RATAJ®

SHAFTLESS SCREW CONVEYORS

... power of idea

ISO 9001

The RATAJ® Company profile

1990 – A private company was founded by Stanislav Rataj (today's chairman of the board of directors) to produce and supply technical products for the agricultural industry. Included in these supplies were shaftless flexible screw conveyors of the type SL, initially used for the conveying of light loose materials.

1994 – Ing. Stanislav Rataj (today's chairman of the board of directors of the RATAJ a.s.) formed a company solely for the production of shaftless screw conveyors. In addition to flexible shaftless screws, rigid conveyors of type RL were produced and supplied to the Czech market.

1999 – Founding of RATAJ s.r.o. and achieving the leading position in the Czech and Slovak markets for the manufacture and supply of shaftless screw conveyors of both the flexible and rigid types.

2000 – a quality system meeting the requirements of CSN EN ISO 9002 was introduced and in 2003 upgraded to CSN EN ISO 9001:2001. Since that period, a significant increase in export of conveyors made by RATAJ s.r.o. has taken place, not only to Europe but also to Africa, America, and Asia.

2003 – **RATAJ SK s.r.o** was founded in the Slovak Republic. A warehouse for screws conveyors was opened and later the production of conveyors for Slovakia was commenced.

2004 – Opening of a dealership of the RATAJ Company in Poland. The Polish market gradually becomes the largest export market of RATAJ. The overall export of the company exceeds 40% of all conveyors produced. Start of construction of a new production complex for the RATAJ Company on a 17,500m^2 plot of land, building the warehouse and production premises covering 1,200m^2 in the first stage.

2005 – Commencement of production of conveyors in the new production hall and opening of the screw, tube and electrical gearbox warehouse. Significant increase in supplies of RATAJ shaftless screw conveyors to energy and heat generation industry, especially in the Czech Republic.

2006 – Purchase of CNC technology for cutting materials using a high-pressure stream. The exports exceeded the limit of 50% of all conveyors produced. Based on the implemented supplies to Lithuania, Latvia, and Estonia, a dealership of the RATAJ Company for the Baltic countries with headquarters in Lithuania is being prepared. The RATAJ Company became a member of the Heat Generation Association of the Czech Republic.

2007 – Transformation of RATAJ s.r.o. to the **RATAJ a.s.** Corporation. Participation in international fairs in Germany, England, Lithuania and Japan increases interest in RATAJ conveyors especially in Germany, Scandinavia and Japan. During participation at the engineering fair in Japan (Osaka), a contract for exclusive representation of the RATAJ Company in Japan was concluded.

2008 – Opening of a dealership of the RATAJ Company in Italy.

2009 – start of a construction of an administration building and a parking lot. Introduction of the K2 information system and change to electronic processing of orders. Supplies of conveyors to new territories including participation in professional fairs in the United Arab Emirates and Bulgaria. Development and supplies of the largest shaftless screw of 800 mm diameter.

2010 - **20 years of existence of the RATAJ Company**. Opening of the administration building, training centre and the parking lot with participation of the RATAJ a.s. Corporation key customers and suppliers. Granting of the first patent to the RATAJ a.s. Corporation for a shaftless screw cooler for loose material. Production of unique rigid shaftless screws with variable lead.

Ingeniously simple principle

Excellent technical designs usually have a common feature. They work on the basis of a simple principle, reliability, efficiency, and have versatile applications. **RATAJ**® shaftless screw conveyors share these principles.
The basic element of **RATAJ**® shaftless screw conveyors is a shaftless screw made of first-class steel of 4 to 40 mm thickness and outside diameters ranging from 25 to 800 mm. A shaftless screw conveyor contains no internal bearings or shaft and transported material fills nearly the entire conveyor cross-section. The shaftless screw, with its precisely defined cross-section and rotating motion allows to transport a large quantity of material at low rpm and with minimum electricity consumption or, on the other hand, very small amounts of material for dosing purposes.
Each **RATAJ**® shaftless screw conveyor is custom designed and manufactured and suited to the material to be conveyed. This allows for optimum adjustment of a shaftless screw conveyor to various types of materials and the existing technology.

