

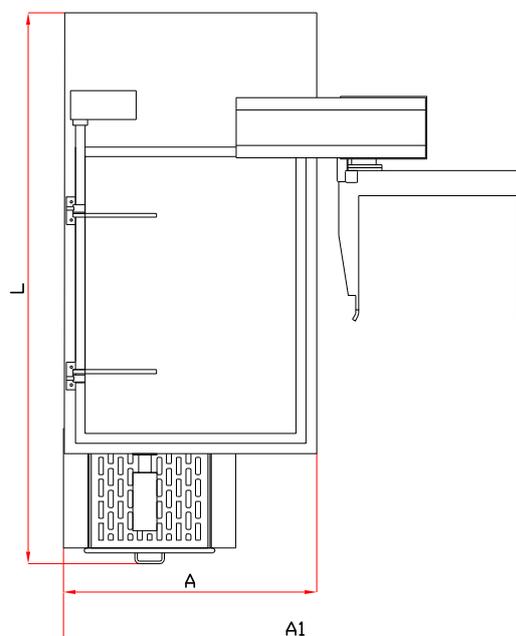
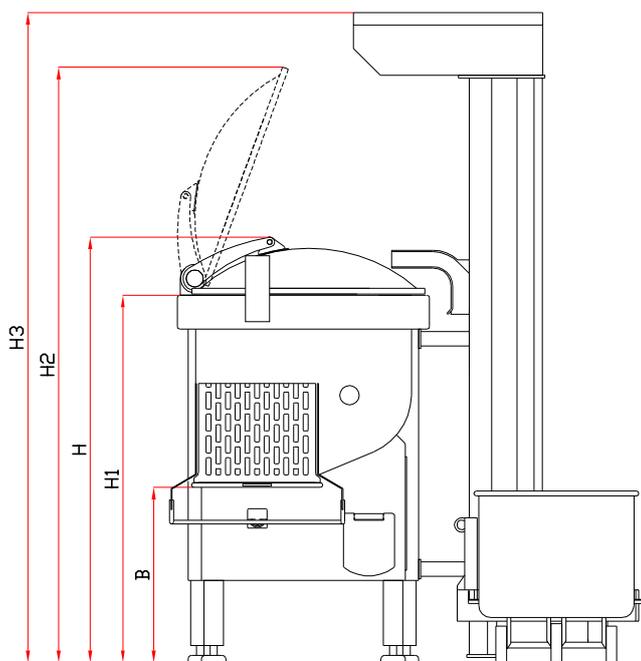


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
195	100	162	162	142	226	251	72±2



Vacuum Paddle Mixer MIX-650V

Total capacity [L]	650
Max filling [L]	520
Installed Power [kW]	10,3
Loader option	PZ-2/250
Vacuum pump	BUSCH 40m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	4 - 36 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	1100
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically

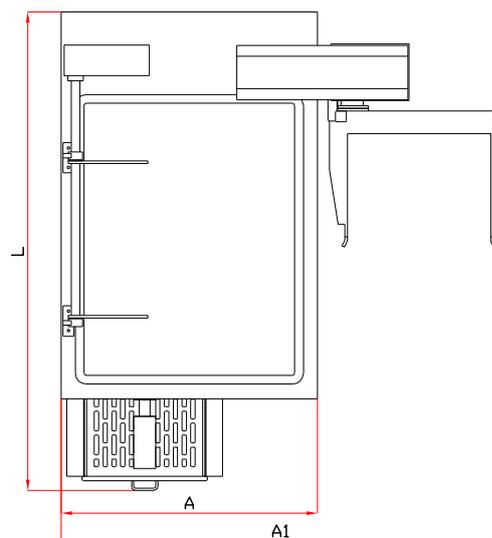
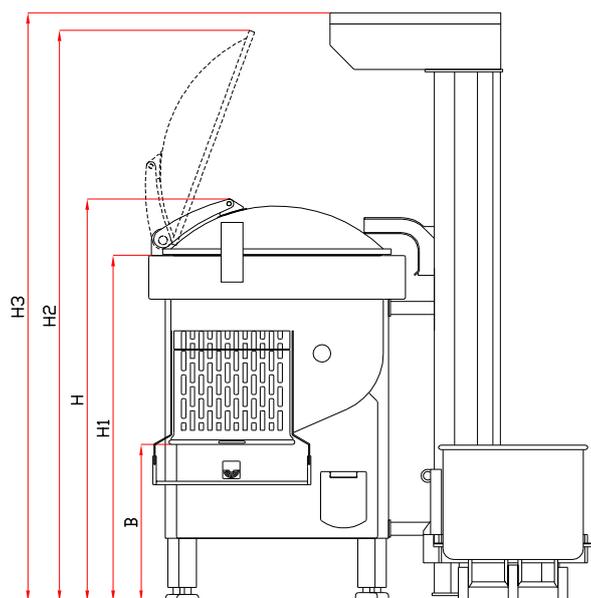


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
228	110	200	177	153	250	271	72±2

Vacuum Paddle Mixer MIX-900V

www.nadratowski.com

Total capacity [L]	900
Max filling [L]	670
Installed Power [kW]	12,1
Loader option	PZ-2/250
Vacuum pump	BUSCH 40m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	4 - 32 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	1310
Unloading to bin DIN 9797	200 l
Openning/closing lids	pneumatically

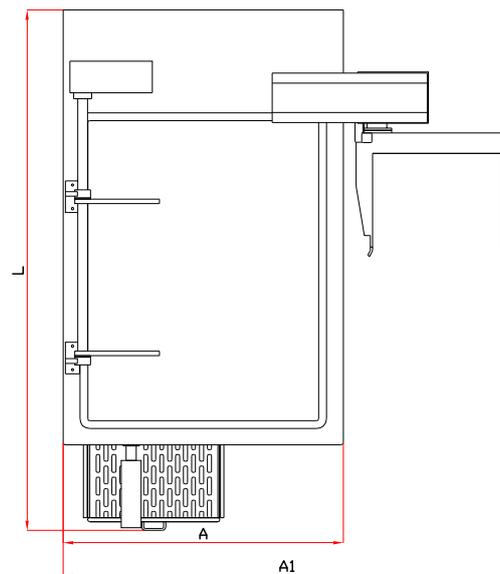
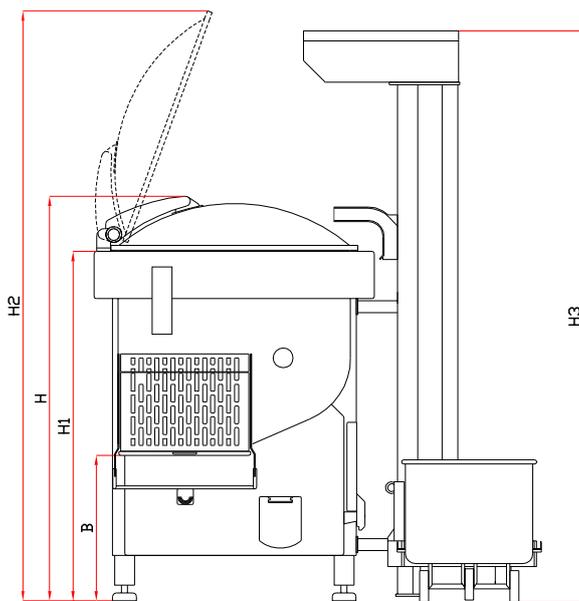


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
222	120	201	186	160	263	271	72±2



Vacuum Paddle Mixer MIX-1500V

Total capacity [L]	1500
Max filling [L]	1200
Installed Power [kW]	16,5
Loader option	PZ-2/250
Vacuum pump	BUSCH 63m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	3 - 28 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	2320
Unloading to bin DIN 9797	200 l
Opennig/closing lids	pneumatically

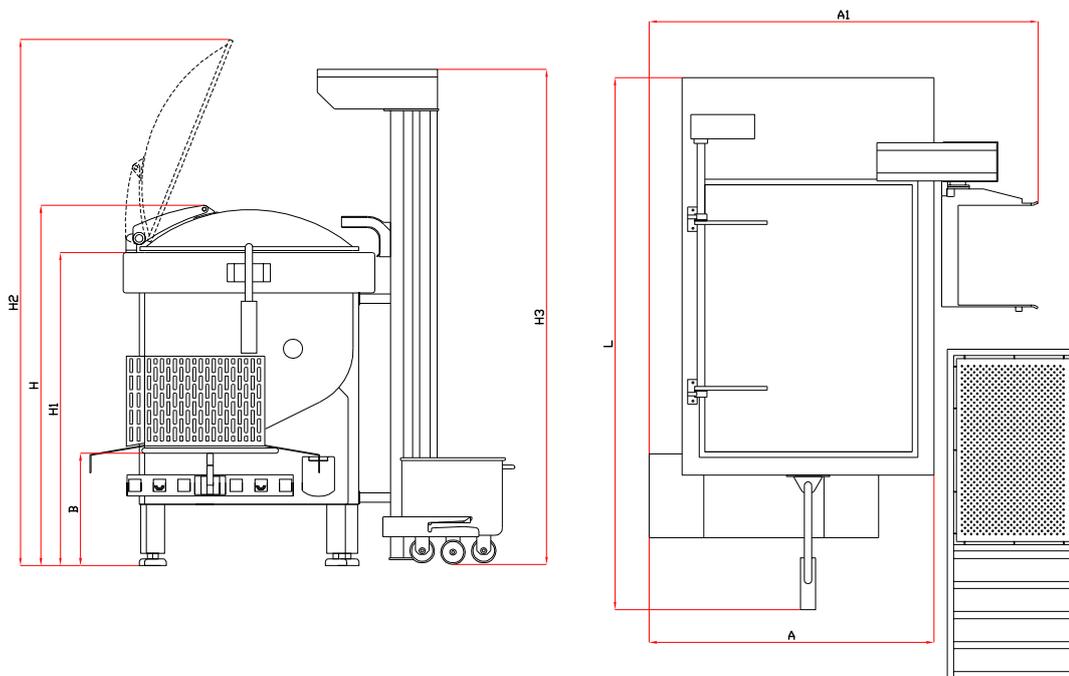


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
265	141	225	205	177	301	282	72±2

