EDITION 2.2

PRODUCT CATALOG DITION 2 2 WE COME FROM POLAND.



Chain conveyors Mobile conveyors Screw conveyors

Conveyor chains

Redler outlet slide gate

Silo outlet slide gate

Bucket elevators Two-way directional distributors Three-way







About us

THALE sp. z o.o. sp.k. Company (owner of the NICZUK brand) is a manufacturer of chain conveyors and other bulk material transport equipment. We have been designing and manufacturing high quality devices, many of which are still in operation, since 1980.



We produce in Poland

All our devices are manufactured in Poland. Direct supervision at each stage of the production process guarantees the highest quality and durability of the product.

Cooperation with the best

Over several decades of our activity we have delivered equipment to many customers who are leaders in their industries. Attention to detail and constant improvement of products have made NICZUK brand a synonym for durability. We provide support in the assembly and service of manufactured equipment.

ABOUT THE COMPANY



We support you at every stage of your investment

We focus on comprehensiveness – we provide technical support, think strategically and, based on the conditions on site, propose optimal solutions to meet the needs of our customers' companies.



Experienced specialists

We are an established brand on the Polish grain and milling market. The combination of the knowledge gained in working for the largest companies in Poland with the tools we have at our disposal guarantees professional and reliable service for our customers.



Projects support

We offer technical advice and support for constructors in the selection of conveyor technology. We select products with a view to adapting the new conveyor to the existing installation. We owe the success of the company and the satisfaction of our customers to the work of a team of qualified specialists.



Quality control

The assurance of constant and highest quality is guaranteed through constant supervision over the implementation processes, technical documentation and verification of supplied materials. Raw materials and semi-finished products are subject to quality control, the hardness of chains and the strength of elements, construction materials and composites are also checked.

We care for the environment

Environmental protection is an important part of the company policy. We implement a number of green projects and carry out activities aimed at reducing the consumption of energy maintaining the machinery park in perfect condition and strict supervision over the processes involving the use of chemical substances (varnishes, paints, solvents). Environmental awareness of the company's employees and cyclical training courses are an important element of the company's functioning.



Waste management and secondary raw materials

We plan, design and implement measures to reduce waste and its negative impact on the environment. Our waste management is very effective – we minimize waste generation "at source". All waste produced by us is transferred to specialized units for use in secondary production or disposal. We recycle 97% of our waste. Metal scrap, waste paper, plastic waste and waste oils are the main secondary raw materials at our plant.



Electricity

Electricity is the main medium consumed by the plant. We constantly strive to reduce electricity consumption by replacing power consumers, motors, hydraulic pumps, using reactive power and modernizing lighting. In addition, all machines are regularly inspected.



Selection of clean materials

We make every effort to use environmentally friendly raw materials and materials. We use the highest quality raw materials for production, taking into account their chemical composition and possible environmental impact.

EXAMPLES OF PROJECTS











Application:

NICZUK devices are used in the transport of bulk materials such as: grain, pulses and oilseeds, sawdust, fodder and biomass. They are most often used in oil mills, mills, feed mixing plants, port handling and grain and biomass warehouses.

Construction:

The evidence of NICZUK products quality is the most stable construction of the drive system, which guarantees reliable operation for years. Thick cross-sections of the materials used throughout the machine ensure the rigidity of the structure and reduce the noise generated during operation.

Characteristics:

Depending on the medium, the conveyors can transport material at an angle of up to 20°. The devices use NORD and SEW gear motors. The offer includes conveyors with a capacity of up to 300 tons.



ATEX-certified conveyors

Characteristics:

The ATEX EX II 2D certificate is a guarantee of safe operation of equipment in potentially explosive atmospheres

See page 15 for more information.

In the version adapted to work in conditions of increased explosion hazard, NICZUK devices are additionally equipped with:







Bearing rollers with an extended service life



Cable connections (earthing) discharge electrostatic charges



Transport of material on the upper deck

Self-cleaning conveyor





Standard version - roller chain return

In standard systems, roller chain return is used. They are made of PA6G, which guarantees long-term reliability under typical operating conditions.

The 1,900 mm long intermediate trough is equipped with four rollers: one guiding, stepped with a centering ridge and three smooth rollers. As the roller is mounted on a steel axle, it is easy to replace without the need to dismantle other elements of the conveyor body.

Use bearing rollers with additional sealing and reduce downtime.