20 Years of development of RATAJ® shaftless screw conveyors

Based on our experience with over 4,000 conveyors installed in many industrial areas and based on our development of sections of screws and tubes, we are constantly developing new designs for a constantly expanding range of conveyor materials for our customers. Our considerable experience of conveying many hundred different materials is used in the design, manufacture and operation of all shaftless screw conveyors. For the first time since the invention of shaftless screws (over 60 years ago), the **RATAJ**® company manufactured the largest shaftless screw conveyor with the screw diameter of 800 mm and a shaftless screw with variable lead. These worldwide unique products put the **RATAJ**® Company in the lead of the technical development in manufacture and supplies of shaftless screw conveyors.

Shaftless screw cooler - RATAJ® patent

Based on our own development we managed to create a shaftless screw cooler working on the principle of rotating shaftless screw without the use of bearings. This very simple, patent-protected cooler principle allows for cooling material of temperatures up to 1000°C. The design of the cooler enables a serial arrangement of several cooling conveyors resulting in very effective cooling of material in a small space. The shaftless screw cooler has been designed in a vertical version only; transport of cooled material may also be performed together with its main function, which is cooling. The cooling medium is usually water or modified water solutions.
Coolers are either steel or stainless depending on the temperature of the input material to be cooled.
Large variability in shaftless screw diameters allows cooling materials such as slag, cinder, ballast ash, fly ash, gravel, chemical and food industry side products and many others. The cooler capacity is influenced by many parameters of the cooled product and each cooler is designed in the same way as the shaftless screw conveyors - “custom-made” in respect to the individual process conditions. We can achieve output of up to several tens of tons of cooled material per hour based on the cooled material and the cooling medium.

Why choose RATAJ shaftless screw conveyors?

- ► Simple and reliable operation, bespoke design, long service life and performance.
- ► Trouble-free transport of materials with extreme physical properties (very abrasive, pieced, flowing, adhesive, dusty, etc.).
- ► Smaller investment and operating costs as compared to belt conveyors, chain conveyors, and pneumatic transport.
- ► Long term operation without the need for repairs or preventive maintenance.
- ► Complete sealing of the conveyor ensuring dust-free operation.
- ► Simple and quick repairs of screws and piping for any user.
- ► Precise dosing and continuous weighing of conveyed material.
- ► Compact dimensions of the conveyor and the electric drives.
- ► Option of system for preventing explosions (**RATATEX**®) between two processes resulting in simplification of the design of the material conveying system (without the need to fit valves at the feed and discharge ends).
- ► Design of the conveyor complying with the requirements for installation into a zone with danger of explosion for dusty materials (ATEX 20, 21, 22) or gases (ATEX 0, 1, 2).
- ► Option of conveyor design complying with explosion resistance up to 1.0 MPa.

BIG-BAG stations, weighing conveyors and accessories to conveyors

Optional accessories available:

- – System of longitudinally opened pipeline with electronic monitoring of the open state.
- – Paddle, capacity or vibration sensors of material level monitoring in hoppers, containers, and chutes.
- – Sensor for speed detection of the shaftless screw including the control electronics for start-up checking, or detecting screw slippage.
- – Manual or programmable control system.
- – Frequency inverter for continuous dosing or change of the conveying rate of the conveyor.
- – Load cells for continuous weighing in the shaftless screw conveyor.
- – Closing valves with electric or pneumatic operation.
- – Mobile frame with drive wheels including a brake.
- – Dosing conveyor with double screw for extreme differences in the dosed quantity of material.
- – Big-Bag filling station.
- – Big-Bag emptying station.
- – Big-Bag storage system consisting of arbitrarily combined components:
  - Weighing strain gauges, including control system for filling or emptying Big-Bags.
  - Suspended cross for lifting bags by forklift truck.
  - Sliding struts of the Big-Bag station for various bag heights.
  - Gate valves with pneumatic drive for controlling material falling from bags into the conveyor.
  - Any selection of the surface colour of the conveyor according to the RAL standard colour range.