Vacuum Paddle Mixer MIX-2400V

www.nadratowski.com

Total capacity [L]	2400
Max filling [L]	1900
Installed Power [kW]	24,2
Loader option	PZ-2/250 or PW-2/1000
Vacuum pump	BUSCH 100m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	3 – 25 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	3415
Unloading to bin DIN 9797	2 x 200 l
Opennig/closing lids	pneumatically

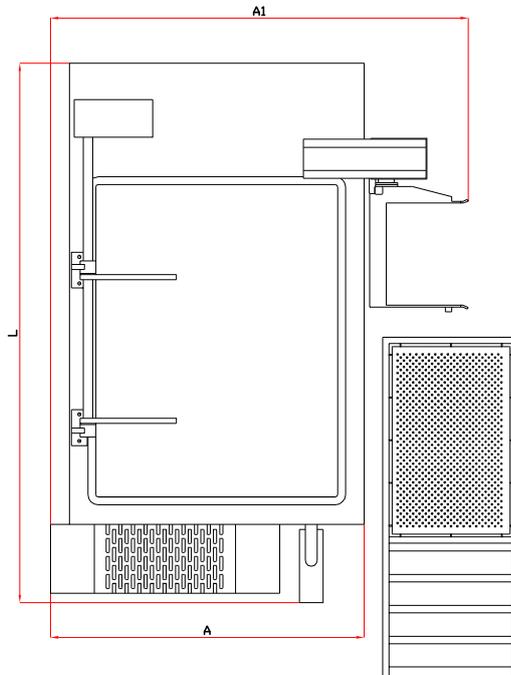
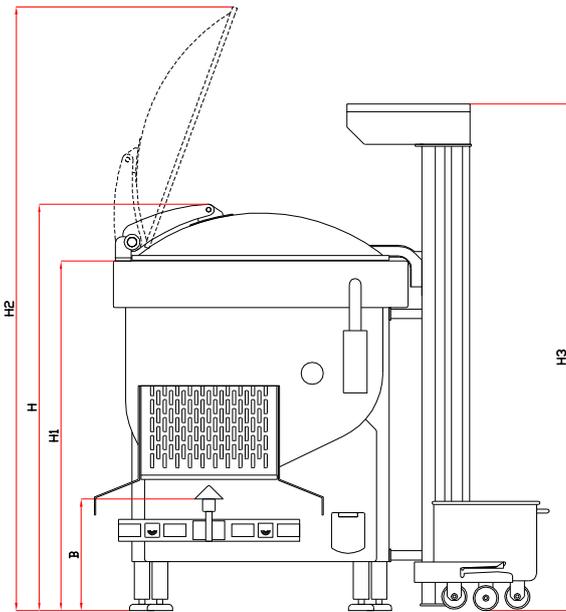


L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
356	185	255	236	206	345	325	72±2



VacuumPaddle Mixer MIX-3600V

Total capacity [L]	3600
Max filling [L]	2800
Installed Power [kW]	41,0
Loader option	PZ-2/250 or PW-2/1000
Vacuum pump	BUSCH 120m3/h
Column Loader power [kW]	0,75
Standard control	PLC and HMI
Shaft rotation speed [rpm]	2 - 20 Variable speed
Required pressure [bar]	6
Mixer net weight [kg]	5253
Unloading to bin DIN 9797	2 x 200 l
Opennig/closing lids	pneumatically



L [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
406	200	275	260	224	390	330	72±2

MIX
ZV

NO. 1

N&N Z-arm mixers
with tiltable hopper

MIX-Z & ZV series



INFO

N&N offers high quality 300, 500, 1000 and 1500 liters **MIX-Z and ZV** series of Z-arm mixers. The option of a machine's individual configuration and a vast range of additional accessories will allow you to choose the solution that best suits your requirements. High manufacturing quality and construction will keep the machine tidy and free from bacterial sources.

EFFICIENT MIXING EFFECT AND SHORT DISCHARGE TIME

N&N MIX-Z and ZV mixers are best suited for intensive mixing of thick and heavy products, such as kebab meat, as well as dough and butter based products. The bowl includes two intermeshing Z-shaped mixing arms. These types of mixers are equipped with hydraulic lid-opening system and are emptied by hydraulically tilting the bowl directly into a tote bin(s).

OPTIONAL VACUUM SYSTEM

The domed lid and walls of the bowl of the **N&N** MIX-ZV are reinforced to allow a vacuum of up to 98% (20mm Hg). The vacuum improves curing, protein extraction and enables control of the pre-mix density. Vacuum can be provided by a **BUSCH** vacuum pump or any other make (dependent on customer choice).

PROGRAMMABLE OPERATION

The **N&N** MIX-Z and ZV series mixers are programmable and have a colour touch-screen for user-friendly operation. The software enables up to 100 mixing programs to be saved, each with up to 5 programmable steps.

SANITARY CONSTRUCTION

The body and the shafts of the MIX-Z and ZV series of the **N&N** mixers are constructed in 100% of the stainless steel. All corners of the hopper and bowl are curved and surfaces are expertly ground and bead blasted or polished to facilitate thorough cleaning. A three zone construction of the drive, hygiene and mixing helps to keep the machine in a clean and tidy condition, not allowing creation of bacteria, as well as easy control of the condition of seals.

PERFORMANCE BENEFITS

- Air evacuation prior to forming stuffing (MIX-ZV)
- Effective mixing action with high peripheral wing speed
- Good volume utilization with short mixing and discharge times
- Excellent distribution and absorption of liquids, spices and additives
- Easy programmable mixing for excellent consistency of a wide range of products
- Robust, reliable and easy-to-clean construction
- Easy operation, handling and sanitation

In order to satisfy all of your production needs, it is possible to equip the mixer with the following options:

- Column loader
- Paddle shafts
- PLC and HMI in standard
- Variable speed control in standard
- Temperature sensor
- Weighing system
- Water dispenser
- Liquid N2 or CO2 cooling
- Double heating/cooling jacket (soups, cheeses, sauces)
- Scrapers (only for paddle shafts)

Z-Arm

Mixer with tiltable hopper

MIX-300Z

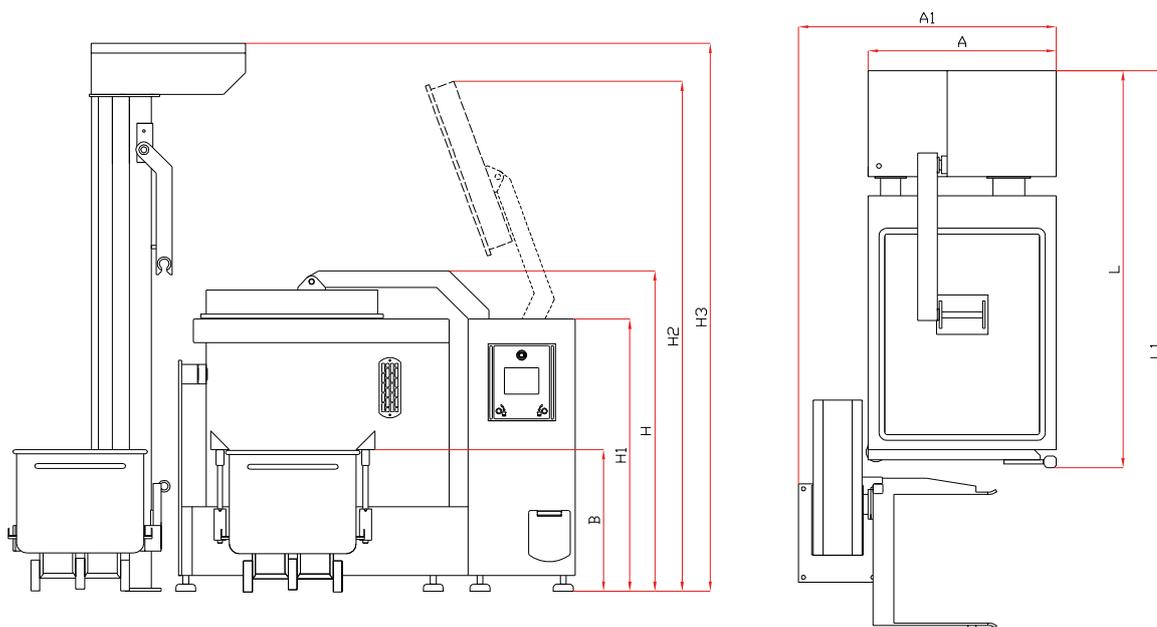
MIX-300ZV



MIX-300Z

	MIX-300Z	MIX-300ZV
Total capacity [L]	300	300
Max filling [L]	180	180
Installed Power [kW]	9,0	9,7
Loader option	PW-2/250	PW-2/250
Vacuum pump	-	BUSCH 21m3/h
Column Loader power [kW]	0,75	0,75
Standard control	PLC and HMI	PLC and HMI
Shaft rotation speed [rpm]	5 - 48 Variable speed	5 - 48 Variable speed
Mixer net weight [kg]	1100	1180
Unloading to bin DIN 9797	200 l	200 l
Openning/closing lids	hydraulically	hydraulically