Self-cleaning

Thanks to the use of rounded walls of the drive and return station and chain with sections equipped with buckets, we can eliminate the problem of the material transported in the conveyor. Repeated "rewinding" of the chain in the device will clean it from the the medium residues. The self-cleaning function allows us to meet the stricter technological requirements, present in the transport of various materials with one conveyor – especially appreciated in feed mixing plants, forwarding points and seed industry.









With upper transport deck

It is used in installations with a large amount of infeeds or in the case of outfeeds located before and after the infeed. Thanks to the use of a high double bottom, it is possible to transport the material through the upper deck towards the return station, where it falls to the lower bottom and is then taken to the drive station.

Use your conveyor more efficiently

The standard version of the chain conveyor could only transport material from the return station towards the drive station. There was a problem of the transported material deposited in the conveyor or having to transport the material in the opposite direction.

To meet these challenges, we have created conveyors in the following versions:

- self-cleaning,
- with the upper transport deck.



Mobile conveyor



Construction:

The mobile conveyor is a suspended device and is designed for horizontal movement in one axis. Its construction enables reversible operation of the conveyor.

The offer includes conveyors with a capacity of up to 200 tons.

Conveyor length:

The optimum length of the conveyor is 7 lm, however, this parameter can be adapted to any requirement on request.

Adaptive design of the sleeves gives the possibility of smooth adjustment of their length to the height at which the conveyor can be suspended.

Loading method:

The most effective method of loading U-shaped vehicles.

Eliminate the need to move the vehicle during loading and use a shorter weighing facility

MOBILE CONVEYORS



Drive of the mobile conveyor system

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Leading design solutions:

• Precise movement of the mobile conveyor - thanks to the use of a chain with a gear motor.

Trough cross-section including support frame and conveyor drive system

- **Safety at work** double overfilling safety device and a reverse wheel movement sensor.
- **Dustproofing of the device** thanks to double lip seal of the top cover.

Screw (ribbon) conveyor

Application:

The screw conveyor is designed for precise transport and dosing of bulk materials. Designed, among other things, to collect materials from tanks.

Construction:

The device has a modular design, which allows it to be easily installed and moved to its destination. The standard solution is to use a coupling in the drive system, which allows to eliminate the adverse drive vibrations.

A ribbon with different pitch is also used, which allows for initial material expansion in the conveyor body.

Characteristics:

The conveyor can be made in version with u-shaped or tubular body. The capacity of conveyors from our offer ranges from 5 to 120 t/h.



Conveyor drive system equipped with a gear motor and coupling



Support for the ribbon

Outfeed module equipped with the speed sensor and overfilling flap

Additional benefits:

- **Bearing-mounted ribbon support** increases the rigidity of the conveyor system. •
- **Easy replacement of external and internal bearings** decoupled drive and the modular design of the conveyor allow a quick • replacement of the ribbon gear.
- Safe operation of the conveyor thanks to the motion sensor on the worm screw and overfill sensor on the flap in the out-• feed module.

PLATE CONVEYOR CHAINS



Plate conveyor chain with cleaning strips

Standard chain, equipped with PE strips mounted on every fifth arm.



Plate conveyor chain with scraping buckets

Scraping buckets are used in self-cleaning versions. Their task is to take the material out of the drive station and lift it towards the return station. Installed at 0.96/1m per 15 lm of the chain.



Scraping block

The scraping block prevents the material from sticking in the space between the chain flat bars. The blocks are optionally mounted at a spacing of 1 piece per 4.8 lm of the chain.

Reduce the amount of material residues in the conveyor by installing strips, blocks and buckets.

Advantages:

- **Reliability** made of suitable steel grades that meet the requirements of DIN 8165.
- Savings a wide range of sizes and pitches allows you to indicate the optimum chain size for your applications. The result is an improvement in the energy balance of the device and a reduction in the costs of operating repairs.
- **Durability in operation** sleeves and pins are subjected to a careful thermo-chemical treatment which results in the actual hardness of 60 HRC. In order to extend their durability, they are protected against turning.
- **Quality** each of the 20 chain sizes is equipped as standard with a cleaning strip for the corner space of the trough, which is made of durable and wear-resistant PEHD1000 plastic. Additionally, the strips act as a spacer between the scrapers and the side of the trough.



Many years of experience in chain production allowed us to develop a manufacturing technology that extends the chain's life span and distinguishes us from the competition. We make every effort to ensure that every meter of chain is of the highest quality. At the customer's request, we can manufacture dedicated chains equipped with scraper bars, sleeve rollers and brackets. Equipment for feed plants, mills and elevators are in constant contact with grain dust, which, when achieving certain concentration, can create an explosive atmosphere.

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In order to reduce the risk and improve safety, THALE (owner of the NICZUK brand) has introduced conveyors, hoists, slide gates and distributors that can operate in Ex 3D (zone 22) and 2D (zone 21) zones.

In NICZUK devices, such solutions include sensors and Ex drives, bearings mounted outside the dust zone, explosion relief systems. Each device designed to work in an explosive zone is properly marked.



REDLER / SILO OUTLET SLIDE GATE

Advantages:

- Master dust-tightness the long-term dust-tightness of the drop plate is guaranteed by compensation of wear and pressure of the upper and lower sealing panel.
- Robustness guarantees reliability for many years.
- Energy-efficient use achieved by using composites, eliminating excessive frictional resistances.
- **Reliable design** manual and electric control utilizing a screw with trapezoidal thread and a special nut made of bronze, which prevents blockage of the slide gate damper.
- **Smooth running** the locking plate with ball-bearing mounted guides prevents blockages due to dust and clogging.

Construction:

The slide gate frame is made of molded sheet metal, previously cut out with the laser. The slide gates drive can be manual, electromechanical or pneumatic. Redler slide gates (ZPR) are made according to the series of produced conveyors (redlers). The redler outlet slide gate damper is lined with 10 mm thick PEHD material forming a single plane with the bottom of the conveyor.

Special orders:

There is a possibility of making a custom-made slide gate with a dimension adapted to the local conditions of the facility.



Redler outlet slide gates



Electric slide gates controlled by NORD or SEW engine with inductive sensors.



Pneumatic slide gates, controlled by HAFNER or FESTO actuator equipped with reed sensors.

Silo outlet slide gates



They are used at silo outlets. They are equipped with a double-sided damper clamp eliminating the problem of dusting.





Application:

The bucket elevator is used for vertical transport of material: grain, pulses and oil seeds, fodder, biomass and other loose materials.

Leading design solutions:

- Elevator wheels perforated, prevent the material from sticking. The lower drum is equipped with kick plates that remove material from inside the wheel. The design significantly reduces damage to the raw material as well as belt and bucket assembly.
- **Elevator belts** adapted to thespecifics of the transported material, supplied by renowned manufacturers such as VAV, Stiff, Muhler Beltex. In antistatic, oil-resistant or resistant to acids added to feed designs.
- Access to the elevator the design of the elevator takes into account the need to clean the device and the possibility of access to its interior. Each elevator is thus equipped with 2 inspection windows, a set of control tubes, a split head. In order to meet your requirements, we can make a device with more service pipes and additional cleaning hatches see foot below.

Significant reduction of the noise generated by the elevator thanks to the plastic lining of the places particularly vulnerable to rubbing.





Control versions



RDA-E | RDS-E | electric drive*



RDA-P | RDS-P | pneumatic drive**



RDA-R | RDS-R | manual drive

Distributor types





Customized distributors for work in Ex 21D dust explosion hazard zones.

Advantages:

- **Higher workmanship culture** The use of laser cutting technology guarantees dimensional repeatability.
- **Dismantable design** enables easier and faster flap replacement, maintenance and repair.
- Spare parts catalog possibility to replace worn parts.



The product is available in a symmetrical version with an angle between outfeeds equal to 90° and an asymmetrical version with an angle of 45°. The design of the distributor enables the replacement of internal seals, the partition plate (flap) and axles.

PE 1000 plastic-lined distributors

We have developed a special solution for operation in areas particularly vulnerable to rubbing.

If you are aware that the distributor will work continuously or will be subjected to greater material friction and you are afraid of the sides rubbing too quickly, choose a plastic lined distributor on all walls.

Reduce the downtime caused by the side or flap rubbing.



PRODUCT SPECIFICATIONS

H1 H2

Conveyor

Conveyor type	SPR-30/30E	SPR-50/50E	SPR-75/75E	SPR-100/100E	SPR-150/150E	SPR-200
Mass capacity for material with a density of 0.75 t/m ³	15-40	35-60	60-75	90-120	130-160	160-300
Volume capacity [m ³]	20-53	47-80	80-100	120-160	173-200	213-400
Dimensions B1 x H1 [mm]	200x280	250x420	300x420	350x500	400x500	450x550
Dimensions B2 x H2 [mm]	280x364	330x464	380x464	430x544	480x542	530x592