FLEXIBLE SHAFTLESS SCREW CONVEYORS

RATAJ® flexible shaftless screw conveyors (types **SL**, **SLK**, **SLN**, **SLP**) are used for the transport of delicate and light materials with transport performances from about 0.001 to 15 m3/hr. A major advantage of these conveyors is the possibility of transport in curves and over large distances up to 120 m per drive unit and very precise dosing of the transported material. Along the entire transport route, there is no intermediate storage (with the exception of an end storage), which allows transport of material in the entire section at a performance about 70% higher than the performance of classic worm conveyors with a shaft with comparable speed and conveyor diameter.
The main application of flexible shaftless screw conveyors is in the food-processing, chemical, and plastic industries for dosing into packaging machines and weighing equipment, emptying and filling of Big-Bags, etc. The radius of the curves are designed for individual diameters of conveyors so that the main principle is preserved, i.e. centering of the shaftless screw by the transported material. It is possible to have several inlets, outlets, and curves in one conveyor depending on the physical properties of the material conveyed and the site conditions. The construction material of the conveyors can be steel, stainless or plastic based on the requirements of the customer (exact specifications stated below). The screw profile is usually oblong and in cases when it is used for conveying compressible materials, a round profile is used.

FLEXIBLE SHAFTLESS SCREW CONVEYORS

Type *1/	Outer screw diameter (mm) (±1-2 mm) *3	Thread lead (mm) (±1-5 mm)	Inner screw diameter (mm) (±1-2 mm)	Screw thickness mm	Transport performance approx. m^3/hod *2/
SL 36	36	36	20	3,0	0,001 – 0,5
SL 38	38	30	22	3,0	0,001 – 0,5
SL 38	38	31	22	4,0	0,001 – 0,5
SLN 38	38	31	22	4,0	0,001 – 0,5
SLN 52	52	37	28	4,7	0,001 – 1,5
SL 53	53	37	33	4,3	0,001 – 1,5
SL 60	60	40	36	4,3	0,001 – 1,5
SLK 60	60	40	48	6,0	0,001 – 1,5
SL 61	61	42	37	5,0	0,001 – 1,5
SL 61	61	60	37	4,0	0,001 – 1,5
SLN 61	61	42	37	4,7	0,001 – 1,5
SL 68	68	50	44	5,0	0,001 – 4,0
SL 68	68	60	44	4,0	0,001 – 4,0
SLK 68	68	50	52	8,0	0,001 – 3,0
SLN 68	68	50	44	4,7	0,001 – 4,0
SLN 68	68	60	44	4,0	0,001 – 4,0
SL 70	70	50	46	4,3	0,001 – 4,0
SLK 70	70	65	46	12,0	0,001 – 3,0
SLN 90	90	60	66	4,7	0,001 – 15,0
SL 95	95	65	67	5,0	0,001 – 15,0
SLK 100	100	70	76	12,0	0,001 – 12,0

Material design:

Screw: TYPE SL, SLK - steel (ST 37, ST 52), TYPE SLN - stainless (AISI 302)
Tube: TYPE SL - steel (ST 37, ST 52), TYPE SLN - stainless (AISI 304, AISI 316)
TYPE SLP - plastic (PVC, PA 6, PA 12, POM, PE)

Depending on the type of material conveyed and specific site conditions, combinations of designs and dimensional variations of screws different from the table above are sometimes used.

*1/ Types marked red = stainless design of the screw and the tubes.
*2) Transport performances of individual conveyors depend on the type and physical properties of the material conveyed.
*3) Conveyor outside diameters depend on the type and physical properties of the material conveyed.

