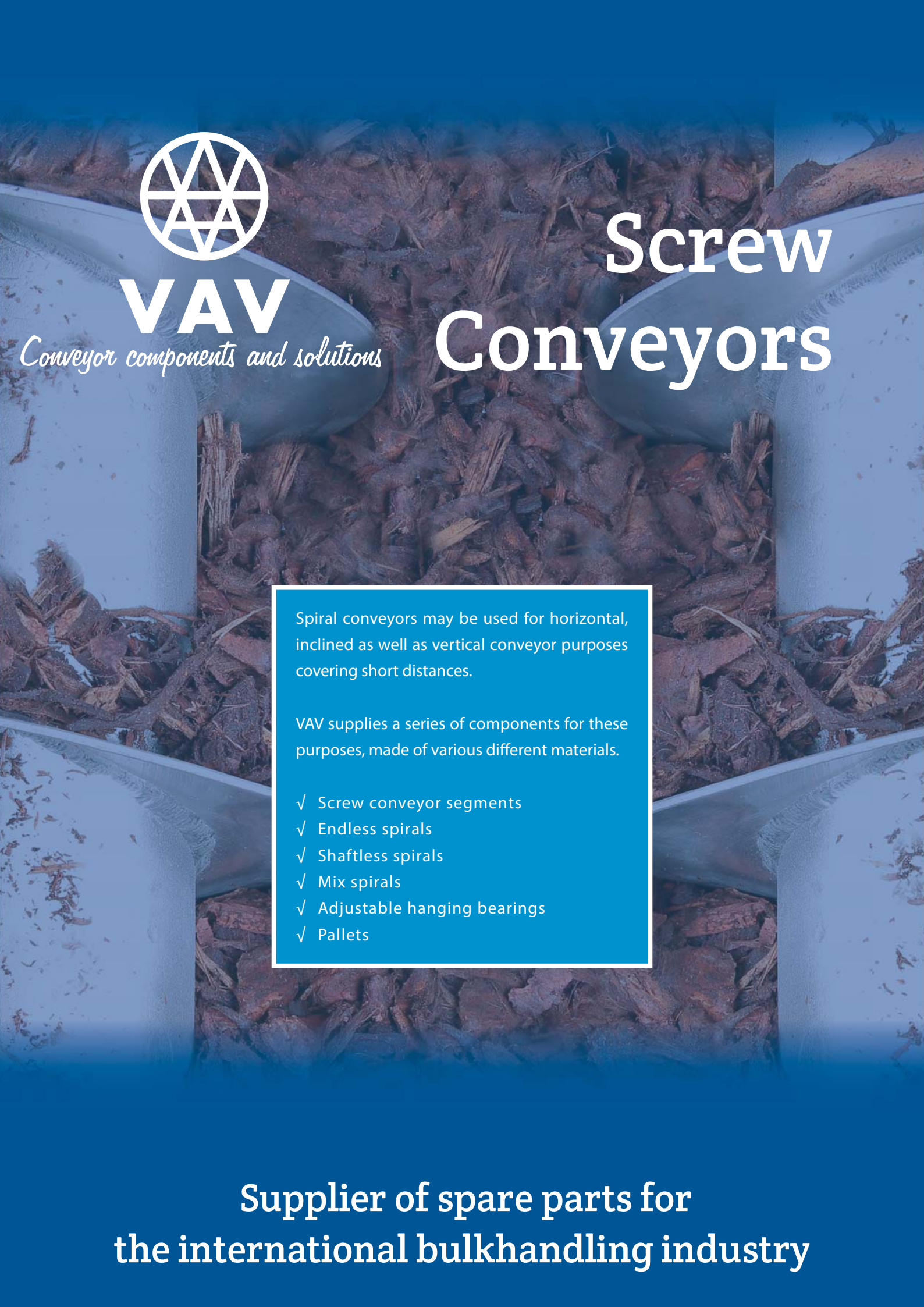


VAV

Conveyor components and solutions

Screw Conveyors

Spiral conveyors may be used for horizontal, inclined as well as vertical conveyor purposes covering short distances.

VAV supplies a series of components for these purposes, made of various different materials.

- √ Screw conveyor segments
- √ Endless spirals
- √ Shaftless spirals
- √ Mix spirals
- √ Adjustable hanging bearings
- √ Pallets

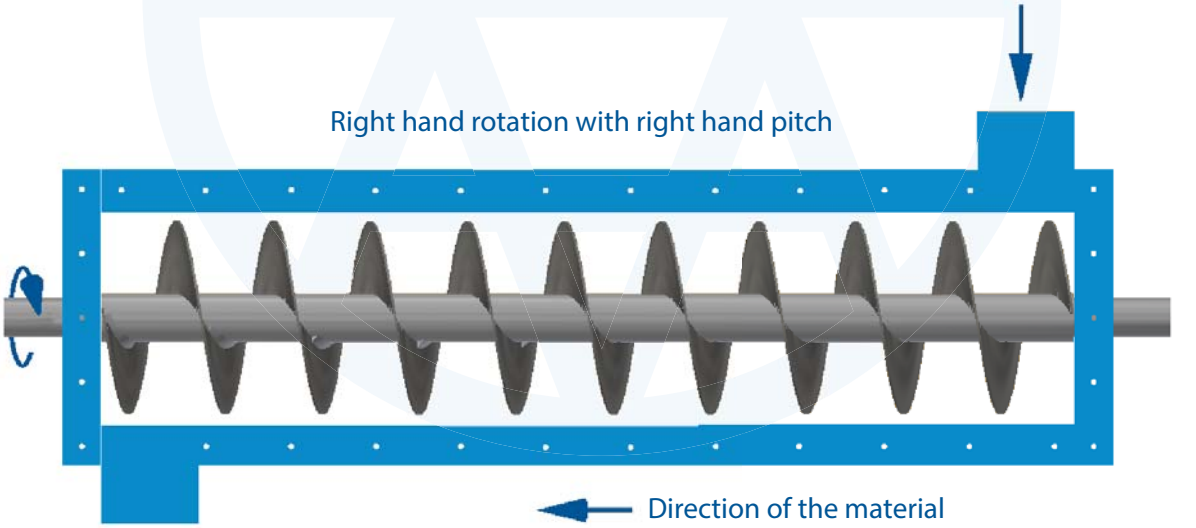
Supplier of spare parts for the international bulkhandling industry

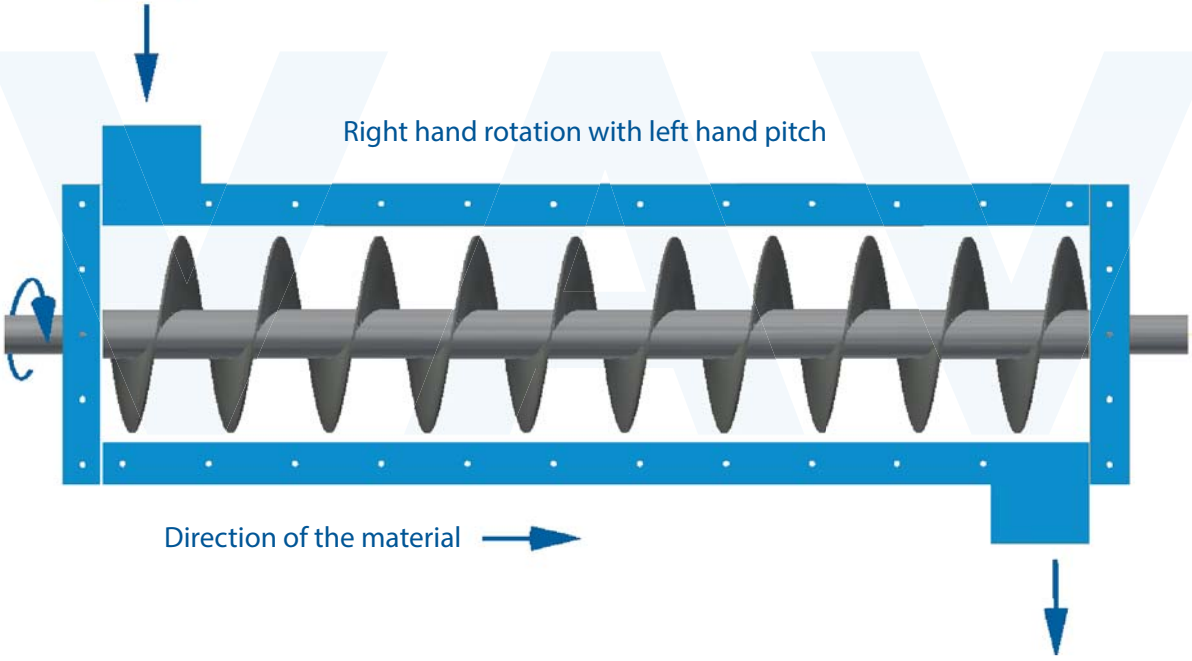
Auger segments

Screw conveyor segments are manufactured to your specifications with a tollerance according to DIN 15261. They are available with an outer diameter between 30 mm and 3.000 mm; the material thickness is between 2 and 40 mm. Any desired pitch is possible. Below please find an example of a screw conveyor segment with a right and a left pitch.

Available in various types of steel such as:

- √ S235JRG2
- √ S355JRG3
- √ HARDOX 400
- √ HARDOX 500
- √ Creusabro
- √ Semi Manax
- √ Stainless steel 304
- √ Stainless steel 316
- √ Stainless steel 316Ti
- √ Stainless steel 316 L
- √ Corten steel



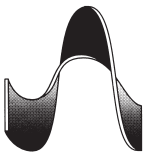


Endless spirals

Endless spirals are rolled out of one single piece. In lengths of 3.000 mm and made of the following materials: S235JRG2 and stainless steel 304, with a left or a right pitch. The following table shows the standard sizes of endless spirals.

Endless spirals (parameters in mm)			
Outer Ø	Inner Ø	Pitch	blade thickness
			inside / outside
80 ± 3	17,2 + 3	80 ± 8	2,5 / 1,2
90 ± 3	25,0 + 3	90 ± 8	2,5 / 1,3
100 ± 3	33,7 + 3	100 ± 10	2,5 / 1,3
120 ± 3	33,7 + 3	120 ± 10	2,5 / 1,3
125 ± 3	33,7 + 3	125 ± 10	2,5 / 1,3
140 ± 3	42,4 + 3	140 ± 10	2,5 / 1,3
150 ± 3	48,3 + 3	150 ± 10	3,0 / 1,6
160 ± 3	48,3 + 3	160 ± 10	3,0 / 1,6
180 ± 3	48,3 + 3	180 ± 10	3,0 / 1,5
180 ± 3	48,3 + 3	180 ± 10	6,0 / 3,0
200 ± 3	48,3 + 3	200 ± 10	3,5 / 1,7
200 ± 3	48,3 + 3	200 ± 10	6,0 / 2,8
200 ± 3	60,3 + 3	200 ± 10	6,0 / 2,8
250 ± 3	60,3 + 3	250 ± 10	4,0 / 2,0
250 ± 3	60,3 + 3	250 ± 10	6,0 / 3,0
300 ± 4	76,1 + 4	300 ± 15	5,0 / 2,5
315 ± 4	76,1 + 4	315 ± 15	5,0 / 2,5
350 ± 4	88,9 + 4	350 ± 15	5,0 / 2,5
400 ± 4	101,6 + 4	400 ± 15	8,0 / 4,0

Additional diameters, shaft sizes, or material thicknesses are available on demand.



Right hand pitch

Left hand pitch

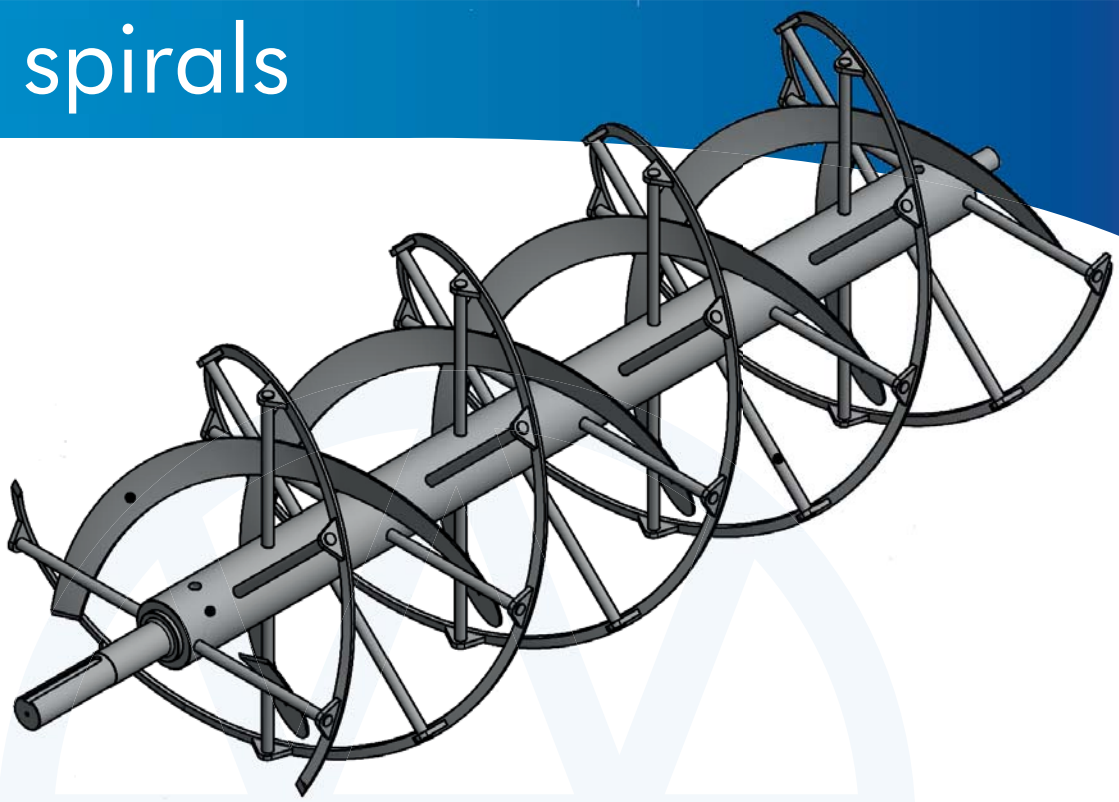
Shaftless spirals

VAV supplies shaftless spirals in various lengths (material S355J2G3 or Stainless steel 304). Any desired size between Ø 80 and Ø 700 mm is available in single, double, triple and full sheet versions. Spirals can be used for horizontal, inclined or vertical transport. Suitable for wet, fibrous and sticky material. VAV also supplies auxiliary spirals in various sizes. The table below shows the standard sizes of shaftless spirals. Other sizes are available on request.

Shaftless spirals (parameters in mm)			
Outer Ø	pitch	material height x thickness	auxillary/inner spiraal
190	140	50 x 20	
190	190	50 x 20	
240	190	60 x 25	30 x 20
240	240	60 x 25	30 x 20
280	220	60 x 25	40 x 20
280	320	60 x 25	40 x 20
320	250	70 x 25	50 x 20
320	320	70 x 25	50 x 20
380	330	70 x 25	50 x 20
380	380	70 x 25	50 x 20
460	360	80 x 25	60 x 20
460	440	80 x 25	60 x 20
530	420	80 x 30	70 x 25
530	530	80 x 30	70 x 25
600	450	80 x 30	80 x 25
600	600	80 x 30	80 x 25

Additional diameters, shaft sizes, or material thicknesses are available on demand.

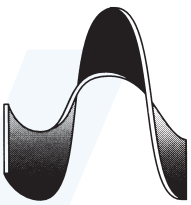
Mix spirals



Mix spirals can be made of sheet material (the following steels):

- √ S235JRG2
- √ S355JRG3
- √ Hardox
- √ Stainless steel

The outer diameter can be produced up to 3.000 mm. Larger diameters are also possible; these are supplied in 180° or 90° segments.



Right hand pitch

Left hand pitch

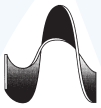
Calculations for Screw conveyors

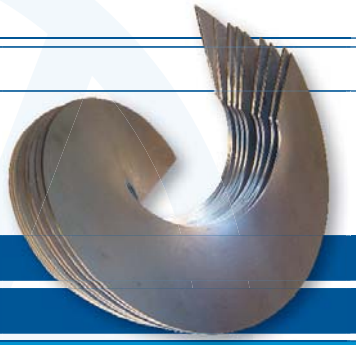
Calculations for screw conveyors

Screw conveyor speed in meters per second

$$v = \frac{\text{Screw diameter (in meters)} \times 3{,}14 \times \text{Rotaions per minute}}{60}$$

v	=	speed in meters per second

Right hand pitch   Left hand pitch



Calculations for screw conveyors

Capacity in m^3 per hour (Q) for horizontal transport*

Q (m^3/u)	=	$47{,}1 \times (D^2 - d^2) \times s \times n \times i$

Capacity in kg per hour (Q) for horizontal transport*

Q (kg/u)	=	$47{,}1 \times (D^2 - d^2) \times s \times n \times i \times sw$
D	=	screw outside diameter in meter
d	=	screw inside diameter in meter
s	=	pitch in meter
n	=	rotations per minute
i	=	degree of trough filling (eg. 10%: i = 0,1)
sw	=	specific weight of the material (kg/m^3)

* With a slope, about 1% capacity loss can be calculated per degree °.

Calculations for screw conveyors

Power in Kw (P)

$$P = \frac{Q \times L \times K}{3600 \times 102}$$

P	=	power in Kw
Q	=	capacity in kg per hour
L	=	conveyor screw length (m)
K	=	friction coefficient