

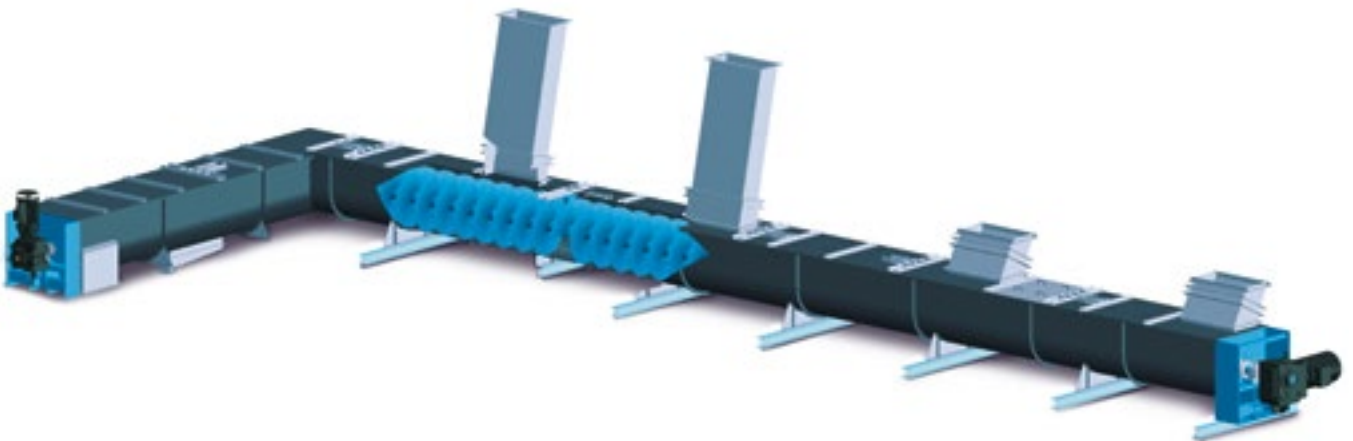


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System partner for bulk conveying

SF

Screw conveyors in various designs



Screw conveyors – compact bulk material conveyance with integrated process technology

Screw conveyors are used to discharge and transport nearly all bulk materials including fibrous and paste-like products. They move bulk material with a rotating, spiral conveying screw in a trough or a tube trough.

The advantages of screw conveyors are low susceptibility to failure, low costs, low space requirement and dust-free transport.

They also offer the possibility to feed and remove flexibly transported goods along the conveyor line. Various designs are available for steep inclined and vertical conveying as well as for work processes such as mixing, stirring, washing, sieving, heating and cooling.

Subgroups / Screw conveyor designs

TSF

Trough screw conveyors

KSF

Cooling screw conveyors

ASF

Damping screw conveyors

RSF

Tube screw conveyors

DSF

Twin-screw conveyors

MSF

Mixing screw conveyors



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Performance specifications for all designs

- dustproof and product sealed
- gas and water tight
- pressure surge protected
- robust design
- design in accordance with Atex (dust explosion classes)
- low space requirement
- low maintenance requirement
- low-noise operation
- flange bearing or pedestal bearing with gland sealing
- optional conveying screws up to 12 m length without centre bearing
- shaft-mounted gearbox directly above hollow shaft or spur gear system with coupling
- special designs

Special specifications

Screw conveyors are available in various materials.



TSF

Trough screw conveyor

For the transport of bulk material in a closed U-shaped or box trough.

Special feature:

- gradients of up to 30° are possible



RSF

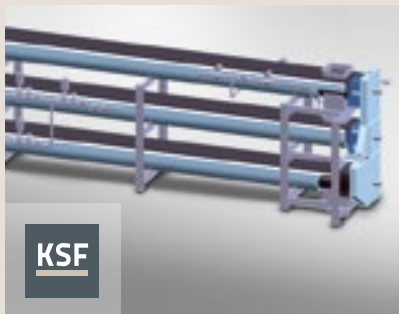
Tube screw conveyor

For the transport of bulk material in a closed tube.

Special feature:

- gradients of more than 30° are possible

*For construction details please see inner side.



KSF

Cooling screw conveyor

Heat exchanger for the cooling of bulk materials.

Special features:

- continuous cooling
- shaft and jacket (trough) cooling



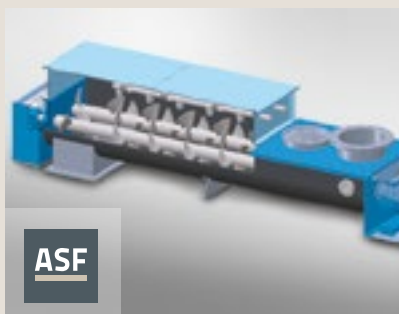
DSF

Twin-screw conveyor

Discharge component for slow-flowing bulk materials, e.g. as discharge conveyor under bunkers or silos.

Special features:

- dual or multiple shaft design
- can be used as continuous screw conveyor



ASF

Damping screw conveyor

For the damping of powdery bulk materials during transportation.