RIGID SHAFTLESS SCREW CONVEYORS

We use **RATAJ®** rigid shaftless screw conveyors (**types RL**, **RLN**, **RLP**, **RR**, **RRL**, **RRN**, and **RLE**) for the transport of abrasive, large particle, and adhesive materials or for high performances up to 1000 m^3/hr. These are especially designed for conveying highly abrasive materials (corundum grit, gravel, sand, crushed rock, grinding dust, blast-furnace and electrical power plant cinder, ceramic materials etc.), conveying materials with large particle sizes (PET bottles, wood, wood chips, paper, biomass, crushed tires etc.), conveying adhesive and wet materials (waste sludge, soil, bentonite, pulp materials, etc.), and conveying very delicate and flowing materials (food powder, chemicals, fly ash, etc.).
With the correct application and technical design of shaftless screw conveyors, we can often solve a complicated problem for the customer in cases where other types of mechanical transport cannot be used.
Rigid screws from two or three connected profiles can be used for highly loaded conveyors (long transport distances, transport of materials with very high bulk density etc.). The thickness of the shaftless screws may be up to 40 mm and the diameter up to 800 mm. Thanks to the high quality of the rigid screws we produce shaftless screw conveyors for pulling or pushing the conveyed material, conveyors connected perpendicularly (fixing) and vertical shaftless screw conveyors instead of classic bucket elevators.
The maximum lengths of rigid screw conveyors installed are up to a distance of 55 m in horizontal arrangements and 25 m in vertical arrangements per drive unit.



We have a corresponding screw, tube and trough material design for every industry and are currently replacing the existing classic applications of worm conveyors, chain conveyor, belt conveyors and bucket elevators more and more frequently.
There is practically no spatial limitation for the transport direction for shaftless screw conveyors. There are many applications where filling and emptying containers from the horizontal and vertical direction, the transport of materials between floors, and high performance conveying at long distances is used.

RIGID SHAFTLESS SCREW CONVEYORS

Type *1/	Outer screw diameter (mm) (±1-5 mm) *3	Thread lead (mm) (±1-10 mm)	Inner screw diameter (mm) (±1-3 mm)	Screw thickness mm	Transport performance approx. m^3/hod *2/
RLN 25	25	15	12	6-12	0,001 – 0,2
RLN 45	45	40	15	5-12	0,001 – 0,3
RLN 50	50	60	20	8-12	0,01 – 0,5
RL 45	45	40	15	5	0,01 – 1,5
RL 60	60	60	20	4-12	0,01 – 1,5
RL 65	65	18	30	6-12	0,01 – 0,5
RLN 70	70	70	22	6-12	0,01 – 1,5
RLN 75	75	75	37	6-12	0,01 – 1,5
RL 75	75	80	27	6-12	0,01 – 2,0
RL 80	80	80	22, 27	5-12	0,01 – 2,0
RLN 80	80	80	27	5-12	0,01 – 2,0
RLN 80/65	80	65	27	6-12	0,01 – 2,0
RL 90	90	90	34	6-12	0,01 – 3,0
RL 90/60	90	60	34	5-12	0,01 – 2,5
RLN 90	90	90	34	6-12	0,01 – 3,0
RLN 90/60	90	60	34	6-12	0,01 – 2,5
RLN 90/100	90	100	34	6-12	0,01 – 2,5
RLN 95/110	95	110	34	8-12	0,01 – 2,5
RL 100	100	100	27, 34	5-12	0,01 – 4,0
RL 100/75	100	75	34	5-12	0,01 – 3,0
RLN 100	100	100	34	6-12	0,03 – 4,0
RLN 100/75	100	75	34	6-12	0,02 – 3,0
RL 110	110	110	34	6-12	0,03 – 6,0
RL 110/75	110	75	34	5-12	0,03 – 5,0
RL 110/80	110	80	48	5-12	0,03 – 5,0
RLN 110	110	110	34	6-12	0,03 – 6,0
RL 120	120	120	38	6-15	0,04 – 7,0
RL 120/80	120	80	38	6-15	0,03 – 6,0
RL 120/105	120	105	44	5-15	0,03 – 6,0
RL 125	125	125	75, 85	5-15	0,03 – 2,0