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L [cm]	L1[cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
202	290	96	130	163	140	260	268	72±2



Z-Arm

Mixer with tiltable hopper

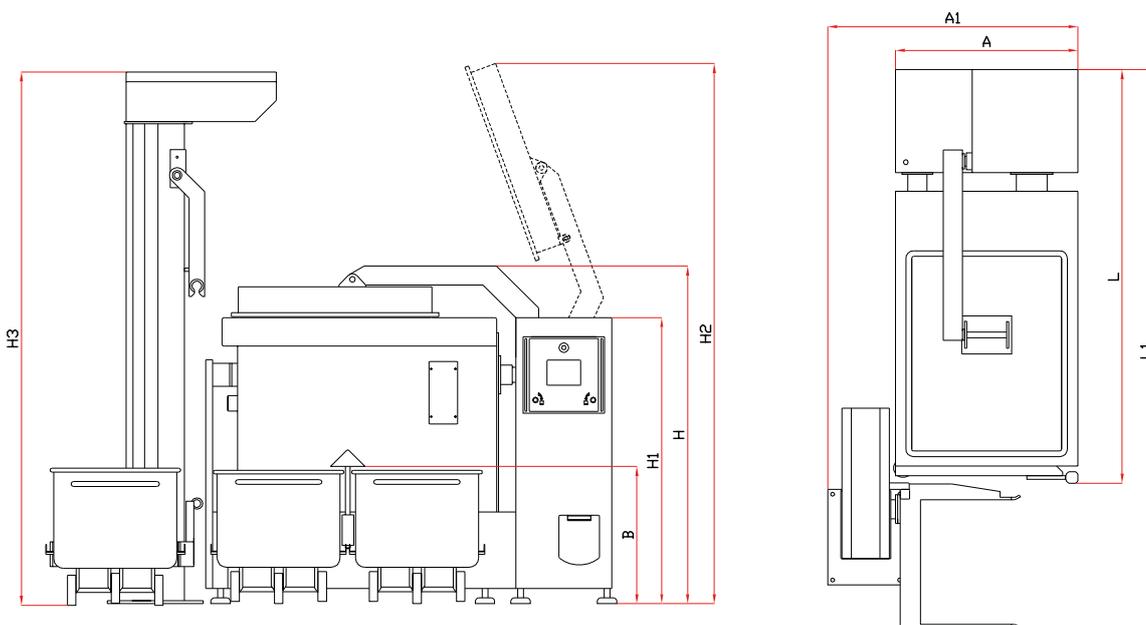
MIX-500Z

MIX-500ZV



MIX-500Z

	MIX-500Z	MIX-500ZV
Total capacity [L]	500	500
Max filling [L]	250	250
Installed Power [kW]	12,5	13,2
Loader option	PW-2/250	PW-2/250
Vacuum pump	-	BUSCH 21m3/h
Column Loader power [kW]	0,75	0,75
Standard control	PLC and HMI	PLC and HMI
Shaft rotation speed [rpm]	4 – 40 Variable speed	4 – 40 Variable speed
Mixer net weight [kg]	1400	1500
Unloading to bin DIN 9797	2 x 200 l	2 x 200 l
Opennig/closing lids	hydraulically	hydraulically



L [cm]	L1[cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
215	305	110	140	181	154	285	268	72±2

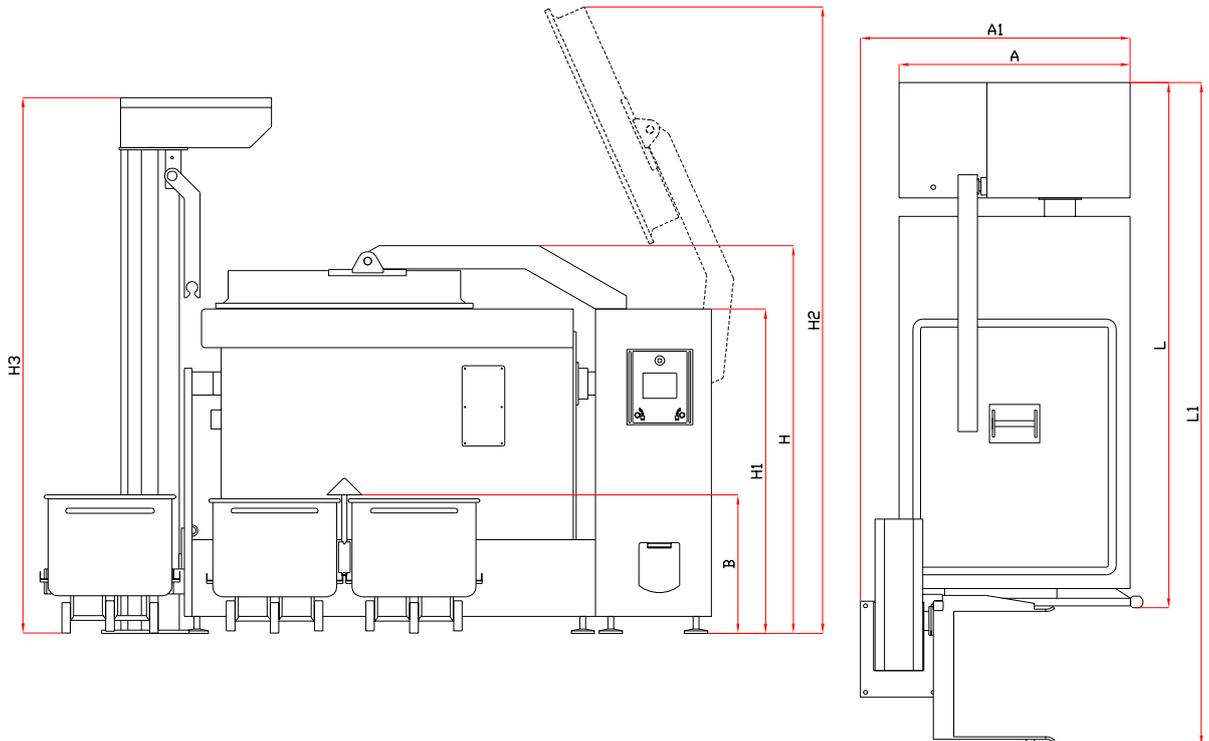
Z-Arm Mixer with tiltable hopper **MIX-1000Z** **MIX-1000ZV**

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	MIX-1000Z	MIX-1000ZV
Total capacity [L]	1000	1000
Max filling [L]	550	550
Installed Power [kW]	23,5	24,6
Loader option	PW-2/250	PW-2/250
Vacuum pump	-	BUSCH 40m3/h
Column Loader power [kW]	0,75	0,75
Standard control	PLC and HMI	PLC and HMI
Shaft rotation speed [rpm]	4 - 30 Variable speed	4 - 30 Variable speed
Mixer net weight [kg]	3400	3500
Unloading to bin DIN 9797	2 x 200 l	2 x 200 l
Opennig/closing lids	hydraulically	hydraulically



MIX-1000Z



L [cm]	L1 [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
273	352	134	165	202	170	326	270	72±2



Z-Arm

Mixer with tiltable hopper

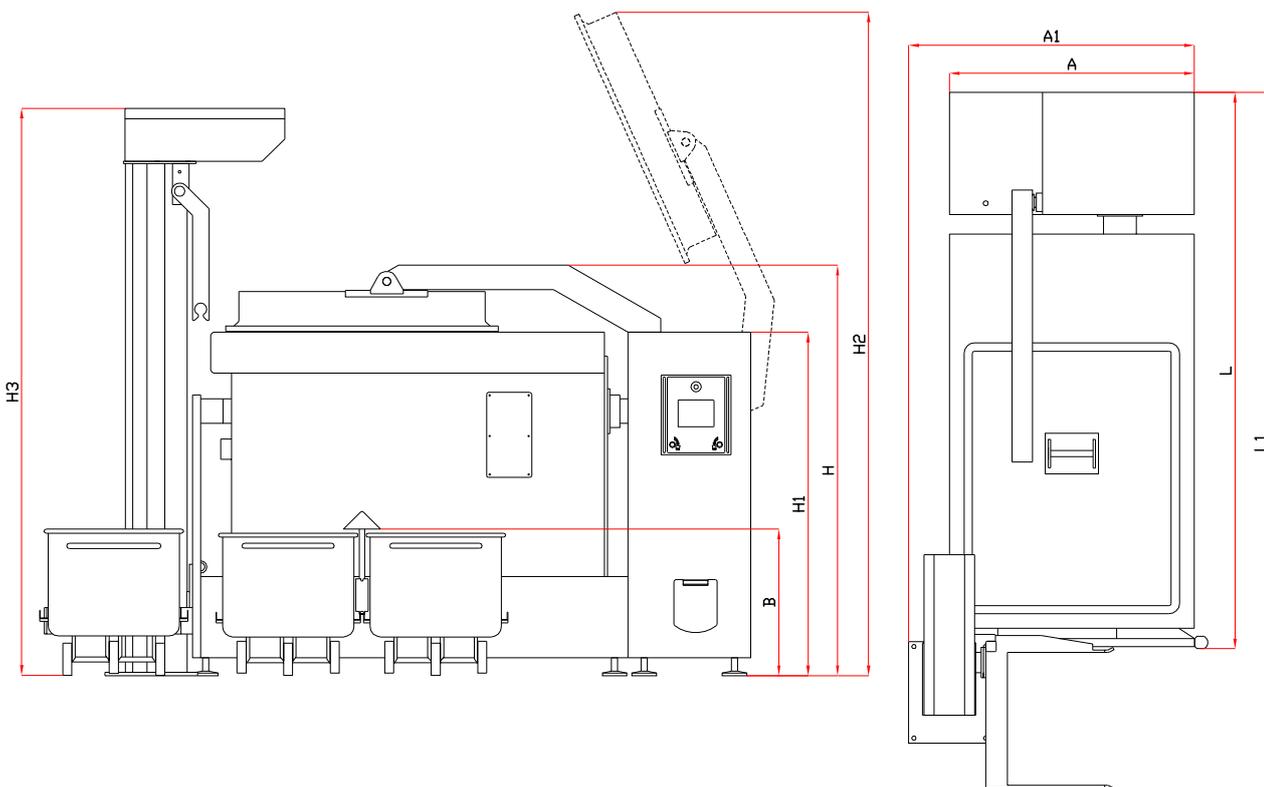
MIX-1500Z

MIX-1500ZV



MIX-1500ZV

	MIX-1500Z	MIX-1500ZV
Total capacity [L]	1500	1500
Max filling [L]	900	900
Installed Power [kW]	31,5	33,0
Loader option	PW-2/250	PW-2/250
Vacuum pump	-	BUSCH 63m3/h
Column Loader power [kW]	0,75	0,75
Standard control	PLC and HMI	PLC and HMI
Shaft rotation speed [rpm]	3 – 28 right/left Variable speed	3 – 28 right/left Variable speed
Mixer net weight [kg]	4200	4400
Unloading to bin DIN 9797	2 x 200 l	2 x 200 l
Openning/closing lids	hydraulically	hydraulically



L [cm]	L1 [cm]	A [cm]	A1 [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
330	406	160	184	230	195	378	297	72±2

MG

NO 1

N&N mixer grinders
MIX MG
series



INFO

MG series of N&N mixer-grinder is an innovative combination of a twin shaft paddle mixer and a high-class grinding head, which is ideally suited for preparing and grinding products such as meat, poultry, sausage stuffing, hamburgers, nuggets and others. The mixer-grinder is a compact machine, which provides an effective mixing and a quick grinding solution.

SHORTER MIXING TIME

The gentle but effective stirring action of the two intermeshing paddle wings maintains excellent particle definition and ensures even product distribution. It is ideal for mixing and grinding pre-ground meat or delicate meat products, where effective mixing requires quick results. A variable speed mixer is available as an option.

GRINDER UNIT

Specially developed to grind pre-blends, the grinder worm is situated in the lower chamber of the mixing bowl, ensuring constant infeed and effective discharge.

SANITARY CONSTRUCTION

Frame, body and mixing paddle wings are made from stainless steel. All corners of the hopper and the cabinet are curved, and the surfaces are fine-ground and polished. A three zone construction of the drive, hygiene and mixing helps to keep the machine in a clean and tidy condition, not allowing creation of bacteria, as well as easy control of the condition of seals.

PROGRAMMABLE OPERATION

The N&N mixer-grinders MG series can be equipped optionally with colour touch-screen and PLC for user-friendly operation. The software enables up to 100 mixing programs to be saved, each with up to 5 programmable steps.

OPTIONAL COOLING

With optional liquid CO₂ or liquid N₂ cooling, the mixer is suitable for extended shelf life and formed products. Cooling provides the correct viscosity and product crystallization for forming, thus maintaining the product shape during further processing. Cooling also reduces bacterial growth and extends the shelf life of the mixture.

PERFORMANCE BENEFITS

- Gentle and highly effective mixing
- Consistent quality throughout the entire batch
- Fresh meat grinding for case ready applications
- Maintains excellent product structure and even product density
- Multi-functional design is compact and space saving
- Options include cooling, dosing, weighing, easy clean seals and variable mixing speed
- Space and labour saving solutions
- Easy programmable mixing for excellent consistency of a wide range of products
- Easy operation, handling and hygiene
- Minimum product residue and cross-mixing of batches
- Robust and reliable

In order to satisfy all of your production needs, it is possible to equip the mixer with the following options:

- Column loader
- PLC and HMI
- Variable speed control
- Separator for tendons and bones with sorting knife.
- Temperature sensor
- Weighing system
- Water dispenser
- "Easy clean" system – a special system of monolithic seals, that allows thorough cleaning inside the machine. This is achieved through quick and easy disassembly (5 minutes)
- Liquid N₂ or CO₂ cooling with bottom- or top-mounted nozzles
- Double heating/cooling jacket (mash, cheeses, sauces)
- Direct steam injection nozzles (example applications: ready meals,
- meat products, vegetables, baby food and petfood)
- Scrapers

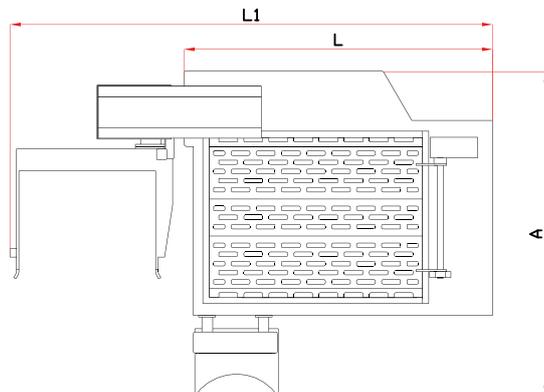
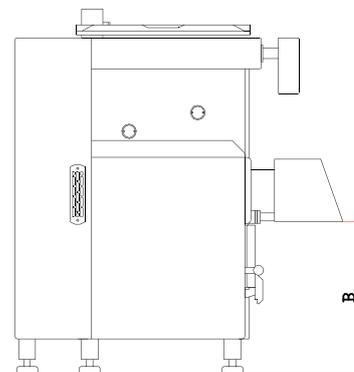
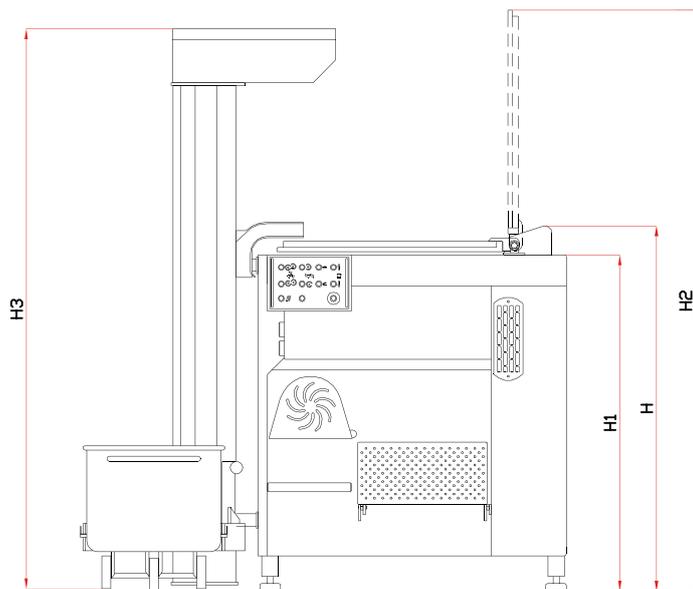
Mixer Grinder MG-450/160 MG-900/160

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	MG-450/160	MG-900/160
Total capacity [L]	450	900
Max filling [L]	350	650
Diameter of throat [mm]	160	160
Supply voltage [V,Hz]	400, 50	400, 50
Mixer Power [kW]	4,5	11,0
Standard control	Button control panel	Button control panel
Grinder Power [kW]	18,5/30,0 as an option	18,5/30,0 as an option
Weight [kg]	1530	1970
Opening/closing lids	pneumatically	pneumatically

MG-450/160

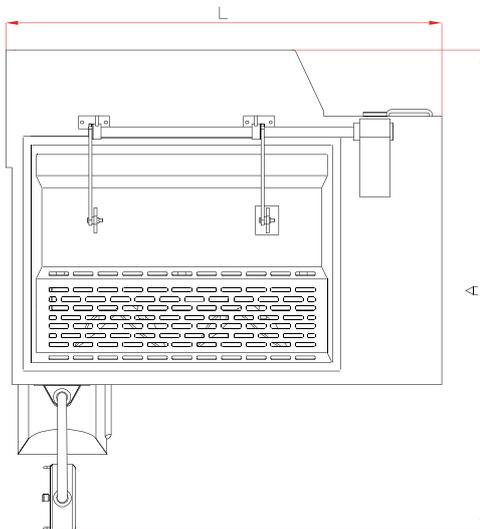
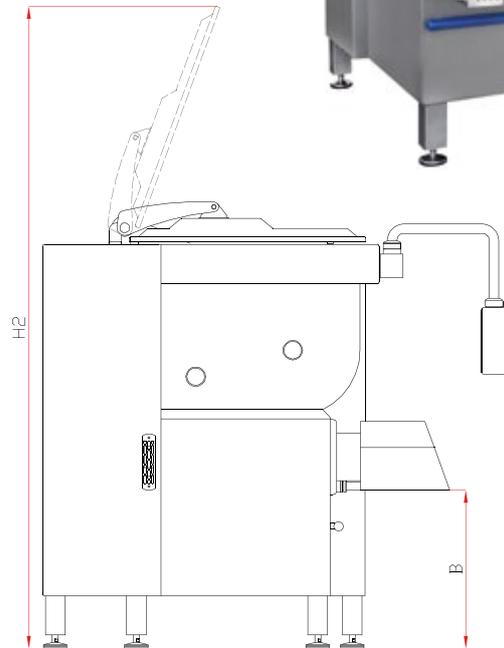
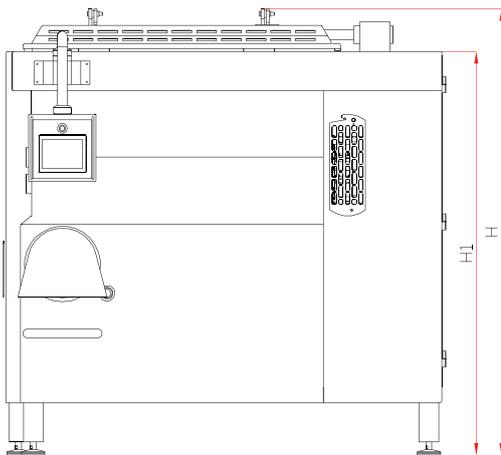


	L [cm]	L1 [cm]	A [cm]	H [cm]	H1 [cm]	H2 [cm]	H3 [cm]	B [cm]
MG-450/160	148	231	166	176	162	280	271	73±2
MG-900/160	186	269	190	225	205	350	300	73±2



Mixer Grinder MG-1500/200

Total capacity [L]	1500
Max filling [L]	1200
Diameter of throat [mm]	200
Supply voltage [V,Hz]v/vv	400,5
Mixer Power [kW]	15
Standard control	Button control panel
Grinder Power [kW]	36,0/55,0 as an option
Weight [kg]	2780
Opening/closing lids	pneumatically



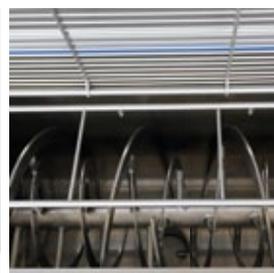
L [cm]	A [cm]	H [cm]	H1 [cm]	H2 [cm]	B [cm]
221	250	228	207	330	81±2

RM

NO 1

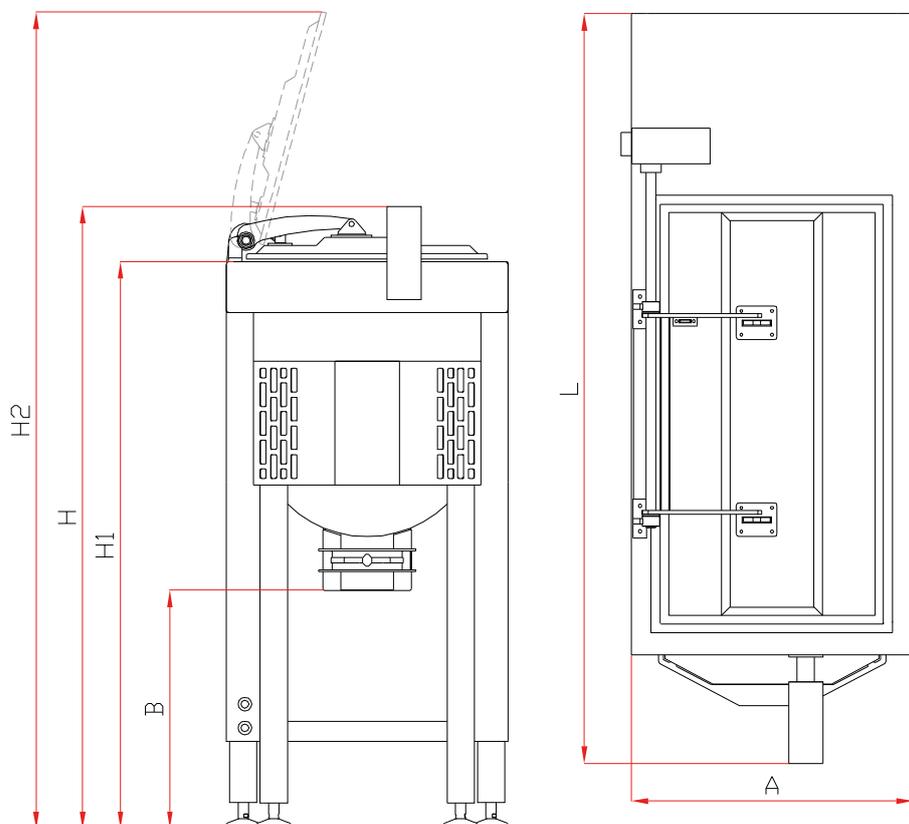
N&N double helix
ribbon mixers

RM series



IN MIXING

Double Helix Ribbon Mixer RM-600



RM-600

	RM-300	RM-600	RM-1000
Total capacity [L]	300	600	1000
Max filling [L]	240	480	800
Installed Power [kW]	5,5	7,5	11,0
Standard control	II rotation speed & left/right rotation	II rotation speed & left/right rotation	II rotation speed & left/right rotation
Shaft rotation speed [rpm]	16/32	14/28	24.12.2014
Type of discharge	Ø150mm butterfly valve	Ø150mm butterfly valve	Ø200mm butterfly valve
Mixer net weight [kg]	640	940	1280
Opening/closing lid and valve	pneumatically	pneumatically	pneumatically
Loader option	PW-2/250	PW-2/250	PW-2/250

	L [cm]	A [cm]	H [cm]	H1 [cm]	H2 [cm]	B [cm]
RM-300	190	67	174	157	214	72±2
RM-600	225	83	185	170	245	72±2
RM-1000	261	95	202	188	272	72±2

N&N frozen block flakers

MIX FL series

INFO

FLAKER FL-414/440 series is designed for the continuous reduction of frozen product at very low temperatures and high volumes whilst maintaining a high quality cut, especially suitable for further processing in bowl choppers, grinders or other downstream equipment. This is achieved by the unique blade design and cutting drum geometry, coupled with the integrated block hold down device and the unique block feeding system.

HIGH EFFICIENCY

N&N FLAKER FL-414/440 With a cutting area of 250 x 420 x 650 mm (10 x 16 ½" x 25 ½") these machines are capable of handling any common block size, whether standard EURO-2-blocks or US 60 lbs-blocks (8" x 16" x 24") and reach capacities, due to the integrated pneumatic feeding ram, of up to 3,6T/hr.

VERSATILITY

N&N Nadratowski Food Processing Equipment worldwide is the only supplier offering 3 different sizes of blades for its rotating cutters. The raw materials, further processing method and the required product size, determine the cutting thickness, which can be between 3 and 45 mm.

CONSTRUCTED TO MAKE IT EASY TO KEEP IT CLEAN

Due to the fully opening cover over the cutting area and the

quick disassembly of the feeding ram, cleaning of the machine is made very easy. All product contact parts are blasted, ground or polished, and the machine body is a completely closed designed, with the control box integrated into the machine frame. Therewith N&N sets the hygiene standard in the industry.

THE HIGHEST QUALITY

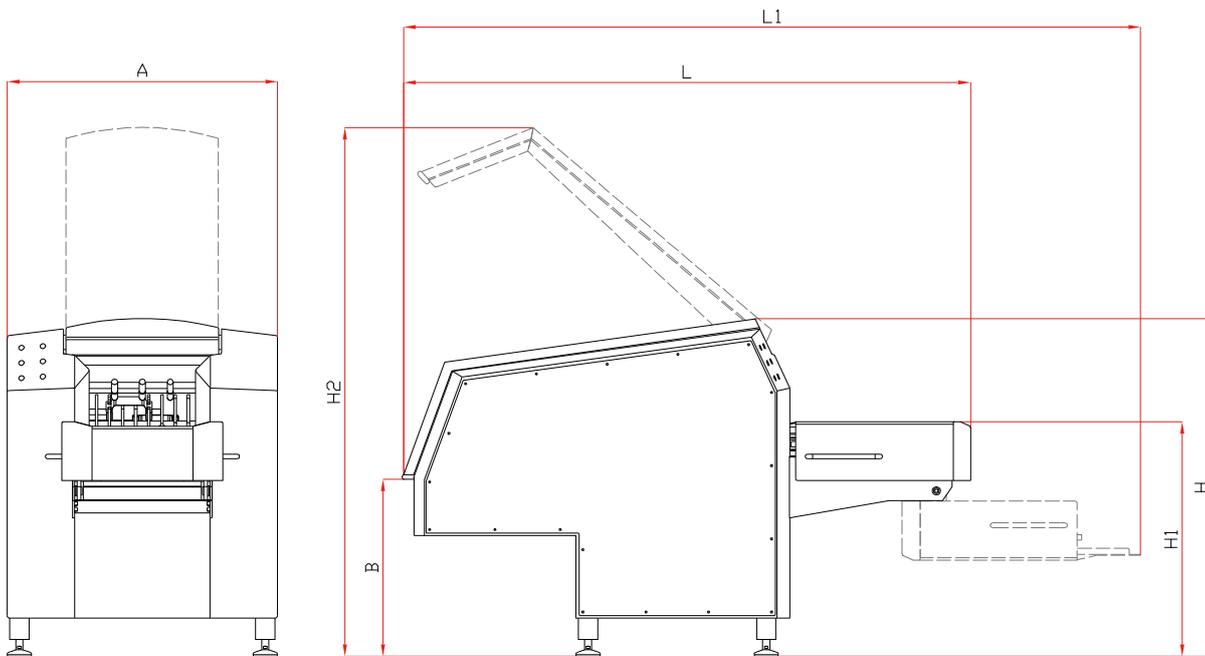
The mixer is certified with hygiene and safety regulations as well as with CE mark. N&N Nadratowski company applies a management system EN ISO 9001:2008 in line with the above standard for the following scope: Manufacture and service of machines for food industry. The certification was conducted in accordance with the TUV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.



Frozen Block Flaker FL-414/440

IN MIXING

Theoretical maximum yield	3600kg/h
Cutting dimensions	250 x 420 x 650 mm
Cutting sizes	FL-414 – 3,6,9 mm FL-440 – 14,17,20 mm
Block temperature	- 30°C
Amount of cutting blades	4 pcs
Electric tension	400 V 50Hz
Installed power	9,2 kW
Standard control	Button control panel
Speed of cutting drum	75 rpm; 145 rpm
Net Weight	980 kg
Opening of cover	pneumatically "FESTO"
Cutting into	200l bin DIN9797



L [cm]	L1 [cm]	A [cm]	H [cm]	H1 [cm]	H2 [cm]	B [cm]
235	305	114	141	98	201	74±2

MV

NO 1

N&N vacuum tumbler
MV series



INFO

N&N MV series vacuum tumblers are unique machines with a mechanically moving drum used to mix and marinate meat and poultry products, with or without vacuum, also suitable for mixing cereal and vegetable products. N&N MV series is specially developed for massaging/tumbling with the highest degree of quality. The large diameter lid, tilting function, drum design and drive control ensures the shortest possible batch processing time, resulting in the maximum number of batches per production day.

A SAFE, CONTROLLED ENVIRONMENT

Massaging and tumbling can be done under continuous vacuum, providing a closed environment for better food safety and greater product consistency.

MAXIMUM OPERATIONAL FLEXIBILITY AND CLEANABILITY

N&N MV-series can be placed in any working position allowing maximum flexibility due to 270° tilting. The wide lid opening simplifies loading and discharge of a product.

The design with no hidden corners provides full access for inspection and ensures effective cleaning.

VACUUM SYSTEM

The reinforced construction enables the N&N MV series to create a vacuum of up to 98% (20 mm Hg). The vacuum improves curing, protein extraction and enables control of the pre-mix density. Vacuum can be provided by a BUSCH vacuum pump or any other make (dependent on customer choice).

PROGRAMMABLE OPERATION

The N&N vacuum tumblers MV series are programmable and have a colour touch-screen for user-friendly operation. The software enables up to 100 mixing programs to be saved, each with up to 5 programmable steps.

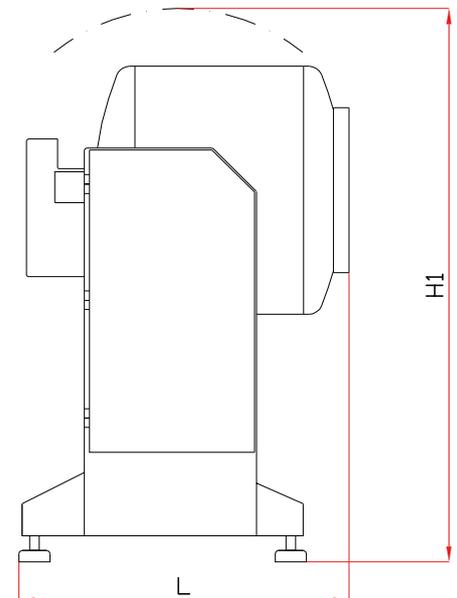
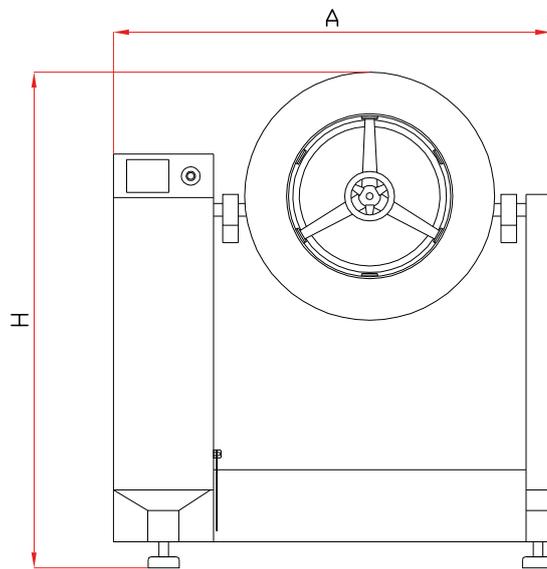
PERFORMANCE BENEFITS

- Accurately planned drum shape and rake system
- PLC and HMI microprocessor controller
- Smooth control over all tumbling parameters
- Built in vacuum system
- Multistage vacuum pump protection
- Pulse vacuum
- Weighing systems (optional)

Vacuum Tumbler MV-300

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Total capacity [L]	300
Max filling [L]	160
Installed power [kW]	2,3
Standard control	PLC and HMI
Shaft rotation speed [rpm]	0 - 9
Net weight [kg]	380
Vacuum pump	BUSCH 21m ³ /h
Unloading to bin	200 l

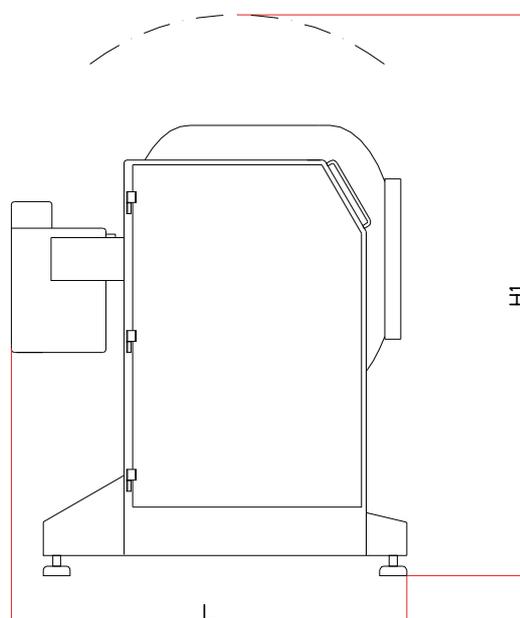
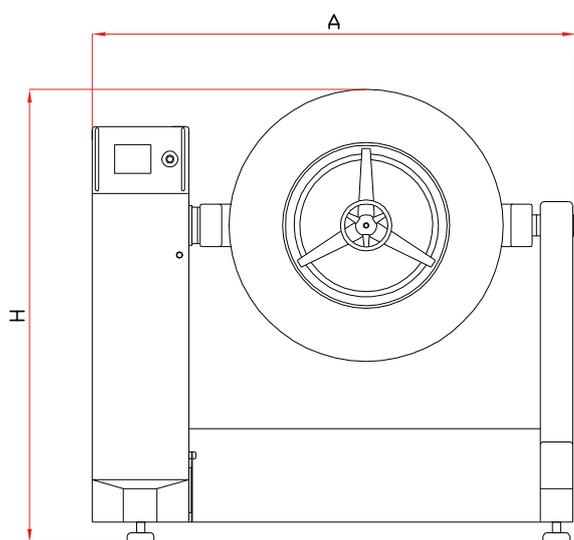


H [cm]	H1 [cm]	A [cm]	L [cm]
160	180	155	110



Vacuum Tumbler MV-600

Total capacity [L]	600
Max filling [L]	380
Installed power [kW]	4,0
Standard control	PLC and HMI
Shaft rotation speed [rpm]	0 - 9
Net weight [kg]	960
Vacuum pump	BUSCH 40m ³ /h
Unloading to bin	200 l

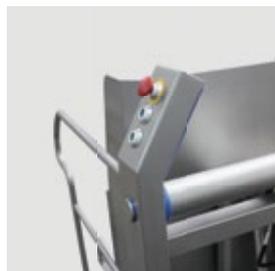


H [cm]	H1 [cm]	A [cm]	L [cm]
170	210	193	146

P

NO 1

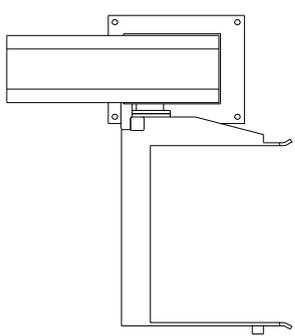
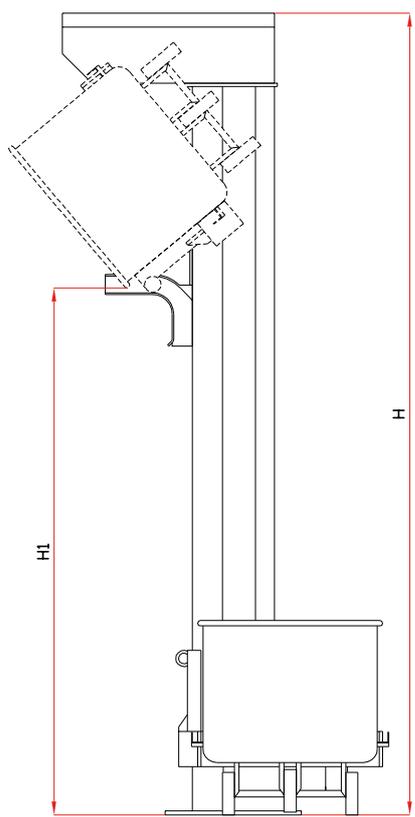
N&N paddle mixers **P series**



