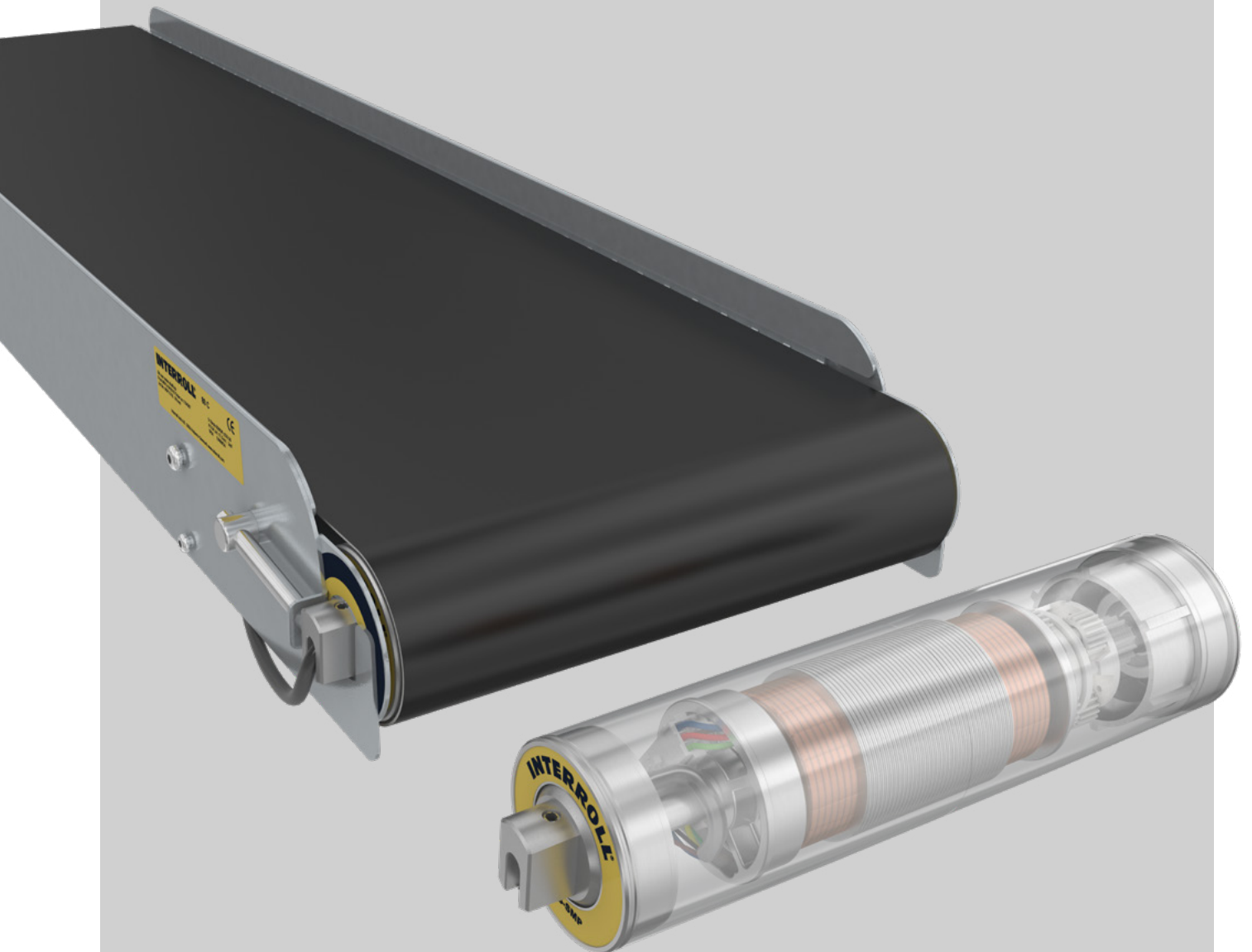


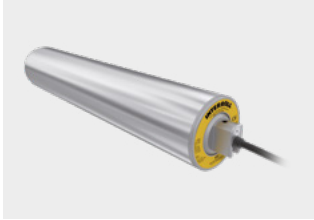
CATALOG

COMMERCIAL BELT DRIVES, CASSETTES AND CONVEYORS

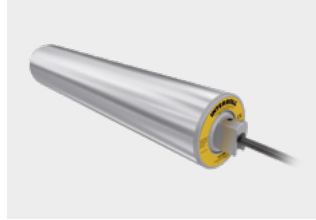


PRODUCT OVERVIEW

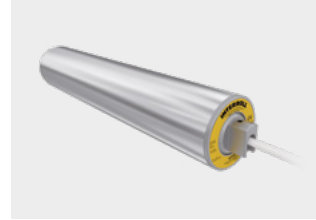
BELT DRIVES



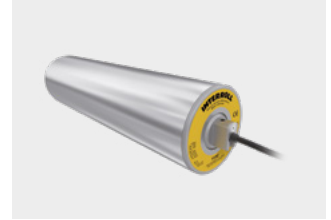
80C
page 6



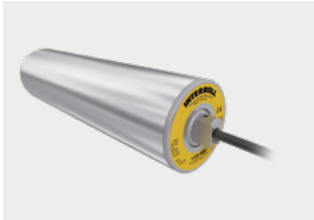
80SMP
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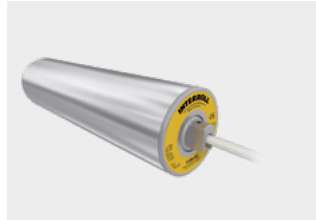
80DC
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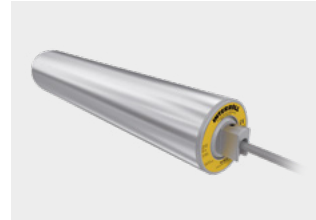
113C
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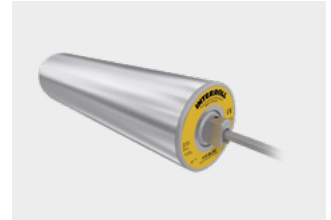
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CONTROLS AND ACCESSORIES



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Softstart Control
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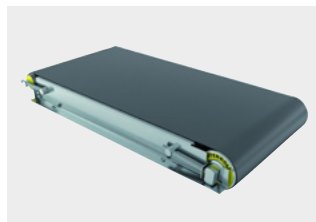


Accessories
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COMMERCIAL CASSETTES

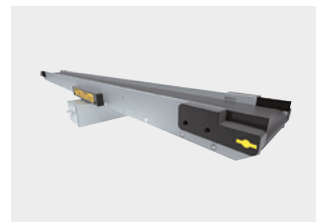


Center Drive Cassette
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Cassette
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COMMERCIAL CONVEYORS



Narrow Belt Conveyor
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Light Industrial Conveyor
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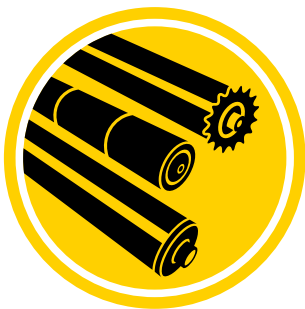


THE INTERROLL GROUP

The Interroll Group is a globally leading supplier of high-quality key products and services for internal logistics.

The company, which is listed on the stock exchange and has its headquarters in Switzerland, employs some 2300 people (in 2020) in 34 companies (in 2020) around the globe.

The solutions for our customers' daily logistical challenges are based on Interroll key products that are built on a worldwide common platform.



Conveyor Rollers

Interroll is the worldwide leading provider of conveyor rollers that can be found in a multitude of applications in internal logistics. For the roller production, we merge quality, flexibility and speed. More than 13 million rollers in 60,000 variants leave our plants worldwide every year. Our production is always order-driven, even for the smallest order quantities and, if desired, even with a delivery time of 24 hours. Proven.



Drives and Controls

Interroll is a leading manufacturer in the segment of DC motor rollers and Belt Drives.

Interroll RollerDrive and their controls are used in automated conveyor technology. Energy-efficient DC drives are installed in decentralized conveyor systems and, as a result, optimize energy demand and material handling. The bus interface enables integrating the zero pressure accumulation conveyor technology into Industry 4.0 systems. Interroll Belt Drives are designed for use in belt conveyors and conveyor systems. These robust, high-quality belt drives enable the construction of maintenance-free, energy-efficient conveyor belt systems for the majority of industrial applications as well as for food processing, baggage handling and supermarket checkouts.



Holding



Sales, Production & Service



Global Competence Centers



Regional Competence Centers

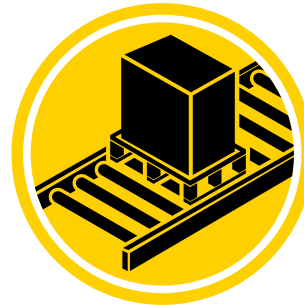


Conveyors & Sorters

The Modular Conveyor Platform (MCP) from Interroll offers highest flexibility: a broad spectrum of modules, consisting of roller conveyors, belt conveyors as well as key products such as transfer, high-performance diverts or spiral lifts, covers all requirements of the material handling.

The Interroll crossbelt sorters were developed with an eye on precision for fast and precise sorting of goods of all types from 50 g to 35 kg. More than 400 Interroll sorters are used every day by the largest CEP players and Ecommerce enterprises worldwide.

The brand-new modular pallet conveyor platform (MPP) offers roller and chain conveyors as well as special conveyors such as transfers and turntables to create a fully integrated, robust, space-saving and energy-saving solution for high throughput handling of pallets.



Pallet & Carton Flow

Interroll Pallet Flow and Carton Flow are the first choice when it comes to rapid turnarounds and optimizing the storage and commissioning process. Thanks to its efficiency and robustness, Pallet Flow ensures long-term availability and more flexibility for peaks in orders. The compact design reduces space requirements by up to 50 percent compared to conventional solutions. The integrated TimePlus Separator as well as the Magnetic Speed Controller increase the safety of the work environment and significantly reduce the risk of damages to goods.

The Interroll Carton Flow solutions are efficient as well as ergonomic, and were developed to improve the commissioning output.

BELT DRIVES

80C



Application Area

Because of its strength, reliability and zero maintenance, this belt drive is perfect for supermarket applications

Applications

- Supermarket checkout conveyors

Characteristics

- 1-phase AC induction motor
- Single-rated voltage
- Integral motor protection
- Techno-polymer planetary gearbox
- Low noise
- Lightweight
- Maintenance-free
- Lifetime lubricated
- Reversible



Technical Data

General technical data	
Motor type	Asynchronous squirrel cage motor, IEC 34 (VDE 0530)
Insulation class of motor windings	Class B, IEC 34 (VDE 0530)
Voltage	1x230 V 50 Hz (IEC 38) 1x115 V 60 Hz (on request)
Frequency	50 Hz (option 60hz)
Internal shaft sealing system	Double-lipped, NBR
Protection rate	IP64
Thermal protection	Bi-metal switch
Ambient temperature	+10 to +40 °C

Material Versions

Component	Version	Material	
		Aluminium	Mild steel
Shell	Crowned		✓
End housing	Standard	✓	
Shaft cap	Standard	✓	
Cable-strain relief	Plug solutions Straight/90°	✓	
	Plug solutions 90° protected	✓	

Mechanical Data

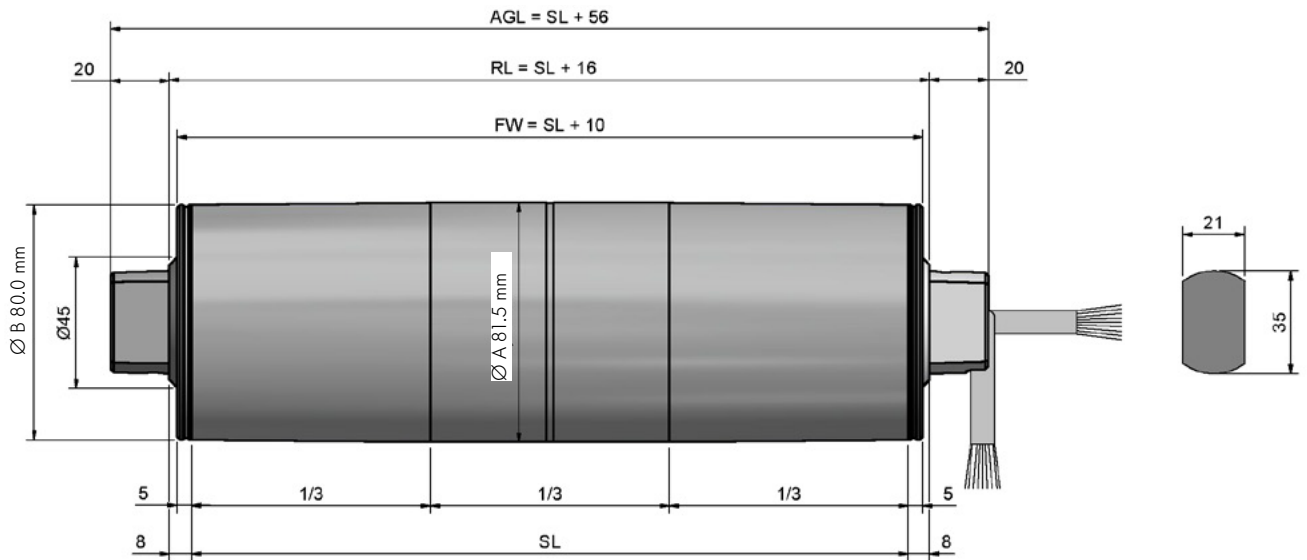
P_N	np	gs	i	v	n_A	M_A	F_N	TE	Max. start weight	SL_{min}
kW				m/s	min ⁻¹	Nm	N	N	Kg	mm
0.050	2	3	71.56	0.16	38.4	10.4	256	2,000	71	264
			63.51	0.18	43.3	9.3	227	2,000	63	264
0.075	2	3	71.56	0.16	38.4	16.0	391	2,000	106	274
			63.51	0.18	43.3	14.2	347	2,000	94	274
0.085	2	3	71.56	0.16	38.4	18.4	452	2,000	120	289
			63.51	0.18	43.3	16.3	401	2,000	107	289

P_N	Rated power	v	Rated velocity of the shell	TE	Max. belt tension
np	Number of poles	n_A	Rated revolutions of the shell	SL_{min}	Min. shell length
gs	Gear stages	M_A	Rated torque of belt drive		
i	Gear ratio	F_N	Rated belt pull of belt drive		

BELT DRIVES

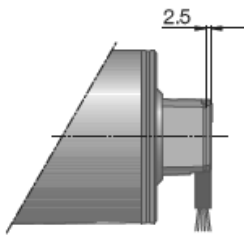
80C

Dimensions

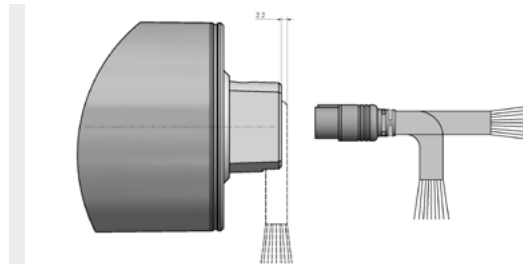


Belt Drive Belt Drive with straight connector

For the Belt Drive 80C with straight connector/fixed cable - SLmin is reduced by 4mm



Plug 90° with cable protection dimensions



Plug Solution 90/straight

Weight and Shell Length

The Belt Drive's weight depends on its length.

Shell length SL 264 – 602 mm
Average weight 4.6 – 7.5 kg

Weight increases by 0.4 kg in 50 mm increments.

Cable Specifications

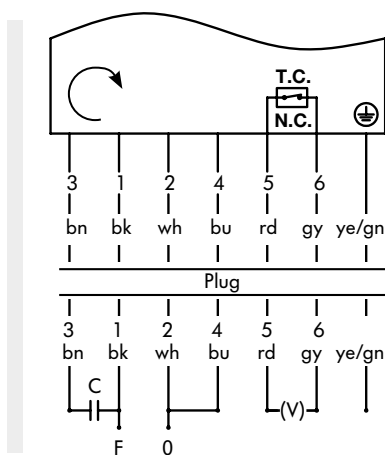
Interroll plug solution includes a strain relief piece. Please order the separately available plug cable to use the advantages of plug and play technology and the flexible preinstallation of your Belt Drive.

- 7 x 0.5 mm²
- Wirepins for proper installation
- Ø Cable: 5-7 mm
- Length: 1.5 / 2 / 3 / 5 m (other lengths available on request)
- Available with common connectors

Connection Diagram

Notes:

- When Belt Drive is without thermal controller (5) and (6) is blind.
- For CCW rotation interchange brown (3) and blue (4)



BELT DRIVES

80SMP



Application Area

Because of its strength, reliability and zero maintenance, this belt drive is perfect for commercial applications.

Applications

- Small light-duty conveyors
- Bottle recycling
- Supermarket checkout conveyors

Characteristics

- 3-phase or 1-phase AC induction motor
- Lightweight
- Single-rated voltage
- Maintenance-free
- Integral motor protection
- Lifetime lubricated
- Techno-polymer planetary gearbox
- Reversible
- Low noise



Technical Data

General technical data	
Motor type	Asynchronous squirrel cage motor, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	1x230 V 50/60 Hz (IEC 34/38) 1x115 V 60 Hz (on request) 3x230 V or 3x400 V 50 Hz (IEC34/38)
Frequency	50 Hz (60 Hz optional)
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR (optional)
Protection rate	IP64 (IP66 optional)
Thermal protection	Bi-metal switch
Ambient temperature, 3-phase motor	+5 to +40 °C
Ambient temperature, 1-phase motor	+10 to +40 °C

Material Versions

Component	Version	Material	
		Aluminium	Mild steel
Shell	Crowned		✓
	Cylindrical		✓
End housing	Standard	✓	
Shaft cap	Standard	✓	

Options

- Lagging for friction drive belts
- Balancing
- Low temperature oil
- UL/cUL safety certifications
- Non-horizontal mounting (more than $\pm 5^\circ$)

Accessoires

- Anti-vibration brackets
- Idler pulleys
- Conveyor rollers

BELT DRIVES

80SMP

Mechanical Data for 3-phase motors

P_N	np	gs	i	v	n_A	M_A	F_N	TE	SL_{min}
kW				m/s	min⁻¹	Nm	N	N	mm
0,040	4	3	78,55	0,07	16,7	19,4	486	2000	295
			71,56	0,08	19,1	17,0	425	2000	295
			63,51	0,09	21,5	15,1	378	2000	295
0,050	2	3	115,20	0,10	23,9	17,0	425	2000	270
0,060	4	2	19,20	0,29	69,2	7,4	186	1500	295
			16,00	0,35	83,6	6,2	154	1500	295
			13,09	0,43	102,7	5,0	126	1500	295
0,075	2	3	96,00	0,12	28,6	21,3	531	2000	270
0,085	2	3	78,55	0,15	35,8	19,3	482	2000	270
			71,56	0,16	38,2	18,1	452	2000	270
			63,51	0,18	43,0	16,1	401	2000	270
			52,92	0,22	52,5	13,1	328	2000	270
			48,79	0,24	57,3	12,0	301	2000	270
		2	43,30	0,27	64,5	10,7	268	2000	270
			30,31	0,38	90,7	7,6	190	1500	270
			19,20	0,60	143,2	5,1	128	1500	270
			16,00	0,72	171,9	4,3	106	1500	270
			13,09	0,88	210,1	3,5	87	1500	270
0,120	2	3	63,51	0,18	43,0	22,7	567	2000	295
			52,92	0,22	52,5	18,5	464	2000	295
			48,79	0,24	57,3	17,0	425	2000	295
			43,30	0,27	64,5	15,1	378	2000	295
			30,31	0,38	90,7	10,7	268	2000	295
		2	19,20	0,60	143,2	7,2	180	1500	295
			16,00	0,72	171,9	6,0	150	1500	295
			13,09	0,88	210,1	4,9	123	1500	295

P_N Rated power
 np Number of poles
 gs Gear stages
 i Gear ratio

v Rated velocity of the shell
 n_A Rated revolutions of the shell
 M_A Rated torque of belt drive
 F_N Rated belt pull of belt drive

TE Max. belt tension
 SL_{min} Min. shell length

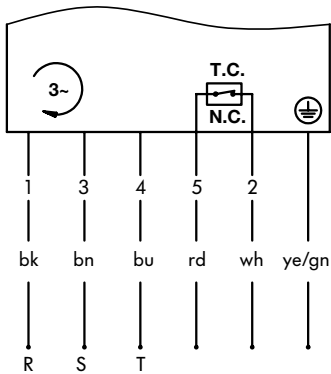
Belt Drive Mechanical Data for 1-phase motors

P_N	np	gs	i	v	n_A	M_A	F_N	TE	SL_{min}			
kW				m/s	min⁻¹	Nm	N	N	mm			
0,050	2	3	115,20	0,10	23,9	17,0	425	2000	260			
			96,00	0,12	28,6	14,2	354	2000	260			
			78,55	0,15	35,8	11,3	283	2000	260			
			71,56	0,16	38,2	10,6	266	2000	260			
			63,51	0,18	43,0	9,4	236	2000	260			
			52,92	0,22	52,5	7,7	193	2000	260			
		2	48,79	0,24	57,3	7,1	177	2000	260			
			43,30	0,27	64,5	6,3	157	2000	260			
			19,20	0,60	143,2	3,0	75	1500	260			
			16,00	0,72	171,9	2,5	63	1500	260			
			13,09	0,88	210,1	2,0	51	1500	260			
			0,075	2	3	96,00	0,12	28,6	21,3	531	2000	270
0,075	2	3	78,55	0,15	35,8	17,0	425	2000	270			
			71,56	0,16	38,2	15,9	398	2000	270			
			63,51	0,18	43,0	14,2	354	2000	270			
			52,92	0,22	52,5	11,6	290	2000	270			
			48,79	0,24	57,3	10,6	266	2000	270			
			43,30	0,27	64,5	9,4	236	2000	270			
		2	30,31	0,38	90,7	6,7	168	2000	270			
			19,20	0,60	143,2	4,5	113	1500	270			
			16,00	0,72	171,9	3,8	94	1500	270			
			13,09	0,88	210,1	3,1	77	1500	270			
			0,085	2	3	78,55	0,15	35,8	19,3	482	2000	285
			0,085	2	3	71,56	0,16	38,2	18,1	452	2000	285
63,51	0,18	43,0				16,1	401	2000	285			
52,92	0,22	52,5				13,1	328	2000	285			
48,79	0,24	57,3				12,0	301	2000	285			
43,30	0,27	64,5				10,7	268	2000	285			
30,31	0,38	90,7				7,6	190	2000	285			
2	19,20	0,60			143,2	5,1	128	1500	285			
	16,00	0,72			171,9	4,3	106	1500	285			
	13,09	0,88			210,1	3,5	87	1500	285			
	0,110	2			3	63,51	0,18	43,0	20,8	519	2000	285
	0,110	2			3	52,92	0,22	52,5	17,0	425	2000	285
						48,79	0,24	57,3	15,6	390	2000	285
43,30			0,27	64,5		13,9	346	2000	285			
30,31			0,38	90,7		9,8	246	2000	285			
19,20			0,60	143,2		6,6	165	1500	285			
16,00			0,72	171,9		5,5	138	1500	285			
2			13,09	0,88	210,1	4,5	113	1500	285			

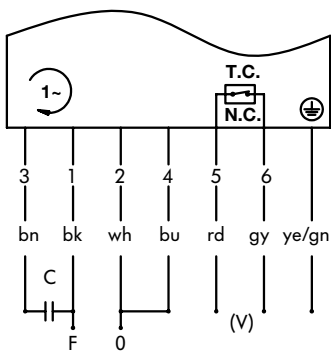
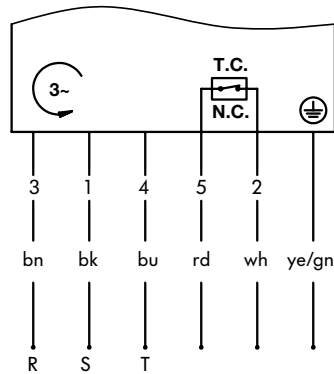
Cable Specifications

- 6 x 0.5 mm², 7 x 0.5 mm²
- Wirepins for proper installation
- Ø Cable: 7 mm
- Length: 1.5 / 2 / 3 / 5 m (other lengths available on request)
- Screened cable for frequency converter operation and halogen-free cable available on request

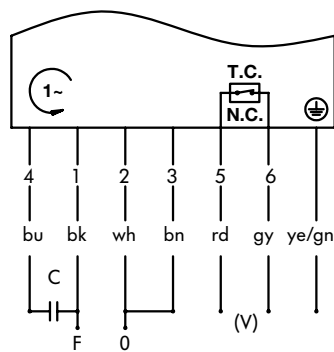
Connection Diagram



3-phase operation, 6 lead cable



1-phase operation, 7 lead cable



BELT DRIVES

80DC



Application Area

- Small light-duty conveyors
- Bottle recycling
- Supermarket checkout conveyors

Characteristics

- Brush type 24 V DC
- Maintenance-free
- Techno-polymer planetary gearbox
- Lifetime lubricated
- Low noise
- Reversible
- Lightweight



Technical Data

General technical data	
Motor type	Brush type 24 V DC
Insulation class of motor windings	Class B, IEC 34 (VDE 0530)
Voltage	16-30 V DC
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR
Protection rate	IP64 (IP66 optional)
Ambient temperature, 1-phase motor	+10 to +40 °C

Material Versions

Component	Version	Material		
		Aluminium	Mild steel	Stainless steel
Shell	Crowned		✓	✓
	Cylindrical		✓	✓
End housing	Standard	✓		
Shaft cap	Standard	✓		

Options

- Lagging for friction drive belts
- Sprockets for plastic modular belts
- Balancing
- Low temperature grease
- UL/cUL safety certifications
- Non-horizontal mounting (more than $\pm 5^\circ$)

Accessories

- Anti-vibration brackets
- Idler pulleys
- Conveyor rollers

BELT DRIVES

80DC

Belt Drive Mechanical Data

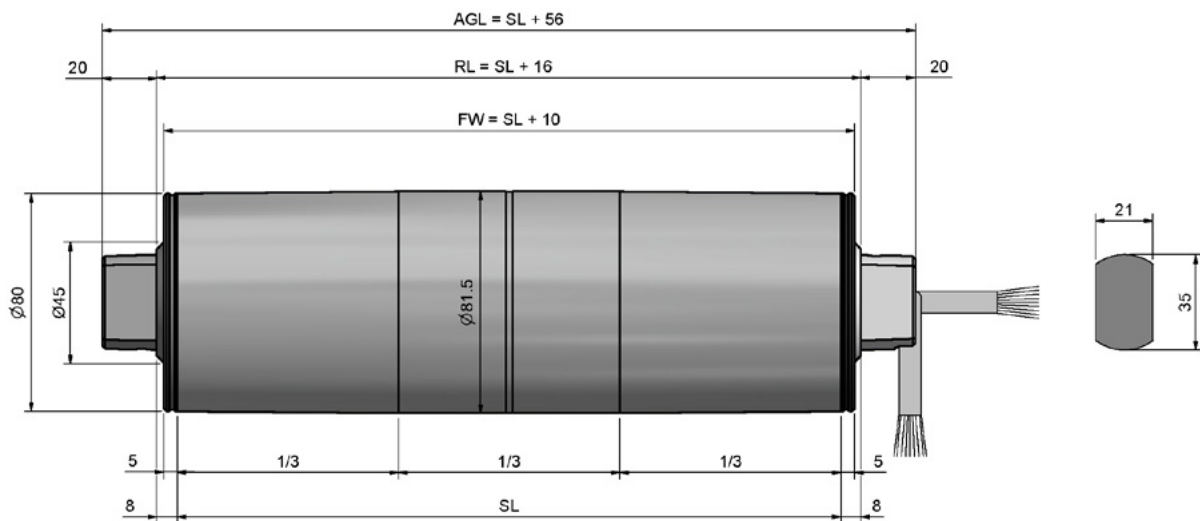
P_N	gs	i	v	n_A	V°	M^A	F^N	TE	Max. start weight	SL_{min}
kW			m/s	min^{-1}	m/s	Nm	N	N	Kg	mm
0.044	3	115.20	0.12	28	0.14	12.6	315	2000	100	260
		96.00	0.15	35	0.17	10.5	263	2000	80	260
		78.55	0.18	42	0.21	8.6	215	2000	67	260
		71.56	0.20	47	0.23	7.8	195	2000	60	260
		63.51	0.23	54	0.25	7.0	175	2000	52	260
		52.92	0.27	63	0.31	5.8	145	2000	44	260
		48.79	0.30	70	0.34	5.4	135	2000	40	260
	43.30	0.33	77	0.38	4.7	118	2000	36	260	
	2	19.20	0.76	178	0.84	1.6	40	1500	16	260
		16.00	0.90	211	1.00	1.3	33	1500	13	260
13.09		1.10	258	1.23	1.1	28	1500	11	260	

P_N Rated power
 gs Gear stages
 i Gear ratio
 v Rated velocity of the shell

n_A Rated revolutions of the shell
 V° No load velocity of the shell
 M^A Rated torque of belt drive
 F^N Rated belt pull of belt drive

TE Max. belt tension
 SL_{min} Min. shell length

Dimensions



Belt Drive with straight connector

Type	Ø A mm	Ø B mm
80DC crowned shell	81.5	80.0
80DC cylindrical shell	80.5	80.5

Weight and Shell Length

The belt drive's weight depends on its length.

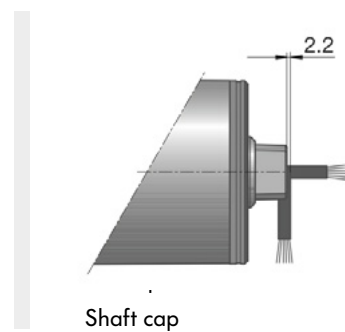
Shell length SL 260 – 602 mm

Average weight 3.9 – 6.3 kg

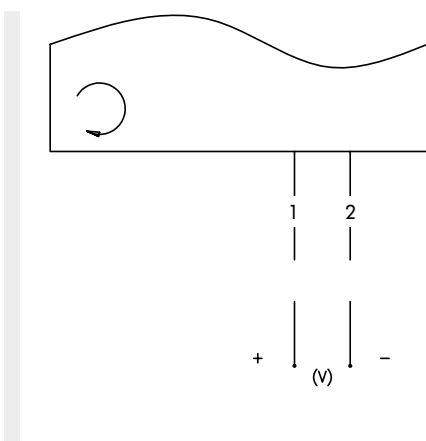
Weight increases by 0.35 kg in 50 mm increments

Cable Specifications

- 2 x 1.5 mm²
- Halogen-free
- Ø Cable: 5-7 mm
- Length: Minimum 1.1 m (other lengths available on request)
- Available with common connectors



Connection Diagram



Note: For CCW rotation interchange (1) and (2).

BELT DRIVES

113C



Application Area

- Light-duty conveyors
- Bottle recycling
- Supermarket checkout conveyors

Characteristics

- 1-phase AC induction motor
- Lightweight
- Single-rated voltage
- Maintenance-free
- Integral motor protection
- Lifetime lubricated
- Techno-polymer planetary gearbox
- Reversible
- Low noise

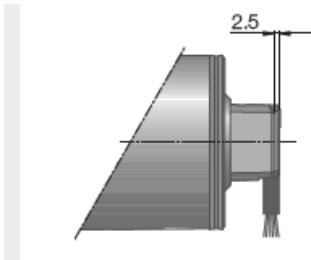


Technical Data

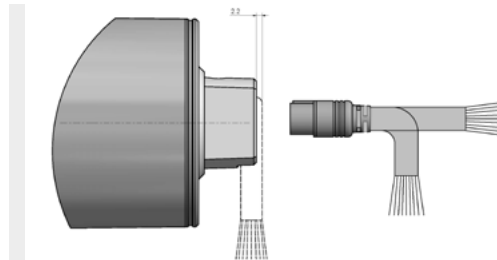
General technical data	
Motor type	Asynchronous squirrel cage motor, IEC 34 (VDE 0530)
Insulation class of motor windings	Class B, IEC 34 (VDE 0530)
Voltage	1x230 V ± 5% (IEC 34/38)
	1x115 V 60 Hz (on request)
Frequency	50 Hz (option 60hz)
Internal shaft sealing system	Double-lipped, NBR
Protection rate	IP64
Thermal protection	Bi-metal switch
Ambient temperature, 1-phase motor	+10 to +40 °C

Material Versions

Component	Version	Material	
		Aluminium	Mild steel
Shell	Crowned		✓
End housing	Standard	✓	
Shaft cap	Standard	✓	
Cable strain-relief	Plug solutions straight/90°	✓	
	Plug solutions 90° protected	✓	



Plug 90° with cable protection dimensions



Plug Solution 90/straight

For the Belt Drive with straight connector/fixed cable SL min is reduced by 10mm

Weight and Shell Length

The belt drive's weight depends on its length.

Shell length	SL 250 – 690 mm
Average weight	6.5 – 12.8 kg

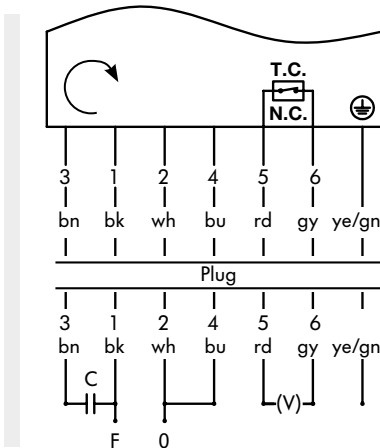
Weight increases by 0.7 kg in 50 mm increments

Cable Specifications

Interroll plug solution includes a strain relief piece. Please order the separately available plug cable to enjoy the advantages of plug and play technology and the flexible preinstallation of your belt drive.

- 7 x 0.5 mm²
- Wirepins for proper installation
- Ø Cable: 5-7 mm
- Length: 1.5 / 2 / 3 / 5 m (other lengths available on request)
- Available with common connectors

Connection Diagram



Notes:

- When belt drive is without thermal controller (5) and (6) is blind.
- For CCW rotation interchange brown (3) and blue (4).

BELT DRIVES

113SMP



Application Area

- Small light-duty conveyors
- Bottle recycling
- Supermarket checkout conveyors

Characteristics

- 3-phase or 1-phase AC induction motor
- Lightweight
- Single-rated voltage
- Maintenance-free
- Integral motor protection
- Lifetime lubricated
- Techno-polymer planetary gearbox
- Reversible
- Low noise



Technical Data

General technical data	
Motor type	Asynchronous squirrel cage motor, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	1x230 V 50/60 Hz 1x115 V 60 Hz 3x 230 V or 400 V 50 Hz (IEC 34/38)
Frequency	50 Hz (60 Hz optional)
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR (optional)
Protection rate	IP64 (IP66 optional)
Thermal Protection	Bi-metal switch
Ambient temperature, 3-phase motor	+5 to +40 °C
Ambient temperature, 1-phase motor	+10 to +40 °C

Material Versions

Component	Version	Material	
		Aluminium	Mild steel
Shell	Crowned		✓
	Cylindrical		✓
End housing	Standard	✓	
Shaft cap	Standard	✓	

Options

- Lagging for friction drive belts
- Sprockets for plastic modular belts
- Balancing
- Low temperature oil
- UL/cUL safety certifications
- Non-horizontal mounting (more than $\pm 5^\circ$)

BELT DRIVES

113SMP

Mechanical Data for 3-phase motors

P_N	np	gs	i	v	n_A	M_A	F_N	TE	SL_{min}
kW				m/s	min⁻¹	Nm	N	N	mm
0.040	8	3	63.00	0.07	11.4	28.6	505	2,700	260
			49.29	0.09	14.6	22.4	395	2,700	260
			38.51	0.11	18.7	17.5	309	2,700	260
0.110	6	2	11.57	0.44	74.8	12.6	223	1,500	275
			10.27	0.50	84.2	11.2	198	1,500	275
			63.00	0.13	21.7	41.6	734	2,000	240
	4	3	49.29	0.16	27.7	32.5	574	2,000	240
			44.09	0.18	31.0	29.1	514	2,000	240
			38.51	0.21	35.4	25.4	449	2,000	240
			30.77	0.26	44.4	20.3	359	2,000	240
			26.84	0.30	50.9	17.7	313	2,000	240
			23.96	0.34	57.0	15.8	279	2,000	240
			15.00	0.54	91.0	10.4	184	1,500	240
			11.57	0.70	118.0	8.0	142	1,500	240
			10.27	0.79	132.9	7.1	126	1,500	240
			8.88	0.91	153.8	6.2	109	1,500	240
			7.86	1.03	173.7	5.5	96	1,500	240
0.160	4	3	44.09	0.18	30.6	42.7	754	2,000	260
0.180	4	3	38.51	0.21	35.2	41.9	740	2,000	275
			30.77	0.26	44.0	33.5	591	2,000	275
			26.84	0.30	50.5	29.2	516	2,000	275
			23.96	0.34	56.6	26.1	461	2,000	275
			15.00	0.54	90.3	17.2	303	1,500	275
		2	11.57	0.70	117.1	13.3	234	1,500	275
			10.27	0.79	131.9	11.9	208	1,500	275
			8.88	0.91	152.6	10.2	180	1,500	275
			7.86	1.03	172.5	9.0	159	1,500	275

P_N Rated power
 np Number of poles
 gs Gear stages
 i Gear ratio

v Rated velocity of the shell
 n_A Rated revolutions of the shell
 M_A Rated torque of belt drive
 F_N Rated belt pull of belt drive

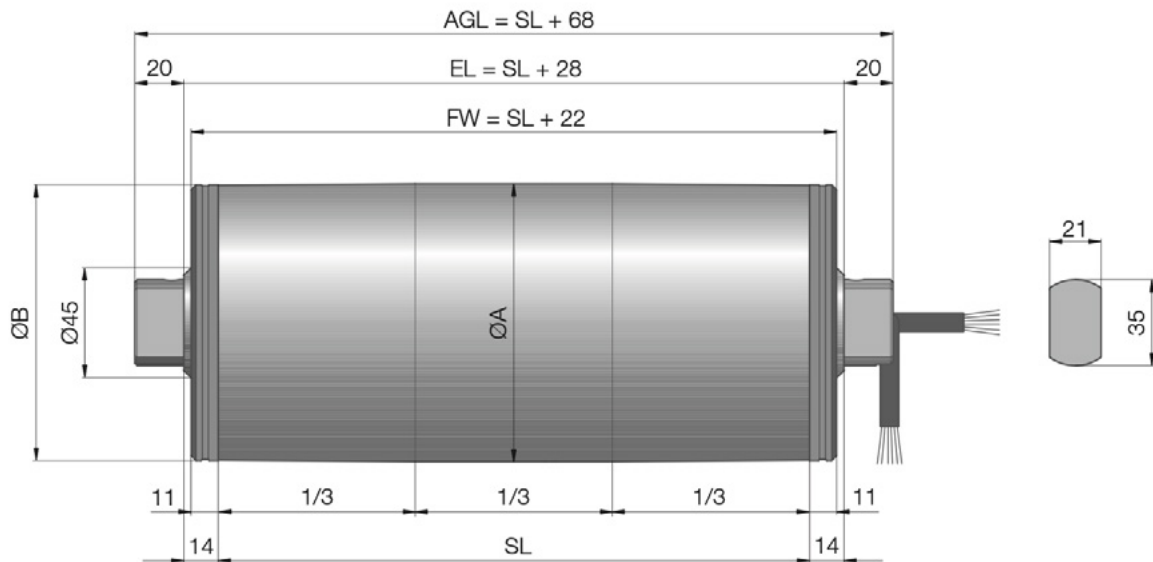
TE Max. belt tension
 SL_{min} Min. shell length

P_N	np	gs	i	v	n_A	M_A	F_N	TE	SL_{min}
kW				m/s	min-1	Nm	N	N	mm
0.330	2	3	44.09	0.38	63.5	42.7	754	2,000	275
			38.51	0.43	72.7	37.3	659	2,000	275
			30.77	0.54	91.0	29.8	526	2,000	275
			26.84	0.62	104.3	26.0	459	2,000	275
			23.96	0.69	116.9	23.2	410	2,000	275
	2	15.00	1.11	186.7	15.3	270	1,500	275	
		11.57	1.44	242.0	11.8	208	1,500	275	
		10.27	1.62	272.6	10.5	185	1,500	275	
		8.88	1.87	315.4	9.1	160	1,500	275	
		7.86	2.11	356.4	8.0	141	1,500	275	
Mechanical Data for 1-phase motors									
0.060	4	3	63.00	0.12	20.6	23.8	420	2,000	240
			49.29	0.16	26.4	18.6	328	2,000	240
			44.09	0.18	29.5	16.6	294	2,000	240
			38.51	0.20	33.8	14.5	256	2,000	240
			30.77	0.25	42.3	11.6	205	2,000	240
	2	26.84	0.29	48.4	10.1	179	2,000	240	
		23.96	0.32	54.3	9.0	160	2,000	240	
		15.00	0.54	86.7	6.0	105	1,500	240	
		11.57	0.70	112.3	4.6	81	1,500	240	
		10.27	0.79	126.5	4.1	72	1,500	240	
6	8.88	0.90	146.4	3.5	62	1,500	240		
	7.86	1.03	165.5	3.1	55	1,500	240		
	15.00	0.35	59.3	11.6	206	1,800	275		
	11.57	0.46	76.9	9.0	159	1,800	275		
	0.080	2	206	1,800	275				
0.110	4	3	63.00	0.12	20.6	43.8	772	2,000	260
			49.29	0.16	26.4	34.2	604	2,000	260
			44.09	0.18	29.5	30.6	541	2,000	260
			38.51	0.20	33.8	26.7	472	2,000	260
			30.77	0.25	42.3	21.4	377	2,000	260
	2	26.84	0.29	48.4	18.6	329	2,000	260	
		23.96	0.32	54.3	16.6	294	2,000	260	
		15.00	0.54	86.7	11.0	194	1,500	260	
		11.57	0.70	112.3	8.5	149	1,500	260	
		10.27	0.79	126.5	7.5	133	1,500	260	
4	8.88	0.91	146.4	6.5	115	1,500	260		
	7.86	1.03	165.5	5.7	101	1,500	260		

BELT DRIVES

113SMP

Dimensions



Belt Drive with straight connector

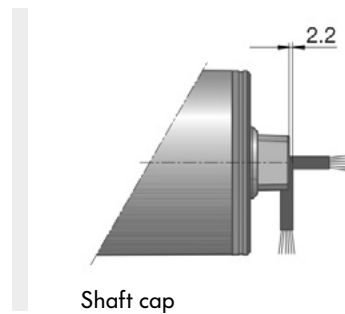
Type	Ø A mm	Ø B mm
113SMP crowned shell	113.3	112.3
113SMP cylindrical shell	113	113

Weight and Shell Length

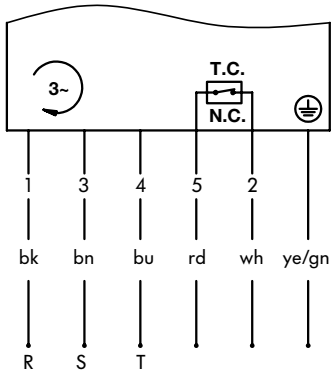
The belt drive's weight depends on its length.

Shell length SL 240 – 1090 mm
 Average weight 7.6 – 19.6 kg

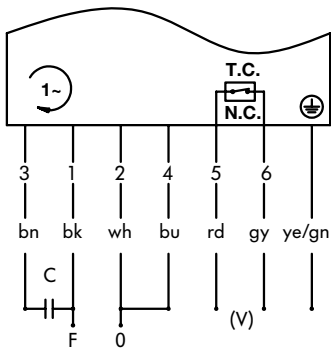
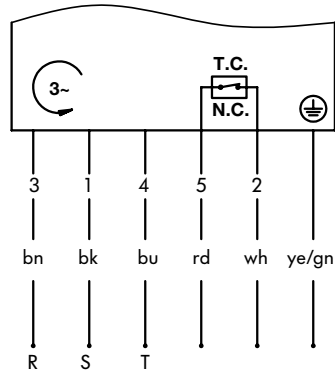
Weight increases by 0.7 kg in 50 mm increments



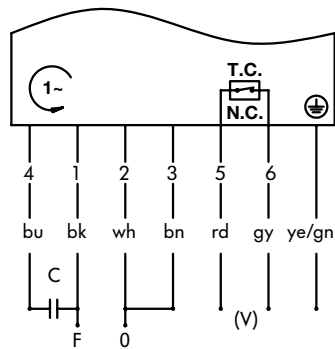
Connection Diagram



3-phase operation, 6 lead cable



1-phase operation, 7 lead cable



BELT DRIVES

113DC



Application Area

- Small light-duty conveyors
- Bottle recycling
- Supermarket checkout conveyors

Characteristics

- Brush type 24V DC
- Maintenance-free
- Techno-polymer planetary gearbox
- Lifetime lubricated
- Low noise
- Reversible
- Lightweight



Technical Data

General technical data	
Motor type	Brush type 24 V DC
Insulation class of motor windings	Class B, IEC 34 (VDE 0530)
Voltage	16-30 V DC
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR
Protection rate	IP64 (IP66 optional)
Ambient temperature	+10 to +40 °C
Thermal Protection	Bi-metal switch

Material Versions

Component	Version	Material		
		Aluminium	Mild steel	Stainless steel
Shell	Crowned		✓	✓
	Cylindrical		✓	✓
End housing	Standard	✓		
Shaft cap	Standard	✓		

Options

- Lagging for friction drive belts
- Sprockets for plastic modular belts
- Balancing
- Food-grade grease
- Low temperature grease
- UL/cUL safety certifications
- Non-horizontal mounting (more than $\pm 5^\circ$)

Accessories

- Anti-vibration brackets
- Idler pulleys
- Conveyor rollers

BELT DRIVES

113DC

Mechanical Data

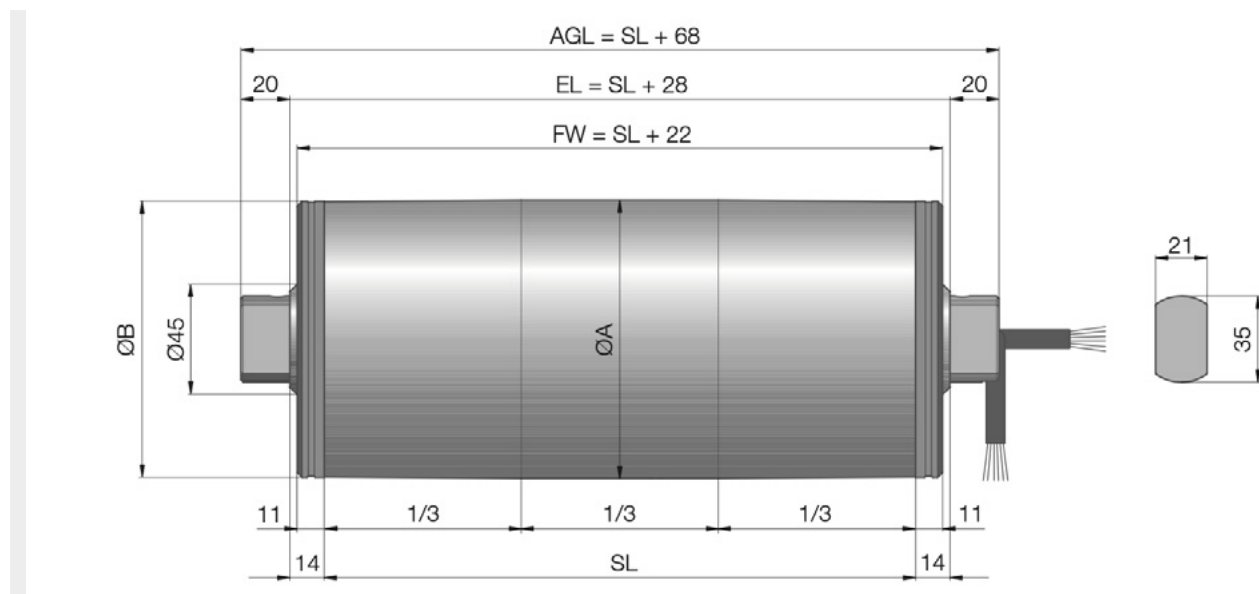
P_N	gs	i	v	n_A	V_o	M_A	F_N	TE	Max. start weight	SL_{min}
kW			m/s	min^{-1}	m/s	Nm	N	N	Kg	mm
0.044	3	115.2	0.18	26	0.20	12.6	223	2,000	71	278
		96.0	0.21	30	0.24	10.5	186	2,000	57	278
		78.5	0.26	37	0.30	8.6	152	2,000	47	278
		71.6	0.29	42	0.33	7.8	138	2,000	42	278
		63.5	0.32	46	0.37	7.0	124	2,000	37	278
		52.9	0.39	56	0.44	5.8	103	2,000	31	278
		48.8	0.42	60	0.48	5.4	96	2,000	28	278
		43.3	0.47	68	0.54	4.7	83	2,000	25	278
	2	19.2	1.07	154	1.18	1.6	28	1,500	11	278
		16.0	1.28	184	1.42	1.3	23	1,500	9	278
		13.1	1.56	224	1.73	1.1	19	1,500	8	278

P_N Rated power
 gs Gear stages
 i Gear ratio
 v Rated velocity of the shell

n_A Rated revolutions of the shell
 V_o No load velocity of the shell
 M_A Rated torque of belt drive
 F_N Rated belt pull of belt drive

TE Max. belt tension
 SL_{min} Min. shell length

Dimensions



Belt Drive with straight connector

Material Versions

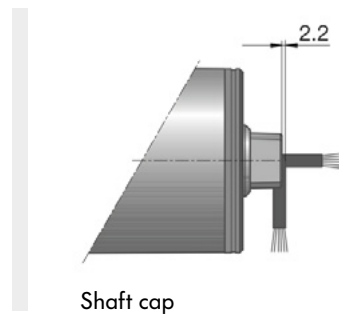
Type	Ø A mm	Ø B mm
113DC crowned shell	113.3	112.3
113DC cylindrical shell	113	113

Weight and Shell Length

The belt drive's weight depends on its length.

Shell length SL 278 – 690 mm
 Average weight 5.5 – 10.7 kg

Weight increases by 0.6 kg in 50 mm increments

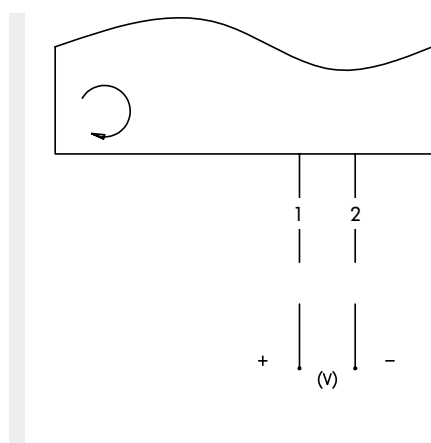


Shaft cap

Cable Specifications

- 2 x 1.5 mm²
- Halogen-free
- Ø Cable: 5-7 mm
- Length: Minimum 1.1 m (other lengths available on request)
- Available with common connectors

Connection Diagram



Note: For CCW rotation interchange (1) and (2).

Technical Data

General technical data	
Motor type	Brushless (BLDC) type 24 V DC or 48 V DC
Insulation class of motor windings	Class B, IEC 34 (VDE 0530)
Voltage/Current	24V DC/ 3,6VA or 48 V DC/1.8A
Cable	3m cable, minimum 2.6m outside shaft
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR
Protection rate	IP66
Ambient temperature	+10 to +40 °C

Material Versions

Component	Version	Material		
		Aluminium	Mild steel	Stainless steel
Shell	Crowned		✓	✓
	Cylindrical		✓	✓
End housing	Standard	✓		
Shaft cap	Standard	✓		

Options

- Rubber Lagging
- Low temperature grease
- Non-horizontal mounting (more than $\pm 5^\circ$)

Accessories

- Anti-vibration brackets
- Idler pulleys, see p ??
- Conveyor rollers

BELT DRIVES

80BLDC

Mechanical Data

P_N	gs	i	V full load	V no load	$n_{A \text{ full load}}$	M_A	F_N	TE	SL_{\min}
kW			m/s	m/s	min-1	Nm	N	N	mm
0.06	3	115.2	0.1	0.14	25	19.9	498	2000	265
		96	0.12	0.17	30	16.6	415		265
		78.5	0.15	0.2	36	13.6	340		265
		71.5	0.17	0.22	40	12.4	310		265
		63.5	0.19	0.25	45	11	275		265
		52.9	0.23	0.3	54	9.2	229		265
		48.8	0.24	0.33	58	8.4	211		265
	43.3	0.28	0.37	66	7.5	187	265		
	2	19.2	0.62	0.83	148	3.5	88	1500	265
		16	0.75	0.99	178	2.9	73		265
		13.1	0.91	1.21	218	2.4	60		265

P_N Rated power
 gs Gear stages
 i Gear ratio
 v Rated velocity of the shell

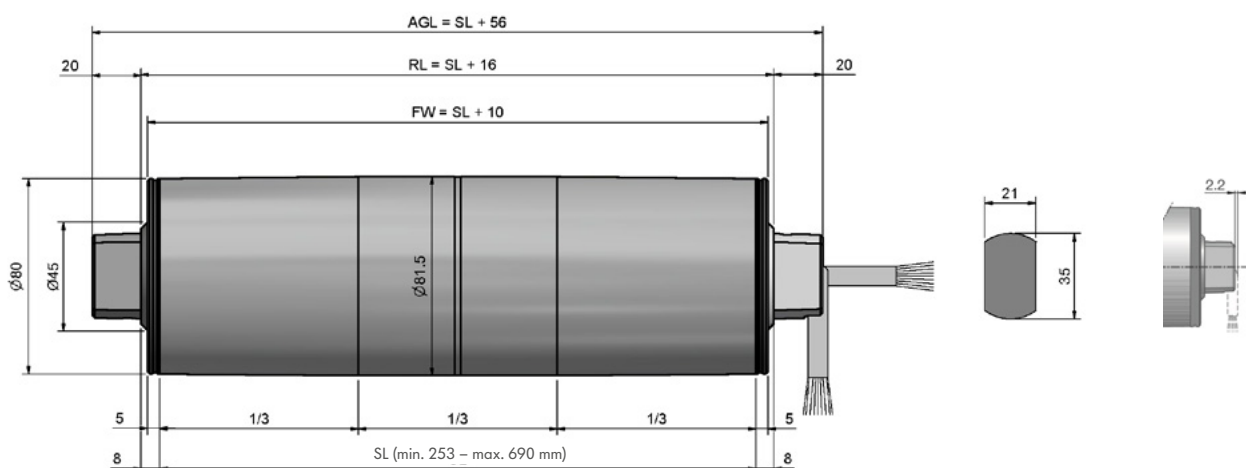
n_A Rated revolutions of the shell
 M_A Rated torque of belt drive
 F_N Rated belt pull of belt drive
 TE Max. belt tension

SL_{\min} Min. shell length

Electrical data

Nominal voltage (V DC)	24	48
Number of poles	4	4
Nominal current (A)	3.6	1.8
Nominal torque (Ncm)	20	20
Nominal speed (rpm)	2850	2850
Friction torque at no load (Ncm)	2.5	2.5
Peak stall torque (Ncm)	95	102
Peak current (A)	9	4.5
No load speed (rpm)	3700	3700
Nominal power (W)	60	60
Torque constant (Vcm/A)	6	12
Terminal resistance (Ohm)	0.8	3.06
Terminal inductance (mH)	1.76	7.05
Rotor inertia (gcm ²)	147.9	147.9
Pos Feedback (Hall, SSI, EMF)	Hall	Hall
Hall effect sensor voltage (V DC)	5	5

Dimensions



Type	Ø A mm	Ø B mm
80BLDC crowned shell	81.5	80
80BLDC cylindrical shell	80.5	80.5

BELT DRIVES

113BLDC

Application Area

Small to medium belt conveyors for packaging, supermarkets and bottle recycling. As well used as infeed or transfer conveyors.

Characteristics

The Belt Drive 113BLDC is a cost-effective belt drive in 24 V or 48 V versions with technopolymer planetary gearbox and maintenance-free design. It is oil-free and lifetime lubricated. The lightweight and low-noise drive offers long service life.

The 113BLDC is available with a motor controller C0 6500 for speed and direction control.



Technical Data

General technical data	
Motor type	Brushless (BLDC) type 24 V DC or 48 V DC
Insulation class of motor windings	Class B, IEC 34 (VDE 0530)
Voltage/Current	24V DC/ 3,6VA or 48 V DC/1.8A
Cable	3m cable, minimum 2.6m outside shaft
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR
Protection rate	IP66
Ambient temperature, 1-phase motor	+10 to +40 °C

Material Versions

Component	Version	Material		
		Aluminium	Mild steel	Stainless steel
Shell	Crowned		✓	✓
	Cylindrical		✓	✓
End housing	Standard	✓		
Shaft cap	Standard	✓		

Options

- Rubber Lagging
- Low temperature grease
- Non-horizontal mounting (more than $\pm 5^\circ$)

Accessoires

- Anti-vibration brackets
- Idler pulleys
- Conveyor rollers

BELT DRIVES

113BLDC

Mechanical Data

P_N	gs	i	V full load	V no load	$n_{A \text{ full load}}$	M_A	F_N	TE	SL_{\min}
kW			m/s	m/s	min-1	Nm	N	N	mm
0.06	3	115.20	0.15	0.19	25	14.1	352	2000	253
		96.00	0.18	0.23	30	11.8	294	2000	253
		78.55	0.21	0.29	36	9.6	241	2000	253
		71.56	0.24	0.31	40	8.8	219	2000	253
		63.51	0.27	0.35	45	7.8	194	2000	253
		52.92	0.32	0.42	54	6.5	162	2000	253
		48.79	0.35	0.46	58	6.0	149	2000	253
	43.30	0.39	0.52	66	5.3	133	2000	253	
	2	19.20	0.88	1.17	148	2.5	62	1500	253
		16.00	1.05	1.40	178	2.1	52	1500	253
		13.09	1.29	1.71	218	1.7	42	1500	253

P_N Rated power
 gs Gear stages
 i Gear ratio
 v Rated velocity of the shell

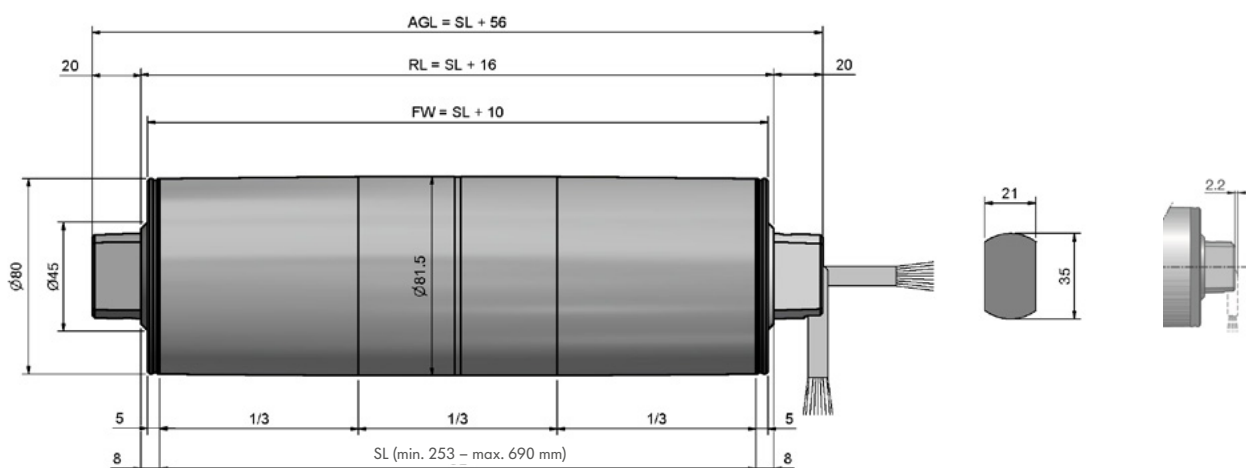
n_A Rated revolutions of the shell
 M_A Rated torque of belt drive
 F_N Rated belt pull of belt drive
 TE Max. belt tension

SL_{\min} Min. shell length

Electrical data

Nominal voltage (V DC)	24	48
Number of poles	4	4
Nominal current (A)	3.6	1.8
Nominal torque (Ncm)	20	20
Nominal speed (rpm)	2850	2850
Friction torque at no load (Ncm)	2.5	2.5
Peak stall torque (Ncm)	95	102
Peak current (A)	9	4.5
No load speed (rpm)	3700	3700
Nominal power (W)	60	60
Torque constant (Vcm/A)	6	12
Terminal resistance (Ohm)	0.8	3.06
Terminal inductance (mH)	1.76	7.05
Rotor inertia (gcm ²)	147.9	147.9
Pos Feedback (Hall, SSI, EMF)	Hall	Hall
Hall effect sensor voltage (V DC)	5	5

Dimensions



Type	Ø A mm	Ø B mm
113BLDC crowned shell	113.3	112.3
113BLDC cylindrical shell	113	113

CONTROLS AND ACCESSORIES

Control CO 6500



Application Area

Control of the Belt Drives 80 and 113BLDC with multiple functions for a wide range of applications within light duty conveying.

Functions

- Variable speed, smooth operation at low speed
- Speed control mode: analog range 0-5V
- External control for direction of rotation CW/CCW and start/stop
- With pulse velocity output, motor rotational speed can be observed anytime
- Protection functions: over-current, overvoltage, under voltage and motor stalling



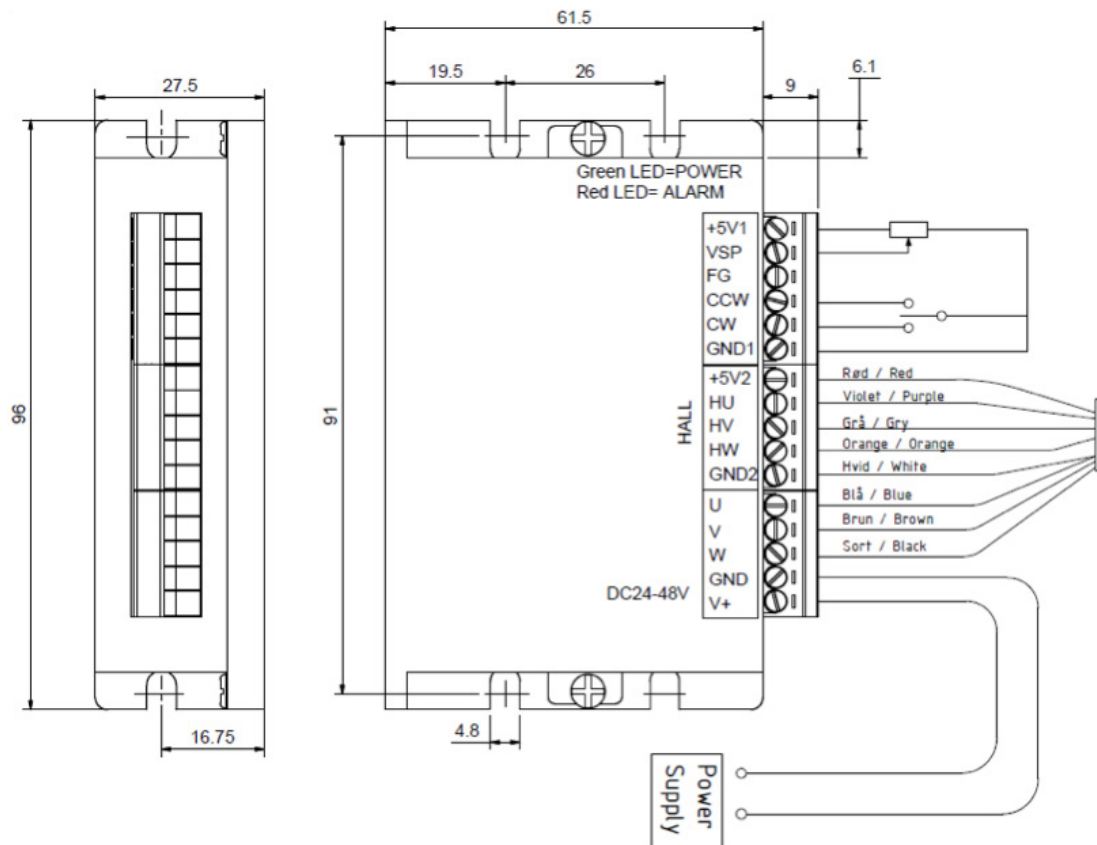
CONTROLS AND ACCESSORIES

Control CO 6500

Technical Data

Operation Voltage	24-48V DC
Incoming current	0-5 Amp
Speed control	0-5V DC
Protection class	IP20
Dimensions L x W x H:	96 x 61.5 x 27.5

Connection diagram



Wiring diagram for 80BLDC and 113BLDC Belt Drive

Mounting: Holes fit for Unbrako Socket Head Cap Screw M4

CONTROLS AND ACCESSORIES

Softstart Control



The motor controllers in a compact design perfectly cover the requirements of checkout manufacturers and reduces the complexity of installation. The integrated start capacitor allows easy start-up of the one-phase drive. With only one control unit it is possible to control the inlet and/or outlet belt and connect all necessary accessories like light barrier, foot-pedal and signal light.

Moreover, depending on chosen control variant, a smooth start and stop of checkout belt is possible, even with a heavy load, thanks to the integrated motor starter. This very useful function helps prevent tilting goods and reduce unnecessary cleaning, downtime of the checkout, and loss of goods.



CONTROLS AND ACCESSORIES

Softstart Control












Technical Data


















	CO 6001	CO 6002	CO 6005	CO 6101	CO 6105
Certification	CE			UL	
Number of motors	1	2	1	1	1
Soft start ramp	Yes		No	Yes	No
Photocell input	Yes		No	Yes	No
Inductive sensor input	Yes		No	Yes	No
Footswitch input	Yes		No	Yes	No
Number of light outputs	2		3	2	3
Motor	1 phase AC			1 phase AC	
Power grid supply	220 - 240VAC/50Hz			110 - 120VAC/60Hz	
Maximum total power consumption	700VA		550VA	850VA	620VA
Motor capacitor	6uF/450VAC			15 uF/250 VAC	
Operating temperature	+5°C to + 40°C			+41F to +104F	
Operating relative humidity	10 % - 80 %			10 % - 80 %	
Dimensions (Width/Hight/Depth)	178/55/223mm		178/55/185mm	7.01/2.17/10.47"	
Mass	580 g	680g	550 g	1.57 lb	1.65 lb
Ordering Number	61114356	61114355	61116641	61114356	61119954

CONTROLS AND ACCESSORIES

Accessories



		Ordering number
Cables		
	Motor plug cable 3m	1000010
	Cable 3Lead, 3m w schuko plug	1112736
	Cable 3Lead, 2m w US plug	731-6204
	Jumper CBP	1112800
	Mounting screw short	-
Photoelectric Sensor		
	Photoelectric Sensor, Photocell Type A	61114357
	Photoelectric Sensor, Photocell Type B	61114358
	Photoelectric Sensor, Photocell Type C	61114359
	Photoelectric Sensor, Photocell Type D	-
	Photoelectric Sensor, Photocell Type E	-
	Photoelectric Sensor, Photocell Type S	-

		Ordering number
Footswitch		
	Footswitch.Single 6241; 3A / 250 VAC	61115536
	Footswitch.Single XF-201Y; 10A / 250 VAC	61114361
	Footswitch.Single 6227-S; 10A / 250VAC	61114360
	Footswitch.Double XF- 6241; 10A /250 VAC	61114362
Mechanical Sensor		
	Mechanical Sensor XV-154-1C25	61114385
	Mechanical Sensor XV-15-F9	61114386
	Mechanical Sensor XV-152-1C25	61114388
	Mechanical Sensor XV-156-1C25	61114390
	Mechanical Sensor XV-15-F11	61114391
	Mechanical Sensor XV-155-1C25	61114392
Inductive Sensor		
	Inductive Sensor MAL J8A3-02-Z/BY	61114383
	Inductive Sensor MAN S08-04NPSZW2S	61114384
	Inductive sensor PS-08P FO	61114515
	Inductive sensor PL-08P MA	61114516
Signal Light		
	Signal Light RGY/230VAC	61114418
	Signal Light RGB230V	61114419
	Signal Light fixing / A	61114420
	Signal Light fixing / B	61114517

COMMERCIAL CASSETTES

Center Drive Cassette



Application Area

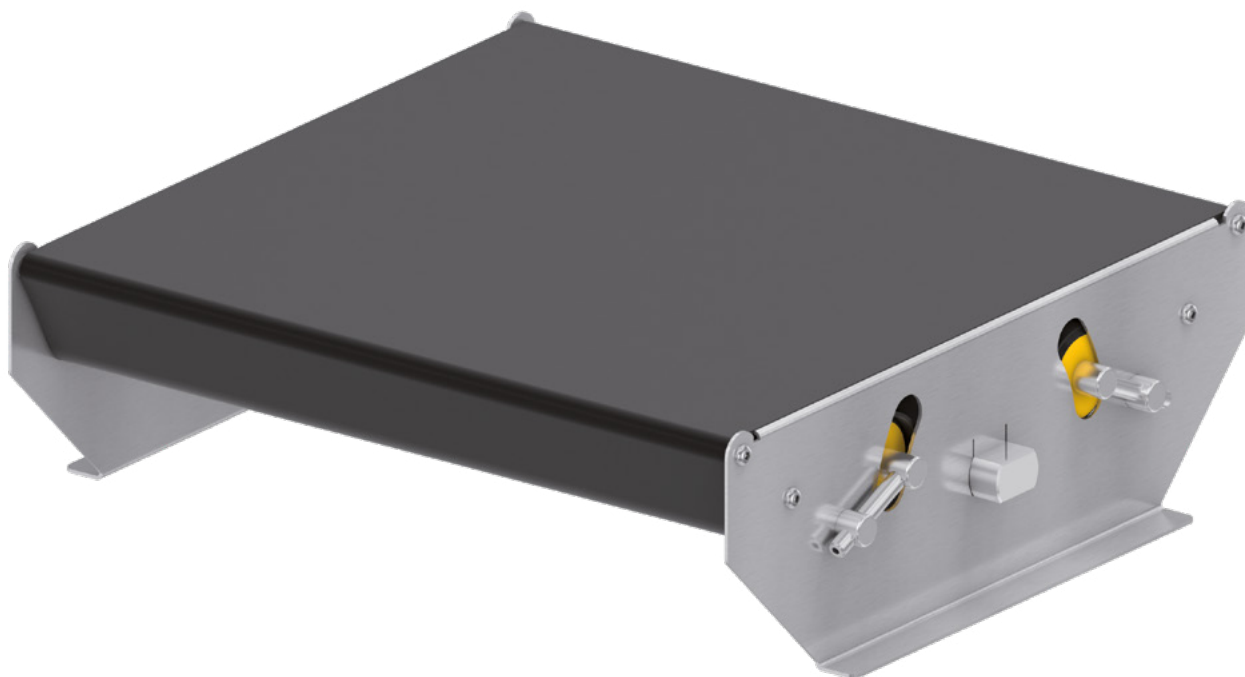
Used in light duty applications where knife edge transfer is a need and in applications requiring wide, yet short conveyor footprint and with a wish for reversibility.

Characteristics

For transportation of small goods, like it is the case in check out applications, the smooth transition between the two conveyors is crucial. The Center Drive Cassette is a clever solution with nearly cutting edge transition: only \varnothing 17 mm idlers are used for belt deflection.

The Cassette is built with a belt drive as a center drive. Thanks to unique traction system, the belt is self-tracked, even for reversible operation. The belt is running with almost no pretension and very quiet. The application is not dependent on the belt tolerances as the Center Drive Cassette has a fixed length.

- Self-tracking belt, even for reversible operation
- No dependency on belt tolerances thanks to the fixed length CC
- Higher belt life due to the low tension forces
- Advantageous concept for wide belts, including under-quadric solutions



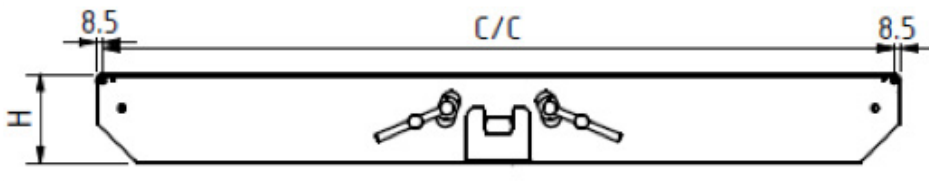
COMMERCIAL CASSETTES

Center Drive Cassette

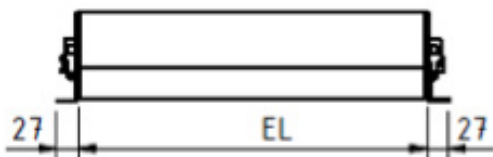
Technical Data

Design	CD Profiled (Center Drive). Fixed belt Center-Center (C/C) distance – Central adjustment. Belt is self-tracked.
Load Capacity	0 – 30kg
Belt speed	Speeds are up to 0.30m/s for 80SMP and 0.38 m/s for 113SMP.
Cassette Size	End to end length min. 378mm, max. 2970 mm Min. standard width EL 286mm, max. Width EL 968mm. for 80SMP Min. standard width EL 268mm, max. Width EL 1118mm. For 113SMP H=110mm. for 80SMP Belt Drive, 143mm for 113SMP Belt Drive. End-heights may be reduced upon request.
Ambient temperature	+10 to +40C
Voltage	3x230-50hz, 3x400V-50hz.
Speed	Up to 0.38m/s.
Roller type	Standard: Ø50mm (Interroll 1700 idler)
Drive type	80SMP or 113SMP
Belt Drive	Mild Steel Shell with hot vulcanized rubber. End housings and shaft caps aluminum.
Idler	Ø17 mm centerless ground shaft, mild steel.
Belt	Standard black PU/PET, 2mm, 2-ply, 1.2 mm. thickness. Pretension of belt 0%.

Dimensions



Cassette Size Min. standard length C/C 358mm, max. Length C/C 2950mm.



COMMERCIAL CASSETTES

Cassette



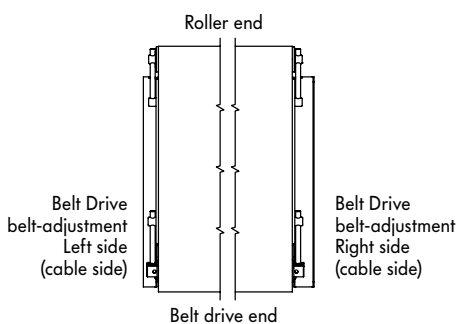
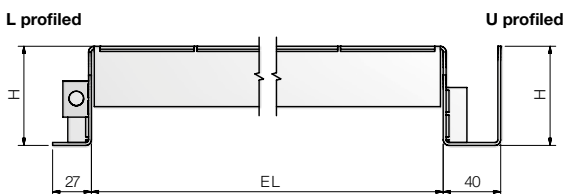
The Interroll Cassette system is a belt drive system to drive a conveyor belt in supermarket checkouts and in equipment used in supermarkets, including Retail Based Reversed Vending Machinery. The Interroll Cassette system includes the Patented Quick Tension/release idler system for easy installation and change of the conveyor belt.



Technical Data

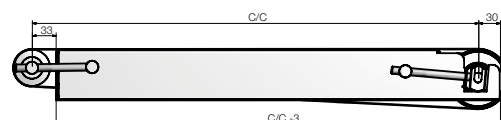
Design	U or L profiled Standard: Idler belt-adjustment Standard: Belt Drive belt-adjustment (one side only, left is standard)
Load capacity	Small: 0 - 50 kg, Medium: 50 - 100 kg, Large: 100 - 150 kg, > 150 kg on request
Cassette belt speed	Standard: 0.15 / 0.17 / 0.19 m/s Option: 0.11 / 0.13 / 0.21 / 0.23 / 0.25 / 0.28 / 0.30 / 0.34 m/s On request: < 0.11 and > 0.34 m/s, Belt speed data are based on 1-phase Belt Drive speed
Length C/C	500 to 2,980 mm
Width EL	300 to 700 mm
Min. ratio length/width	2
Inclined/declined	Please contact your Interroll customer consultant
Ambient temperature	+5 to +40 °C
Belt Drive drive and Idler	
Voltage	1 x 230 V 50 Hz, 3 x 230 V 50 Hz, 3 x 400 V 50 Hz Option: 1 x 115 V 60 Hz, 3 x 230 V 60 Hz, 3 x 460 V 60 Hz
Speed	Belt Drive speed is typically 5% lower than belt speed
Ø Drive	81 mm or 113 mm
Ø Idler pulley	Standard: 50 mm (Interroll 1750 idler), Option: 40 mm, On request: < 40 mm
Materials	
Cassette	2 mm galvanised steel
Belt Drive	Shell: surface protected, End housings and shaft caps: aluminium
Idler pulley Shell:	galvanised, Endhousings and endcaps: techno-polymer
Belt	Standard black PVC/PET, 2 mm, 2-ply, K1%= 6-8 N/mm Pretension of belt 0.2 - 0.3%, Other belt types on request

Dimensions



Belt Drive	H mm
80C	69
113C	85.5

Note: Standard belt width is equal to EL - 6



Note:

- Cable and capacitor to be ordered separately
- The cassette can be connected for operation in both directions

COMMERCIAL CONVEYORS

Narrow Belt Conveyor



Application Area

Used in applications, where either the conveyed good requires a narrow belt with side guides, or in applications where space around the conveyor is limited.

Characteristics

The Narrow conveyor is a standardized conveyor in three predefined lengths and widths, and comes with three different speeds. As a drive is the Belt Drive 80SMP used for a smooth and reliable operation.

The conveyor frame is based on proven side guide cassette design, where the side guide is built into the frame. The under guarding and drive box are made from 1mm steel, making the conveyor lighter.

The drive is placed underneath the conveyor, making easy to place conveyors end to end and still utilize a small gap, as only Ø40 idlers are used at both ends.

- Easy installation
- Integrated side guide
- Quick tension release in both ends
- Small transfer gap, Ø40 end idlers
- Integrated photosensor placement
- Side by side placement, via off-center drive placement
- Fixed end to end conveyor length for precise installation
- Telescopic support legs, for height adjustment



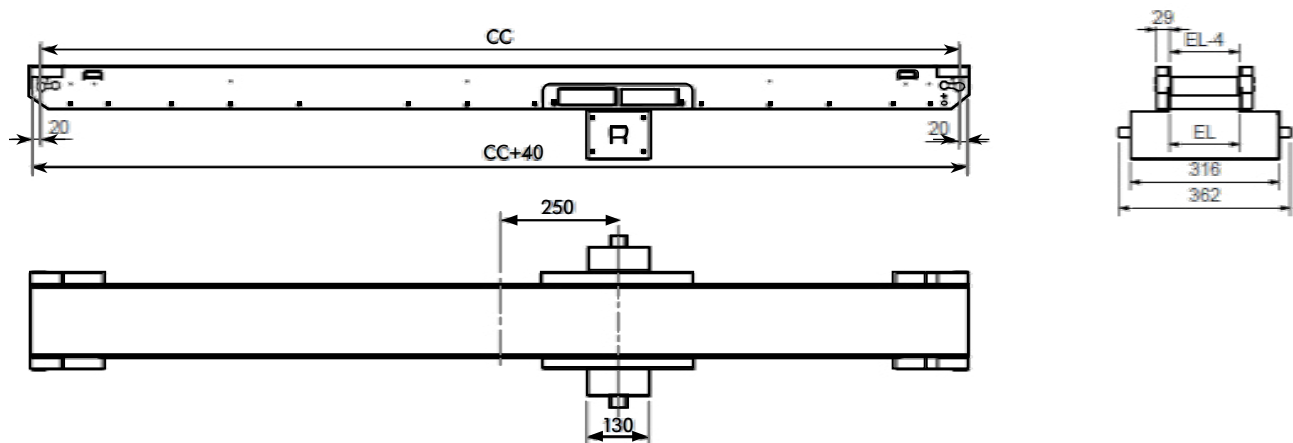
COMMERCIAL CONVEYORS

Narrow Belt Conveyor

Technical Data

Load capacity	0 -50 kg
Cassette belt speed	0,18 / 0,29 / 0,92 m/s
Length CC	1940 / 2940 / 3940 mm (End to end length: 1984/2984/3984mm)
Width EL	150 / 200 / 250 mm
Ambient temperature	+10 to +40 °C
Belt drive and idler	
Voltage	3 x 400V 50 Hz
Ø Drive	81mm
Ø Idlers	40mm (Interroll 6000 roller)
Idler configuration	Fixed end

Dimensions



COMMERCIAL CONVEYORS

Light Industrial Conveyor



When it comes to the production requirements of the light industry, space utilization is just one of key success factors. Another one - efficiency - helps to save the costs and reduce the footprint. This cost-efficient, easy-to-handle conveyor solution is based on a simple construction with lean design. There is no time consuming assembly or belt tensioning, thanks to clever plug-and-play construction.

The belt is already tensioned and tracked and the conveyor is run in before delivery. This makes on-site installation very quick and easy.

The lean construction of the conveyor without protruding external parts - like a gear motor, for example - is enabled by compact Interroll Belt Drives, allowing for more effective use of space.

The unique quick tension release makes changing belts very easy, even without special skills. The Interroll Light Industrial Conveyor

- Easy to install
- Space saving construction
- Efficient drive
- Easy adjustments
- Simple belt change
- Belt tensioned and tracked



COMMERCIAL CONVEYORS

Light Industrial Conveyor

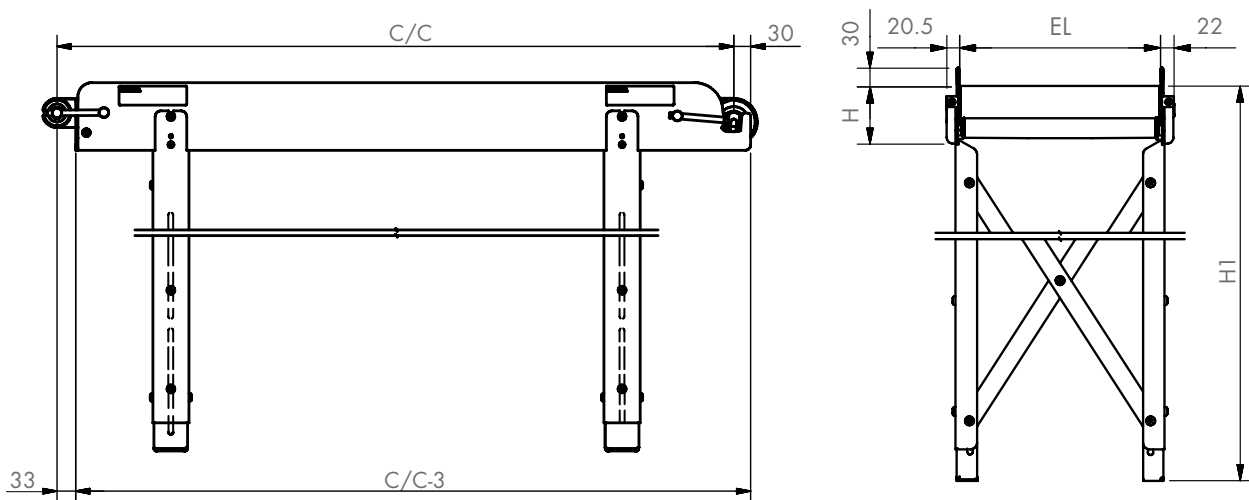
Technical Data

Load capacity	up to 50 kg/m
Belt speed	up to 0.34 m/s, others on request
Conveyor dimensions	Length C/C: 800 - 2980 mm, others on request Width EL: 300 - 600 mm Recommended minimum Length/Width ratio: 2
Incline/decline	Possible
Ambient temperature	+10° to + 40°C
Voltage	1x230 V-50 Hz, 3x230-50 Hz, 3x400 V-50 Hz, 24V DC, 24 V - 48 V BLDC
Belt Drive diameter	Ø 80 mm or Ø 113 mm
Idler diameter	Ø 51 mm (Interroll Series 1700)
Idler configuration	Fixed end

Materials

Frame, support legs and profile	2 mm hot-dip coated galvanized steel, S profile
Belt Drive	Shell surface protected, end housings and shaftcaps aluminum
Idler	Shell galvanized, end housings and endcaps technopolymer
Belt	Black PVC/PET, 2mm, 2-ply, others on request Pretension of belt 0.3 %

Dimensions



	H in mm	H1 in mm	Standard feet	Machine feet	Wheels
Ø80 Belt Drive	90	640 - 815	669 - 928	777 - 952	
Ø113 Belt Drive	137	647 - 825	674 - 938	784 - 962	

ENVIRONMENTAL CONDITIONS

Net supply deviation. Information must be observed with caution.

Using 3-phase 50 Hz motors in a 60 Hz net supply with the same voltage.

- Motor rated: 230/400 V – 3ph – 50 Hz
- Net supply: 230/400 V – 3ph – 60 Hz

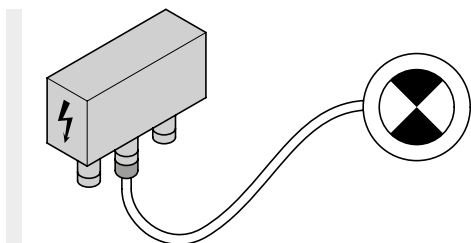
Using a 3-phase 50 Hz motor in a 60 Hz net will increase the frequency and therefore the speed by 20 %. If the rated motor parameters are to be kept constant, a 20 % higher input voltage would be required (law U/f). However, if this 20 % higher voltage is not supplied all voltage-dependent parameters will be affected in accordance with the following scheme.

Net voltage = rated motor voltage

Motor data

Power	P	kW	100%
Rated rpm	n_n	rpm	120%
Rated torque	M_n	Nm	88.3%
Starting torque	M_A	Nm	64%
Pull-up torque	M_s	Nm	64%
Pull-out torque	M_k	Nm	64%
Rated amperage	I_N	A	96%
Starting amperage	I_A	A	80%
Power factor	$\cos \varphi$		106%
Efficiency	η		99,5%

Net supply	Motor rating
230/400 V	230/400 V
3 ph	3 ph
60 Hz	50 Hz



Using 3-phase 50 Hz rated motors in a 60 Hz net supply with 15/20 % higher voltage

- Motor rated: 230/400 V – 3ph – 50
- Net supply: 276/480 V – 3ph – 60 – 2 and 4 poles (motor voltage + 20 %)
- Net supply: 265/480 V – 3ph – 60 – 6, 8, 10 and 12 poles (motor voltage + 15 %)

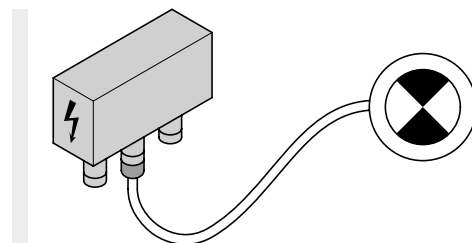
Using a 3-phase 50 Hz motor in a 60 Hz net with 20 % higher voltage will increase the frequency and therefore the speed by 20 % but will maintain all the rated motor parameters subject to small variations (law U/f). Note! However, if the net supply voltage = motor voltage + 15 % the actual motor power will be 92 % of the original motor power.

Net voltage = 1.2 x rated motor voltage (for 2 and 4 poles)

Motor data

Power	P	kW	100%
Rated rpm	n_n	rpm	120%
Rated torque	M_n	Nm	100%
Starting torque	M_A	Nm	100%
Pull-up torque	M_s	Nm	100%
Pull-out torque	M_k	Nm	100%
Rated amperage	I_N	A	102%
Starting amperage	I_A	A	100%
Power factor	$\cos \varphi$		100%
Efficiency	η		98%

Net supply	Motor rating
276/480 V	230/400 V
3 ph	3 ph
60 Hz	50 Hz



Connecting 3-phase motors to a single phase supply

3-phase motors combined with a frequency converter can be connected to a single phase supply providing that the supply voltage is the same as that of the motor. 3-phase motors generally have a much higher efficiency than single phase motors.

Connecting 1-phase motors to 60 Hz supply

Using 1-phase 50 Hz motors on 60 Hz supply is not generally recommended. The change to 60 Hz with same voltage will affect parameters as shown on 3-phase supply, but with higher risk of overheating and noise increase.

Altitude above 1,000 m

Operating a belt drive at an altitude of more than 1,000 m may result in power loss and thermal overload due to the low atmospheric pressure. This must be considered when calculating your power requirement. For further information please contact your Interroll customer consultant.

APPLICATIONS

Bottle Recycling

Belt Drives 80-113SMP, 80-113DC, 80-113BLDC are suitable for Retail Based Reversed Vending Machines (RBRVM) and associated backroom bottle and can handling equipment.

On request, belt drives can be suited with techno-polymer sprockets for use with modular belting. If applications for narrow belts, handling bottles and cans is required, belt drives can be adapted to this use; either by special brackets or the use of dedicated cassette-systems. If smaller drive diameter or use of other motor types is required, please contact your Interroll customer consultant.



Supermarket Checkouts

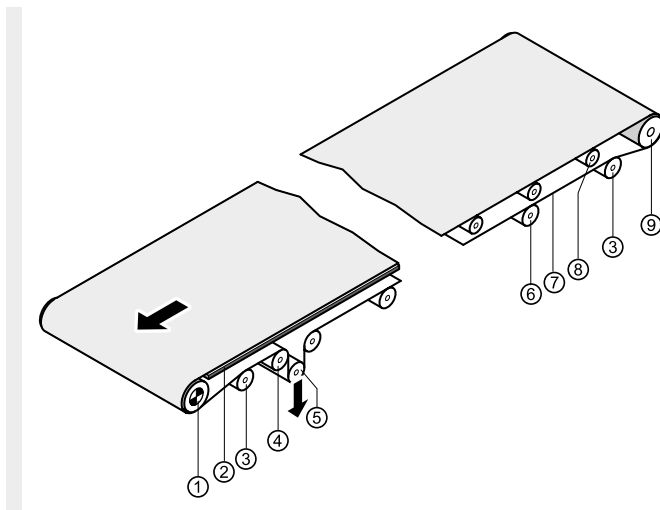
A wide variety of packed foods, confectionery and electrical goods are carried on supermarket checkout conveyors. Frequent start/stops and low noise are typical for this type of application with friction drive belts.

- Plug-in cable connectors
- Primarily single phase supply, 3-phase as an option
- Dedicated Soft Start Control and accessories



A belt conveyor is designed primarily to transport or transfer materials from one place to another. In its simplest form, a belt conveyor normally consists of a longitudinal frame with a belt drive and idler pulley at each end around which a continuous belt revolves. The belt, which carries the materials, can be supported either by rollers or a steel, wood or plastic slide bed plate. In this chapter we subdivide the design guidelines into two sections: friction drive belt conveyors and positive drive belt conveyors, as each type requires a different method of torque transfer from the drive.

Friction Drive Belt Conveyors



- 1 Belt Drive
- 2 Slide bed
- 3 Snub roller
- 4 Deflection roller
- 5 Tension roller
- 6 Return roller
- 7 Conveyor belt
- 8 Carrying roller
- 9 Idler pulley

Friction drive belt conveyors, e.g. rubber, PVC or PU flat belts, rely on high friction between the belt drive and belt and sufficient belt tension in order to transmit the torque from the belt drive to the belt. For typical friction factors, refer to the table below.

DESIGN GUIDELINES

Torque transmission

Normally the steel crowned shell of the belt drive is sufficient to transmit the torque but care must be taken not to over-tension the belt, which could damage the belt drive shaft bearings or even the belt itself. The conveyor belt should only be tensioned in line with the manufacturer's recommendations and should be sufficient only to drive the belt and load without belt slip. Over-tensioning can damage the belt drive and belt. Maximum belt tensions for the belt drives can be found in the product pages of this catalogue. It is recommended to use belt $K1\% < 8N/mm$ and a belt tension of 0.3%. Please also note the belt relaxation according to the belt manufactures catalog data.

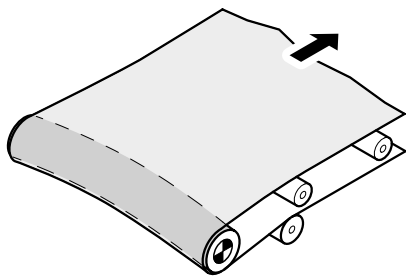


Fig.: Damaged belt drive due to over-tensioning

To improve the torque transmitted from the belt drive to the belt, rubber lagging can be applied to the shell to produce more grip.

- Smooth lagging is adequate for dry applications or alternatively diamond patterned lagging; grooved or other lagging can also be used
- V-grooves for belt tracking can be machined into the lagging to prevent belt wander

When external belt tracking devices are installed, cylindrical shells can be used to prevent opposing influences.

Depending on the belt material the friction between conveyor belt and belt drive can vary.

Consider the following friction factor when calculating the belt tension:

Drum motor surface	Conditions	Belt material							
		Steel	Frictioned rubber	PVC, low friction		PVC, high friction		Polyester fabrics	Impregnation with Ropanol
Steel	Dry	0.30	0.25	0.30	0.35	0.40	0.30	0.20	0.25
	Damp	0.25	0.20	0.20	0.25	0.30	0.20	0.15	0.20
Rubber	Dry	0.40	0.30	0.35	0.40	0.50	0.40	0.25	0.30
Grooved rubber	Damp	0.35	0.25	0.25	0.30	0.40	0.30	0.20	0.25
PVC, non-slip	Dry	0.50	0.40	0.41	0.50	0.60	0.45	0.35	0.40
	Damp	0.35	0.35	0.30	0.40	0.40	0.40	0.25	0.30
Ceramics	Dry	0.35	0.35	0.30	0.40	0.40	0.40	0.25	0.30
	Damp	0.45	0.35	0.30	0.40	0.40	0.40	0.25	0.30

Belt wrap

There is another way to improve the torque transmitted from the belt drive to the belt: You can increase the angle of belt wrap around the belt drive. The angle of wrap is measured in degrees. A larger degree of wrap gives better traction between the belt and belt drive and the belt requires less belt tension. A minimum belt wrap angle of 180° is normally recommended to transmit the full torque from the belt drive to the belt, however increasing the angle of wrap to 230° and more, for instance, results in lower belt tension being required and will reduce the wear and tear on the belt drive and belt.

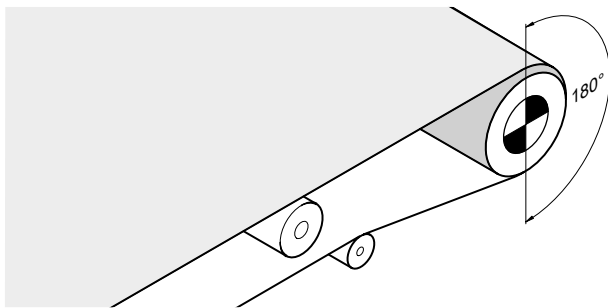


Fig.: Minimum belt wrap angle for friction drive belt conveyors

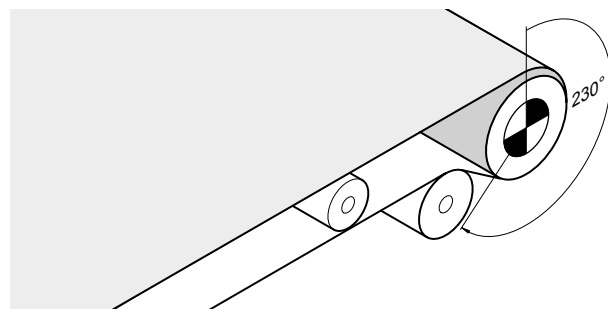
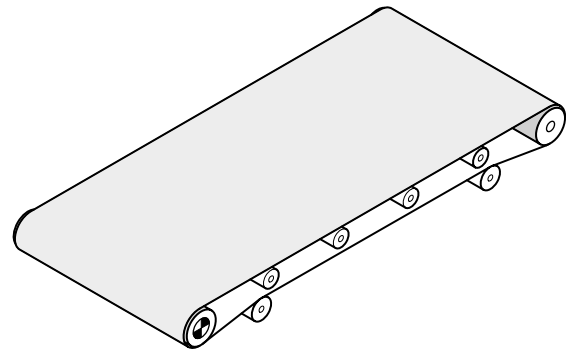


Fig.: Increased belt wrap angle for friction drive belt conveyors

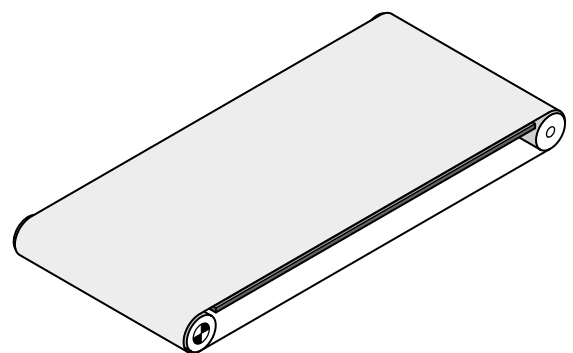
Roller Bed Conveyors

Due to their lower friction, roller bed conveyors require less power, less belt tension and are therefore more efficient than slide bed conveyors. Roller bed belt conveyors are especially suitable for longer conveyors with heavy loads.



Slide bed conveyor

Belt conveyors using a slide bed have more friction and require higher power and belt tension than belt conveyors with rollers and are therefore less efficient. However, the transported goods lie on the belt with greater stability and due to its simple construction is a lower cost option to the roller bed conveyor.



Drive positions

The belt drive is usually positioned at the head or discharge end of the conveyor. Optimal belt tracking is obtained from the Belt Drive pulling the belt.

DESIGN GUIDELINES

Head drive

The head drive (discharge end) is the most common and preferred option for non-reversible conveyors and is ideal because it is simple to design and easy to install. Furthermore most of the belt tension is on the top carrying side and allows the belt drive to transfer its full torque to the belt.

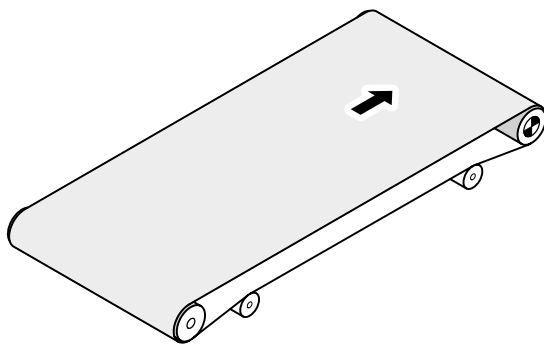


Fig.: Non-reversible conveyor with head drive

Tail drive

The tail drive (loading or receiving end) is not the ideal drive position as the belt drive is pushing the top carrying side of the belt and more tension is applied to the return belt, therefore the full torque of the drive may not be applied. This type of drive can lead to belt waves (belt lifting on the top side), jumping and undesirable belt wander. If a tail drive is necessary, it is recommended only for use with short friction drive belt conveyors up to 2 or 3 metres in length with light loads. (It is not recommended for positive drive belts).

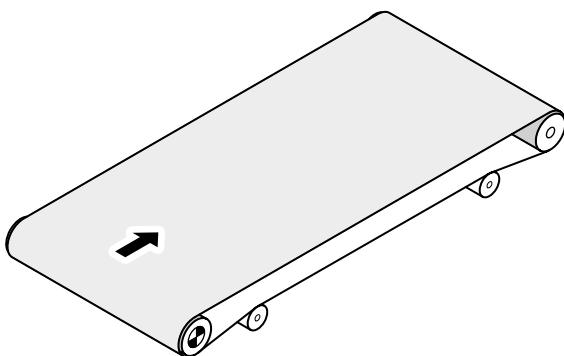
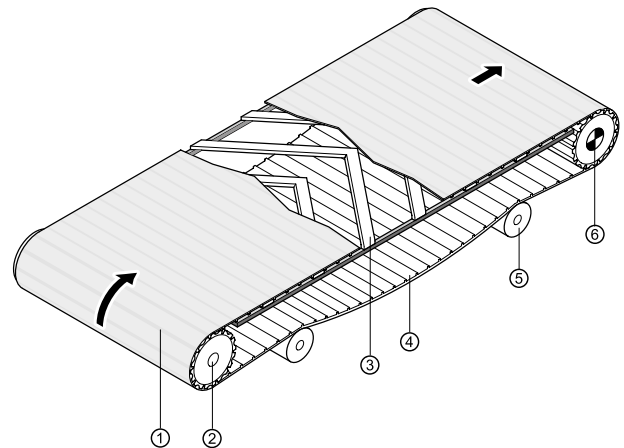


Fig.: Short friction drive belt conveyor with tail drive

Positive Drive Belt Conveyors



- 1 Plastic modular belt
- 2 Idler pulley with sprockets
- 3 Support slats
- 4 Catenary sag
- 5 Returnway rollers
- 6 Belt Drive

Positive drive belt systems have a lower power consumption than friction drive belts, enabling longer conveyor constructions. As there is no belt tension, there is less stress on the belt drive bearings. However, because the belt has no direct contact with the drum shell, heat dissipation is less effective and therefore must be used in conjunction with a frequency converter optimised for cool-running. Alternatively a cool-running belt drive can be used.

Examples of positive driven belts include the following:

- Plastic modular belts
- Thermoplastic non-modular belts
- Steel slatted belts
- Steel wire belts
- Toothed belts
- Chain conveyors

Positive drive belt installations can be quite complex and are not discussed in detail in this catalogue. Please refer to the belt supplier's instructions and contact Interroll if further advice is required. The use of Commercial Belt Drives with modular belting, must be done with care due to lack of heat dissipation. It is recommended to contact Interroll for further advice

Torque transmission

Belt Drives for positive drive belt conveyors are normally supplied with full-width machined rubber lagging, profiled to engage the profile of the conveyor belt on the underside. Alternatively, a cylindrical drum shell with a laterally welded key can be supplied enabling any type of steel, stainless steel or plastic sprocket wheels to be fitted to the shell. The number of sprockets depends on the belt width and load but there must be a minimum of three. The calculation of the number of sprockets required can be found in the belt manufacturer's catalogue. Due to the thermal expansion of the belt, all sprockets supplied by Interroll are floating and therefore it may be necessary to guide the belt using side guides built into the conveyor frame. Alternatively, Interroll can supply one fixed sprocket positioned in the centre of the belt.

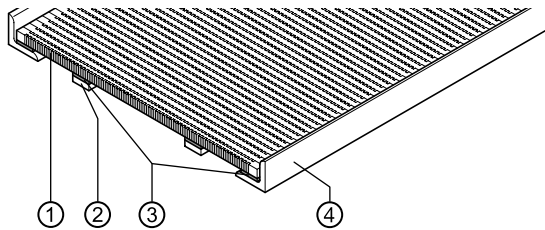


Fig.: Belt guides

- 1 Belt
- 2 Support slats
- 3 Wear strips
- 4 Side support / side guides

Belt tension

Due to its positive drive, the conveyor belt generally requires no belt tension and uses only the gravity from its own weight to engage the lagging or sprocket profile. On the return side, the belt should hang loose allowing for the so called catenary sag necessary to accommodate the changing length of the belt due to thermal expansion and contraction. The installation and conveyor design should comply with the belt manufacturer's recommendations.

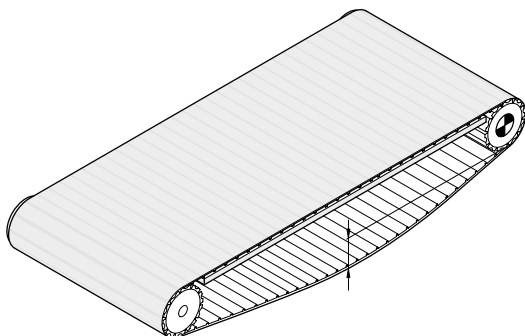


Fig.: Short conveyor without support rollers on the return belt

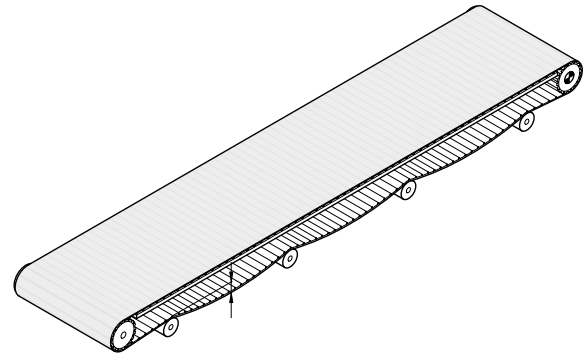


Fig.: Medium and long conveyor with catenary sags and support rollers on the return belt

Velocity factor

The increased diameter of the belt drive when fitted with lagging or sprockets will influence the rated speed of the belt drive shown in this catalogue. In order to calculate the final belt speed, please use the following calculation. The velocity factor depends on the belt thickness. Please contact Interroll for the velocity factor.

$$V_{\text{belt}} = V_{\text{dm}} \times V_f$$

V_{belt} : Speed of the belt
 V_{dm} : Rated speed of the belt drive
 V_f : Velocity factor

The torque is transmitted directly from the shell via the lagging or through the key and sprockets and finally to the belt. This provides a very high level of efficiency of up to 97 % of the mechanical output of the motor. In start-stop applications, the use of a soft start or frequency converter will increase the lifespan of the belt, sprockets and gear transmission.

Belt pull correction factor

When using lagging or sprockets, the rated belt pull of the belt drive will be reduced. this can be calculated as follows:

$$\text{Corrected belt pull} = \text{Rated belt pull} / V_f$$

Drive positions

For positive drive belt conveyors either a head drive or centre drive is possible.

DESIGN GUIDELINES

Head drive

The belt drive should be positioned at the head (discharge end) of the conveyor so that the top carrying side of the belt is pulled under tension.

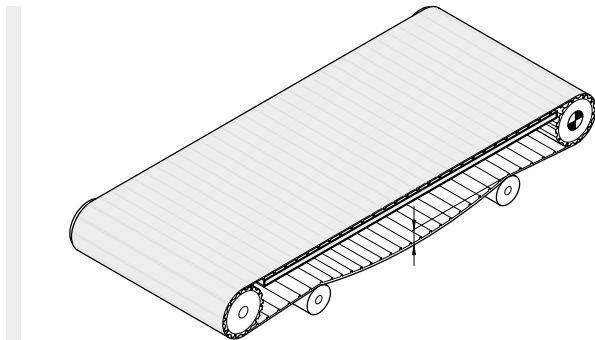


Fig.: Head drive for positive drive belt conveyors

Tail drive

Tail drives are not recommended. If the belt drive is positioned at the tail end (receiving end) and tries to push the belt, the return side of the belt will have more tension than the carrying side, causing the belt to skip and jump over the lagging profile or sprockets, causing buckling of the excess belt and interfering with product handling.

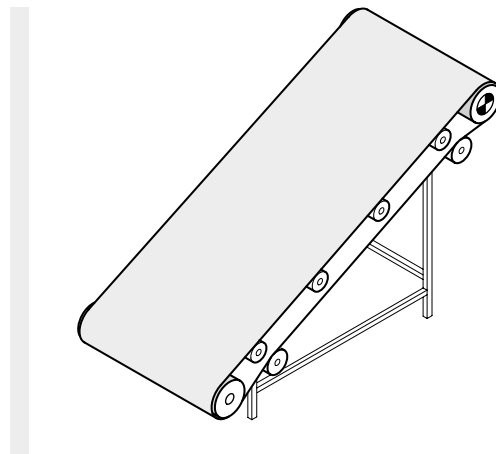
Centre drive

Centre drives can be used for long unidirectional conveyors or for reversible conveyors. In the case of reversible conveyors, great care and attention is required for their design. Please contact the belt manufacturer for advice.

Other Conveyor Types

Inclined conveyors

Inclined conveyors require more power and higher belt tension than horizontal conveyors to move the same load. A back stop should be considered for single direction inclined conveyors to prevent rollback of the belt and load.

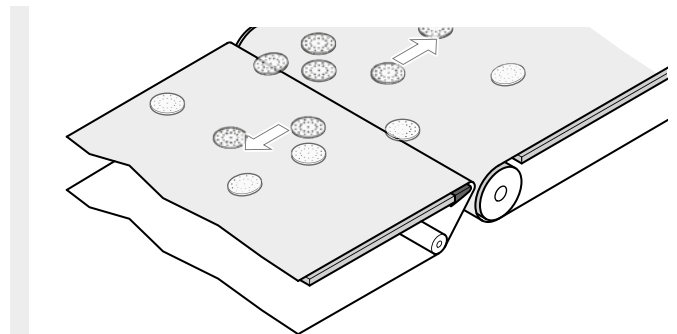


Reversible inclined or declined conveyors

An electromagnetic brake should be considered to prevent accidental reversal and rollback of the belt and load. To reduce acceleration and over-run of the belt and load on a declined conveyor calculate the power required as for an inclined conveyor.

Knife-edge conveyors

Knife edges reduce the gap between the transfer points of two conveyors. However, with friction drive belt conveyors, knife edges can severely increase the belt pull and tension required to overcome the increased friction between belt and knife edge. To reduce this friction the belt transfer angle should be increased as much as possible and a roller with a small diameter should replace the knife edge.



Plough and diverter units

If a belt drive is installed in a plough or diverter unit, the belt drive will be positioned vertically, requiring a special belt drive design with the cable always at the top.

Frequent starts and stops

Frequent starts and stops can cause thermal overload of the motor and premature wear of the gear, reducing the lifespan of the belt drive. In applications such as these, Interroll recommends the use of a frequency converter to optimise the heat loss of the motor and use of the soft-start ramping facility to reduce the start-up load on the gears.

Mounting Requirements

Horizontal mounting

A belt drive is normally mounted horizontally, parallel to the idler pulley and perpendicular to the conveyor frame to allow the belt to run centrally without belt wander.

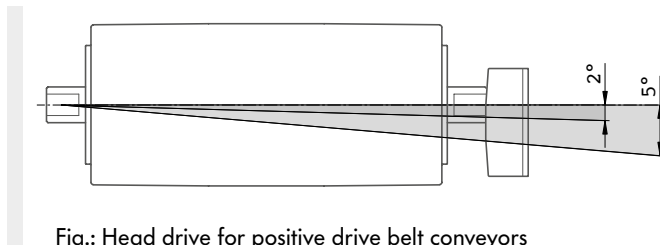
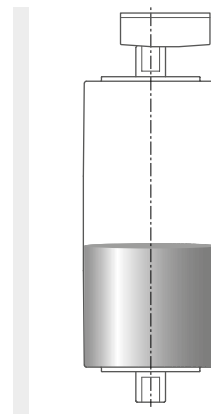


Fig.: Head drive for positive drive belt conveyors

All 80SMP belt drives must be mounted within $\pm 5^\circ$ of the horizontal. 113SMP, 80C and 113C belt drives must be mounted within $\pm 2^\circ$ of the horizontal.

Non-horizontal mounting

A specific belt drive design with special top bearings on the shaft is needed. The connection must always be at the top and a specific volume of oil is also needed for non-horizontal mounting.



- Carton turning
- Plough transfer units
- Deflector conveyors

Please contact Interroll for non-horizontal mounting

DESIGN GUIDELINES

Mounting brackets

The mounting brackets must be strong enough to withstand the belt drive belt pull and its start-up torque. They must be fully supported and fastened to the conveyor frame so that the shaft ends do not move or deform. Shaft end key flats must always be fully supported by the brackets.

- Use the mounting brackets specified for each model of belt drive see accessories on p ??.

Axial play

The axial play between the shaft key flats and the bracket must be not more than 0.4 mm.

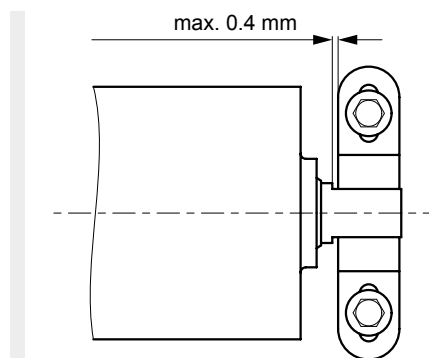


Fig.: Maximum axial play

Torsion play

The torsion play between the shaft key flats and the mounting bracket must be not more than 0.4 mm.

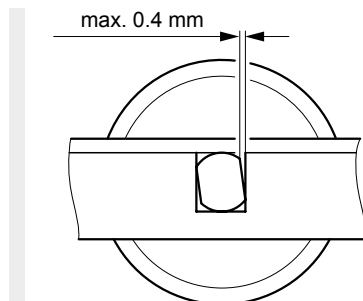


Fig.: Maximum torsion play

There must be no clearance between the shaft key flats and mounting bracket if the belt drive is to be used for frequent reversible operations or a large number of starts and stops.

Supported length Other mounting devices

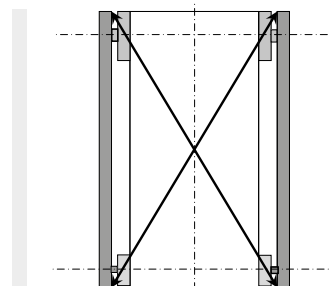
It is possible to mount the belt drive without mounting brackets directly into the conveyor frame, in which case the shaft ends have to be fitted into cut-outs in the conveyor frame that are reinforced to meet all of the above requirements.

Belt alignment

Belt Drives for friction drive belts are normally supplied with crowned shells in order to ensure central belt tracking and prevent misalignment of the belt during operation. However, the belt must be checked and adjusted at its initial start up and continuously maintained as necessary.

Diagonal check

The difference in length of the two diagonals must not be more than 0.5 %. The diagonals are measured from the belt drive shaft to the idler pulley shaft or from the belt edge to belt edge.



Belt position

The underside of the belt should be flush with the conveyor slide or roller bed and must not be more than 3 mm above.

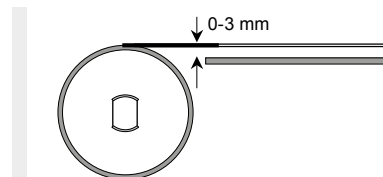
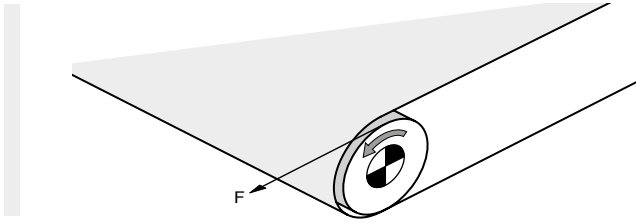


Fig.: Maximum distance between belt and conveyor bed

Misaligned belt drives, belts or idler pulleys may cause high friction and overheat the belt drive. This may also result in premature wear of the belt and lagging.

Belt Pull

The rated belt pull, power and speed for each belt drive version are shown in this catalogue.



You can calculate the belt pull F using the following formulae. Alternatively please ask Interroll to send you their simple to use calculation program by e-mail.

Please use the formulae only as a guideline since it refers to typical operating conditions and the influence of additional friction caused by the following is not included:

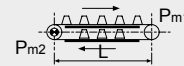
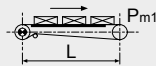
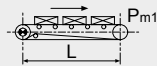
CALCULATION GUIDE

Belt pull calculation (F)

$$F = F_0 + F_1 + F_2 + F_3 + \text{safety factor}$$

Please add a safety factor of 20 % to this calculation.

Conveying system

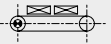


Roller bed conveyor

Slide bed conveyor

Double slide bed conveyor

Force without load



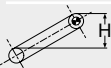
$$F_0 = 0.04 \cdot g \cdot L \cdot (2 P_n + P_{pr})$$

$$F_0 = g \cdot L \cdot P_n \cdot C_2$$

$$F_0 = g \cdot L \cdot P_n (C_2 + C_4)$$

Force to convey materials horizontally

horizontally



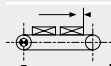
$$F_1 = 0.04 \cdot g \cdot L \cdot P_{m1}$$

$$F_1 = g \cdot L \cdot P_{m1} \cdot C_2$$

$$F_1 = g \cdot L \cdot (P_{m1} \cdot C_2 + P_{m2} \cdot C_4)$$

Force to convey materials on incline

on incline



$$F_2 = g \cdot H \cdot P_{m1}^*$$

$$F_2 = g \cdot H \cdot P_{m1}^*$$

$$F_2 = g \cdot H \cdot (P_{m1} - P_{m2})^*$$

Accumulation

P_n in kg/m	Belt weight per linear metre
P_{pr} in kg/m	Weight of rotating parts of the belt conveyor (carrying and return section) per metre length
P_{m1} in kg/m	Weight of the conveyed product on the load section, for each metre of length of the belt conveyor
P_{m2} in kg/m	Weight of the conveyed product on the return section, for each metre of length of the belt conveyor
C_1	Coefficient of friction between product and belt carrying side
C_2	Coefficient of friction between belt carrying side and slider bed
C_3	Coefficient of friction between return belt and product
C_4	Coefficient of friction between return belt side and slider bed
L in m	Centre-to-centre length
H in m	Height difference in conveyor
F_0 to F_3 in N	Force components for shown operating conditions
g in m/s^2	9.81

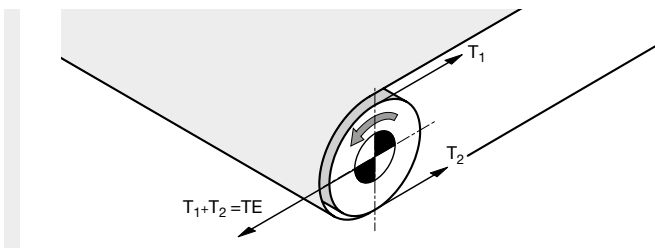
* The value of F_2 is negative with declined conveyors, however to prevent over-run acceleration due to gravity, it is advised that F_2 is positively calculated as for inclined conveyors.

Belt material	Slide bed material C2, C4		Product material C1, C3		
	PE	Steel	Steel	Glass, techno-polymer	Techno-polymer
PE	0.30	0.15	0.13	0.09	0.08
PP	0.15	0.26	0.32	0.19	0.17
POM	0.10	0.20	0.20	0.15	0.15
PVC/PU		0.30	0.30		0.30
Polyamide or polyester		0.18	0.18		0.17
Rubber	0.40	0.40	0.40		0.40

Belt Tension

Take into account the following points when calculating the belt tension:

- Consider the length and width of the conveyor belt
- Consider the belt type and check the belt tension required to transport the load
- Check the belt elongation necessary for the installation. Depending on the load, elongation of the belt during installation should be 0.3 %. It is recommended to use belt elongation factor: K1% less than/equal to 8N/mm.
- Belt tension can be obtained from the belt supplier and please consider also the belt relaxation, from the belt specifications.
- Ensure that the required belt tension does not exceed the max. belt tension (TE) of the belt drive.



The required belt tension T_1 (top side) and T_2 (bottom side) can be calculated in accordance with DIN 22101 or CEMA Standard. The actual belt tension can be roughly defined on the basis of the belt manufacturer's specifications by measuring the belt elongation during tensioning. Always use a belt tension measuring instrument during installation.

The maximum allowable belt tension (TE) of each belt drive is specified in the belt drive tables in this catalogue. The belt type, belt thickness and correct belt drive diameter should be in accordance with the belt manufacturer's recommendations. Belt drive diameters that are too small could lead to the belt becoming damaged.

Over-tension of the belt may damage the shaft bearings or other internal components of the belt drive and will shorten the product's lifespan.

Belt Drive Diameter

- Choose the smallest diameter but with due consideration of all the parameters of the application and environmental conditions
- Check the minimum flexing diameter allowed for the belt and choose the belt drive diameter accordingly

All belting has a safe minimum diameter for normal or back flexing for belt drives or idler pulleys. Always refer to the belt manufacturer's specification for this information and choose the belt drive diameter accordingly, otherwise serious damage may occur to the belt or belt drive. If the belt drive diameter is too small, insufficient torque will be transmitted to the belt and belt slip or jumping may occur.

CALCULATION GUIDE

Single Phase Motors

Single phase AC motors are typically used when 3-phase voltage is not available.

Principle

Single phase AC motors have a main winding and an auxiliary winding to create an auxiliary rotating field. The phase shift between the main and auxiliary phase is created by a permanently connected running capacitor.

Starting torque / Starting capacitors

The starting torque can be very limited because of the imperfect field of rotation:

- The starting torque of 3-phase AC motors is typically 120 – 410 % of rated torque
- The starting torque of single phase AC motors is typically 65 – 115 % of rated torque

Some single phase AC motors – especially in the higher power range – need an additional starting capacitor to reach a starting torque of 150 – 200 % of the rated torque. This starting capacitor has to be switched parallel to the running capacitor. This should be done ideally via a current-dependent switch relay during the start-up sequence of the motor. When the right torque/current has been reached, the starting capacitor must be switched off by the relay. The capacitance value of the running capacitor and starting capacitor is always stated on the motor type label.

Noise

Single phase motors generally have a higher noise level at zero-load operation compared to 3-phase motors, because of the difference in the rotating magnetic field. Typically there is an unbalanced increase in noise. This does not affect the operation of the belt drive and will normally disappear when belt tension or load is applied to the belt drive. Claims cannot be accepted due to this noise effect.

Capacitors and relays

All capacitors must be ordered separately for single phase belt drives. Standard recommended capacitor type to be used with Interroll 1 phase motors is Class B (10.000H-450V) according to EN60252.. A suitable current-dependent relay to convert the starting capacitor to a run capacitor can be supplied if needed for start and run capacitors. Please contact your Interroll customer consultant for further information. The correct installation of the starting capacitor is shown on the wiring diagram supplied with the belt drive.

Interroll strongly recommends the use of 3-phase motors, as they are more efficient and save energy. Improved efficiency can be achieved by using a 3-phase motor with a frequency converter. If a single phase supply is the only option, consider using a 3-phase motor together with a single phase input / 3-phase output frequency converter.

Final Steps

Please conclude your selection after considering the following:

- Choose the belt drive version with the required belt pull, belt tension, diameter and speed for your application
- If you cannot find the required speed in the belt drive tables then use a frequency converter and choose the motor version with the closest speed or contact Interroll
- Choosing a belt drive version with least number of poles and least amount of gear stages can reduce the purchase price of the unit
- Use the belt drive configurator to validate your selection (see fold-out page)

Motor

Tolerances

All data, excluding the rated voltage, number of poles, number of phases and physical dimensions, is subject to a tolerance of +10 % and -15 %.

Rated voltage

The motors (230 /400 V50 Hz) are designed in accordance with IEC 60034-1 for using within a voltage range of ± 5 % of the rated voltage.

Speed

All speeds stated in this catalogue are subject to a tolerance of ± 10 %. This depends on the temperature, load and friction factors.

Motor size

All stator windings are produced in accordance with the International Electronic Commission (IEC) DS 188 IV B1 and VDE 0530.

Motor type

Asynchronous AC squirrel cage induction motor or brush type 24 V DC.

Alternative voltage

- Belt Drives for alternative voltages are available on request
- SMP and C-series belt drives are normally supplied with one voltage option.

3-phase motors

Unless otherwise specified, all motors are supplied as standard for 3-phase / 400 V / 50 Hz supply Interroll can offer all standard voltages for worldwide use.

Thermal Protection

A thermal winding protection switch is incorporated in all Interroll

Belt Drives and consists of a simple reversible bimetal switch built into the motor winding head. This must be connected externally in such a way that it will switch off the power to the motor by interrupting a relay device or a current limitation coil of an external motor protection switch. If a thermal overload occurs in the motor causing the stator winding to overheat, the switch will open at a pre-determined temperature (winding temp. 125C) and interrupt the power supply.

If the thermal protector is not connected, as described above, the warranty will be invalidated. Please contact Interroll if you wish to use other types of thermal winding protection.

For 80C and 113C Belt Drives thermal protection can be offered with the thermal in series with the winding; i.e selfprotected motors.

For optimal protection the integral thermal winding protection should be combined in a control system with an additional external thermal protection device.

Shell

Manufactured from thick-walled mild steel tube and machine crowned to ensure correct belt tracking. Alternatively, the tube can be made of stainless steel (AISI 304). The stainless steel version has extended chemical resistance and is suitable for food applications. Shells with special crowns and grooves are used for multiple belt conveyors.




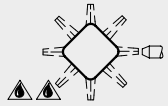

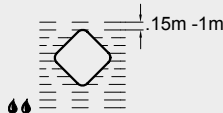
End Housing and Shaft Caps

Interroll Belt Drives are supplied with pressed and glued end housings. End housings and shaft caps are manufactured from sea water-resistant aluminium.

MATERIAL SPECIFICATION

Protection rate

Interroll Belt Drives are provided with IP64 protection as standard.

Protection against solid bodies			Protection of internal equipment against harmful ingress of water		
Symbol	IP, first number	Definition	Symbol	IP, first number	Definition
	5	Dust-protected		4	Protected against spray water
	6	Dust-tight		5	Protected against water jets (P1 nozzle 6.3 mm, water delivery rate 12.5 l/min ±5 %)
				6	Protected from projections of water similar to marine swells (P2 nozzle 12.5 mm, water delivery rate 100 l/min ±5 %)
				7	Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily (30 min.) immersed 1 metre in water under standardised conditions of pressure and time.

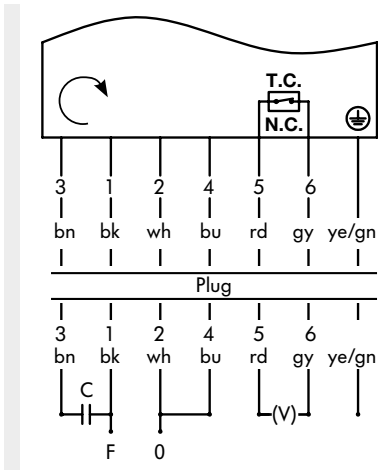
Abbreviations

Explanation of abbreviations:		
TC: Thermal control	1~: 1-phase motor	Cr: Capacitor run
BR: Electromagnetic brake	3~: 3-phase motor	Cs: Capacitor start
NC: Normally Closed		
rd: red	gy: grey	wh: white
ye: yellow	gn: green	or: orange
bu: blue	bn: brown	vi: violet
bk: black	pk: pink	(): alternative colour

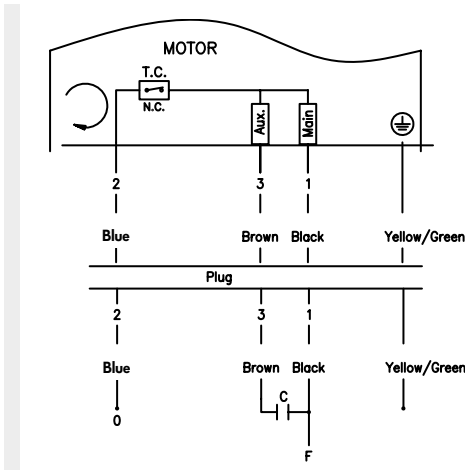
Rotation

Note: The rotational direction of the belt drive is shown on the connection diagrams. The rotation indication is when facing the Belt Drive from the cable side

Connection Diagram for Belt Drives 80C, 113C Standard

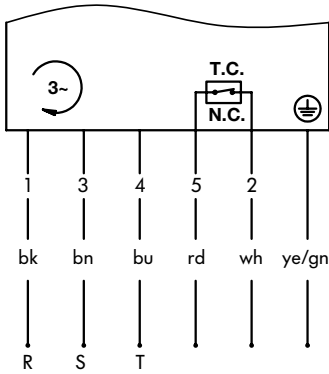


Connection Diagram for Belt Drives 80C, 113C Optional

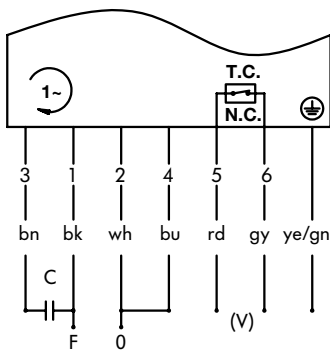
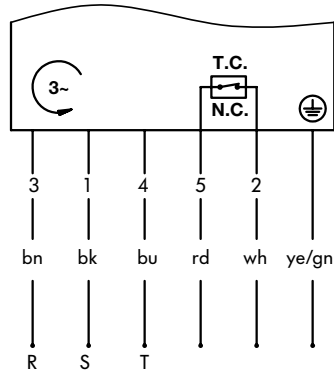


CONNECTION DIAGRAMS

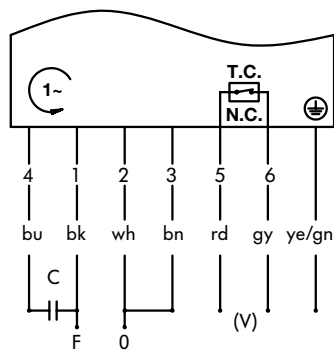
Connection Diagrams for Belt Drives 80-SMP, 113-SMP



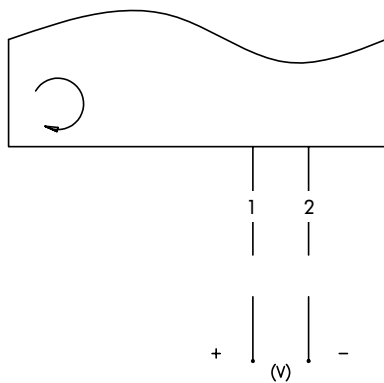
3-phase operation, 6 lead cable



1-phase operation, 7 lead cable



Connection Diagram for Belt Drives 80DC, 113DC



Note: For CCW rotation interchange (1) and (2).



Did you know? 6 times out of 10, the checkout stands in supermarkets and retail stores are powered by Interroll.

The Interroll Center of Excellence in Copenhagen, Denmark concentrates on drum motors and cassettes used as belt drives in checkouts and reverse vending machines for supermarkets.

In this product sector, the Center of Excellence is responsible within the global Interroll Group for all technical concerns ranging

from development and application engineering to production and support for local Interroll entities.

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Contents

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About Interroll

The Interroll Group is the leading global provider of material handling solutions. The company was founded in 1959 and has been listed on the SIX Swiss Exchange since 1997. Interroll provides system integrators and OEMs with a wide range of platform-based products and services in these categories: Rollers (conveyor rollers), Drives (motors and drives for conveyor systems), Conveyors & Sorters as well as Pallet & Carton Flow (flow storage systems). Interroll solutions are in operation in express and postal services, e-commerce, airports, the food and beverage industry, fashion, automotive sectors, and many other manufacturing industries. Among the company's end users are leading brands such as Amazon, Bosch, Coca-Cola, DHL, Nestlé, Procter & Gamble, Siemens, Walmart and Zalando. Headquartered in Switzerland, Interroll has a global network of 34 companies with turnover of around CHF 530.6 million and 2,300 employees (2020).

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