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CATALOG

N&N®
NADRATOWSKI

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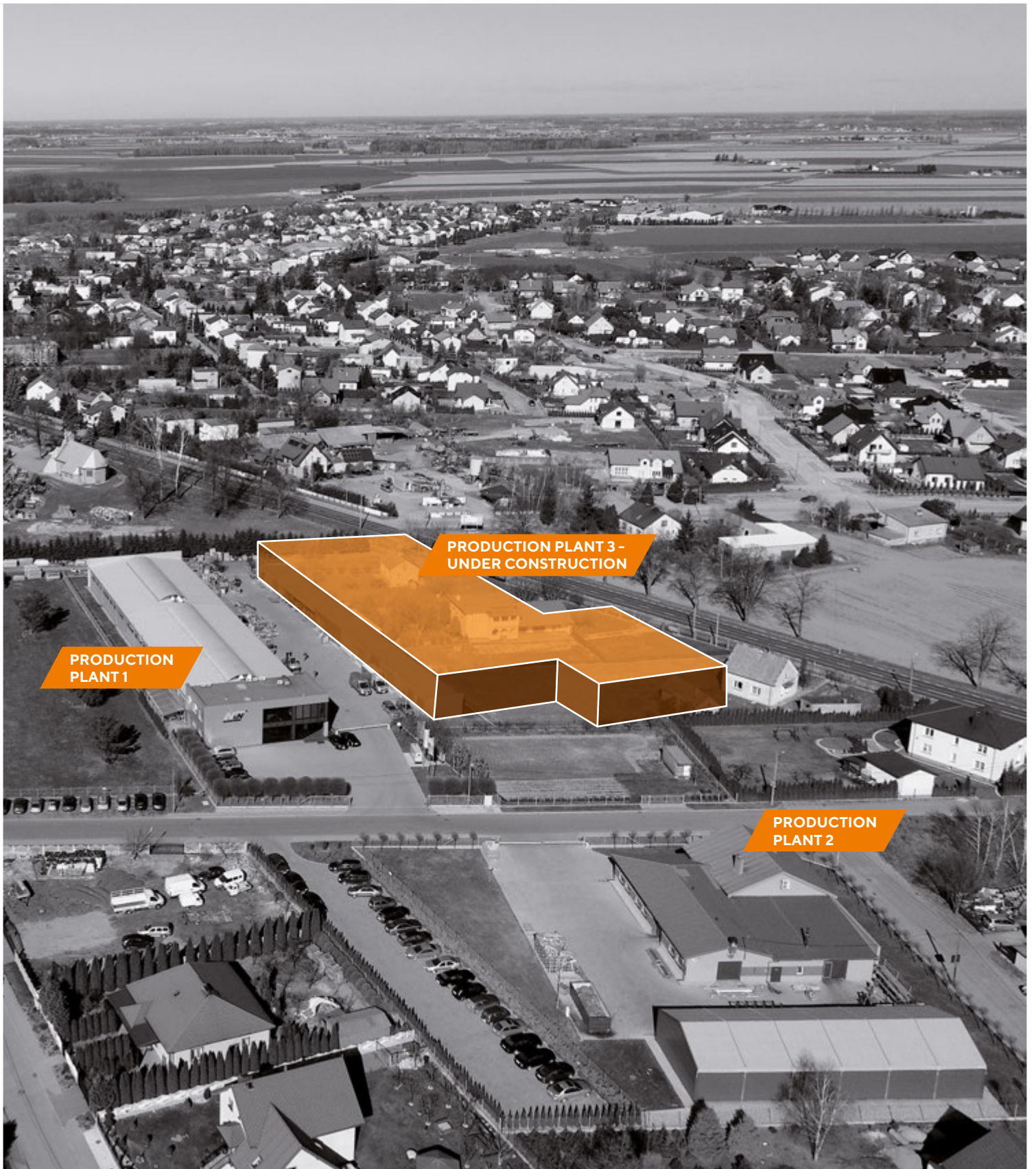
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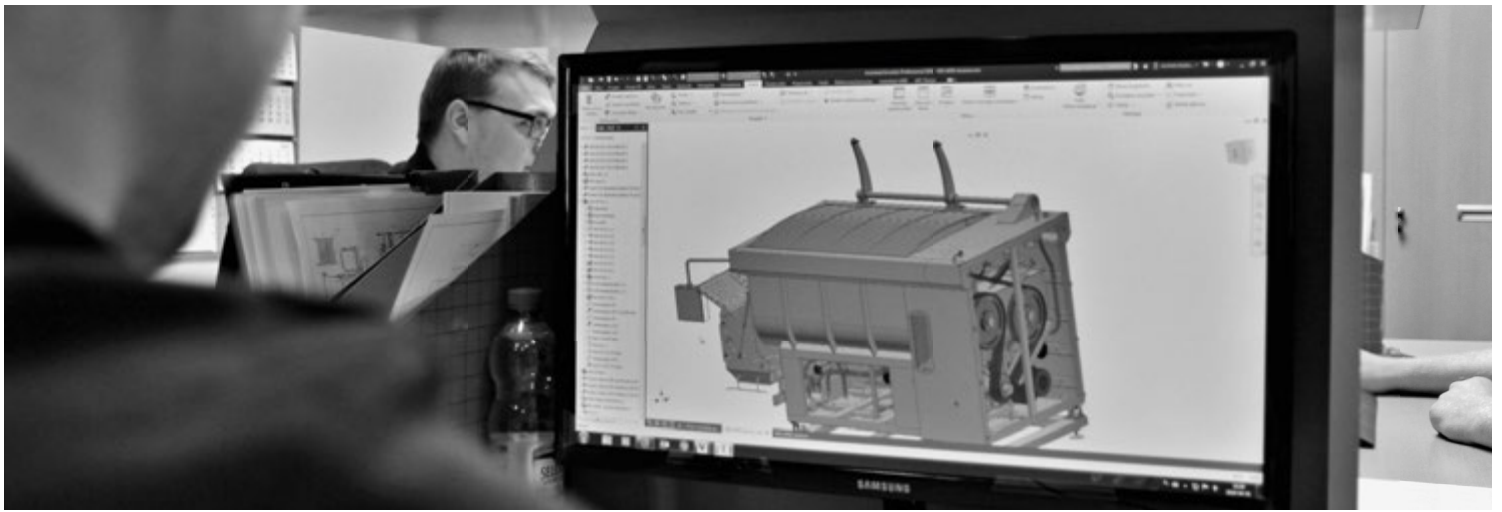
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ABOUT COMPANY

Founded in 2001, N&N Nadratowski sp.j is a family-owned, modern company that has been driving the development, production and distribution of high quality machinery for food processing for almost two decades.

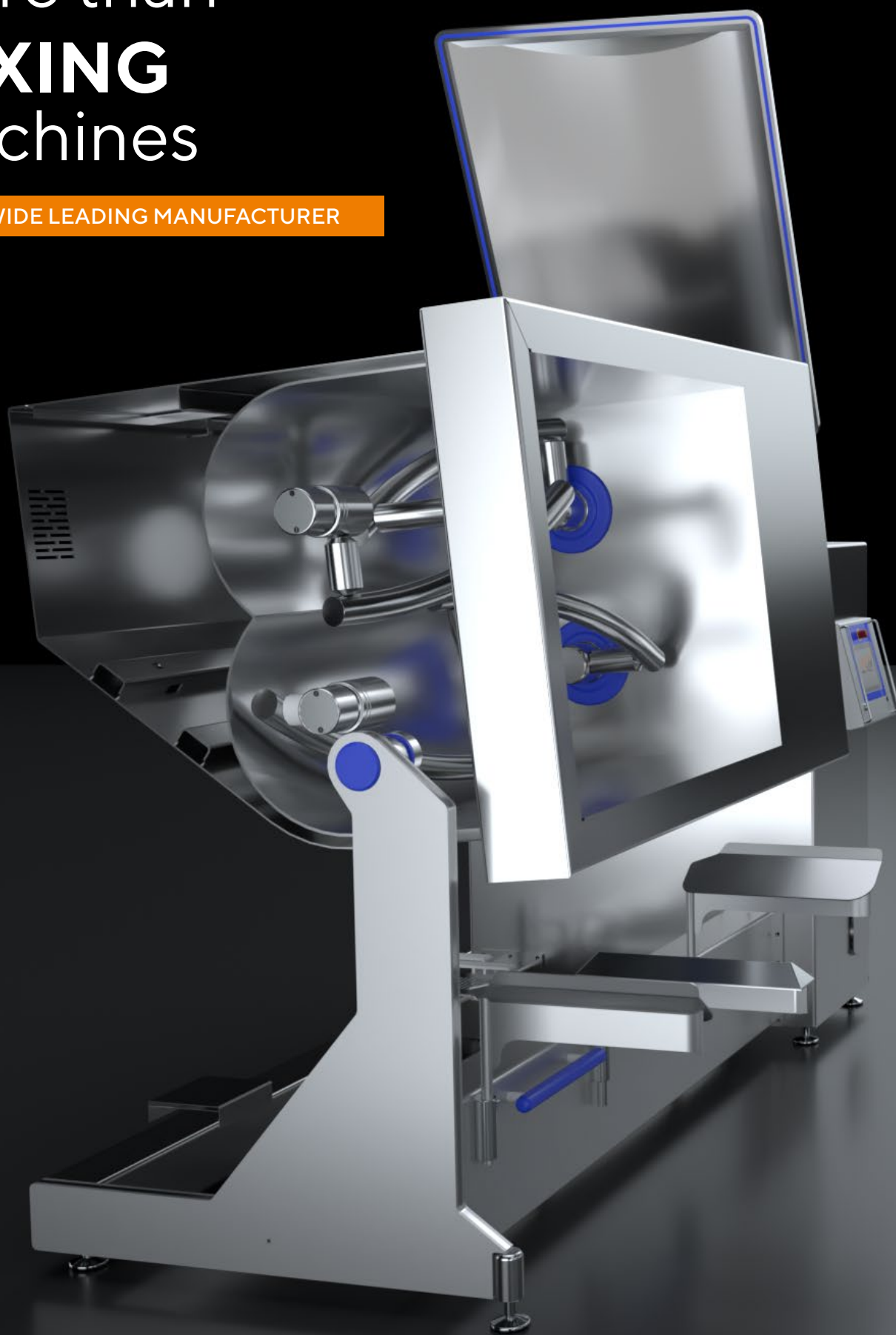
From the very beginning, N&N's engineers and designers have set uncompromisingly high demands on materials, technology, design and production development. The main emphasis is on quality and individual approach to each customer, and the narrow specialization, wide range of models, flexibility and high attention to detail of manufactured equipment has allowed us to find hundreds of satisfied customers and become one of the largest manufacturers of mixers for food processing in the world. Thanks to an extensive network of trusted representatives, most of the manufactured machines in Bielsk are exported to several dozen countries on 5 continents.

N&N Nadratowski focuses on continuous development of existing products in order to better fulfil their tasks and anticipate the future needs of the market, in order to become one of the leading manufacturers of machines in the food industry and the unquestionable world leader in the mixer market in the future.



more than
MIXING
machines

WORLDWIDE LEADING MANUFACTURER



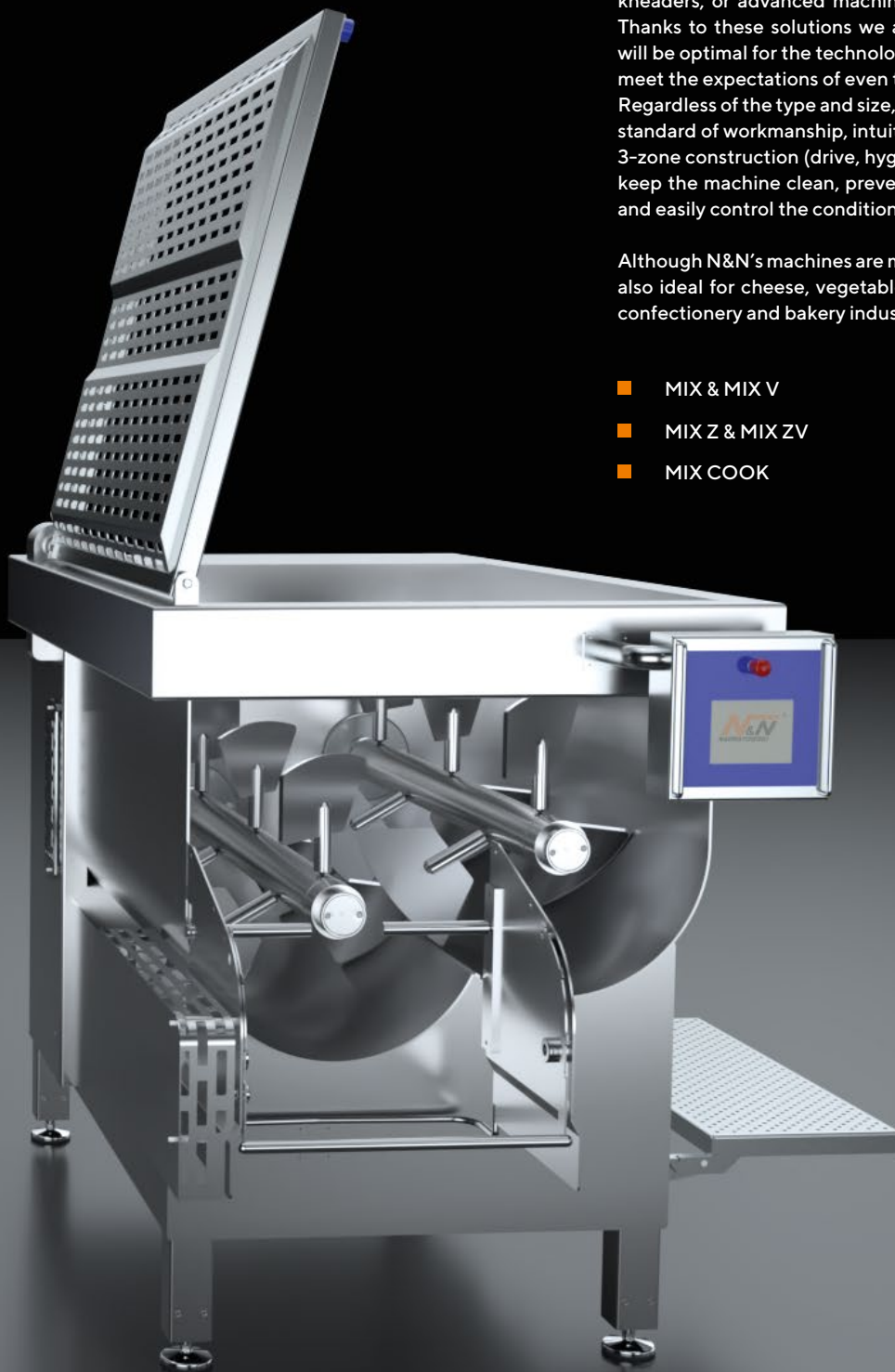
INDUSTRIAL MIXERS

N&N Nadratowski sp.j. is a manufacturer of a wide range of high-quality mixers, applicable in all sectors of the food industry. As one of the few manufacturers, we offer such a wide range of models and capacities in this narrow category of machines, from universal paddle mixers to thick mass kneaders, or advanced machines with the option of cooking or cooling. Thanks to these solutions we are able to customize the machine, which will be optimal for the technological requirements of your product and will meet the expectations of even the most demanding customers.