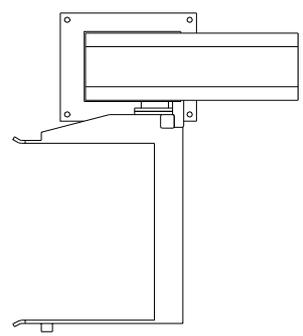
Column Loader PW-2/250

IN MIXING

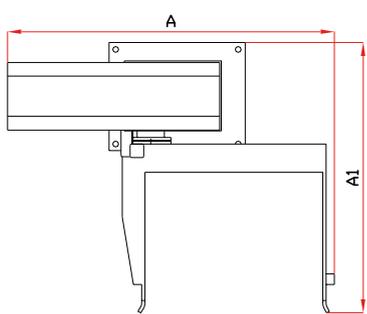
Max lifting capacity[kg]	350
Column Loader power [kW]	0,75
Lifting speed [m/s]	0,1
Discharge height [cm]	table row - H1
Net weight [kg]	330 (type height III)



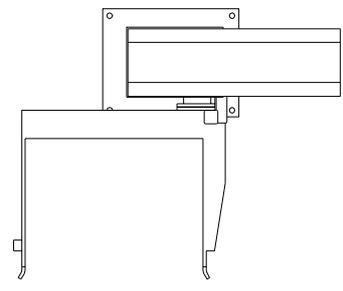
Column loader - TYPE A



Column loader - TYPE B



Column loader - TYPE C

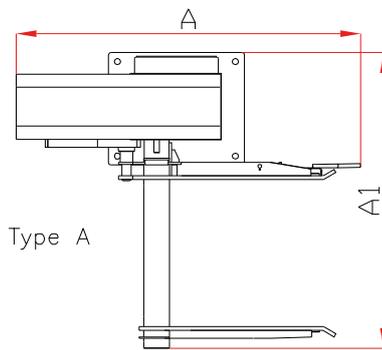
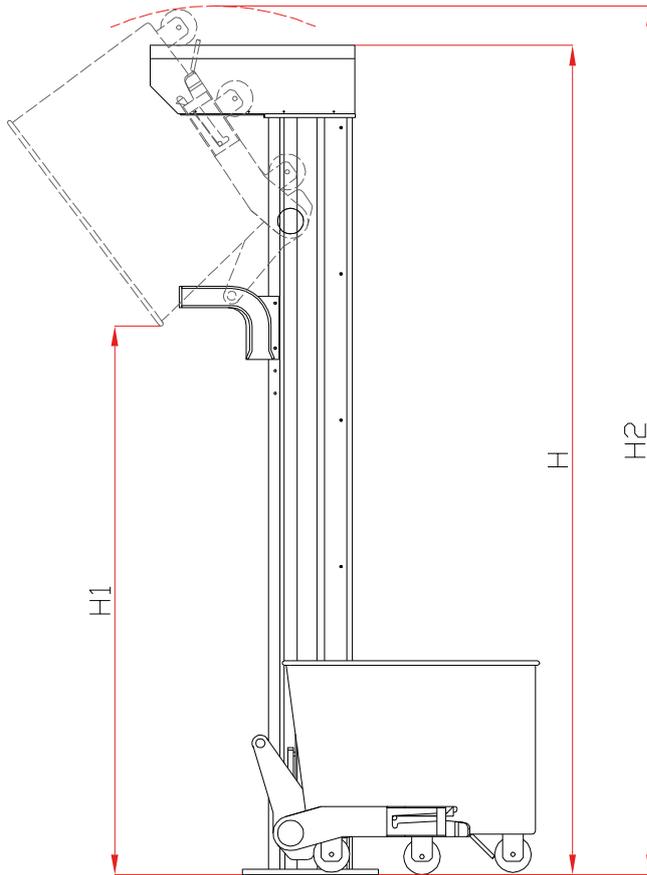


Column loader - TYPE D

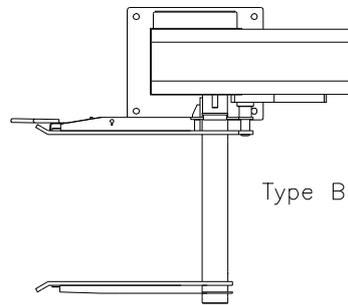
Type height	I	II	III	IV	V	VI	VII
H [cm]	252	282	297	342	362	282	412
H1 [cm]	1050-1550	1350-1850	1550-2050	1750-2450	2150-2650	2350-2850	2650-3150
A [cm]	120	120	120	120	120	120	120
A1 c[m]	100	100	100	100	100	100	100

Column Loader PW-2/600

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Type A



Type B

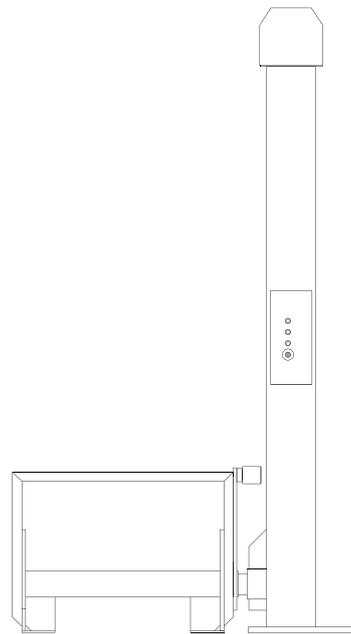
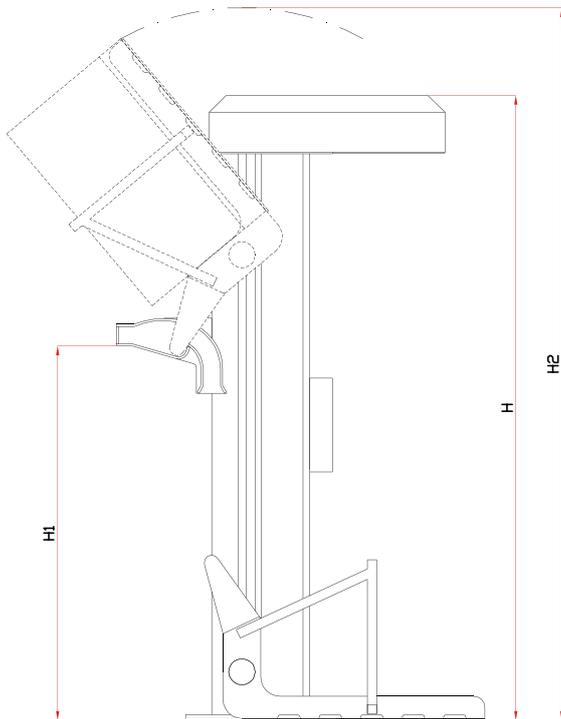
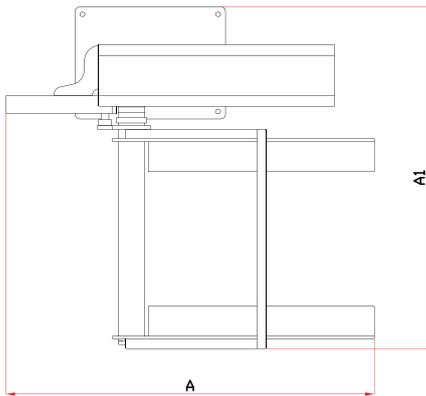


FOOD
PROCESSING
EQUIPMENT

Type height	I	II	III
H [cm]	324	369	399
H1 [cm]	1600-2100	1950-2450	2250-2750
H2 [cm]	342	387	417
A [cm]	152	152	152
A1 [cm]	132	132	132

Max lifting capacity[kg]	600
Column Loader power [kW]	1,5
Lifting speed [m/s]	0,1
Discharge height [cm]	table row - H1
Net weight [kg]	605 (type height I)

Column Loader PW-2/1000

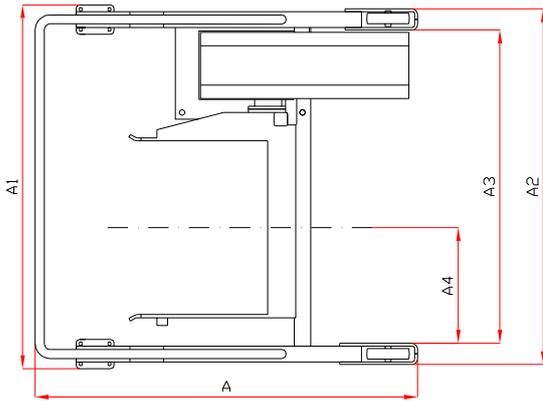
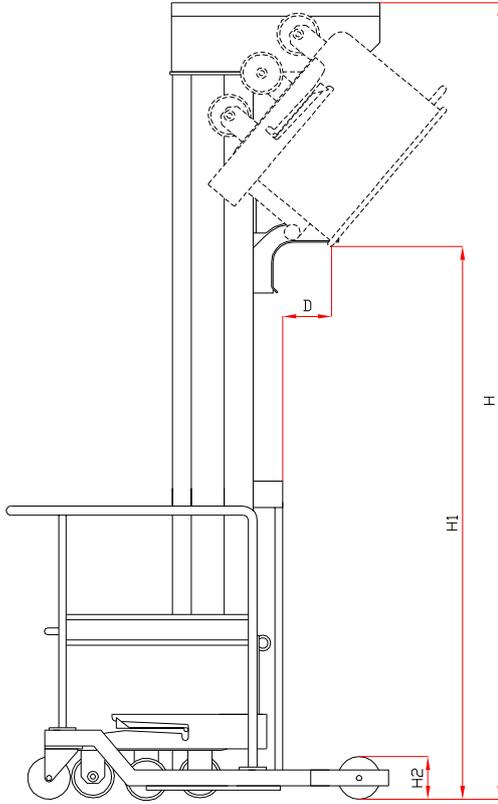