Elevator

Elevator type	NPK-10	NPK-30	NPK-60	NPK-100	NPK-150	NPK-200
Capacity (t/h) for 0.7 t/m3 density	10	30	65	103	150	204
Assumed number of buckets pcs./m	8	7	7	7	5	6.25
Belt width H [mm]	120	160	220	270	330	400
Elevator wheel diameter [mm]	300	500	500	500	500	630
Pipe dimensions A x B [mm]	180x176	215x200	300x250	360x260	400x330	480x340
Outside dimension C x E	260x256	295x280	380x330	340x440	480x410	560x420
Distance between pipes D	236	396	396	396	396	522



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Conveyor chain

-	g		SPR	Trough inside width	Pitch	Flat	bar	Pin	Sleeve	Clearance	Chain width	Pin length	Scrapers width	Strips width	Strips thickness	Connec- tor length	Arm length
1		s2		b6 [mm]	t [mm]	g [mm]	s [mm]	Ø d1 [mm]	Ø d2 [mm]	b1 [mm]	b2 [mm]	b3 [mm]	b4 [mm]	b5 [mm]	s2 [mm]	L1 [mm]	L2 [mm]
			10	150	100	35	5	14	20	25	46	60	135	145	8	140	145
t			30E	200	125	35	5	14	20	25	46	60	185	195	8	165	170
	0		30	200	125	40	6	16	22	30	55	72	185	195	8	170	180
	M		50E	250	160	40	6	16	22	30	55	72	235	245	8	205	215
s1		_	50	250	160	45	6	18	26	35	60	78	235	245	8	210	225
	Ô	1	75E	300	160	45	6	18	26	35	60	78	285	295	8	210	225
	\square	L2	75	300	160	50	8	20	30	45	78	100	285	295	8	220	230
Ød1			100E	350	160	50	8	20	30	45	78	100	335	345	8	220	230
	٥	٠,	100	350	160	60	8	26	36	55	88	110	335	345	8	230	240
0		L1	150E	400	160	50	8	20	30	45	78	100	385	395	8	220	230
3 d2			150	400	160	60	8	26	36	55	88	110	385	395	8	230	240
	0		200E	450	160	60	8	26	36	55	88	110	435	445	10	230	240

More possible chain types can be found at www.niczuk.pl in the łańcuchy [chains] tab.

Asymmetric distributor

Туре	А	в	с	D		F		н	I	J	øк	Р	Drivo
of manifold	[mm]	[pcs.]	Drive										
RDA-200-E				504		466							0.18 kW 4.6 rpm
RDA-200-R	495	309	118	324			050	280	200	240	10.5	8	Lever L=345 mm
RDA-200-P					545		303						Pneumatic actuator
RDA-250-E				(00		516							0.18 kW 4.6 rpm
RDA-250-R	565	355	136	009			402	330	250	290	10.5	8	Lever L=415 mm
RDA-250-P					650		403						Pneumatic actuator
RDA-300-E				(05		566							0.18 kW 4.6 rpm
RDA-300-R	635	401	153	073			542	380	300	340	10.5	8	Lever L=465 mm
RDA-300-P					736		543						Pneumatic actuator
RDA-350-E				790		616							0.18 kW 4.6 rpm
RDA-350-R	705	447	171	780			502	430	350	390	10.5	12	Lever L=515 mm
RDA-350-P	705				801		503						Pneumatic actuator
RDA-400-E	780			044		666							0.18 kW 4.6 rpm
RDA-400-R		493	189	866			5.25	480	400	440	10.5	12	Lever L=615 mm
RDA-400-P					907		235						Pneumatic actuator





Symmetrical distributor

Туре			с	D				н			øк		
of manifold	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[pcs.]	Drive
RDS-200-E				470		465							0.18 kW 4.6 rpm
RDS-200-R	332	280	99	4/0			251	280	200	240	10.5	8	Lever L=345 mm
RDS-200-P					720		331						Pneumatic actuator
RDS-250-E				500		515							0.18 kW 4.6 rpm
RDS-250-R	367	295	117	320			401	330	250	290	10.5	8	Lever L=415 mm
RDS-250-P					743		401						Pneumatic actuator
RDS-300-E				(07		565							0.18 kW 4.6 rpm
RDS-300-R	427	359	134	027			457	380	380 300	340	10.5	8	Lever L=465 mm
RDS-300-P					845		400						Pneumatic actuator
RDS-350-E				177		615							0.18 kW 4.6 rpm
RDS-350-R	463	373	152	0//			507	430	350	390	10.5	12	Lever L=515 mm
RDS-350-P					861		507						Pneumatic actuator
RDS-400-E		19 430		770		665					10.5		0.18 kW 4.6 rpm
RDS-400-R	519		170	//0			55/	480	400	440		12	Lever L=615 mm
RDS-400-P					976		336						Pneumatic actuator

Three-way distributor

Type of manifold	A [mm]	B [mm]	C [mm]	D [mm]	F [mm]	G [mm]	H [mm]	l [mm]	J [mm]	Ø K [mm]	P [pcs.]	Drive
RTS-200-E				470	651							0.18 kW 4.6 rpm
RTS-200-R	332	280	99	4/0	154	474	280	200	240	9	8	Lever L=345 mm
RTS-200-P					001	401						Pneumatic actuator
RTS-250-E				500	493							0.18 kW 4.6 rpm
RTS-250-R	367	295	117	520		420	330	250	290	9	8	Lever L=345 mm
RTS-250-P						420						Pneumatic actuator
RTS-300-E				407	543							0.18 kW 4.6 rpm
RTS-300-R	427	359	134	027		445	380	300	340	9	8	Lever L=465 mm
RTS-300-P						400						Pneumatic actuator
RTS-350-E				704	593							0.18 kW 4.6 rpm
RTS-350-R	487	423	151	/20		E10	430	350	390	9	12	Lever L=BD mm
RTS-350-P						510						Pneumatic actuator
RTS-400-E				0.05	643							0.18 kW 4.6 rpm
RTS-400-R	547	487	168	825		480	400	440	9	12	Lever L=BD mm	
RTS-400-P						222						Pneumatic actuator

Redler slide gate

Actuator size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	l [mm]	J [mm]	K [mm]	Slide gate size
ZPR-30-E					75.0			215				0.25 kW 276 rpm
ZPR-30-R	200	500	280	575	750			160	100	580	640	Hand wheel Ø160 mm
ZPR-30-P						900	120					Pneumatic actuator
ZPR-50-E					(00			215				0.25 kW 276 rpm
ZPR-50-R	250	500	330	675	000			160	100	580	640	Hand wheel Ø160 mm
ZPR-50-P						1050	120					Pneumatic actuator
ZPR-75-E					950			215				0.25 kW 276 rpm
ZPR-75-R	300	500	380	775	750			160	100	580	640	Hand wheel Ø160 mm
ZPR-75-P						1200	120					Pneumatic actuator
ZPR-100-E					1050			215				0.25 kW 276 rpm
ZPR-100-R	350	600	430	875	1050			160	100	680	740	Hand wheel Ø160 mm
ZPR-100-P						1350	120					Pneumatic actuator
ZPR-150-E					1150			215				0.25 kW 276 rpm
ZPR-150-R	400	600	480	975	1150			160	100	680	740	Hand wheel Ø160 mm
ZPR-150-P						1500	120					Pneumatic actuator
ZPR-200-E												0.25 kW 276 rpm
ZPR-200-R	450	600	530	1075	1250	1650	120	215	100	680	740	Hand wheel Ø160 mm
ZPR-200-P												Pneumatic actuator

Silo slide gate

Actuator size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	l [mm]	J [mm]	K [mm]	L [mm]	Slide gate size
NZZ-200-E			750		215				455				0.25 kW 276 rpm
NZZ-200-R	200	575	/50		160		100	280			240		Hand wheel Ø160 mm
NZZ-200-P				900		120							Pneumatic actuator
NZZ-250-E			950		215				180				0.25 kW 276 rpm
NZZ-250-R	250	675	000		16		100	330		100	290		Hand wheel Ø160 mm
NZZ-250-P				1050		120							Pneumatic actuator
NZZ-300-E			050		215				505				0.25 kW 276 rpm
NZZ-300-R	300	775	930		160		100	380		110	340		Hand wheel Ø160 mm
NZZ-300-P				1200		120							Pneumatic actuator
NZZ-350-E			1050		215				530				0.25 kW 276 rpm
NZZ-350-R	350	875	1050		160		100	430		130	390	130	Hand wheel Ø160 mm
NZZ-350-P	550				1350		120	0				Pneumatic actuator	
NZZ-400-E			1150		215				555				0.25 kW 276 rpm
NZZ-400-R	400	00 975	975 1150		160		100	480		390	440	150	Hand wheel Ø160 mm
NZZ-400-P				1500		120	20						Pneumatic actuator