Regardless of the type and size, all models are characterized by the highest standard of workmanship, intuitive and easy operation, robust and reliable 3-zone construction (drive, hygiene and mixing zone), which allows you to keep the machine clean, preventing the formation of bacterial outbreaks and easily control the condition of seals.

Although N&N's machines are mainly used in meat processing, but they are also ideal for cheese, vegetables, fish, soups, baby food as well as in the confectionery and bakery industries.

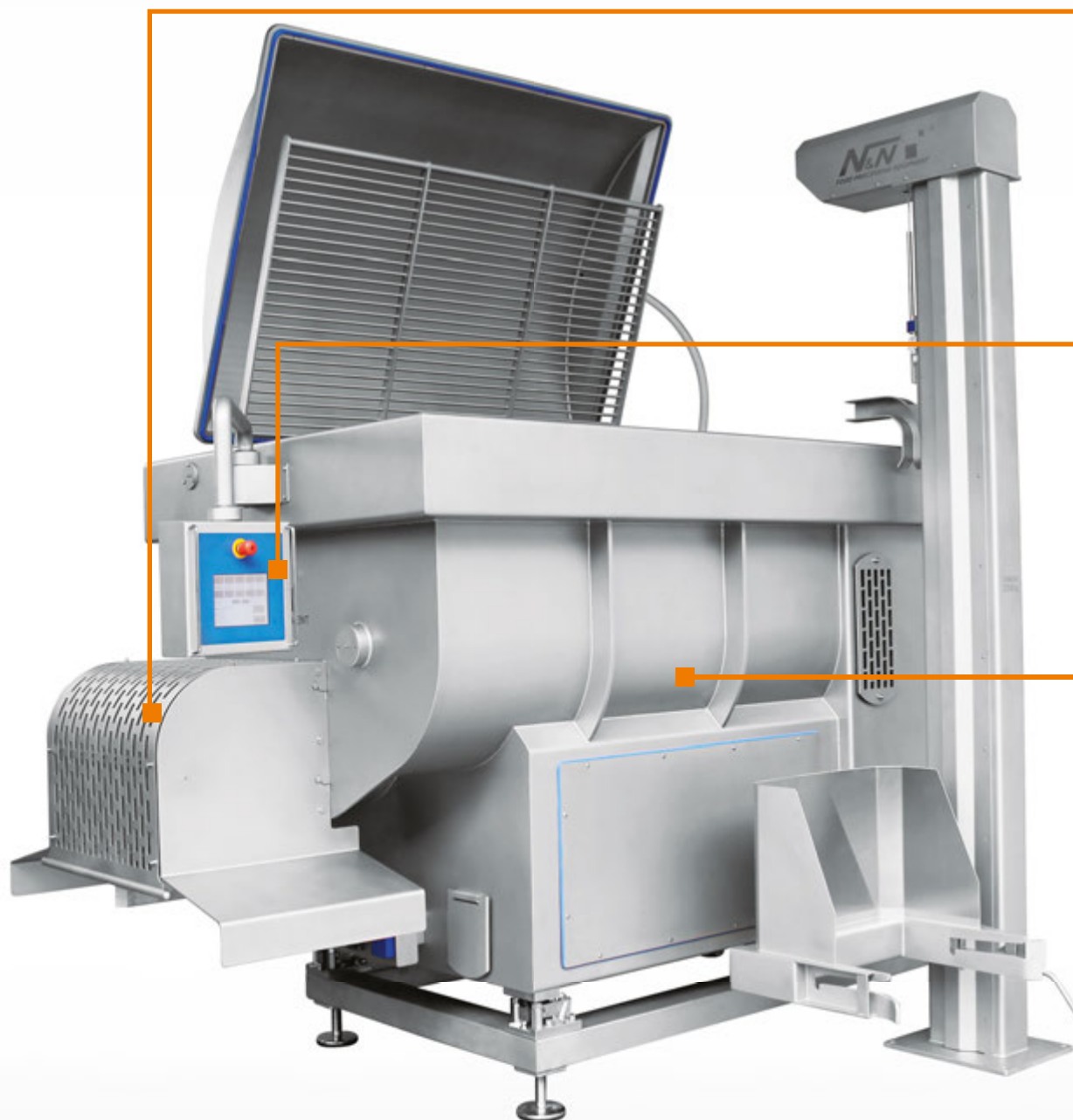
- MIX & MIX V
- MIX Z & MIX ZV
- MIX COOK
- MIX S & MIX SV
- MIX SZ & MIX SZV
- RM



**FOOD
PROCESSING
EQUIPMENT**

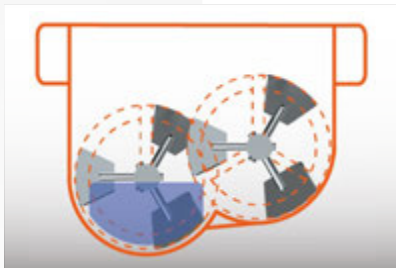
MIX & MIX V SERIES

The MIX and MIX V series are the highest quality open and vacuum intermeshing twin shaft paddle mixers with capacities from 180 to 6000 liters. With a wide range of capacities, individual configuration and a variety of accessories, you can choose a mixer that is perfectly suited to your technological requirements and the reliable operation of which you will be enjoying for decades.



INTERMESHING TWIN SHAFTS PADDLE MIXERS

MIX
& MIX V



INTERMESHING PADDLE SHAFTS

In the MIX and MIX V series the mixing process takes place through two dependent and intermeshing paddle shafts, placed at different heights. Mixing is carried out by rotating both shafts in the opposite direction with the same preset speed inside or outside.



UNLOADING

The N&N's MIX and MIX V series, thanks to a large ejection flap located at the lower half of the mixing bowl and low clearance between the shafts and the bowl, have a very short ejection time of the mixed product, while leaving only minimal amount of product between the individual batches.



CONTROL

Depending on the model, MIX and MIX V series mixers are equipped with reliable manual operator panel or colour HMI touch screen, which is user-friendly and intuitive to use. The software allows access control, manual and automatic operation and up to 100 mixing programs, where each can consist of 5 programmable steps.



VACUUM SYSTEM

The MIX V series vacuum mixers have a reinforced bowl construction and a solid and tight top cover, which allows to achieve a vacuum of up to 99%. Vacuum improves protein extraction, liquids absorption, distribution and absorption of spices and other additives, enables density control, and eliminates air bubbles before emulsification, filling or forming.



APPLICATION

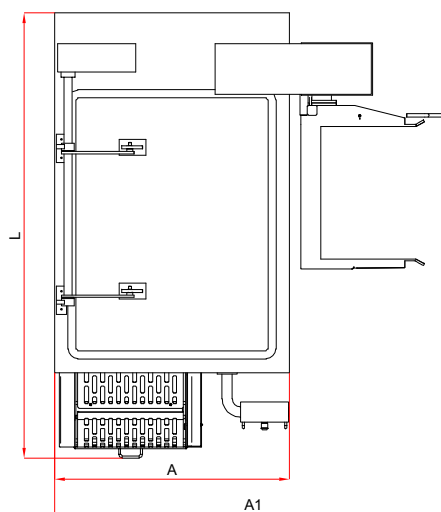
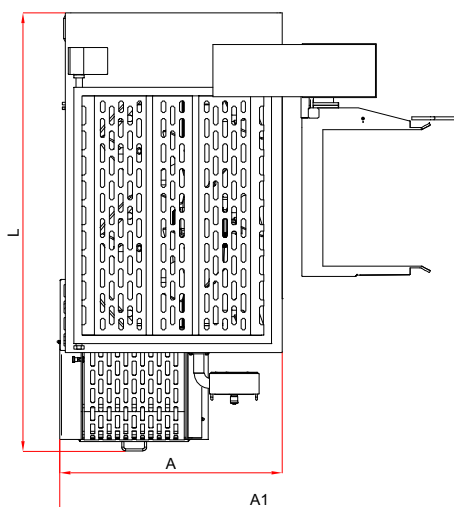
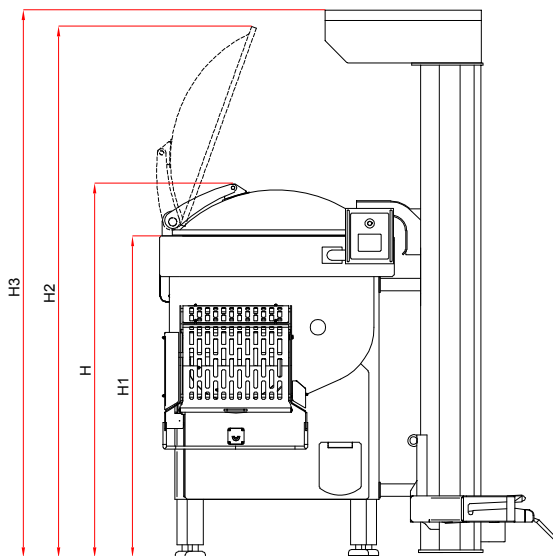
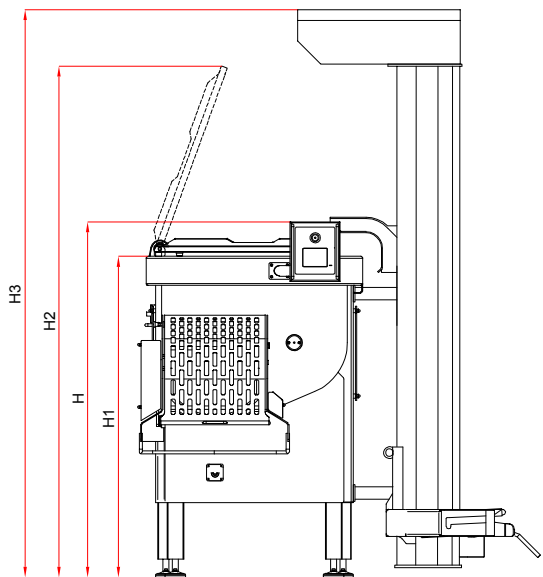
The MIX and MIX V series machines are the most universal type of mixers available on the market, which are able to gently, effectively and quickly mix most types of products, regardless of viscosity and stickiness, such as stuffing and meat, poultry and fish cuts, vegetables, fruits, cereal mixes, dairy products, up to animal feed.

SPECIFICATION

MACHINE TYPE [MIX]	180	300	450	650	900	1200	1500	2000	2400	3000	3600	4500	6000	8000
	180 V	300 V	450 V	650 V	900 V	1200 V	1500 V	2000 V	2400 V	3000 V	3600 V	4500 V	6000 V	8000 V
Total capacity [L]	180	300	450	650	900	1200	1500	2000	2400	3000	3600	4500	6000	8000
Max filling [L]	135	225	338	488	675	900	1125	1500	1800	2250	2700	3375	4500	6000
Motor power [kW]	1,8/2,4 2,5	3,7/4,4 4,0	4,5/5,5 5,5	6,5/8,5 11,0	9,3/11,5 11,0	15,0	15,0	22,0	22,0	30,0	37,0	45,0	45,0	60,0
Shaft rotation speed [rpm]	30/60 6-60	24/48 5-48	20/40 5-40	18/36 4-36	16/32 4-30	15/30 4-30	14/28 3-28	3-25	3-25	2-22	2-22	2-22	2-22	2-22
Standard control														
Mixer net weight [kg]	388 460	520 620	570 720	930 1150	1100 1300	1560 1810	1920 2320	2460 2940	3080 3630	3920 4560	4580 5550	5100 6250	6450 7800	7800 8500
Busch vacuum pump [m ³ /h]	- 21	- 21	- 21	- 40	- 40	- 63	- 63	- 100	- 100	- 160	- 160	- 205	- 305	- 305
Fuse [A]	16 20	20	20 25	25 50	32 50	63	63	100	100	120	140	160	160	160
Loader option	PZ 2/250	PZ 2/250	PZ 2/250	PZ 2/250	PZ 2/250	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000	PZ 2/250 lub PW 2/1000
Unloading bin DIN 9797	200L 	200L 	200L 	200L 	200L 	1x200L 	1x200L 	2x200L 	2x200L 	2x200L 	2x200L 	BIG BOX 	BIG BOX 	BIG BOX
Opening/Closing lids														
Required pressure [bar]	- 6	- 6	- 6	6	6	6	6	6	6	6	6	6	- 6	- 6

MODEL OF MACHINES [MIX]	180	300	450	650	900	1200	1500	2000	2400	3000	3600	4500	6000	8000
	180 V	300 V	450 V	650 V	900 V	1200 V	1500 V	2000 V	2400 V	3000 V	3600 V	4500 V	6000 V	8000 V
Column loader	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLC and HMI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Smooth variable speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Temperature sensor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water dosing system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weighing system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
"Easy Clean" shafts seals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional grid	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polished shafts and bath	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Double jacket max pressure 2.0 Bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dust proof sealed lid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INTERMESHING TWIN SHAFT PADDLE MIXERS



MIX

MIX V

MODEL OF MACHINES [MIX]	180 V	300 V	450 V	650 V	900 V	1200 V	1500 V	2000 V	2400 V	3000 V	3600 V	4500 V	6000 V	8000 V
H [cm]	140	152	162	177	186	191	205	223	240	252	264	294	315	345
H1 [cm]	125	133	142	153	160	165	177	190	206	212	224	250	250	273
H2 [cm]	188	207	226	250	264	281	301	328	346	362	388	422	430	448
H3 [cm]	226	251	251	271	271	282	282	325	325	358	358	438	438	448
L [cm]	172	180	195	228	221	243	265	311	350	370	402	443	455	465
A [cm]	78	86	100	110	113	129	137	162	188	191	200	208	218	246
A1 [cm]	158	166	180	190	193	291	217	242	359	361	374	378	388	545
	165	173			198	211	221							

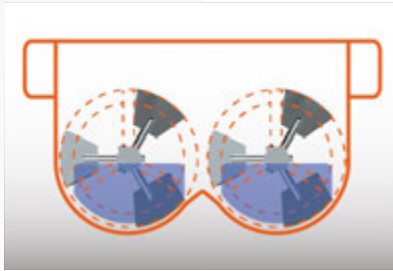
MIX S & MIX SV SERIES

The MIX S and MIX SV series are the highest quality open and vacuum mixers with parallel shafts and capacities from 500 to 4800 liters, which can be equipped with paddle or ribbon shafts. With a wide range of products, individual configuration and a variety of accessories, you can choose a machine that is perfectly suited to your technological requirements and the reliable operation of which you will be enjoying for decades.



PARALLEL TWIN SHAFT MIXERS

MIX
S & MIX SV



PARALLEL SHAFT

In mixers of MIX S and MIX SV series the mixing process is carried out by two twin parallel paddle or ribbon shafts, placed at the same heights. The characteristic feature of this series of machines is the possibility to set the speed and direction of rotation independently for each shaft.



UNLOADING

The N&N's mixers of MIX S and MIX SV series, are fitted with two unloading flaps and low clearance between the shafts and the mixing bowl, have a very short release time of the mixed product, while leaving only minimal amount of filling between individual batches.



CONTROL

The MIX S and MIX SV series mixers are equipped as standard with a colour and reliable HMI touch screen, which is user-friendly and intuitive to use. The software allows access control, manual and automatic operation and up to 100 mixing programs, where each can consist of 5 programmable steps.



VACUUM SYSTEM

The MIX SV series vacuum mixers have a reinforced bowl construction and a solid and tight top cover, which allows to achieve a vacuum of up to 99%. Vacuum improves protein extraction, liquids absorption, distribution and absorption of spices and other additives, enables density control, and eliminates air bubbles before emulsification, stuffing or forming.



APPLICATION

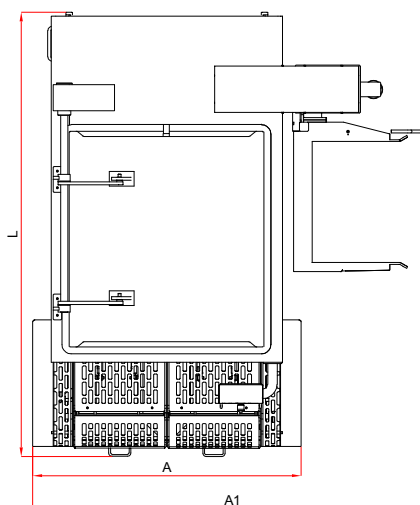
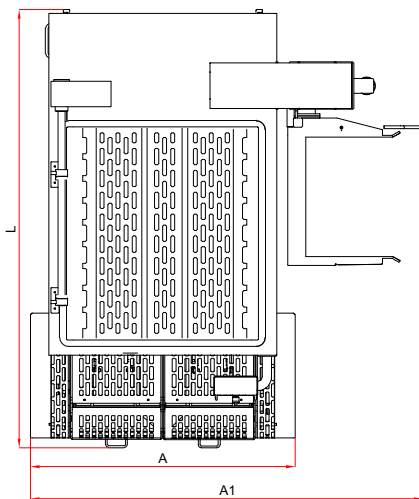
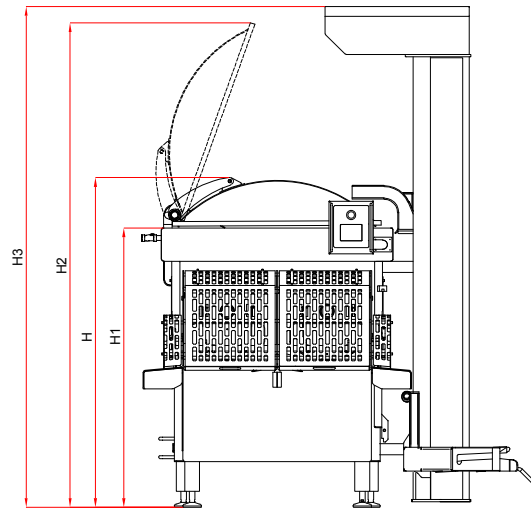
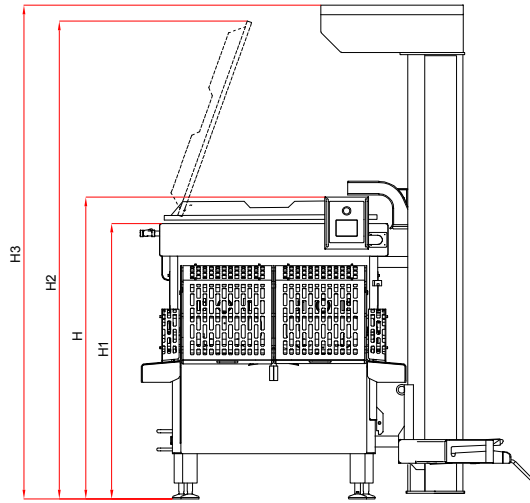
The MIX S and MIX SV series equipment is an universal type of mixers which, depending on the types of ribbon or paddle shafts used, will be perfect for mixing products of medium and high density, such as finely and very finely chopped meat stuffing, cheese stuffing or animal feeds.

SPECIFICATION

MACHINE TYPE [MIX]	500 S	750 S	1000 S	1250 S	1600 S	2100 S	2600 S	3200 S	3800 S	4800 S
	500 SV	750 SV	1000 SV	1250 SV	1600 SV	2100 SV	2600 SV	3200 SV	3800 SV	4800 SV
Total capacity [L]	500	750	1000	1250	1600	2100	2600	3200	3800	4800
Max filling [L]	375	563	750	938	1200	1575	1950	2400	2850	3600
Motor power [kW]	2x3,0	2x5,5	2x5,5	2x5,5	2x7,5	2x11,0	2x11,0	2x15,0	2x15,0	2x22,0
Shaft rotation speed [rpm]	20/40	18/36	16/32	14/28	14/28	13/26	12/24	3-25	2-22	2-22
	5-40	4-36	4-32	4-30	3-28	3/28	3-25			
Standard control										
Mixer net weight [kg]	890	1100	1420	1982	2420	2840	3620	4380	4920	5420
	1020	1320	1620	2070	2820	3320	4170	5020	5890	6570
Busch vacuum pump [m ³ /h]	-	-	-	-	-	-	-	-	-	-
	21	40	40	40	63	100	100	160	160	200
Fuse [A]	25	32	32	32	40	63	63	100	100	120
Loader option	PZ 2/250	PZ 2/250	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000
Unloading bin DIN 9797	200L	200L	2x200L	2x200L	2x200L	2x200L	2x200L	2x200L	2x200L	2x200L
	2x200L	2x200L								
Opening/Closing lids										
Required pressure [bar]	6	6	6	6	6	6	6	6	6	6

MODEL OF MACHINES [MIX]	500 S	750 S	1000 S	1250 S	1600 S	2100 S	2600 S	3200 S	3800 S	4800 S
	500 SV	750 SV	1000 SV	1250 SV	1600 SV	2100 SV	2600 SV	3200 SV	3800 SV	4800 SV
Column loader	o	o	o	o	o	o	o	o	o	o
PLC and HMI	S	S	S	S	S	S	S	S	S	S
Smooth variable speed	o	o	o	o	o	o	o	S	S	S
	S	S	S	S	S	S	S			
Temperature sensor	o	o	o	o	o	o	o	o	o	o
Water dosing system	o	o	o	o	o	o	o	o	o	o
Weighing system	o	o	o	o	o	o	o	o	o	o
"Easy Clean" shafts seals	o	o	o	o	o	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Additional grid	-	-	-	-	-	-	-	-	-	-
	o	o	o	o	o	o	o	o	o	o
Polished shafts and bath	o	o	o	o	o	o	o	o	o	o
Double jacket max pressure 2.0 Bar	o	o	o	o	o	o	o	o	o	o
Dust proof sealed lid	o	o	o	o	o	o	o	o	o	o
	S	S	S	S	S	S	S	S	S	S

PARALLEL TWIN SHAFT MIXERS



MIX S

MIX SV

MODEL OF MACHINES [MIX]	500 S	750 S	1000 S	1250 S	1600 S	2100 S	2600 S	3200 S	3800 S	4800 S
	500 SV	750 SV	1000 SV	1250 SV	1600 SV	2100 SV	2600 SV	3200 SV	3800 SV	4800 SV
H [cm]	160	163	164	168	191	202	216	233	270	289
H1 [cm]	149	152	153	155	167	174	185	217	240	260
H2 [cm]	245	265	268	289	310	339	349	361	390	428
H3 [cm]	251	271	271	282	300	300	325	358	358	406
L [cm]	200	229	225	243	340	371	373	391	405	436
A [cm]	120	132	145	156	166	182	195	216	221	232
A1 [cm]	190	202	215	226	236	252	365	380	385	395

MIX Z & MIX ZV SERIES

The MIX Z and MIX ZV series are the highest quality two-shaft open and vacuum mixers with capacities from 500 to 1500 liters, which are equipped with Z-type shafts or optional paddle shafts. With a wide range of products, individual configuration and a variety of accessories, you can choose a machine that is perfectly suited to your technological requirements and the reliable operation of which you will be enjoying for decades.



INTERMESHING Z-TYPE SHAFT MIXERS WITH TILTING BOWL



Z-TYPE INTERMESHING SHAFTS

In MIX Z and MIX ZV series mixers the mixing process is carried out by two intermeshing Z-type or optionally paddle shafts, placed at the same heights. Mixing is carried out by rotating both shafts at the same preset speed inwards or outwards.



UNLOADING

The MIX Z and MIX ZV series mixers are equipped as standard with a hydraulic opening system of the mixing chamber cover and unloading, which is performed by tilting the bowl directly to two euro bins or other containers, which enables easy and quick emptying of the mixing chamber.



CONTROL

The MIX Z and MIX ZV series mixers are equipped as standard with a colour and reliable HMI touch screen, which is user-friendly and intuitive to use. The software allows access control, manual and automatic operation and up to 100 mixing programs, where each can consist of 5 programmable steps.



VACUUM SYSTEM
















The MIX ZV series vacuum mixers have a reinforced bowl construction and a solid and tight top cover, which allows to achieve a vacuum of up to 99%. Vacuum improves protein extraction, liquids absorption, distribution and absorption of spices and other additives, enables density control and eliminates air bubbles before emulsification, stuffing or forming.



APPLICATION

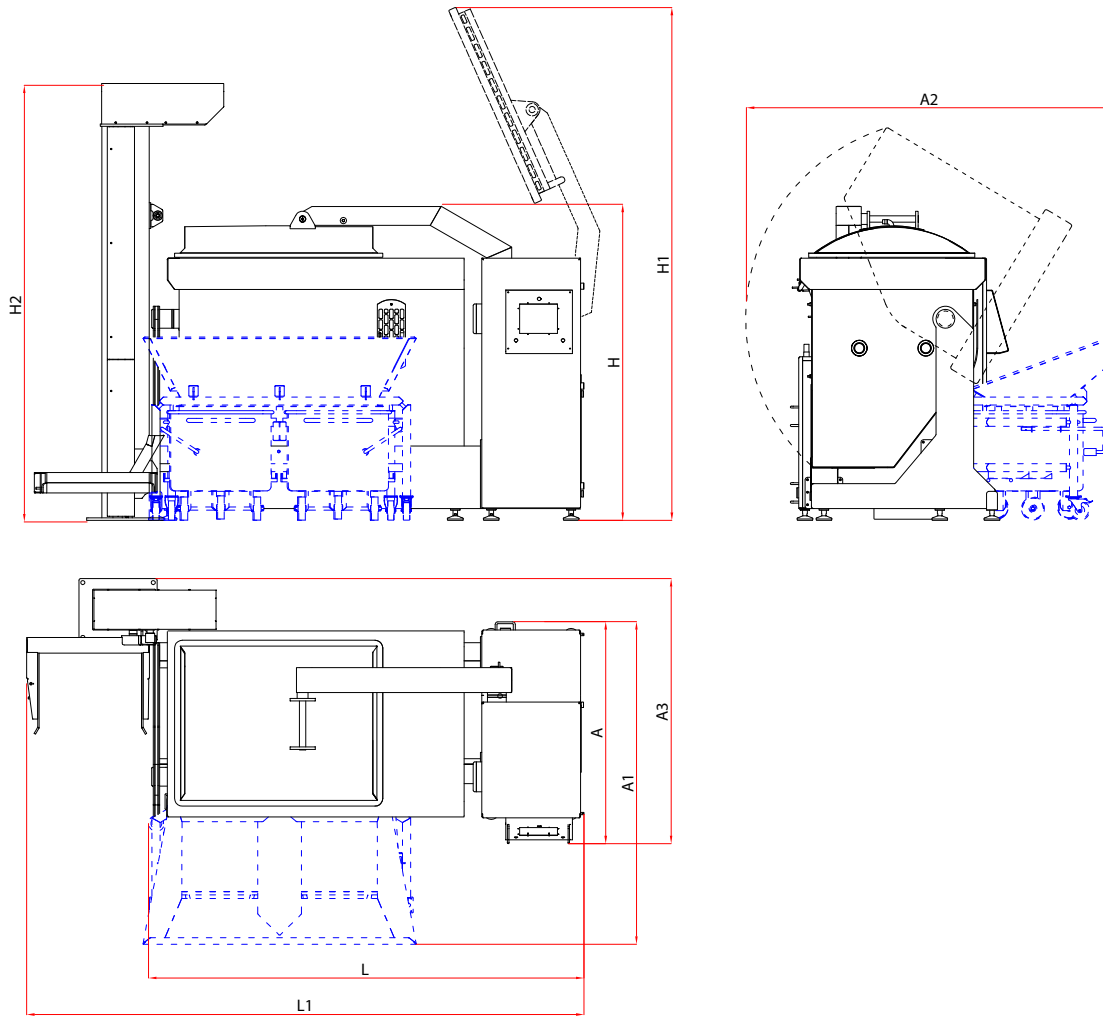
The N&N's MIX Z and MIX ZV series mixers are designed for very intensive mixing of highly fragmented thick and heavy meat stuffing, e.g. in the production of kebab meat as well as bakery and confectionery masses.

SPECIFICATION

MACHINE TYPE [MIX]	300 Z	500 Z	1000 Z	1500 Z	2600 Z
	300 ZV	500 ZV	1000 ZV	1500 ZV	2600 ZV
Total capacity [L]	300	500	1000	1500	2600
Max filling [L]	180	300	600	900	1560
Installed power [kW]	7,5	11	22	30	55
Shaft rotation speed [rpm]	5-48	4-40	4-30	3-28	3-26
Standard control					
Mixer net weight [kg]	1100	1420	2850	4050	6050
Busch vacuum pump [m ³ /h]	-	-	-	-	-
Fuse [A]	32	50	100	120	160
Loader option	PW 2/250	PW 2/250	PW 2/250	PW 2/250	PW 2/250
Unloading bin DIN 9797	200L 	2x200L 	2x200L 	2x200L 	2x200L 
Opening/ Closing lids	 H	 H	 H	 H	 H

MODEL OF MACHINES [MIX]	300 Z	500 Z	1000 Z	1500 Z	2600 Z
	300 ZV	500 ZV	1000 ZV	1500 ZV	2600 ZV
Column loader	o	o	o	o	o
PLC and HMI	S	S	S	S	S
Smooth variable speed	S	S	S	S	S
Temperature sensor	o	o	o	o	o
Water dosing system	o	o	o	o	o
Weighing system	o	o	o	o	o
"Easy Clean" shafts seals	o	o	o	-	-
Additional grid	-	-	-	-	-
Polished shafts and bath	S	S	S	S	S
Double jacket max pressure 2,0 Bar	o	o	o	o	o
Dust proof sealed lid	o	o	o	o	o
Paddle shafts	S	S	S	S	S
Paddle shafts	o	o	o	o	o

INTERMESHING Z-TYPE SHAFT MIXERS WITH TILTING BOWL



MODEL OF MACHINES [MIX]	300 Z	500 Z	1000 Z	1500 Z	2600 Z
	300 ZV	500 ZV	1000 ZV	1500 ZV	2600 ZV
H [cm]	163	192	201	228	296
H1 [cm]	140	154	170	195	244
H2 [cm]	260	290	328	378	462
H3 [cm]	255	271	282	300	361
L [cm]	203	216	278	327	399
L1 [cm]	283	295	358	407	475
A [cm]	98	110	142	167	212
A1 [cm]	160	178	206	222	270
A2 [cm]	182	202	234	253	309
A3 [cm]	133	145	176	201	230

MIX SZ & MIX SZV SERIES

The MIX SZ and MIX SZV series is the strongest series of two-shaft, tilting open and vacuum mixers equipped with round or flat Z-shafts. These machines are designed for mixing and kneading the most demanding and heavy masses, and the high standard of workmanship and hygiene zone allows to keep the machine clean, preventing the formation of bacterial outbreaks.



HEAVY DUTY PARALLEL Z-TYPE SHAFT MIXERS WITH TILTING BOWL



Z-TYPE PARALLEL SHAFTS

In MIX SZ and MIX SZV series mixers the mixing process is carried out by two parallel Z-type shafts, placed at the same heights. The characteristic feature of this series of machines is the possibility to set the speed and direction of rotation independently for each shaft.



UNLOADING

Mixers of the MIX SZ and MIX SZV series are equipped as standard with hydraulic opening system of mixing chamber cover. The unloading system is carried out by the hydraulic bowl tilting directly to two euro bins or another container, which enables easy and quick emptying of the mixing chamber.



CONTROL

The MIX SZ and MIX SZV series mixers are equipped as standard with a colour and reliable HMI touch screen, which is user-friendly and intuitive to use. The software allows access control, manual and automatic operation and up to 100 mixing programs, where each can consist of 5 programmable steps.



VACUUM SYSTEM













The MIX SZV series vacuum mixers have a reinforced bowl construction and a solid and tight top cover, which allows to achieve a vacuum of up to 99%. Vacuum improves protein extraction, liquids absorption, distribution and absorption of spices and other additives, enables density control, and eliminates air bubbles before emulsification, stuffing or forming.



APPLICATION

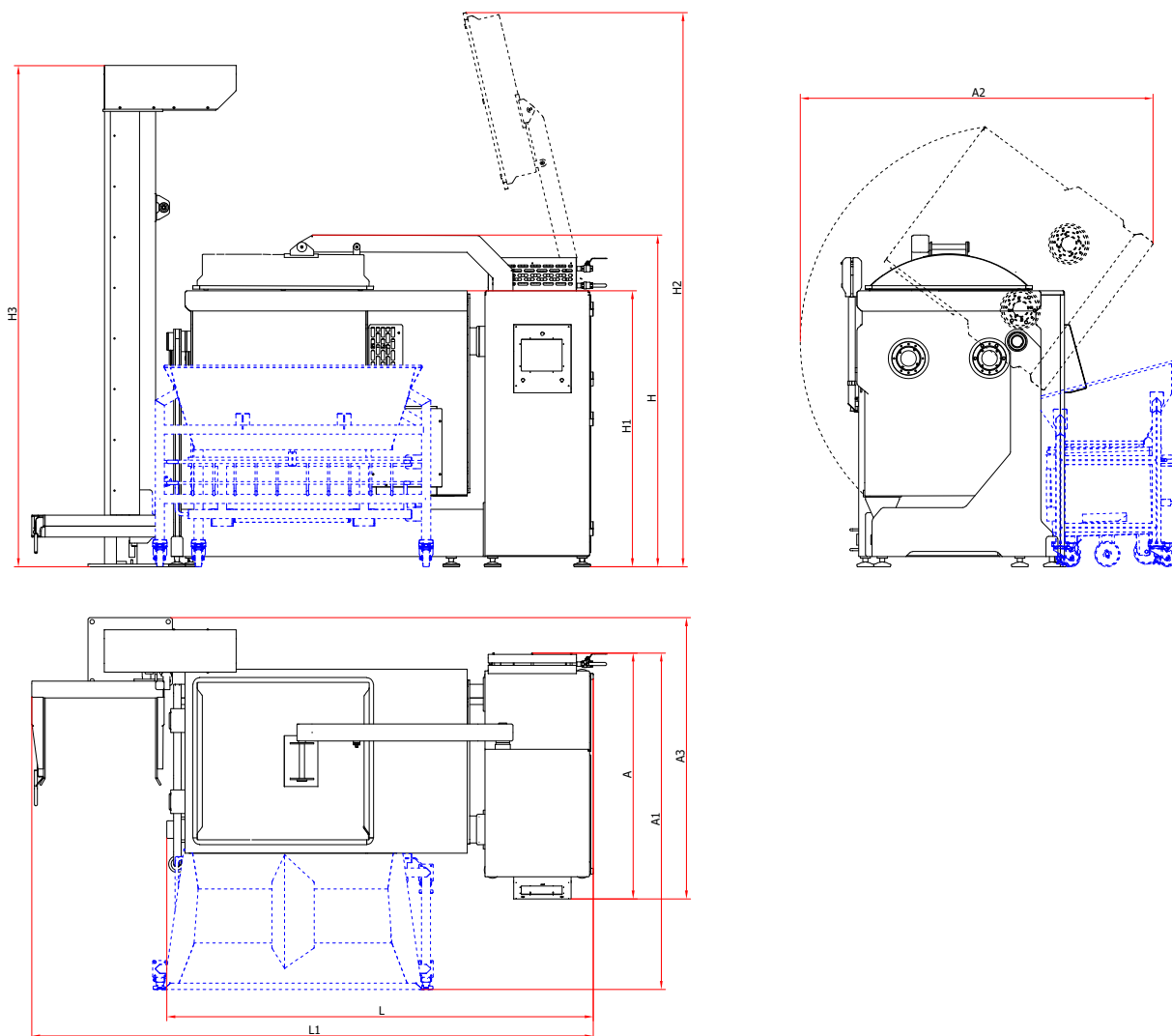
The N&N's MIX SZ and MIX SZV series mixers are designed for very intensive mixing and kneading of masses, e.g. in the production of confectionery and bakery masses such as: maturing dough, protein bars, bouillon cubes.

SPECIFICATION

MACHINE TYPE [MIX]	300 SZ	500 SZ	1000 SZ	1500 SZ
	300 SZV	500 SZV	1000 SZV	1500 SZV
Total capacity [L]	300	500	1000	1500
Max filling [L]	200	320	650	1000
Installed power [kW]	2x7,5	2x15	2x22	2x30
Shaft rotation speed [rpm]	5/48	4/40	4/30	3/28
Standard control				
Mixer net weight [kg]	1300	1780	3400	4600
	1400	1900	3580	4850
Busch vacuum pump [m ³ /h]	-	-	-	-
	21	21	40	63
Fuse [A]	40	100	120	160
Loader option	PW 2/250	PW 2/250	PW 2/250	PW 2/250
Unloading bin DIN 9797	200L 	2x200L 	2x200L 	2x200L 
Opening/ Closing lids	 H	 H	 H	 H

MODEL OF MACHINES [MIX]	300 SZ	500 SZ	1000 SZ	1500 SZ
	300 SZV	500 SZV	1000 SZV	1500 SZV
Column loader	o	o	o	o
PLC and HMI	S	S	S	S
Smooth variable speed	S	S	S	S
Temperature sensor	o	o	o	o
Water dosing system	o	o	o	o
Weighing system	o	o	o	o
"Easy Clean" shafts seals	o	o	o	-
	-	-	-	-
Additional grid	-	-	-	-
Polished shafts and bath	S	S	S	S
Double jacket max pressure 2.0 Bar	o	o	o	o
Dust proof sealed lid	o	o	o	o
	S	S	S	S
Paddle shafts	o	o	o	o

HEAVY DUTY PARALLEL Z-TYPE SHAFT MIXERS WITH TILTING BOWL



MODEL OF MACHINES [MIX]	300SZ	500SZ	1000SZ	1500SZ
	300 SZV	500 SZV	1000 SZV	1500 SZV
H [cm]	163	192	201	228
H1 [cm]	143	164	176	194
H2 [cm]	260	290	328	376
H3 [cm]	250	271	282	300
L [cm]	203	216	278	327
L1 [cm]	283	295	358	407
A [cm]	112	124	162	187
A1 [cm]	172	180	203	234
A2 [cm]	166	181	220	266
A3 [cm]	140	166	186	211

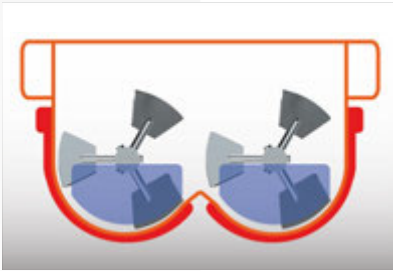
MIX COOK

SERIES

The MIX Cook series is an innovative two-shaft cooking mixers equipped with a steam or oil heating jacket as standard, which allows for quick and even mixing and cooking of many products. It is currently one of the best solutions in the field of food heat treatment, which allows to achieve high quality, reproducible results and to meet the highest standards of food production safety. Thanks to the possibility of equipping the machine with paddle or ribbon shafts with the option of equipping it with an innovative system of scrapers preventing burning, it can be used for cooking various products from sauces, purées, baby food, vegetables, rice, grains or minced meat and offal.



PARALLEL TWIN SHAFT COOKING MIXERS WITH DOUBLE JACKET



PARALLEL TWIN SHAFTS

In the MIX Cook series mixers the mixing process is carried out by two twin parallel paddle or ribbon shafts, placed at the same heights. The characteristic feature of this series of machines is the possibility to set the speed and direction of rotation independently for each shaft.



UNLOADING

The N&N's mixers of the MIX Cook series, thanks to the two built-in discharge flaps and low clearance between the shafts and the mixing bowl, enable fast and safe ejection of the cooked product, while leaving only minimal amount of product between the individual batches.



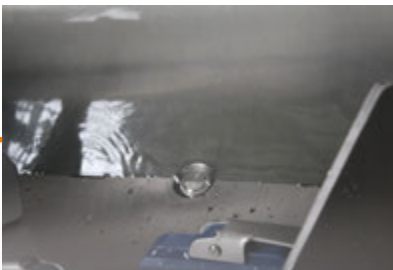
CONTROL

The MIX Cook series mixers are equipped as standard with a colour HMI touch screen, which is user-friendly and intuitive to use. Dedicated software with advanced cooking options and process monitoring and control equipment allows you to maximize product efficiency. Possibility of recipe management and access control allows to maintain repeatability of individual product batches.



SCRAPERS































The MIX Cook series mixers can be optionally equipped with an innovative system of scrapers consisting of a springy claw and a special high-temperature-resistant plastic, which perfectly scrape the product from the whole heating surface of the jacket and prevent the product from burning.



DIRECT STEAM INJECTION

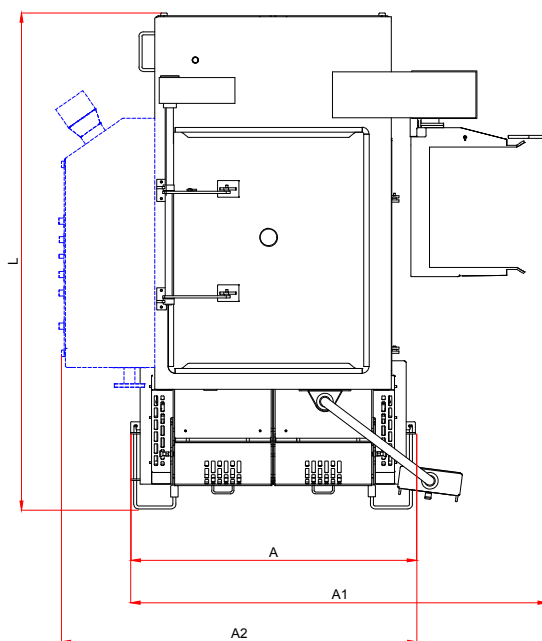
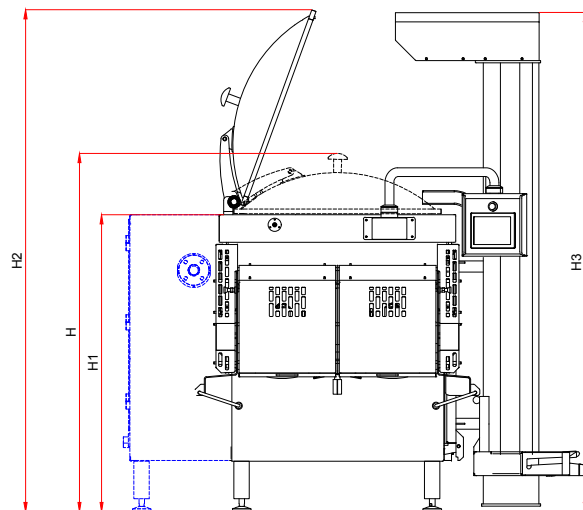
All MIX Cook series machines can be equipped with a system of hygienic nozzles for direct steam injection into the product, which can accelerate the process even several times without the effect of burning.

SPECIFICATION

MACHINE TYPE [MIX COOK]	500 SV	750 SV	1000 SV	1250 SV	1600 SV	2100 SV	2600 SV	3200 SV	3800 SV	4800 SV
Total capacity [L]	500	750	1000	1250	1600	2100	2600	3200	3800	4800
Max filling [L]	375	560	750	940	1200	1575	1950	2400	2850	3600
Installed power [kW]	2x3	2x5,5	2x5,5	2x5,5	2x7,5	2x11	2x11	2x15	2x15	2x22
Shaft rotation speed [rpm]	5-40	4-36	4-30	4-30	3-28	3-28	3-25	3-22	2-20	2-18
Standard control										
Mixer net weight [kg]	1220	1620	1920	2070	3220	3720	4570	5620	6540	7340
Busch optional vacuum pump [m ³ /h] option available with vacuum type of mixer	25	45	45	72	72	100	100	160	205	205
Fuse [A]	25	32	32	32	40	63	63	100	100	120
Loader option	PZ 2/250	PZ 2/250	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000
Steam train	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco	Included - Spirax Sarco
Minimum steam inlet pressure [bar]	3	3	3	3	3	3	3	3	3	3
Max temperature of jacket [°C]	120	120	120	120	120	120	120	120	120	120
Unloading bin DIN 9797	200L 	200L 	2x200L 	2x200L 	2x200L 	2x200L 	2x200L 	2x200L 	2x200L 	2x200L 
Opening/Closing lids	 P	 P	 P	 P	 P	 P	 P	 P	 P	 P
Required pressure [bar]	6	6	6	6	6	6	6	6	6	6

MODEL OF MACHINES [MIX]	500 SV	750 SV	1000 SV	1250 SV	1600 SV	2100 SV	2600 SV	3200 SV	3800 SV	4800 SV
Column loader	o	o	o	o	o	o	o	o	o	o
PLC and HMI	S	S	S	S	S	S	S	S	S	S
Smooth variable speed	S	S	S	S	S	S	S	S	S	S
Temperature sensor of jacket and product	S	S	S	S	S	S	S	S	S	S
Water dosing system	o	o	o	o	o	o	o	o	o	o
Weighing system	o	o	o	o	o	o	o	o	o	o
Additional grid	o	o	o	o	o	o	o	o	o	o
Polished shafts and bath	S	S	S	S	S	S	S	S	S	S
Direct steam injection	o	o	o	o	o	o	o	o	o	o
Scrapers on shafts	o	o	o	o	o	o	o	o	o	o
Cooling of jacket with tap water	o	o	o	o	o	o	o	o	o	o
Ball valves for draining	o	o	o	o	o	o	o	o	o	o
Steam filtration system	o	o	o	o	o	o	o	o	o	o

PARALLEL TWIN SHAFT COOKING MIXERS WITH DOUBLE JACKET



MODEL OF MACHINES [MIX COOK]	500 S	750 S	1000 S	1250 S	1600 S	2100 S	2600 S	3200 S	3800 S	4800 S
	500 SV	750 SV	1000 SV	1250 SV	1600 SV	2100 SV	2600 SV	3200 SV	3800 SV	4800 SV
H [cm]	165	181	195	202	205	225	227	252	282	302
H1 [cm]	149	161	162	172	167	185	187	221	232	252
H2 [cm]	230	265	273	294	311	340	350	378	398	430
H3 [cm]	251	271	282	282	300	300	325	325	358	406
L [cm]	260	265	270	290	340	371	373	381	405	436
A [cm]	130	145	155	166	176	192	205	212	229	232
A1 [cm]	195	205	227	236	246	262	275	408	299	305
A2 [cm]	182	197	206	218	228	244	258	271	283	290

RM SERIES

The RM series is a specific type of mixers with a single shaft construction with a capacity from 300 to 4500 liters. With a wide range of products, individual configuration and a wide range of accessories, you can choose a machine that is perfectly suited to your technological requirements and the reliable operation of which you will be enjoying for decades.



SINGLE SHAFT DOUBLE HELIX CONTRA FLOW MIXER



DOUBLE-RIBBON SHAFT

These units are equipped with a characteristic two-ribbon shaft with smaller and larger diameters and a counter-rotating direction of rotation, which allows extremely fast mixing time.



UNLOADING

Unloading is carried out by a pneumatic butterfly valve located in the central point of the mixing bowl, which allows for quick time of valve opening and closing.



CONTROL

The RM series mixers are equipped as standard with a colour and reliable HMI touch screen, which is user-friendly and intuitive to use. The software allows access control, manual and automatic operation and up to 100 mixing programs, where each can consist of 5 programmable steps.



VACUUM SYSTEM






















The RM series vacuum mixers can be optionally equipped with a vacuum system. The vacuum mixing process improves absorption of liquids, distribution and absorption of spices and other additives, enables density control, and eliminates air bubbles.



APPLICATION

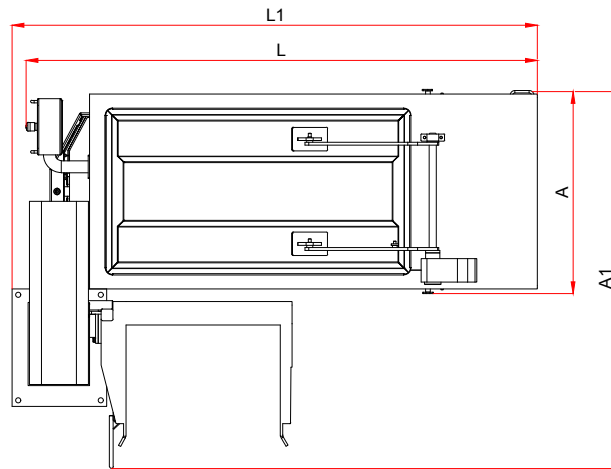
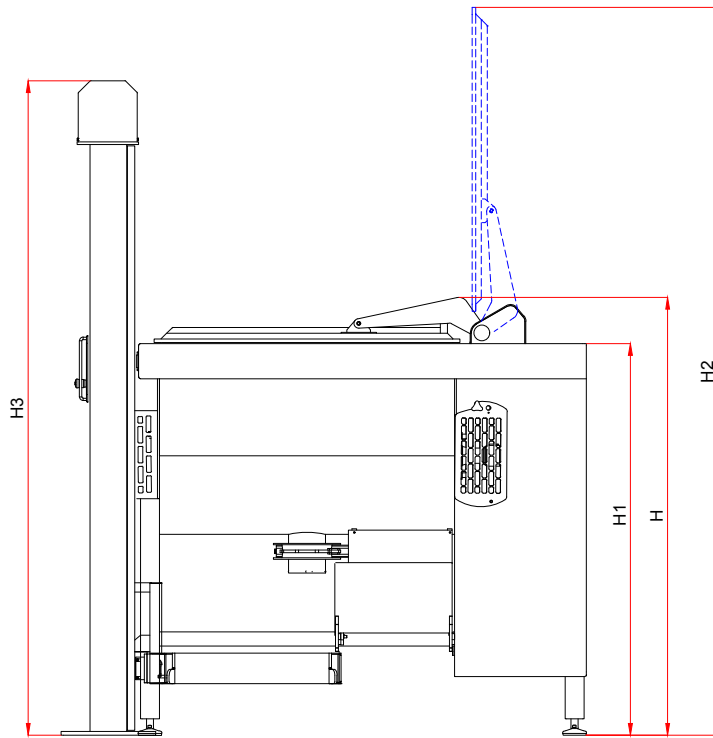
The N&N's RM series mixers are designed to mix most loose products such as mixtures of spices, food additives, liquid and semi-liquid products.

SPECIFICATION

MACHINE TYPE [RM]	300	600	1000	1800	2500	3500	4500
Total capacity [L]	300	600	1000	1800	2500	3500	4500
Max filling [L]	225	450	750	1350	1875	2625	3375
Motor power [kW]	5,5	7,5	11	15	22	30	37
Shaft rotation speed [rpm]	4-36	3-28	3-22	3-18	3-15	2-12	1-10
Standard control							
Mixer net weight [kg]	640	940	1550	1900	2600	3400	4200
Fuse [A]	25	32	50	63	100	120	140
Loader option	PW 2/250	PW 2/250	PW 2/250	PW 2/250	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000	PZ 2/250 or PW 2/1000
Unloading bin DIN 9797	200L 	200L 	200L 	200L 	1x200L 	1x200L 	1x200L 
Opening/Closing lids							

MODEL OF MACHINES [RM]	300	600	1000	1800	2500	3500	4500
Column loader	o	o	o	o	o	o	o
PLC and HMI	S	S	S	S	S	S	S
Smooth variable speed	S	S	S	S	S	S	S
Temperature sensor	o	o	o	o	o	o	o
Water dosing system	o	o	o	o	o	o	o
Weighing system	o	o	o	o	o	o	o
"Easy Clean" shafts seals	-	-	-	-	-	-	-
Additional grid	o	o	o	o	o	o	o
Polished shafts and bath	o	o	o	o	o	o	o
Double jacket max pressure 2.0 Bar	o	o	o	o	o	o	o
Dust proof sealed lid	S	S	S	S	S	S	S
Vacuum version	o	o	o	o	o	o	o

SINGLE SHAFT DOUBLE HELIX CONTRA FLOW MIXER

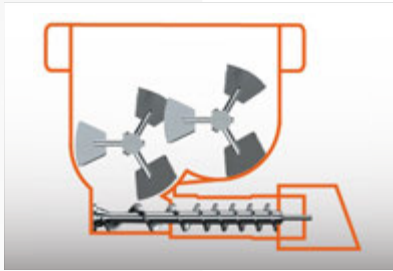


MODEL OF MACHINES [RM]	300	600	1000	1800	2500	3500	4500
H [cm]	180	188	210	243	251	273	296
H1 [cm]	156	167	190	210	220	232	244
H2 [cm]	280	311	280	310	350	375	398
H3 [cm]	282	282	300	325	341	361	378
L [cm]	200	218	260	295	303	385	418
L1 [cm]	223	232	287	330	339	420	453
A [cm]	80	88	102	124	138	154	167
A1 [cm]	160	170	180	201	215	231	238

MG SERIES

The MG series mixer-grinders is an innovative combination of a twin shaft paddle mixer and a high-end grinder, which is ideal for preparing, grinding and forming products such as minced meat and other products. The combination of two units in one compact body saves a great deal of space and, above all, significantly shortens the process by eliminating transport between a standard mixer and a grinder, as would be the case with a conventional solution.





MIXING SYSTEM

Gentle yet effective mixing with two paddle shafts, identical to the standard mixer, maintains the perfect structure of the stuffing and ensures efficient mixing of both fatty and lean meat, up to 20% faster. This is the ideal solution for mixing and grinding pre-minced meat and other meat products, where efficient mixing in a short time, excellent product structure and the maintenance of an adequate colour contrast after grinding is essential.



GRINDING

The MG series machines are specially developed for the grinding of pre-minced meat. The grinder's throat is located perpendicularly under the mixer's tank. In the lower half of the tank there is a container, which thanks to specially shaped paddles of the mixer quickly fills the grinder's throat, leaving almost no leftovers.



CONTROL

The mixer-grinders of MG series mixers are equipped with reliable manual operator panels or colour HMI touch screen, which is user-friendly and intuitive to use. The software allows access control, manual and automatic operation and up to 100 mixing programs, where each can consist of 5 programmable steps.



AUXILIARY TROLLEY



The auxiliary trolley on which the screw and cutting tools can be removed directly is an ideal and hygienic solution for storing the screw while washing it and saving space.



APPLICATION

The mixer-grinders of the MG series are an ideal solution for mixing and final grinding of already pre-grounded products such as meat filling for sausages, hamburgers, nuggets, vegetables purées and fruit pulp and many others.

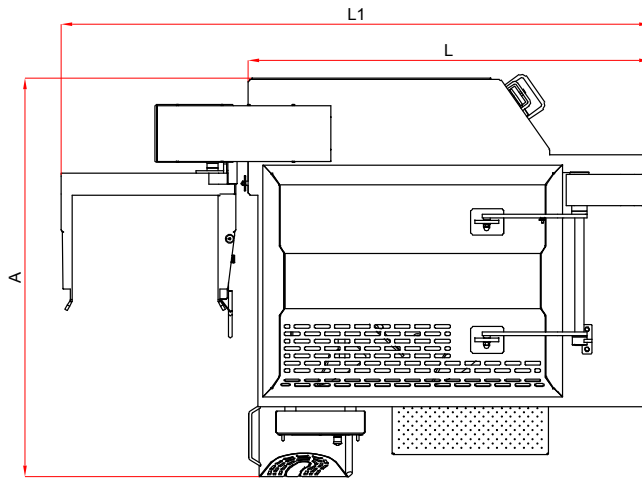
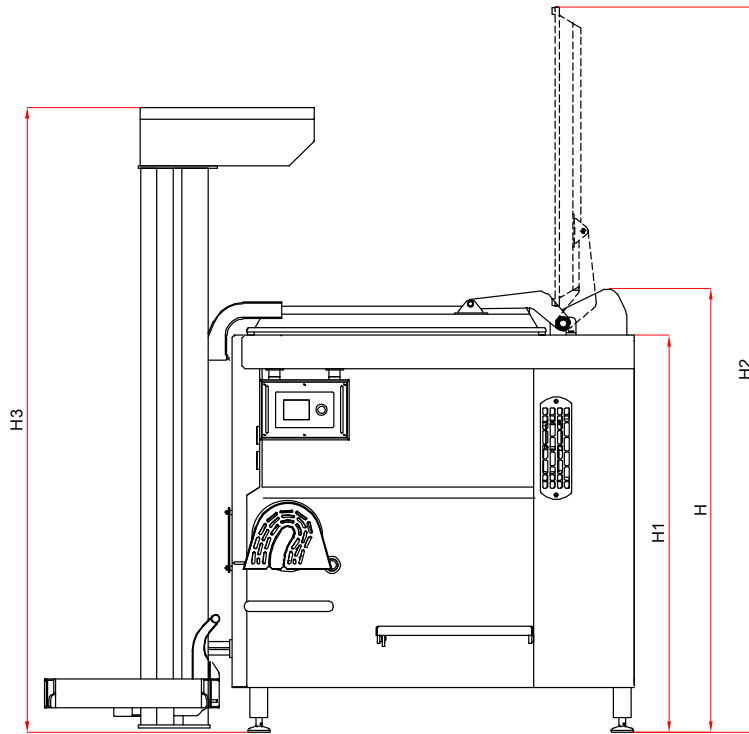
SPECIFICATION

MACHINE TYPE [MG]	450/160	900/160	1500/200
Total capacity [L]	450	900	1500
Max filling [L]	338	675	1125
Mixer power [kW]	4,5	11	15
Grinder power [kW]	optionally	optionally	optionally
Shaft rotation speed [rpm]	20/40	16/32	14/28
Standard control			
Mixer net weight [kg]	1530	1970	2780
Diameter of throat [mm]	160	160	200
Fuse [A]	63/100	80/100	140/100
Opening/ Closing lids	 P	 P	 P
Required pressure [bar]	6	6	6

MODEL OF MACHINES [MG]	450/160	900/160	1500/200
Column loader	o	o	o
Button control panel	S	S	S
PLC and HMI	o	o	o
Smooth variable speed	o	o	o
Temperature sensor	o	o	o
Water dosing system	o	o	o
Weighing system	o	o	o
"Easy Clean" shafts seals	o	o	o
Additional grid	-	-	-
Polished shafts and bath	o	o	o
Double jacket max pressure 2,0 Bar	o	o	o
Dust proof sealed lid	o	o	o

MIXER-GRINDERS

MG



MODEL OF MACHINES [MG]	450/160	900/160	1500/200
H [cm]	180	200	229
H1 [cm]	162	178	207
H2 [cm]	289	326	328
H3 [cm]	271	282	325
L [cm]	150	181	222
L1 [cm]	234	265	306
A [cm]	179	180	246

MV SERIES

N&N MV series vacuum tumblers are unique machines with mechanical drum positioning, allowing it to tilt in the range of 120 degrees. The application of the tumbling process ensures optimization of the weight with obtaining a higher quality of the manufactured products. Tumbling takes place in a continuous vacuum, providing a closed environment for better food safety and greater product consistency.





PRINCIPLE OF OPERATION

Thanks to the adjustable tilt angle and asymmetrical fins, the MV series tumblers ensure that the meat is gently "tumbled" during rotating (to the left), as the product is not lifted. If less sensitive products are tumbled (to the right), the asymmetric fins lift the product in order to achieve a more aggressive effect, which leads to a reduction in process time. Additional removable forks allow for tumbling even very small parts. The robust construction and tight cover allow the MV series tumblers to achieve a vacuum of up to 99% (10mm Hg). The effect of vacuum allows for plasticization of meat and obtaining meats with improved structure and colour.



DESIGN AND ERGONOMICS

Simple and stable welded stainless steel construction meets the highest hygienic requirements, ensures easy operation, cleanliness and long life of the machine. Ergonomic solutions such as the vacuum lid holder allows for hygiene and comfort of work.



CONTROL

All MV series machines are equipped as standard with a colour, intuitive and reliable HMI touch panel, which is user-friendly and intuitive to use. The software allows for access control, manual and automatic operation, and saving up to 100 programs, where each can consist of 5 programmable steps.



OPTIONAL LOADING ARM







Each of the MV series tumblers can be optionally equipped with a loading arm adapted to DIN9797 standard euro bins or other containers. The compact design saves space and improves ergonomics.



APPLICATION

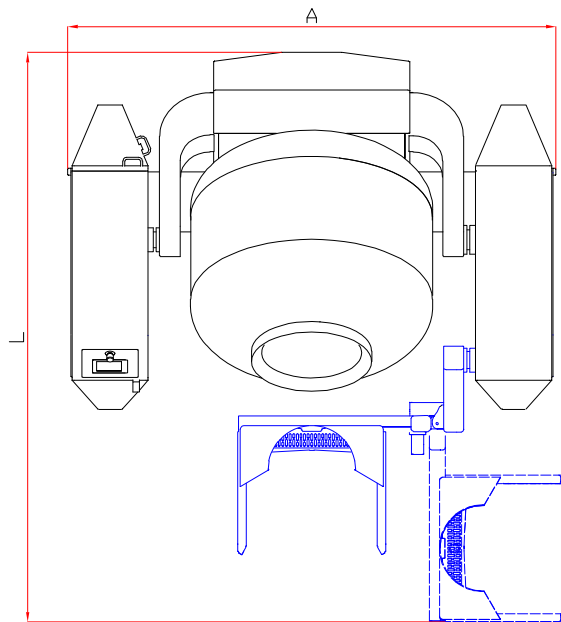
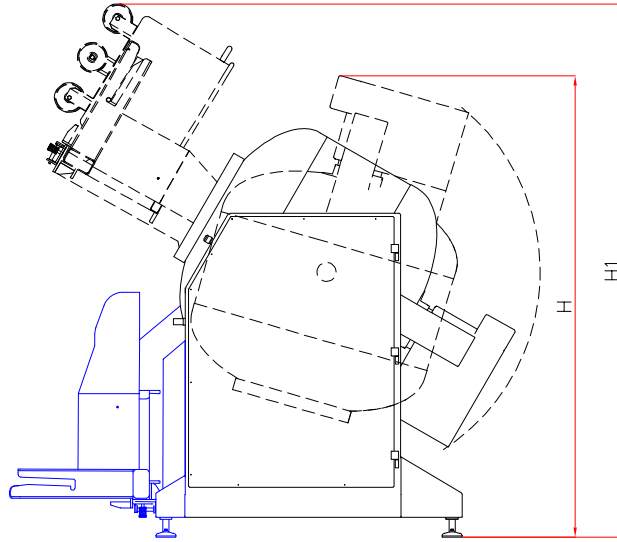
The MV series tumblers are perfect for intensive pickling and vacuum tumbling of both large and small meat elements as well as gentle processing of poultry elements such as wings, legs and fillet. The internal shape of the tumbler's drum enables wet pickling, plasticizing, dry salting and marinating. Vacuum-free machines are also suitable for mixing cereal, vegetable and fruit products.

SPECIFICATION

MACHINE TYPE [MV]	300	600	1000
Total capacity [L]	300	600	1000
Max filling [L]	160	380	600
Motor power [kW]	2,3	4,0	7,0
Fuse [A]	16	20	25
Loader option	PZ 3/250	LIFTING ARM	LIFTING ARM
Busch vacuum pump [m ³ /h]	21	40	40
Standard control			
Drum rotation speed [rpm]	0-9	0-9	0-9
Mixer net weight [kg]	160	380	1480
Unloading bin DIN 9797	200L 	200L 	200L 

MODEL OF MACHINES [MV]	300	600	1000
Loader option	o	o	o
PLC and HMI	S	S	S
Smooth variable speed	S	S	S
Temperature sensor	-	-	-
Weighing system	-	-	-
Double jacket max pressure 2.0 Bar	-	-	-

VACUUM TUMBLERS



MODEL OF MACHINES [MV]	300	600	1000	600 with lifting arm	1000 with lifting arm
H [cm]	187	190	232	190	232
H1 [cm]	-	-	-	261	269
L [cm]	132	153	180	233	288
A [cm]	158	200	225	216	244

FL SERIES

The FL series flakers are ideal for grinding blocks of frozen meat or other food in continuous work. The equipment is suitable for cutting blocks in Euro or US standard and can be processed at temperatures up to -30 °C and the feeding table can be used to unpack the product from the foil. Unique blade and cutting drum geometry combined with automatic clamping (models FL-440 and FL-660) allows for high productivity while maintaining high cutting quality, which is particularly suitable for further processing of the product in cutters, grinders or other equipment.





CUTTING DRUM

Ideal cutting of the FL series machines is possible thanks to the unique construction of knives and drum geometry, which in combination with the integrated pneumatic clamping system of the blocks allows to obtain above-average results. This series has a low noise level.



HIGH-QUALITY CUTTING BLADES

As one of the few flakers on the market, FL series flakers can be equipped with two types of blades, which allow for 6 different cutting thicknesses (with low knives - 3, 6, 9 mm; with high knives - 14, 17, 20 mm), which allows you to optimally adapt to the requirements of your production.



CROSS BLADES

N&N is one of the few manufacturers in the world offering additional "Cross" blades. Thanks to these blades, the product is not only flaked by the main U-shaped blades, but at the same time it is also cut crosswise, which results in much smaller pieces. These pieces are ideal for further processing in mixes or for the preparation of emulsions for sausage production, individual mincing processes of minced meat, hamburgers or other moulded products.



HYGIENE-FRIENDLY DESIGN










Thanks to the fully opening lid above the cutting area and the quick disassembly of the block pusher, cleaning of the machine is very easy. All parts in contact with the product are sandblasted or ground and the machine body is completely enclosed and the control box is integrated in the machine frame. Thanks to these solutions, we set the highest hygiene standards in the industry.



APPLICATION

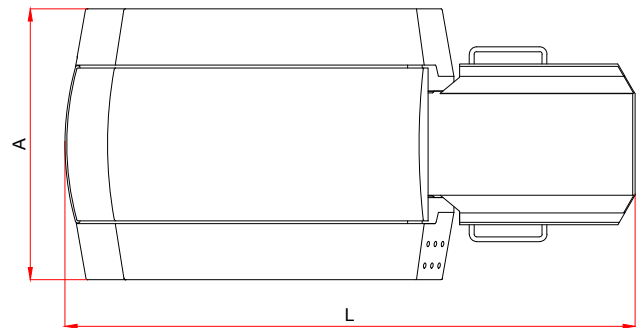
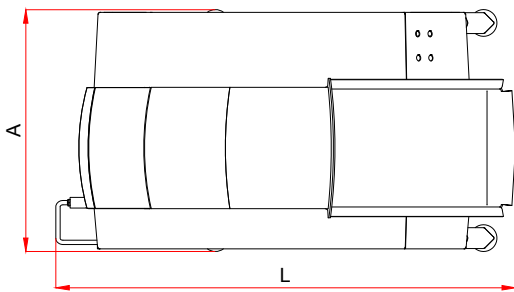
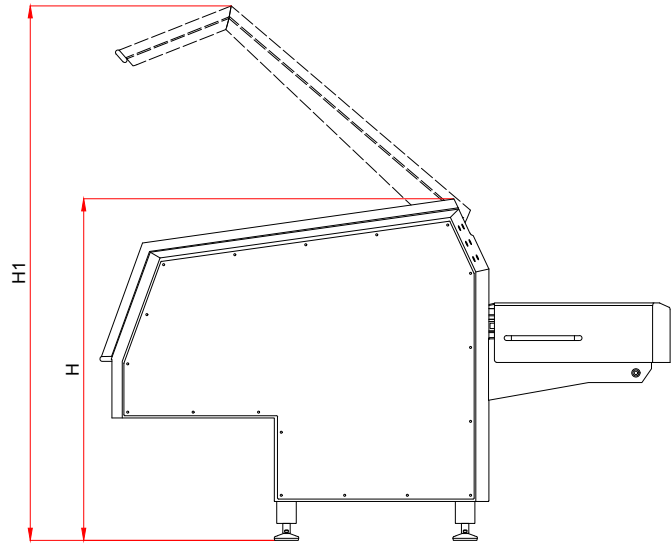
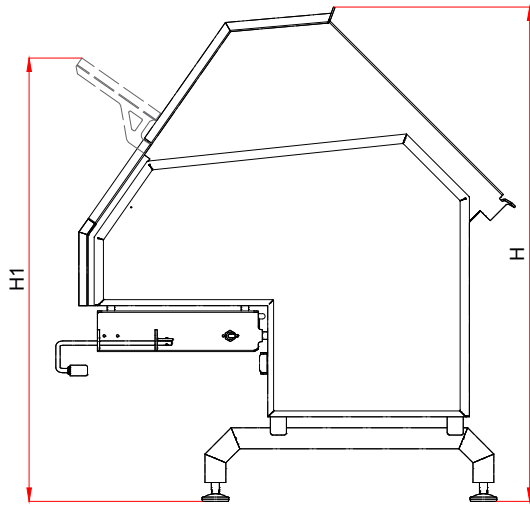
The FL series flakers are ideal for cutting blocks of frozen meat, fish, vegetables or fruit, as well as dairy products such as cheese or confectionery products such as chocolate blocks.

SPECIFICATION

MACHINE TYPE [FL]	330	440	660
Theoretical maximum yield [kg/h]	1500	4000	8000
Cutting dimension [mm]	25x420x650	25x420x650	350x810x650
Cutting thickness	low knives - 3,6,9 mm high knives - 14,17,20 mm	low knives - 3,6,9 mm high knives - 14,17,20 mm	low knives - 3,6,9 mm high knives - 14,17,20 mm
Amount of cutting blades	4 pcs (high knives in set)	4 pcs (high knives in set)	7 pcs (high knives in set)
Speed cutting drum [rpm]	130	I-70 II-140	112
Motor power [kW]	7,5	9,2/11,5	18,5
Standard voltage	400,50	400,50	400,50
Standard control			
Flaker net weight [kg]	590	980	1860
Fuse [A]	20	32	50
Loader option	-	PZ 3/250	PZ 3/250
Cutting to	200L 	200L 	BIG BOX 
Opening/ Closing lids			
Required pressure [bar]	-	6	6
Block temperature	-30°C	-30°C	-30°C

MODEL OF MACHINES [FL]	330	440	660
Loader option	-	o	o
Button control panel	S	S	S

FROZEN BLOCK FLAKERS



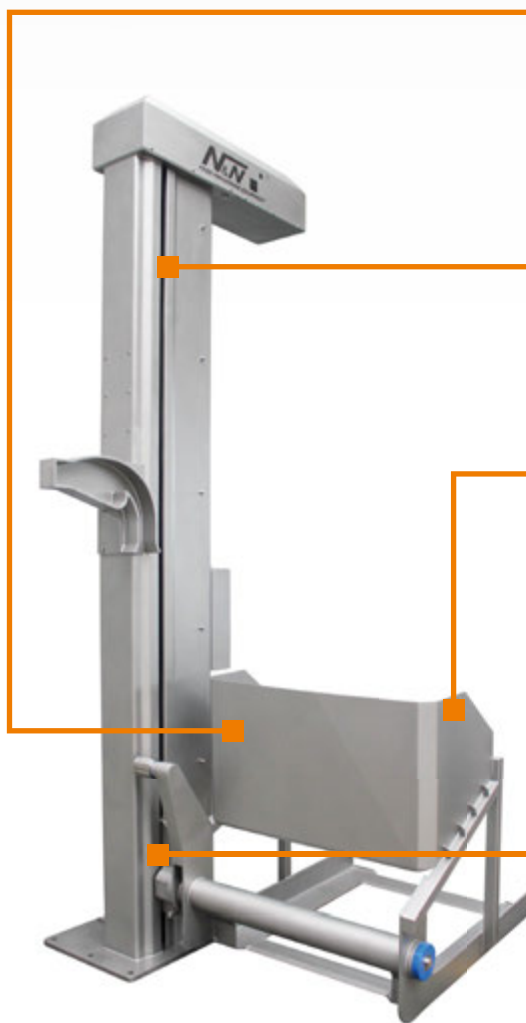
FL 330

FL 440 & FL 660

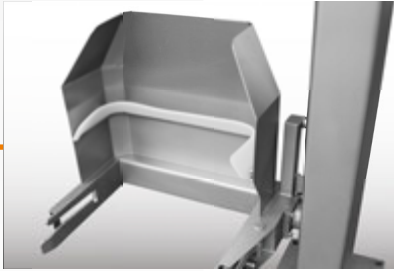
MODEL OF MACHINES [FL]	330	440	660
H [cm]	185	141	178
H1 [cm]	166	211	269
L [cm]	172	236	295
A [cm]	90	112	160

P SERIES

N&N Nadratowski offers high quality column loaders and tippers for standard euro bins, dolavs, as well as other tanks on request. The column loaders can be fixed to the mixer, in a free-standing version (ground mounting) or in a mobile version as a loading system for other equipment and applications. All of our loading systems have the CE mark.



COLUMN AND SWING LOADERS



HIGHEST QUALITY OF WORKMANSHIP

The P-series loading systems are top-class aesthetics and workmanship, and their reliable and durable construction allows to enjoy reliable operation for many years.



INDIVIDUAL GRIPPERS

Column loader, aside from the standard gripper of the DIN9797 euro bin, can be adapted to lift barrels, crates or other containers according to the customer's needs and requirements.



INDIVIDUAL APPROACH

A wide range of additional accessories allows us to increase the range of applications for our elevators and tippers, for example by means of sealing jackets, pressure funnels or an additional strainer.



SAFETY

N&N Nadratowski puts great emphasis on the safety and reliability of its equipment. Column loaders are equipped with a highly durable galvanized chain and a mechanical safety brake provides additional protection against falling of the trolley in the event of chain breakage.

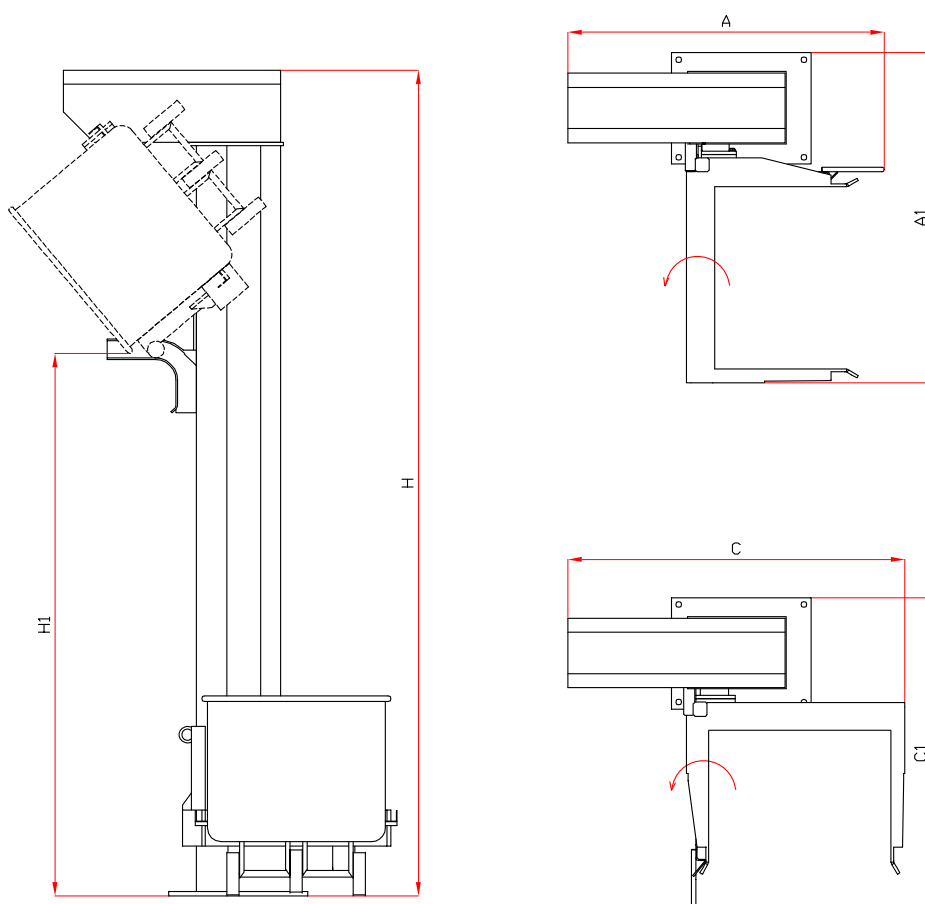


INDIVIDUAL SOLUTIONS

In order to meet the expectations of its customers, N&N Nadratowski is able to offer customized loading, unloading or handling solutions based on proven solutions.

SPECIFICATION

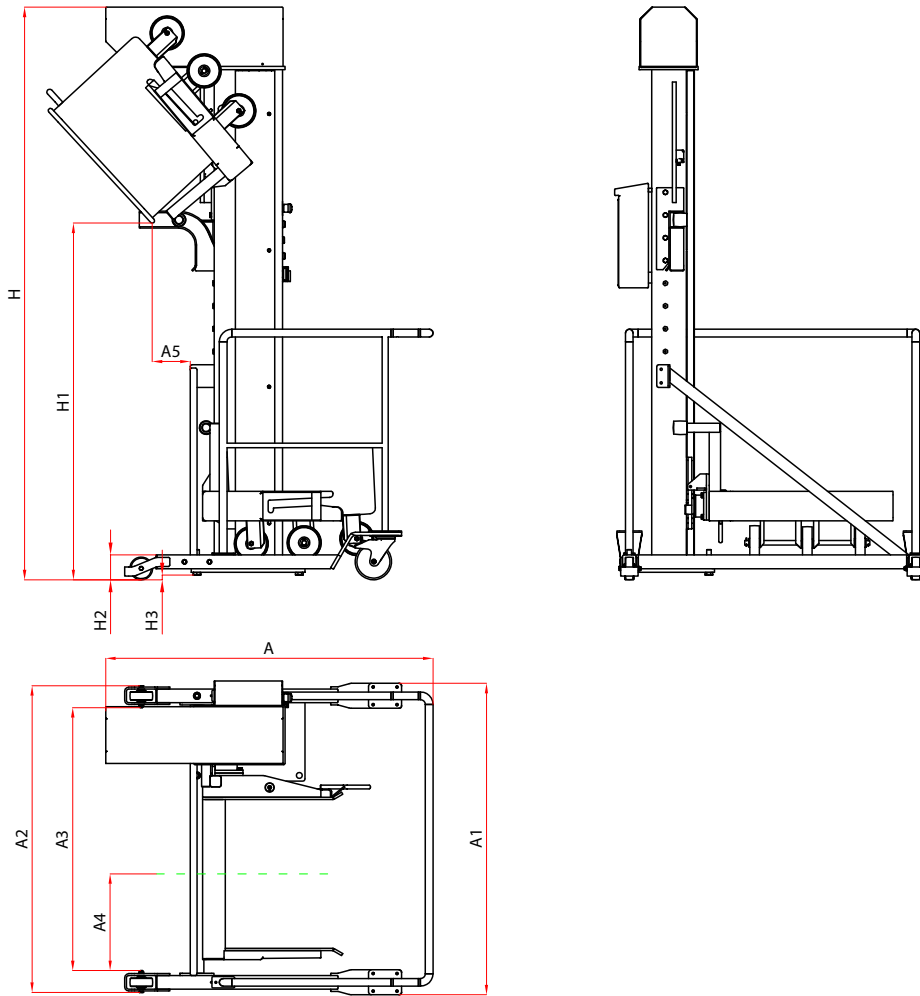
COLUMN LOADER MODEL [P]	PW 2/250 (free standing version)	PM 2/250 (movable version)	PW 2/600	PW 2/1000
Maximum lifting capacity [kg]	380	380	600	1000
Motor power [kW]	0,75	0,75	1,5	2,2
Fuse [A]	10	10	10	10
Lifting speed [m/s]	0,1	0,1	0,1	0,1
Discharge height	table row - H1	table row - H1	table row - H1	table row - H1
Net weight [kg]	330 (type height III)	380 (type height III)	605 (type height I)	1100 (type height I)



PW 2/250 (FREE STANDING VERSION)

TYPE HEIGHT	I	II	III	IV	V	VI	VII	VIII
H [cm]	249	279	297	322	338	358	378	406
H1 [cm]	105-155	135-185	155-205	175-225	195-245	215-265	235-285	265-315
A [cm]	114	114	114	114	114	114	114	114
A1 [cm]	119	119	119	119	119	119	119	119
C [cm]	121	121	121	121	121	121	121	121
C1 [cm]	112	112	112	112	112	112	112	112

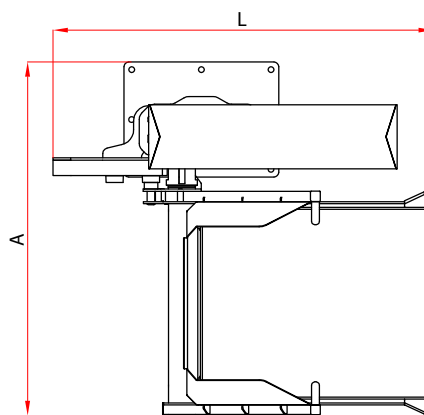
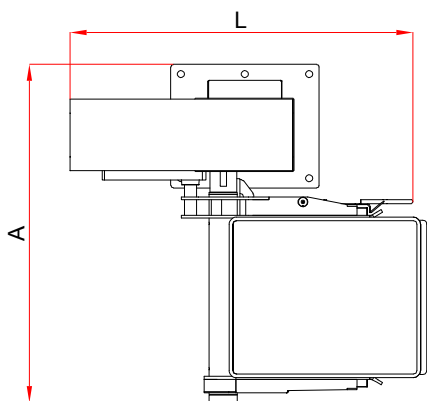
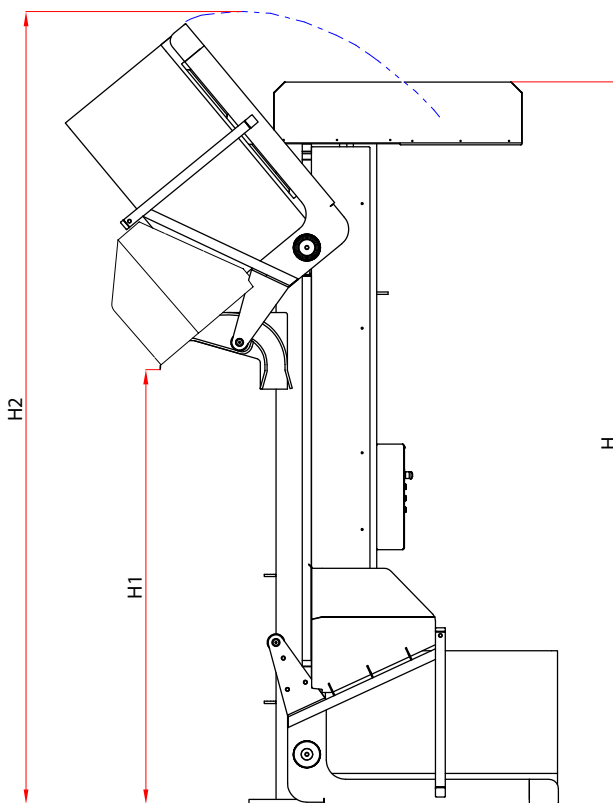
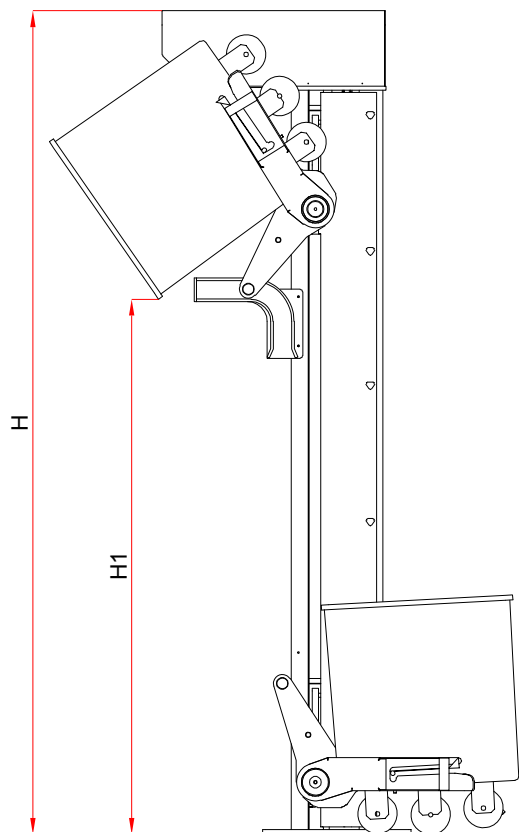
COLUMN AND SWING LOADERS



PM 2/250 (MOVABLE VERSION)

TYPE HEIGHT	I	II	III	IV	V	VI	VII	VIII
H [cm]	253	283	301	326	342	362	382	410
H1 [cm]	105-155	135-185	155-205	175-225	195-245	215-265	235-285	265-315
H2 [cm]	11	11	11	11	11	11	11	11
H3 [cm]	2	2	2	2	2	2	2	2
A [cm]	144	144	144	144	162	162	162	162
A1 [cm]	137	137	137	137	159	159	159	159
A2 [cm]	135	135	135	135	157	157	157	157
A3 [cm]	116	116	116	116	137	137	137	137
A4 [cm]	43	43	43	43	53	53	53	53
A5 [cm]	16	16	16	16	13	13	13	13

SPECIFICATION



PW 2/600

PW 2/1000

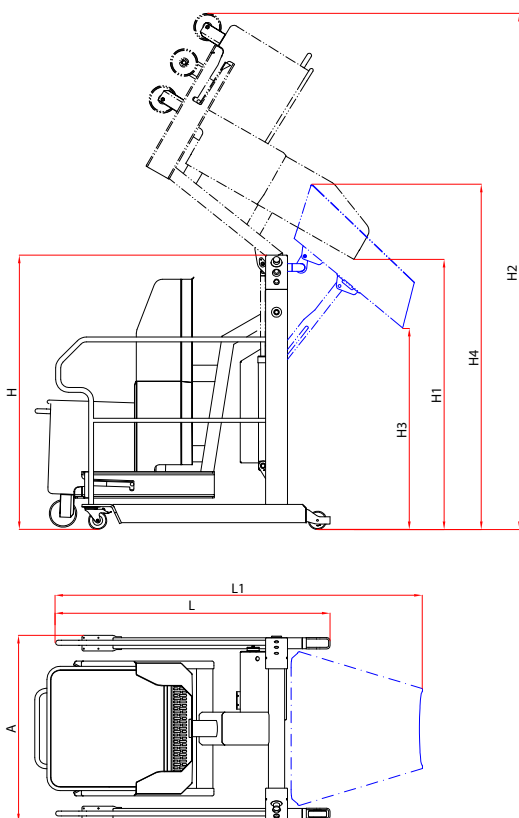
TYPE HEIGHT	I	II	III
H [cm]	324	369	399
H1 [cm]	160-210	195-245	225-275
L [cm]	140	140	140
A [cm]	141	141	141

TYPE HEIGHT	I	II	III	IV	V	VI
H [cm]	286	335	377	401	431	453
H1 [cm]	100-135	149-184	191-226	215-250	228-280	250-302
H2 [cm]	325	374	416	440	470	492
L [cm]	197	197	197	197	197	197
A [cm]	186	186	186	186	186	186

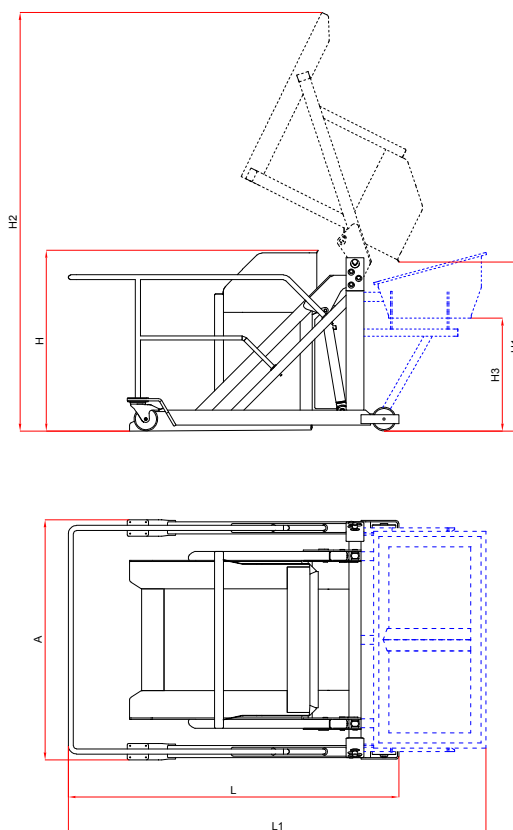
COLUMN AND SWING LOADERS

P

SWING LOADER MODEL [P]	PZ 3/250	PZ 3/1000
Maximum lifting capacity [kg]	380	1000
Column loader power [kW]	0,75	1,5
Fuse [A]	6	10
Voltage [V,Hz]	230,50 or 400,50	400,50
Net weight [kg]	186	475 (type height I)



PZ 3/250



PZ 3/1000

TYPE HEIGHT	PZ 3/250	PZ 3/250 MV
H [cm]	129	150
H1 [cm]	118	148
H2 [cm]	240	283
H3 [cm]	-	110-133
H4 [cm]	-	189
L [cm]	130	151
L1 [cm]	-	198
A [cm]	103	103

TYPE HEIGHT	I	II	III
H [cm]	122	150	175
H1 [cm]	113	130	152
H2 [cm]	283	315	346
H3 [cm]	73	96	-
L [cm]	222	236	196
L1 [cm]	281	295	-
A [cm]	164	164	164

PRODUCTION LINES

As one of the market leaders, N&N Nadratowski is fully aware that the demand for automatic production lines is growing rapidly all over the world. Production lines are used for the following products: minced meat, hamburgers, sausage filling, meat standardization and finished products. This continuous trend towards production lines is driven by the need to continuously reduce production costs (while maintaining constant quality), standardize processed raw materials and ensure traceability.

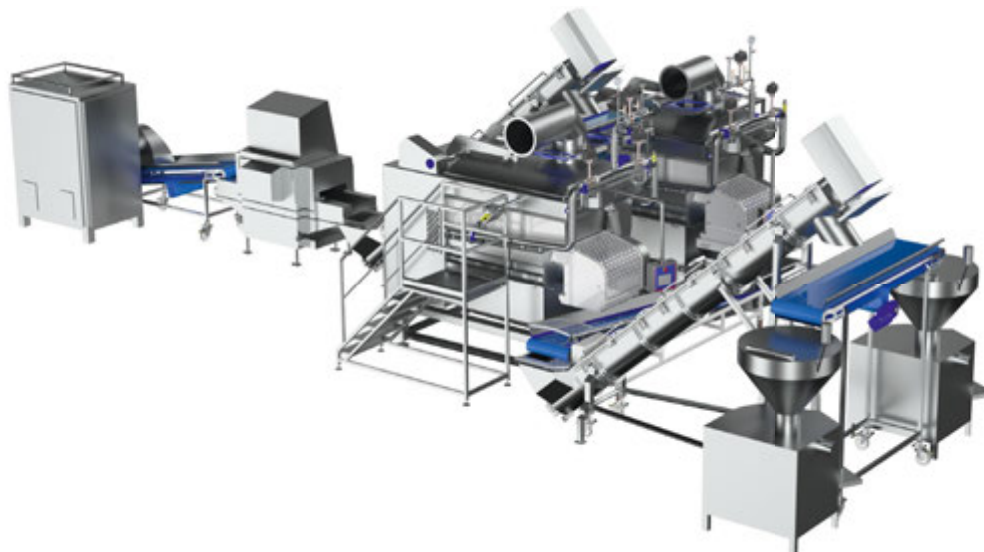


TAILOR-MADE SOLUTIONS

Together with you, N&N Nadratowski is able to offer ready-made solutions perfectly tailored to your needs, matching the right equipment, taking into account the available room size, production volume, processing methods and product diversity. We ensure the flow of materials and connect the installation both mechanically and in terms of operation, data processing and safety technology to achieve high quality, efficient and reliable production processes for your products. The result is a turnkey solution, from the raw material to the finished product.

OPTIMAL COMPONENTS

Our successful projects are based on proven N&N equipment such as mixers, mixer-grinders and flakes. Our range also includes a variety of transport systems, such as belt conveyors or screw conveyors. The central operator panel, including control and monitoring equipment and optimal safety solutions complement the range of production lines. Thanks to automated production lines, N&N guarantees consistent product quality and accurate repeatability.

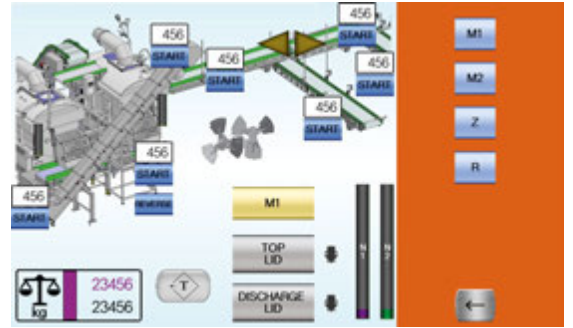


AUTOMATIC LINES



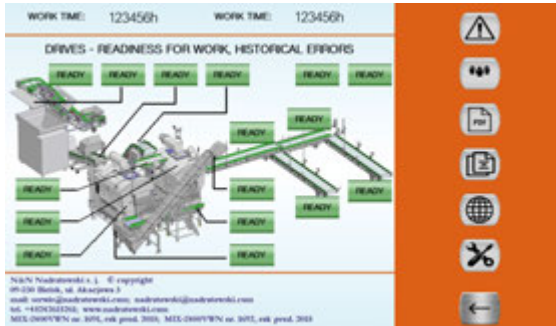
LINE CONTROL STATION

- Control station for operation, system visualization and central error display
- Integrated 12" touch screen
- Manual or automatic operation of machines
- Filling level indicator and tank monitoring
- Mass indicators



N&N MIXING CONTROL SYSTEM

- Freely programmable automatic operation sequence
- Formulation, storage and automation of recipes and production lists
- Programming machine options
- Up to 999 programs depending on customer requirements



OCCUPATIONAL SAFETY

- Strong emphasis on the safety of our lines. We are able to achieve this with advanced software
- Top class industrial automation components in the field of safety
- Robust machines, manufactured according to the highest standards



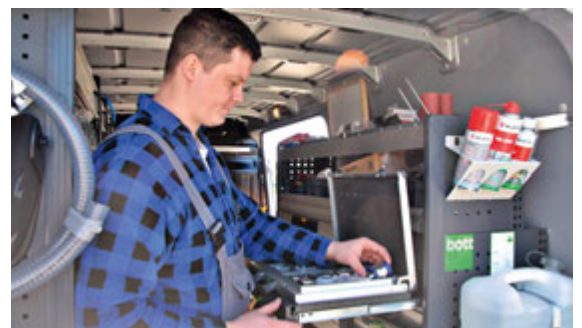
TRANSPORT SYSTEMS

- Belt, screw and giraffe type convey
- All systems can be equipped with a sensor controlled funnel allowing filling with smooth speed control
- Made of 100% stainless steel, designed to the highest hygiene standards



BUFFER SYSTEMS

- Different capacity buffer tanks with optional agitator and filling level sensor



PROFESSIONAL SERVICE

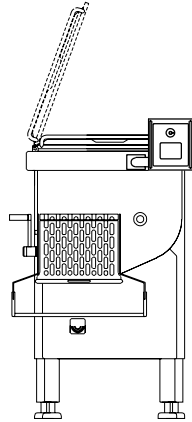
- Minimal maintenance is required due to the robust and durable construction of the individual machines in the line
- Easily accessible inspection doors
- Fast and professional service



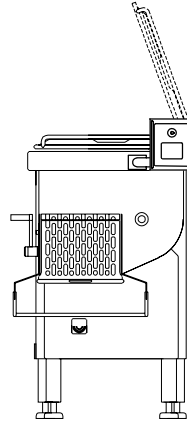
STATIONARY MIXERS

MIX, MIX V, MIX S, MIX SV

TYPE A
RIGHT-HAND SYSTEM

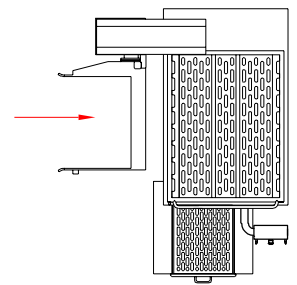
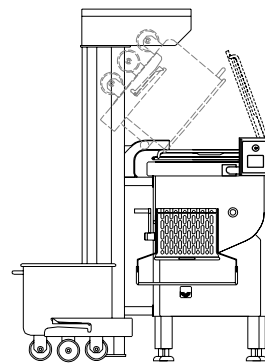
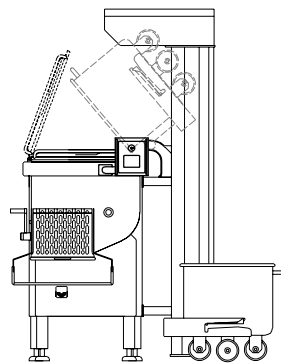
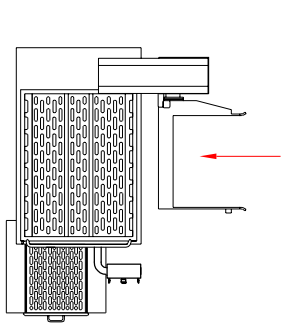


TYPE B
LEFT-HAND SYSTEM



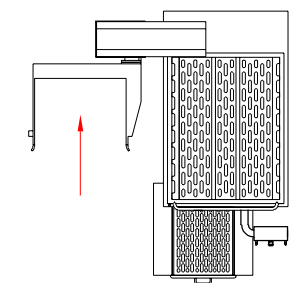
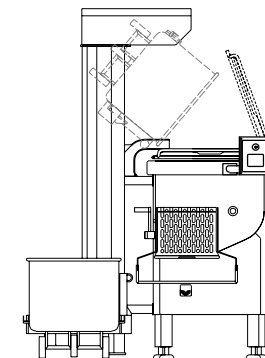
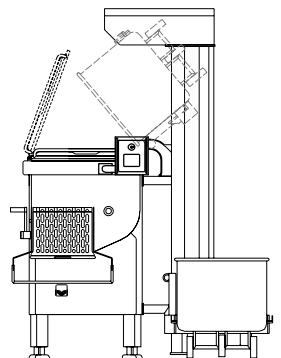
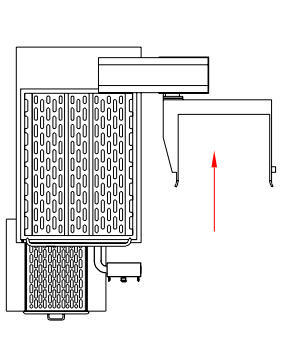
STATIONARY MIXERS

MIX, MIX V, MIX S, MIX SV +
COLUMN LOADER PZ 2/250 & PW 2/250



TYPE A
RIGHT-HAND SYSTEM
LOADER 90°

TYPE B
LEFT-HAND SYSTEM
LOADER 90°



TYPE C
RIGHT-HAND SYSTEM

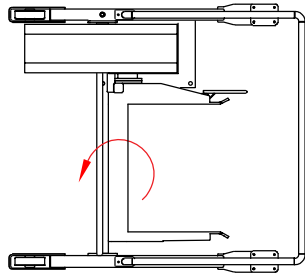
TYPE D
LEFT-HAND SYSTEM



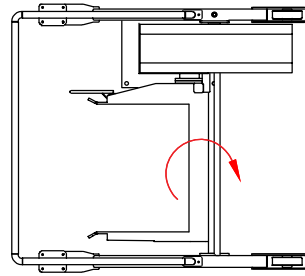
COLUMN LOADERS

PM 2/250 (MOVABLE VERSION)

TYPE A
RIGHT-HAND SYSTEM



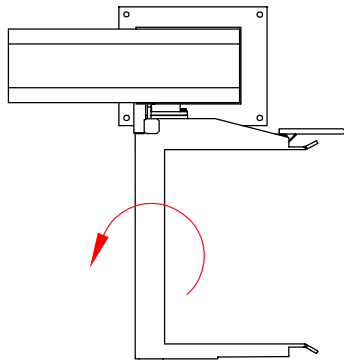
TYPE B
LEFT-HAND SYSTEM



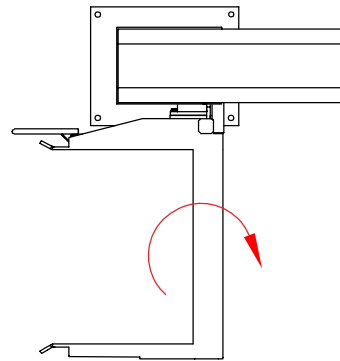
COLUMN LOADERS

PW 2/250 (FREE STANDING VERSION)

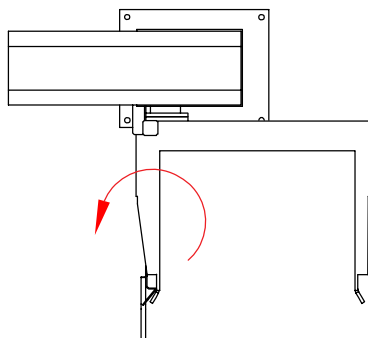
TYPE A
COLUMN LOADER



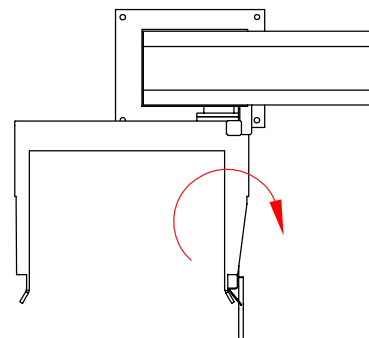
TYPE B
COLUMN LOADER



TYPE C
COLUMN LOADER



TYPE D
COLUMN LOADER



OPTIONS



COLUMN LOADERS

All models of mixers can be equipped with one or two column loaders for standard DIN9797 euro bins or one loader for dolav container. Screw and belt conveyers are available on individual request.



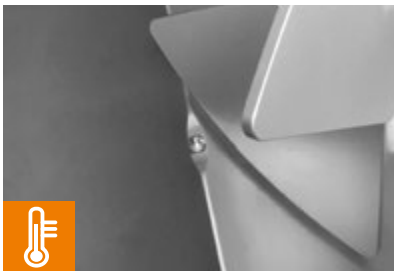
PLC AND HMI

An advanced type of control by means of a HMI and PLC colour touch panel. An unquestionable advantage is the advanced, but intuitive and user-friendly interface created by the internal team of programmers.



EASY CLEAN SHAFT SEALS

A system of monolithic silicone seals to help maintain the ideal cleanliness of the mixing bowl by quick and easy disassembly for precise washing without the use of tools.



TEMPERATURE MEASUREMENT

The sensor built in the mixing bowl allows to have the temperature of the mixed product under constant control and gives the possibility to interrupt the process if the set parameter is exceeded. Easy reading and archiving on the control panel is an additional advantage.

***Option only available with PLC and HMI**



DOSAGE OF WATER

The system of automatic dosing of any chosen amount of water or other liquids with similar physical parameters to the kneading-trough at any time in the manual process mode or in a predefined stage of the process in the automatic mode.

***Option only available with PLC and HMI**



WEIGHING SYSTEM

The use of load cells mounted underneath the trough allows for accurate and precise weighing of products whilst in production, added and removed quantities and gives the ability to automatically start and stop the loading and unloading processes.

***Option only available with PLC and HMI**



SMOOTH GRINDER SPEED ADJUSTMENT

Possibility to adjust the grinding screw speed in full range.

***Option only available with PLC and HMI**



SMOOTH SHAFT SPEED ADJUSTMENT

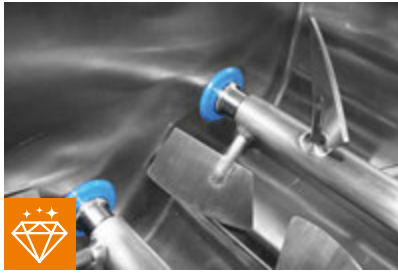
The rotating speed of the mixing shafts can be adjusted in the full range.

***Option only available with PLC and HMI**



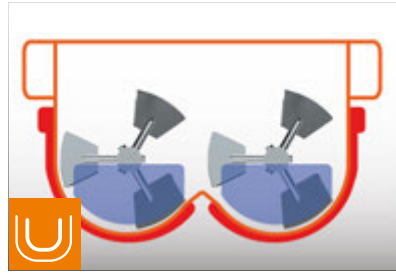
ANALOGUE/BUTTON CONTROL

The simplest type of control available via a control panel with reliable buttons.



POLISHED BATCH AND SHAFTS

Surface of mixing bowl and mixing shafts with ground surface, which reduces the sticking effect of the product.



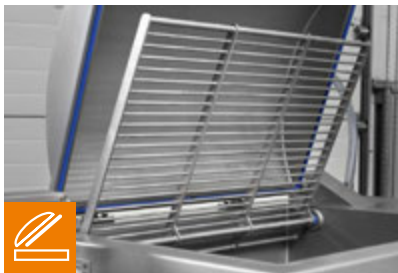
DOUBLE JACKET

The double heating/cooling jacket for water or other media serves to better control the process by maintaining the required product temperature.



FULLY SEALED COVER

Tight cover is suggested for use in the mixing of dusty products.



ADDITIONAL OPENWORK COVER

Stationary mixers with full and tight top cover can be optionally equipped with an additional openwork cover, which allows us to work safely with the open main cover, which gives us the possibility of direct control or addition of spices, without interrupting the mixing process.



THE LCO₂ COOLING SYSTEM TOP INJECTION

The optional LCO₂ liquid cooling system from above (so-called snow-laying by means of snow canals) provides excellent process temperature control, improves product ductility, making moulding easier and more stable, thus maintaining product shape during further processing. Cooling also reduces bacterial growth and extends the shelf life of the mixed product.



THE LN₂ OR LCO₂ COOLING SYSTEM BOTTOM INJECTION

The optional LN₂ or LCO₂ liquid cooling system from below (direct nozzle injection) provides excellent process temperature control, improves product ductility, making moulding easier and more stable, thus maintaining product shape during further processing. Cooling also reduces bacterial growth and extends the shelf life of the mixed product.



RIBBON SHAFTS

All models of the MIX S and MIX SV series can be optionally equipped with ribbon shafts.



PADDLE SHAFTS

All models of the MIX Z, MIX ZV, MIX SZ and MIX SZV series can be optionally equipped with paddle shafts.



Z-TYPE FLAT SHAFTS

All models of the MIX SZ and MIX SZV series can be equipped with Z type flat shafts, ideal for kneading bakery and confectionery masses.



MANUALLY



BUTTON CONTROL PANEL



PLC AND HMI



HYDRAULICALLY



PNEUMATICALLY

200L



200L

2x200L



2x200L

BIG BOX



BIG BOX

1x200L



1x200L/BIG BOX
1200x1000x800 mm

2x200L



2x200L/BIG BOX
1200x1000x800 mm

-

NOT AVAILABLE

S

STANDARD

o

OPTIONALLY

*Let's mix
together*

NO  IN MIXING  nadratowski
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