Type height	I	II	III
H [cm]	335	375	400
H1 [cm]	1400-1900	1800-2300	2050-2550
H2 [cm]	380	420	445
A [cm]	200	200	200
A1 [cm]	185	185	185

Max lifting capacity[kg]	1000
Column Loader power [kW]	2,2
Lifting speed [m/s]	0,1
Discharge height [cm]	table row - H1
Net weight [kg]	1100 (type height I)

Column Loader PM-2/250

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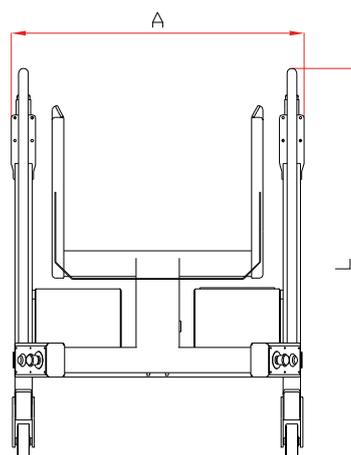
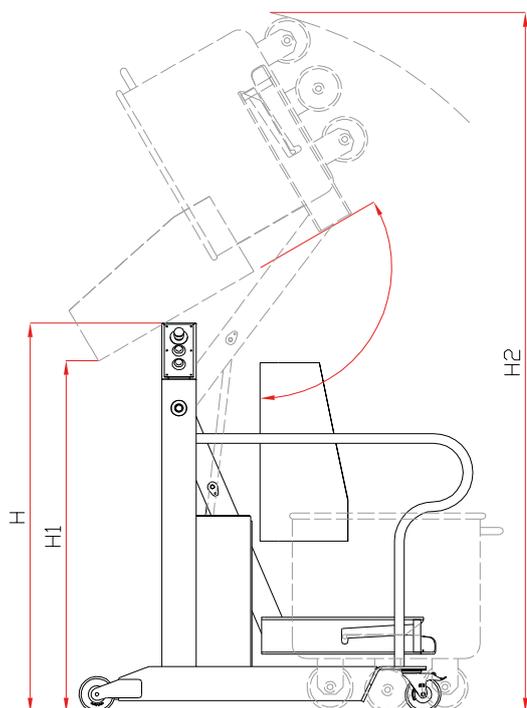
Max lifting capacity[kg]	350
Column Loader power [kW]	0,75
Lifting speed [m/s]	0,1
Discharge height [cm]	table row - H1
Net weight [kg]	380 (type height III)

Type height	I	II	III	IV	V	VI	VII
H [cm]	255	285	300	345	365	285	415
H1 [cm]	1050-1550	1550-1850	1550-2050	1750-2450	2150-2650	2350-2850	2650-3150
H2 [cm]	16	16	16	16	16	16	16
A [cm]	145	145	145	145	145	145	145
A1 [cm]	137	137	137	137	137	137	137
A2 [cm]	134	134	134	134	134	134	134
A3 [cm]	118	118	118	118	118	118	118
A4 [cm]	44	44	44	44	44	44	44
D [cm]	18	18	18	18	18	18	18



Swing Loader PZ-3/250

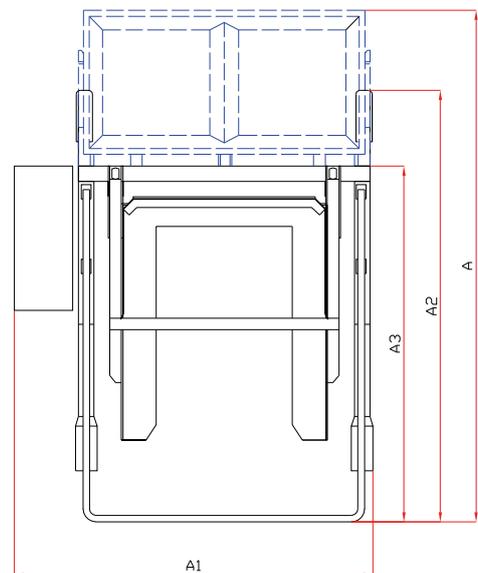
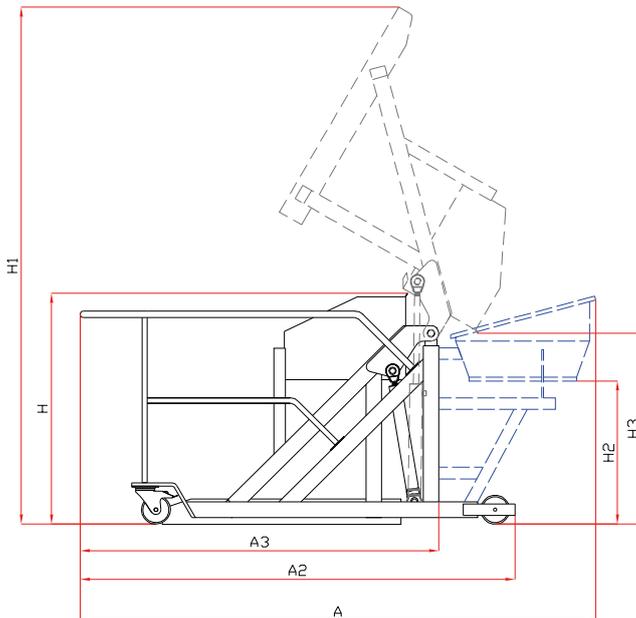
Max tilting capacity[kg]	350
Installed power [kW]	0,37
Voltage [V,Hz]	400,50 230,50
Net weight [kg]	280



H [cm]	H1 [cm]	H2 [cm]	A [cm]	L [cm]	a [°]
125	115	228	102	125	120

Swing Loader PZ-3/1000

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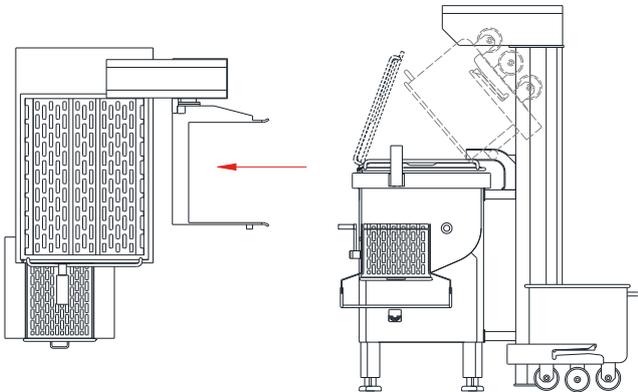
Type height	I	II	III
H [cm]	120	1400	1630
H1 [cm]	270	2920	3250
H2 [cm]	740	910	-
H3 [cm]	980	1150	1520
A [cm]	266	266	-
A1 [cm]	185	185	185
A2 [cm]	224	224	224
A3 [cm]	185	185	185

Max tilting capacity[kg]	1000
Installed power [kW]	1,5
Voltage [V,Hz]	400,50
Net weight [kg]	475 (type height III)

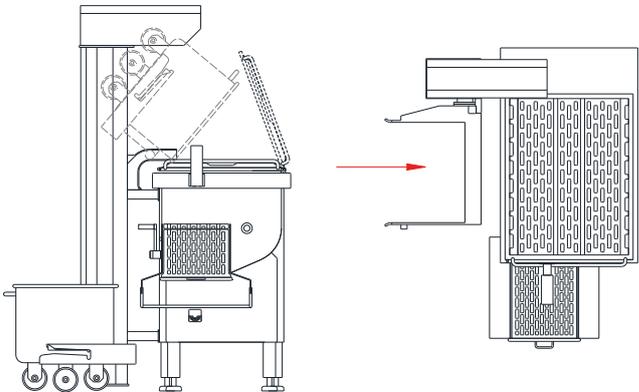


Configurations of a paddle mixer with the column loader PZ-2/250

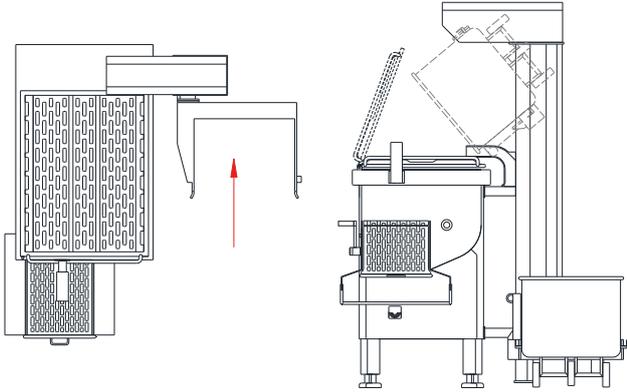
Type A - Right hand system - loader 90°



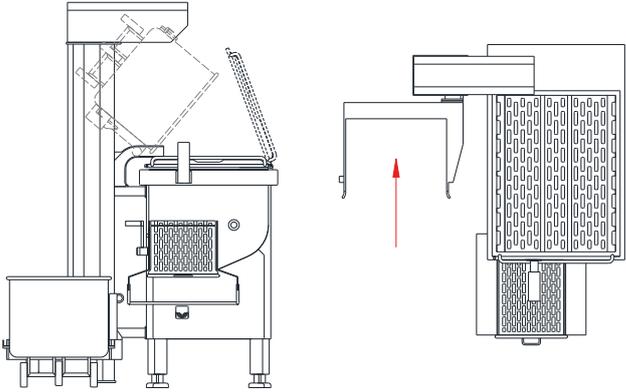
Type B - Left hand system - loader 90°



Type C - Right hand system



Type D - Left hand system



Notes

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