RLN 120	120	120	38, 40	6-10	0,04 – 7,0
RLN 120/80	120	80	38	6-10	0,03 – 6,0
RL 130	130	130	38	6-15	0,03 – 7,0
RL 140	140	140	40, 49	7-15	0,1 – 10,0
RL 140/100	140	100	49	8-15	0,1 – 7,0
RLN 140	140	140	49, 52	8-10	0,1 – 10,0
RLN 140/100	140	100	49	8-10	0,1 – 7,0
RL 150	150	150	49	8-20	0,2 – 15,0
RL 150/105	150	105	49	8-20	0,2 – 13,0
RLN 150	150	150	49	8-12	0,2 – 15,0
RLN 150/140	150	140	54	10	0,2 – 15,0
RLN 150/170	150	170	54	10	0,2 – 15,0
RLN 150/180	150	180	50	10	0,2 – 15,0
RL 160	160	160	49, 60	12-20	0,1 – 12,0
RL 160/105	160	105	49	12-20	0,1 – 8,0
RL 180	180	180	49, 61, 66	12-20	0,3 – 20,0
RLN 180	180	180	61	10-20	0,3 – 20,0
RL 190/135	190	135	61	12-20	0,5 – 25,0
RL 195	195	195	95	20	0,5 – 25,0
RL 200	200	200	61	12-20	0,5 – 25,0
RL 200/135	200	135	61	12-20	0,4 – 20,0
RLN 200	200	200	61, 85	10-20	0,5 – 20,0
RLN 200/135	200	135	61	10-20	0,5 – 20,0
RL 220	220	220	61	12-20	0,5 – 20,0
RL 230	230	230	76, 88	12-20	0,5 – 20,0
RL 230	230	230	100, 130	12-20	0,5 – 20,0
RL 230/160	230	160	61	12-20	0,5 – 15,0
RLN 230	230	230	76	10-20	0,5 – 25,0
RL 240	240	240	76	12	0,5 – 15,0
RL 240/145	240	145	140	20	0,5 – 15,0
RLN 240/145	240	145	76	10-25	0,5 – 20,0
RL 250	250	250	76	12-25	0,5 – 30,0
RL 250/150	250	150	42	15	0,5 – 20,0
RL 250/170	250	170	76	12	0,5 – 20,0
RL 250/200	250	200	89	12	0,5 – 20,0
RLN 257	257	205	102	12-25	0,5 – 25,0
RLN 270/200	270	200	106	12-25	0,5 – 25,0
RL 275	275	275	104	20	0,5 – 40,0
RLN 275	275	260	80	12-25	0,5 – 25,0
RL 280	280	280	89	20	0,5 – 40,0
RL 280	280	280	102, 160	12-25	0,5 – 30,0
RL 280/190	280	190	89	12-25	0,5 – 30,0
RLN 280	280	280	89	10-25	0,5 – 40,0
RL 300	300	300	89,102	12-30	0,5 – 70,0
RLN 300	300	300	89	10-25	0,5 – 70,0
RL 300/160	300	160	76	12-30	0,5 – 50,0
RL 315	315	315	102	12-30	0,5 – 70,0
RL 315/210	315	210	102	12-20	0,5 – 60,0
RL 350	350	350	102,169	12-30	1,0 – 150,0
RLN 350	350	350	102	10-25	1,0 – 150,0
RL 400	400	400	120	12-30	3,0 – 200,0
RL 400/265	400	265	120	12	2,0 – 100,0
RLN 400	400	400	120	12-30	3,0 – 200,0
RL 500	500	500	140	12-25	4,0 – 300,0
RL 520	520	360	273	12-25	5,0 – 300,0
RL 600	600	600	169, 240	12-30	5,0 – 600,0
RL 600/400	600	400	169	12	3,0 – 300,0
RL 600/500	600	500	300	30	3,0 – 200,0
RLN 600/400	600	400	400	20-40	3,0 – 400,0
RL 800/600	800	600	344	30	10,0 –1000,0