Special features:

- self-cleaning construction of the worm shafts
- adjustable water supply



MSF

Mixing screw conveyor

For the mixing of one or more bulk materials during transportation.

Special features:

- optional armoring of mixing blades or paddles
- optional adjustable paddles



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Sector compendium



Oil industry



Food industry



Lime industry



Waste management industry



Seed industry



Chemical industry



Steel industry



Cement industry



Shipping industry

Examples of centre bearings



Standard design with red brass bush



Centre bearing with "Cooper" bearing



Heavy design with red brass bush

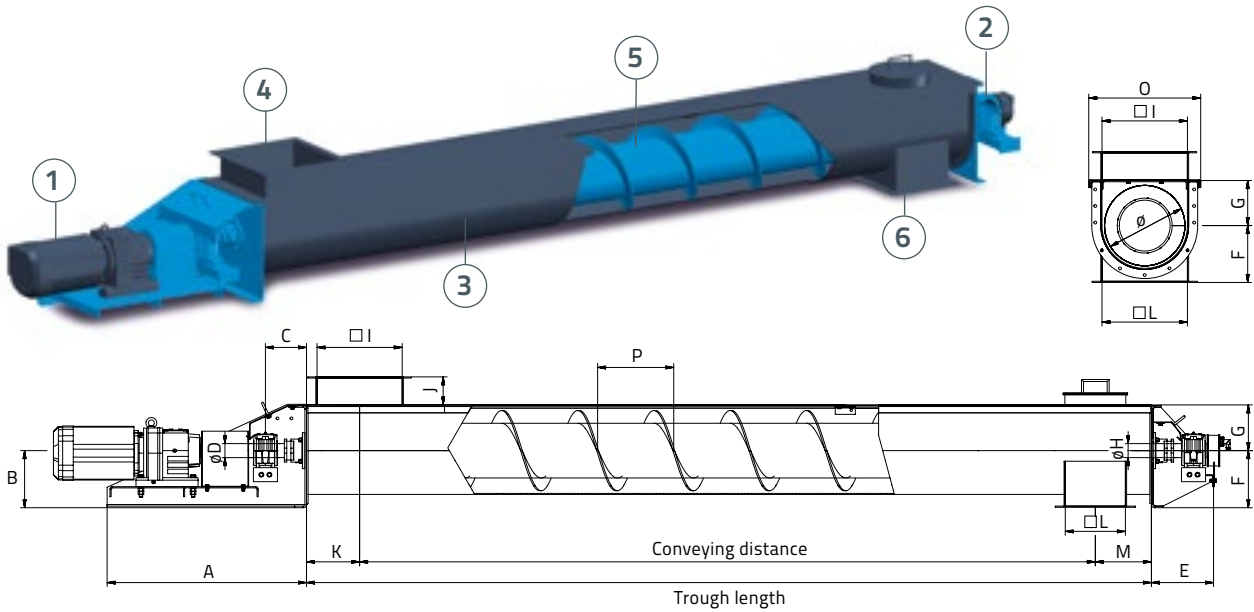


Centre bearing for twin-screw

TSF

RSF

Trough and tube screw conveyors



Design Data*

		Dimensions in mm (subject to technical modifications)												
Drive console	Screws \varnothing (standard)		100	125	160	200	250	315	400	500	630	800	1000	1250
	Drive console length approx.*	A	500	500	705	705	850	850	1000	1000	1300	1400	1400	1500
	Drive console height approx.*	B	112	130	150	180	224	280	335	425	500	560	670	860
	Distance from trough to bearing	C	115	120	190	190	200	205	205	238	238	250	260	265
End console	Drive spigot \varnothing	D	30	30	35	40	50	60	60	80	80	90	100	110
	End console length approx.	E	200	200	245	245	265	270	270	325	325	350	360	375
	Dimension from shaft middle to discharge lower edge, highest and lowest vertex	F	112	130	150	180	224	280	335	425	500	560	670	860
	Trough discharge	G	63	75	90	112	140	180	224	280	355	450	560	710
Inlet	Middle ground spigot \varnothing	H	30	30	35	40	50	60	60	80	80	90	100	110
	Inlet inside width \square	I	112	140	180	220	270	335	425	525	660	830	1040	1290
	Inlet height	J	50	80	80	100	120	130	140	150	160	180	200	200
Dis-charge	Minimum inlet distance	K	90	105	135	155	180	220	265	325	395	480	630	780
	Discharge inside width \square	L	112	140	180	220	270	335	425	525	660	830	1040	1290
Trough	Minimum outlet distance	M	100	115	145	165	195	235	280	340	410	520	650	800
	Trough inside width	N	112	140	180	220	270	335	425	525	660	830	1040	1290
	Maximum housing width	O	191	220	264	324	378	445	555	681	816	1036	1253	1510
	Pitch	P	100	125	160	200	250	300	350	400	450	500	560	630

*Dimensioning table only applies to TSF (and correspondingly to RSF). There is no dimensioning table for all other „Special design“ configurations.