Material design:

Screw:	TYPE RL -	steel (ST 37, ST 52), TYPE RLN - stainless (AISI 304, AISI 316, AISI 316 L a AISI 316T)
Tube:	TYPE RL -	steel (ST 37, ST 52), TYPE RLN - stainless (AISI 304, AISI 316)
	TYPE RLP -	plastic PP
	TYPE RRL, RRN -	polyamide inserts **RATAMID®**
	TYPE RLE -	basalt inserts

*1/ Types marked red = stainless design of the screw and the tubes

*2) Transport performances of individual conveyors depend on the type and physical properties of the material conveyed.

*3) Conveyor outside diameters depend on the type and physical properties of the material conveyed.

The best of electric gearboxes

Electric gear boxes are one of the key elements of our shaftless screw conveyors. Their designs include a helical gear box, worm reduction gear box, helical-bevel gear box and flat gear box based on individual site conditions. We use flat gear boxes with an inserted adapter protecting the gear box from being polluted by the material conveyed in case of conveying dusty and abrasive materials and materials with high temperatures. We worked with the gear box manufacturer on the development of this unique design. We supply stainless steel gear boxes for use in food and chemical production plants consisting of stainless steel stator and the gear box body. This design is especially convenient when conveying aggressive materials.
In case the conveyor is intended for use in environments with explosion hazard, we supply gear boxes of an “EX” design for dusty materials (zones 21, 22) and for gases (zones 1, 2).

ATEX... and still something more

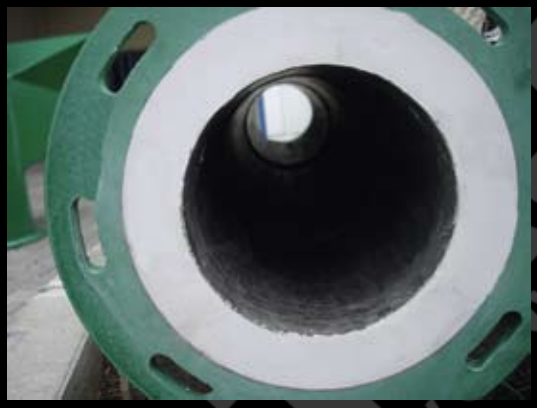
Based on the technical requirements for equipment and protective systems designed for use in an environment with danger of explosion, our shaftless screw conveyors have been tested and certified to comply with the requirements of the corresponding standards. We specialize in the supply of conveyors, which work in zones with danger of explosion; furthermore, there is a possibility of optional equipment of a shaftless screw conveyor with the **RATATEX®** system, which prevents the transfer of explosions between two processes connected with the shaftless screw conveyor.
Special shaftless screw conveyors resistant to explosion up to the pressure of 1.0 MPa are designed for applications where explosive material may enter the conveyor causing explosion therein (such as burning fuel, hot ashes etc.). The design of such conveyors exceeds the scope of obligatory technical security standards for environments with danger of explosion
The technical parameters of the shaftless screw conveyor designed for an environment with danger of explosion (ATEX) are designed so that the conveyor itself cannot initiate an explosion.

RATATEX® - protective system of non-transfer of explosion

Our company developed a protective system of non-transfer of explosion between two processes for conveyors used in power plants, heat generation plants, in the chemical and food-processing industries. This system can be used for dosing coal and other dusty materials, which at a certain concentration with air can cause an explosion.
A certificate with international validity was granted by the FTZU Radvanice test lab to the **RATATEX®** protective system.

RATAMID® - does wonders

We supply **RATAJ®** shaftless screw conveyors with plastic inserts of **RATAMID®** brand polyamide inserts (types **RRL** and **RRN**) for adhesive materials.
The plastic **RATAMID®** inserts made on the PA 6 polyamide basis show several times better properties in tensile strength, tenacity, abrasion, mechanical stress, and low adhesive coefficient. The temperature of conveyed materials with the use of the plastic insert may be up to 140 °C, and short-term up to 180 °C.
In some cases, short-term only, it is possible to “dry cycle” these conveyors empty and also convey materials that solidify easily and create sticky and hard crusts; last but not least, the plastic insert enables easy removal of the conveyed material if the tubing needs to be thoroughly cleaned. These conveyors have a wide range of applications in the food-processing industry because the plastic inserts have been approved as safe for contact with foodstuffs.



POLYPROPYLENE AND MELTED BASALT = Excellent results

Based on the experience of several years of operation, we design polypropylene tubes or steel tubes fitted with basalt inserts for conveying abrasive and adhesive materials.
Polypropylene, with its special properties, shows better abrasion resistance in some cases compared to standard steel pipelines. The low weight of the tubes allows producing the conveyor in longer assembly pieces and the use of flange connections significantly accelerates the conveyor installation.
Inserts from cast basalt are used for the transport of extremely abrasive and hard materials, e.g. fly ash, glass, corundum, non-plastics, crushed basalt, blasting materials, and wherever there is a requirement of the customer for the longest service life of the equipment. The design of basalt inserts can be in the form of a trough or a tube, which are inserted into the steel shell of the conveyor.

RIGID PLASTIC SCREW CONVEYORS

To meet the requirements of an increasing number of new adhesive and abrasive materials we can supply RATAJ plastic screw conveyors (Types RP, RPN) consisting of a plastic screw (worm) internally reinforced with a steel or stainless profile.
Such conveyors, equipped with a polyamide screw may also be used for demanding applications to convey highly abrasive materials.
The conveyors' main feature is their light-weight structure and silent operation even when operating an empty conveyor. A plastic screw as compared to a steel screw is several times lighter and when combined with corresponding plastic tubing; the conveyors may even be used in applications requiring continuous operation even without the conveyed material. The main areas of application are the food-processing industry (adhesive and wet materials), the chemical industry (aggressive substances) and last but not least also heavy industries, power industry and civil engineering.

RIGID PLASTIC SCREW CONVEYORS

Tipe *1/	Outer screw diameter (mm) (±1mm)	Thread lead (mm) (±1mm)	Inner screw (mm) *3/	Screw thickness mm	Transport performance approx. m^3/hod *2/
RP 95	95	60	108	4	0,001 – 10,0
RPN 95	95	60	104	4	0,001 – 10,0
RP 154	154	90	204	7	0,01 – 20,0
RPN 154	154	90	168	7	0,01 – 20,0

Material design:

Screw: TYPE RP - plastic (PA 6, PP, PE, PU, PVDF)
Tube: TYPE RP - steel (ST 37, ST 52), TYPE RPN - stainless (AISI 304, AISI 316)
TYPE RPP - plastic (PA 6, POM, PE),

Depending on the type of material conveyed and specific site conditions, combinations of material designs may sometimes be used.

RATAJ® conveyors work throughout the world

The **RATAJ®** Company has manufactured and installed over 4,000 conveyors for application in most industries. These applications include emptying and filling containers, hoppers, and Big-Bags, transport of material between processes, filling and emptying cars, dosing, and transport into homogenizers, packaging machines, crushers, sorters, mills, boilers, and many other applications.
Our long-term experience with material transport using shaftless screw conveyors for more than 200 different types of materials conveyed gives our customers a guarantee of optimum and technically advanced design for loose material transport.
Our customers are significant Czech, Slovak, European, and global companies. By the end of 2010, we will have supplied conveyors to 37 countries worldwide:

EUROPE: Austria, Belarus, Belgium, Bosnia, Croatia, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Norway, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Ukraine, United Kingdom, Yugoslavia.
AFRICA: Algeria, Egypt.
AMERICA: Chile, United States of America.
ASIA: Armenia, Japan, Kazakhstan, Mongolia, Saudi Arabia, Tajikistan, Turkmenistan, United Arab Emirates.

A reference list of installed conveyors, our customers, and types of conveyors can be found on our website



Regarding the fact that we design and manufacture shaftless screw conveyors for many industries (food processing, chemical, plastic, power generation, heavy industry, agriculture, wood-working industry, ecology, pharmaceutical etc.) and that the conveyors are made based on our own design and experience, respecting the customer requirements at the same time, we can, if required, produce a “customized” screw or a conveyor with materials and dimensions required.



We can transport everything that is loose, adhesive and flowing

From our very wide range, we have selected the following examples of applications and transport of materials using **RATAJ** shaftless screw conveyors:

- **Woodworking industry** (wood dust, veneer, parings, bark, pellets, sawdust, chips).
- **Ecology** (electrical scrap, sludge, crushed marble, dust-offs, grass mixture, filtering fills).
- **Power generation** (energy gypsum, lignite and pit-coal, coke, coke and coal dust, ash, fly ash, petroleum waste, soot, cinder, dross).
- **Pharmaceutical industry** (penicillin).
- **Chemical industry** (dyes, brown stone, bisphenol A, fertilizers, chloramines, alum, catalysts, rubber, cyanide, acids, ice, saltpeter, urea, sulfur, ammonium sulfate, aluminum sulfate, soda, titanium white, putties).
- **Nuclear industry** (uranium dust, active coal, radioactive ion resin).
- **Light industry** (abrasives, borax, charcoal, rubber granulate, graphite, aluminium blinds, chemlon thread, chalk, mineral wool, paper, tires, polystyrene, wash powders, silica, textile fibers and shears, soil).
- **Plastic industry** (ABS, PE, PP, PA, PET film, PVC granulates, polystyrene).
- **Food-processing industry** (peanuts, cappuccino, sugar, tea, lentils, chocolate mass, apples, mustard, cocoa, coffee, spice, lactose, gluten, grains, flour, frozen vegetables, muesli, peppers, fruit stones, pastry, custard, raisins, fish, rape, rice, malt, cream, breadcrumbs, dried milk, salt, starch, plums, tobacco, curd cheese, pasta, egg shells, dried vegetable mixtures, cabbage).
- **Heavy industry, metallurgy** (bentonite, crushed glass, aluminum granulate, carbide dust, corundum grit, cast-iron and steel splinters, cast iron and steel marbles, magnesite, manganese ore, nickel, glass batch, glass, heavy metals).
- **Construction** (agglomeration dust, asphalt granulate, cellulose, cement, clays, kaolin, diatomaceous earth, pearlite, sand, plaster, gravel, fireclay, lime, lime sludge, granite grit).
- **Agriculture** (biomass, caraway, feed mixtures, corn, legumes, poppy seeds, grains, fruits, colza, straw, soy, pollard, vegetables).

The most important service we can offer is our “know-how”. Our constant development and installation of new, still untried types of materials with the assistance of our customers allows us to stay ahead in the technology of screw conveyors.

All our customers, regardless of size, give us information and experience from the operation of our shaftless screw conveyors that we further use for the transport of new and difficult-to-transport materials under unique technological conditions.

We will gladly provide you with the experience with transport of loose materials, their storage, and physical properties during a free phone consultation or on our website www.sypkehmoty.cz

We have installed test conveyors on our manufacturing and warehouse premises for your convenience to test conveying of your material with a selection of more than 130 types of shaftless screws and accessories for shaftless screw conveyors.

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