Theoretical conveying capacity in proportion to filling level

Filling level	Screw diameter	Pitch	Q [m ³ /h]	n [min ⁻¹]	Exemplary conveying goods
15%	160	160	2,5	70	asbestos, ash, ore, filter dust, fly ash, cacao beans, potassium salt, coal, gravel, soda, sludge, sulphur, sand, clay, sugar, beet pulp
	200	200	4	64	
	250	250	6,5	55	
	315	300	11	50	
	400	350	18	45	
	500	400	29	40	
	630	450	45	35	
	800	500	70	32	
	1000	560	90	25	
	1250	630	130	20	

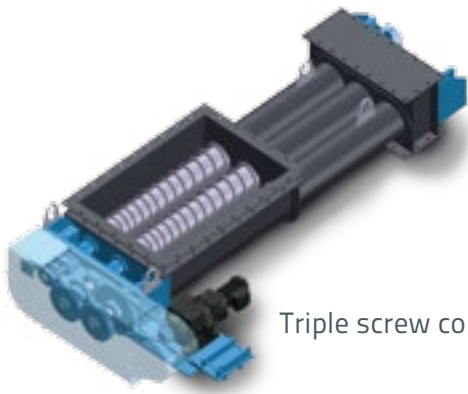
Filling level	Screw diameter	Pitch	Q [m ³ /h]	n [min ⁻¹]	Exemplary conveying goods
30%	160	160	6,5	110	sewage sludge, salt, lignite, soil, gypsum, hops, wood flour, chips, hydrated lime, chalk, malt, milk powder, crushed oil seed, saw dust, soy meal
	200	200	11,5	100	
	250	250	20	90	
	315	300	35	80	
	400	350	56	70	
	500	400	90	63	
	630	450	140	55	
	800	500	225	50	
	1000	560	300	40	
	1250	630	460	35	

Filling level	Screw diameter	Pitch	Q [m ³ /h]	n [min ⁻¹]	Exemplary conveying goods
45%	160	160	3,5	189	cotton seed, beans, flax seed, fish meal, barley, graphite, semolina, oats, charcoal, coffee, lime, copra, potatoes, malt, maize, flour, oilseed, rice, soy beans, tobacco, wheat, sugar
	200	200	7	168	
	250	250	14	130	
	315	300	24	135	
	400	350	42	120	
	500	400	70	108	
	630	450	120	98	
	800	500	195	84	
	1000	560	300	75	
	1250	630	380	68	

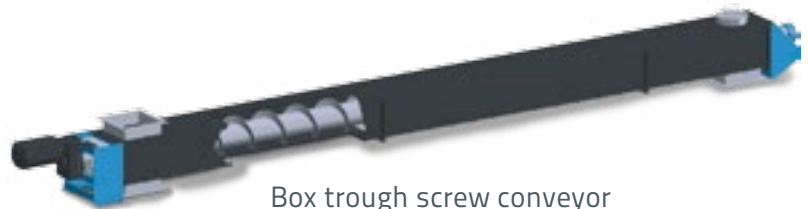
Screw conveyor construction modular system

- ① **Driving console:**
with shaft-mounted geared motor and torque support,
with spear gear motor with coupling,
pedestal bearing with gland nut,
flange bearings with sealing ring
- ② **End console:**
pedestal bearing with gland nut,
flange bearings with sealing ring
- ③ **Conveyor trough:**
tube trough, V-trough, box trough, U-trough
- ④ **Inlet:**
variable
- ⑤ **Worm shaft:**
tubular shaft with blade or paddle,
worm shafts without tubular core
- ⑥ **Outlet:**
variable

Special designs / application examples



Triple screw conveyor



Box trough screw conveyor



Plug screw conveyor



Plug screw conveyor in BW pedestal

Upon request also wear protected screw conveyors are available:

the conveying of abrading goods wears down the protection of the screw provided by build-up welding or the use of wear-resistant sheet metals such as manganese steel (1.3401). The optimal method to render screw blades wear and corrosion resistant is to apply the SCHRAGE metal spraying coating followed by thermal redensification.



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Get to know our technique/procedure

Conveying techniques:

We offer information material as well as accessory for the following conveying techniques:

BW Bucket Elevators

GF Belt Conveyors

RK Tube Chain Conveyors

TK Trough Chain Conveyors

DA Dosing / Gates

Services:

Read more about our services for the various conveying techniques in our overview brochure.

BE Basic engineering

SW Service / maintenance

DE Detail engineering

EL Replacement delivery

MI Realisation / implementation

Interested in refining high-wear parts?

Avoid downtimes and ensure that your machinery is running around the clock. In addition to Schrage GmbH Plant Engineering the Schrage Group also includes Schrage GmbH Metal & Welding Technology. This company offers diver-

se services and techniques for surface refining (wear and corrosion protection) as well as small-scale production of machine components.

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System partner for bulk conveying

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How to find us:

