2° ED. MOT EN 03/14

MOTORIZED PULLEYS UNIT HANDLING

GENERAL CATALOGUE

Moving ahead.

RULMECA®

Motorized Pulleys

Rulmeca – Moving ahead.

Since its foundation in 1962, the Rulmeca Group, headquartered in Bergamo (Almé), Italy, has grown to become one of the world's leading manufacturers of premium components for material handling. We strongly believe in our positioning as a component supplier and have successfully remained faithful to our mission for more than 50 years. Our reliability as a partner has made Rulmeca one of the most trusted brands in the industry.

As a family-owned business, a long-term perspective and responsible action form the basis of Rulmeca Group's economic success. The unique combination of tradition and innovation, of quality and service is our key success factor. This is also seen in our consistent environmental and social responsibility throughout the value chain. More than 1200 employees in twenty-two production and sales companies all around the globe serve Rulmeca clients in 85 countries.

Along with our products, which help to handle and move bulk materials and unit loads all over the globe, the Rulmeca Group is also moving ahead. Building on our experience supplying to OEM and end users in Italy, one of Europe's key markets for unit handling applications, we have developed a comprehensive range of components for internal logistics: made by Rulmeca. Our aim? To remain the preferred supplier and trusted partner for our customers who produce and engineer machinery, equipment and systems for unit handling applications.

We believe we have something important to offer to our customers.

Rulmeca's international presence allows us to access the most efficient sources of procurement, thus boosting the competitiveness of our offering.
At the same time our extensive network of affiliated companies and business partners allows us to always be in close contact with our customers. As a vertically integrated manufacturer, we have the flexibility to respond to individual needs whenever they arise.

Today the Rulmeca Group's global business encompasses three product brands: Rulmeca, Precismeca and Melco. They are part of one Group, they share a common philosophy, but each has its own character and operates according to the specific needs of its markets and its customers. Following this strategy, Rulmeca Group has evolved in recent decades to become the world's largest producer of belt conveyor rollers/idlers and motorized pulleys in the bulk handling industry.

We don't only sell products, we find solutions. Our research departments are equipped with dedicated test facilities, where our products are thoroughly examined under extreme conditions. We are committed to the development of new products and the continuous improvement of our current range, often considered among the best in the market. Components provided by the Rulmeca Group improve the performance, safety and reliability of the systems, equipment and machines produced and utilized by our customers.

With the benefit of these assets and this strategic focus, the Rulmeca Group offers a portfolio of state-of-the-art components for a vast array of industries and applications handling both bulk materials and unit loads.

Our new range of Rulmeca ***unit handling components*** *comprises rollers, motorized pulleys, 24V drive rollers and controls, as well as modules for dynamic storage. This range of products has been developed for demanding applications such as airport logistics, postal and parcel handling, and logistics applications in manufacturing, distribution centers, food and beverage processing and warehousing.*

For us, this catalogue is an important milestone.
And we will keep on moving ahead.
Please stay tuned.

Kind regards from The Rulmeca Team

PS: Feel free to contact your local Rulmeca Company - www.rulmeca.com.
We look forward to receiving your feedback and comments.

Contents

Introduction to Motorized Pulleys

Reduced energy consumption

Compared to many corresponding motor and gearbox systems commonly used in industry, Rulmeca Motorized Pulleys are able to use less energy for the same performance, helping to reduce power consumption, benefiting the environment and reducing energy costs.

Increased efficiency

Rulmeca Motorized Pulleys have a higher efficiency compared to traditional motor transmission systems, which are normally able to transfer approximately 75% of the power used to the belt. A Rulmeca Motorized Pulley is able to transfer up to 97%.

Ease of installation

Rulmeca Motorized Pulleys are much faster and easier to install when compared to traditional multiple component motor transmission systems, typically requiring less than a quarter of the time for installation. With fewer parts to consider, conveyor design and assembly is easier and quicker, procurement is also simplified reducing overall costs.

Space-saving design

With motor, bearings and gearbox enclosed inside the casing, motorized pulleys are very compact, requiring less space, increasing the aesthetic and functional value of the finished conveyor.

Designed for the toughest conditions

The Rulmeca Motorized Pulley is designed to operate perfectly even in the most aggressive environmental conditions such as, in the presence of water, dust, grit, chemicals, grease, oil and even during high pressure wash-down procedures.

Guaranteed for food

Thanks to its flat smooth surfaces, stainless steel finish and totally enclosed, hermetically sealed design, Rulmeca Motorized Pulleys are easy to clean reducing contamination risk in food processing environments.

Safety

Component parts are totally enclosed within a Rulmeca Motorized Pulley. With the external shafts held captive in a conveyor frame, the only moving part is the body of the pulley running under the conveyor belt. Conveyors can be designed in such a way preventing any of the drive pulley to be visible, resulting in an extremely safe method to drive conveyor belts.

Maintenance-free

The fully sealed design ensures that internal parts are not exposed to external environmental conditions or tampering. A completely self contained unit, requiring no maintenance throughout its service lifetime.

Applications for Rulmeca Motorized Pulleys

Standard conveyor belts

To drive standard belts using the friction between the Motorized Pulley shell and the underside of the conveyor belt. The belt, which passes over the Motorized Pulley works as a heat sink, taking the heat produced by the electric motor and allowing it to dissipate away.

Plastic modular belts

For applications that involve the use of plastic modular belts, it is necessary to cover the motorized pulley with a profiled lagging or to fit laser cut profiled sprockets to the shell of the pulley, to provide positive drive to the belt.
Please contact Rulmeca to select optimum drive solution.

Thermoplastic positively driven belts

Thermoplastic belt applications require Motorized Pulleys to be fitted with profiled lagging to suit, in order to provide positive drive.
Please contact Rulmeca to select optimum drive solution.

Non-Belt applications

For applications that do not require the use of belts, such as for moving product in direct contact with the pulley, or for brush cleaning applications. To prevent overheating we would recommend the adoption of frequency converters.
Please contact Rulmeca to select specification.

Standard Motorized Pulley Range

		80LP	80LS	113LP	113LS	138LS	165LS	220M	220H	320L	320M	320H
Diameter [mm]		85,5	81,5	113,6	113,5	138,5	165	216	216	323	321	321
Power [kW]	from	0,06	0,02	0,06	0,035	0,1	0,11	0,37	0,37	0,75	0,75	0,75
	to	0,12	0,12	0,37	0,37	1	2,2	4	5,5	4	7,5	7,5
Torque [Nm]	from	6,6	2,8	5	8,8	29	30	30	115	67	134	876
	to	25,5	26,6	58	90,1	168	340	409	705	418	1045	2090
Tangential Force [N]	from	127	68	87	155	345	360	279	2093	417	835	5225
	to	630	648	1000	1516	2425	4100	4195	6558	2604	6531	13062
Speed Belt [m/s]	from	0,1	0,05	0,06	0,05	0,05	0,05	0,2	0,13	0,32	0,16	0,13
	to	0,77	1	1,05	1,5	1,6	3,15	2,5	2,5	2,5	2,5	2
Roller Length RL [mm]	from	253	200	256	250	300	350	400	450	400	500	550
	to	912	1000	1212	1200	1800	1800	2000	2000	2000	2000	2000

Motorized Pulley 80LP

A strong capable drive for small light duty conveyors

Product description

Due to its strength, reliability and no need for maintenance this motorized pulley is used in small conveyors, packaging machines and simple transfer units.

Characteristics

- Asynchronous motor AC three-phase or single-phase
- Single supply voltage
- on request: 3-phase dual voltage (possible delta/star connection)
- Integral motor protection
- Gearbox planetary-type polymer or polymer / steel combination
- Low noise operation
- Light and distributed weight
- Maintenance free
- Lifetime lubrication
- Reversible operation

Applications

- Small conveyors for light loads, non-continuous use
- Transfer Conveyors
- Packaging machines for light loads
- Food processing equipment, metal detection, x-ray
- Cash desks in supermarkets
- Dry, damp and wash down applications

Technical data	
Motor Data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	230 or 400 V ± 5% (IEC 34/38)
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped of nitrile rubber, NBR
External shaft sealing system	Deflection seal nitrile rubber, NBR
Protection rate	IP66
Thermal protection	bimetallic Contact
Ambient temperature, 3-phase motor	+5 to +40 °C
Ambient temperature, 1-phase motor	+10 to +40 °C
General technical data	
Max. Roller length (RL)	900 mm

Motorized Pulleys with RL length greater than 550 mm have reinforced shaft.
All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 80LP

A strong capable drive for small light duty conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Component	Version	Material			
		Standard	Option		
		Aluminium	Steel	Stainless Steel	Brass /Nickel
Shell	Crowned	Std	✓	✓	
	Cylindrical	✓	✓	✓	
	Special crowns with grooves	✓	✓	✓	
End housing	Standard	Std		✓	
Shaft cap	Standard (with straight/90° free position cable)	Std			
	With cable protection			✓	✓
Electrical connection	Straight or 90° cable connector			✓	✓
	Elbow connector	✓		✓	

Please contact Rulmeca for further versions.

Options

- Rubber lagging for standard belts
- Dynamic balancing
- 3-phase dual supply voltage (possible delta/star connection)
- Food grade Oil (EU, FDA and USDA)
- Low temperature Oil
- Non-horizontal mounting (more than ± 5 °)
- For special versions, please contact RULMECA

Accessories

- Mounting brackets
- Idler pulleys
- Rollers for conveyors

Cable Specifications

Cable options available:

- Standard, shielded
- Standard, unshielded
- Halogen-free, shielded
- Halogen-free, unshielded

Available lengths: 1,5 / 3,0 m (other lengths available on request).

Motorized Pulley 80LP

A strong capable drive
for small light duty conveyors

Mechanical data for 3-phase motor-50Hz

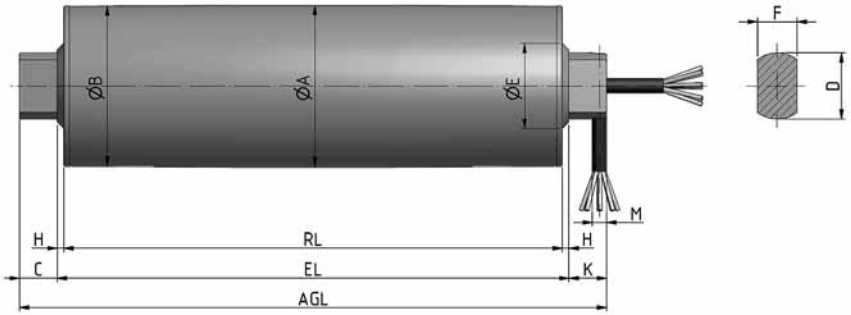
Rated Power [kW]	Poles n.	Gear stages n.	Rated speed of the shell [m/s]	Rated revolutions of the shell [min-1]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,06	4	3	0,10	22,5	25,5	600	2000	269
			0,11	24,7	23,2	545		
			0,12	27,0	21,9	490		
			0,15	33,7	16,8	400		
			0,16	36,0	15,7	375		
			0,19	42,7	13,5	315		
			0,24	53,9	10,7	250		
		2	0,39	87,6	6,7	155		253
0,12	4	3	0,19	42,7	26,9	630	2000	292
			0,24	53,9	21,3	500		
		2	0,39	87,6	13,1	310		276
			0,46	103,4	11,1	260		
			0,49	110,1	10,4	245	1500	
			0,59	132,6	8,6	203		
			0,77	173,0	6,6	156		

Mechanical data for 1-phase motor-50Hz

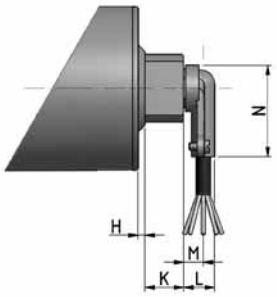
Rated Power [kW]	Poles n.	Gear stages n.	Rated speed of the shell [m/s]	Rated revolutions of the shell [min-1]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,06	4	3	0,10	22,5	25,5	600	2000	280
			0,11	24,7	23,2	545		
			0,12	27,0	21,9	490		
			0,15	33,7	16,8	400		
			0,16	36,0	15,7	375		
			0,19	42,7	13,5	315		
			0,24	53,9	10,7	250		
		2	0,39	87,6	6,7	155		269
0,075	4	3	0,15	33,7	20,4	480	2000	292
			0,16	36,0	19,1	450		
			0,19	42,7	15,9	375		
			0,24	53,9	13,1	312		
		2	0,39	87,6	8,1	192		276
			0,46	103,4	6,8	163		
			0,49	110,1	6,4	153	1500	
			0,59	132,6	5,4	127		
0,09	4	3	0,15	33,7	25,5	600	2000	292
			0,16	36,0	23,9	563		
			0,19	42,7	19,9	474		

Motorized Pulley 80LP

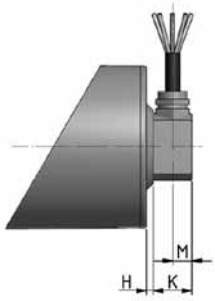
A strong capable drive
for small light duty conveyors



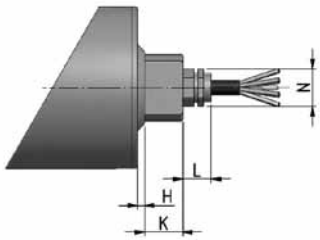
Motorized Pulley Standard Version.



Elbow connector in aluminium.



Cable connection 90°.



Straight connector.

Type/Option	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized Pulley Standard Version	85,5	84,5	20	35	45	21		3	20		8			
Elbow connector in aluminium									20	18	12	48		
Cable connection 90 °									20		10			
Straight Connector									20	15		20		

Std. RL shell lenghts (mm)	300	350	400	450	500	550	600	650	700	750	800	850	900
Avrg. weigth (kg)	4,3	4,5	4,7	4,9	5,1	5,3	5,5	7,6	8	8,3	8,6	9	9,3

- Min lengths: see table at pag.12
- Max length: 900 mm
- Weights are orientative due to different shell executions and motor powers

Motorized Pulley 80LS

A very compact strong drive for small high use conveyors

Product description

This Motorized Pulley is perfect for high torque applications with limited space or access.

Characteristics

- Salt water resistant aluminum bearing housings
- Three phase AC induction motor
- 3-phase dual voltage is standard
- Integral motor protection
- Hardened steel helical gear box
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation
- Reinforced internal shaft for RL exceeding 500 mm

Applications

- Small conveyors for feeding materials with frequent cycle
- Packaging equipment
- Dynamic weighing equipment
- Metal detectors
- Ideal for pharmaceutical industry
- Meat processing
- Steel or plastic modular belts applications
- Dry, humid and wash down applications

Technical data	
Motor Data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Derated windings (20% power reduction)	On request for applications without belt
Voltage	230/400 V ± 5% (IEC 34/38) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped, FPM OR nitrile rubber NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	0°C to +40 °C
General technical data	
Max. Roller length (RL)	1000 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Component	Version	Material				
		Aluminium	Steel	Stainless steel	Brass/Nickel	Polymer
Shell	Crowned		Std	TS8N		
	Cylindrical		Std	TS8N		
	Cylindrical + key (for sprockets)		Std	TS8N		
	Special crowns and grooves		Std	TS8N		
End housing	Standard	Std		TS8N		
	With V-grooves			TS8N		
	With O-grooves			TS8N		
Shaft	Standard			Std		
	Cross-drilled and threaded, M6			Std		
Electrical connection	Straight connector			TS8N	Std	
	Elbow connector			TS8N		Std
	Terminal box*	Std		TS8N		

* Shaft cap version .
Please contact Rulmeca for further versions.
TS8N Version - End Caps in stainless steel with PTFE lip seals.

Options

- Rubber Lagging for standard belts
- Profiled lagging for plastic modular belts
- Profiled lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop / Anti run-back bearing
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than ± 5°)

Note: The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Shaft cap
- Frequency Converters

Motorized Pulley 80LS

A very compact strong drive for small high use conveyors

Technical data for Motorized Pulley 80LS - 3-phase - 50Hz									
Rated Power [kW]	Poles n.	Gear Stages n.	Gear Ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. Length RL [mm]
0,02	8	3	53,89	0,05	11,3	16,0	391	3600	250
			37,78	0,07	16,1	11,2	274		
			30,88	0,08	19,8	9,2	224		
0,035	4	3	53,89	0,11	25,0	12,7	310	3600	200
			37,78	0,14	35,7	8,9	217		
			30,88	0,18	43,7	7,3	177		
		2	21,23	0,25	63,5	5,0	122	2650	
			14,88	0,38	90,6	3,5	86		
			12,16	0,45	110,8	2,9	70		
0,07	4	3	53,89	0,10	23,9	26,6	648	3600	250
			37,78	0,14	34,1	18,6	454		
			30,88	0,18	41,7	15,2	371		
		2	21,23	0,25	60,7	10,5	255	2650	
			14,88	0,38	86,5	7,3	179		
			12,16	0,45	105,9	6,0	146		
	2	3	53,89	0,22	51,5	12,3	301	2650	200
			37,78	0,32	73,5	8,6	211		
			30,88	0,38	90,0	7,1	172		
		2	21,23	0,55	130,8	4,9	118	2100	
			14,88	0,80	186,6	3,4	83		
			12,16	1,00	228,4	2,8	68		
0,12	2	3	53,89	0,22	51,5	21,1	515	2650	250
			37,78	0,32	73,5	14,8	361		
			30,88	0,38	90,0	12,1	295		
		2	21,23	0,55	130,8	8,3	203	2100	
			14,88	0,80	186,6	5,8	142		
			12,16	1,00	228,4	4,8	116		

Motorized Pulley 80LS

A very compact strong drive for small high use conveyors

Standard weights for Motorized Pulley 80LS

Rated Power	Poles	Standard weight [kg] for standard RL [mm]													
[kW]	n.	200	250	300	350	400	450	500	550	600	650	700	800	900	1000
0,02	8	---	3,40	3,85	4,30	4,75	5,20	5,65	6,10	6,55	7,00	7,45	7,90	8,35	8,80
0,035	4	2,80	3,25	3,70	4,15	4,60	5,05	5,50	5,95	6,40	6,85	7,30	7,75	8,20	8,65
0,07	4	---	3,40	3,85	4,30	4,75	5,20	5,65	6,10	6,55	7,00	7,45	7,90	8,35	8,80
	2	2,80	3,25	3,70	4,15	4,60	5,05	5,50	5,95	6,40	6,85	7,30	7,75	8,20	8,65
0,12	2	---	3,40	3,85	4,30	4,75	5,20	5,65	6,10	6,55	7,00	7,45	7,90	8,35	8,80

Cable specification

Available cable options:

- Standard, Screened
- Standard, Unscreened
- Halogen-free, Unscreened

Available lengths: 1/3/5 m.

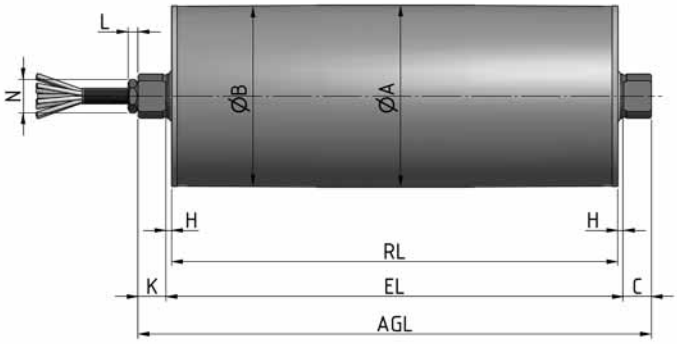
Min. length with option

The following options increase the minimum length of the motorized pulley.

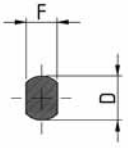
Option	RL min with option
Electromagnetic brake	RL min. + 50 mm
Encoder	RL min. + 0 mm

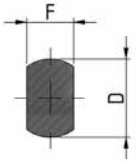
Motorized Pulley 80LS

A very compact strong drive for small high use conveyors

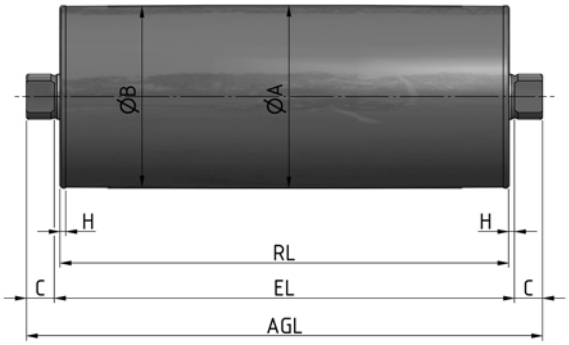


Standard Motorized Pulley with straight connector in stainless steel.

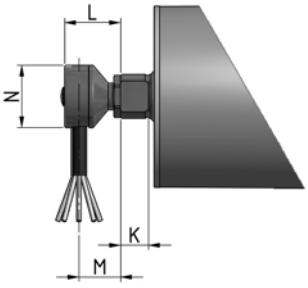




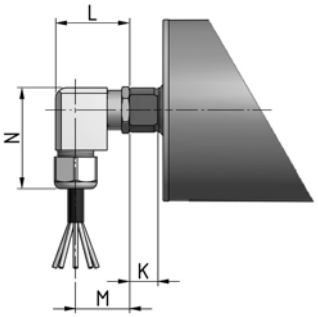
Shaft Cap.



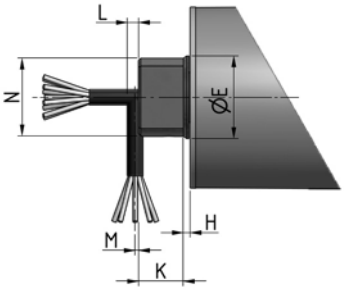
Idler Pulley, stainless steel version (TS8N).



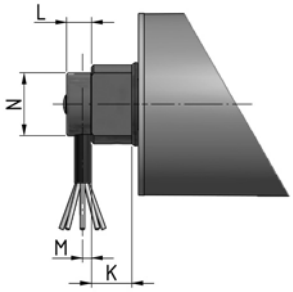
Elbow connector in stainless steel.



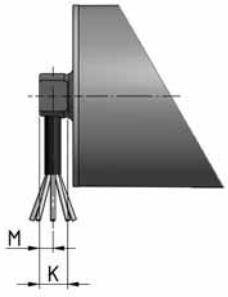
Elbow Connector in polyamide.



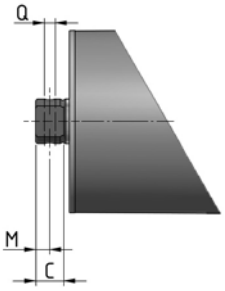
Straight/Elbow connector with shaft cap in stainless steel.



Elbow connector with shaft cap in stainless steel.



Cable Connector 90° with threaded shaft.



Cross-drilled and threaded shaft.

Motorized Pulley 80LS

A very compact strong drive for small high use conveyors

Type/Option	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized pulley 80LS Standard version Straight connector in stainless steel	81,5	80,5	12,5	20		14		2,5	12,5	4,5		15		
Elbow connector in stainless steel									12,5	25	18,5	28		
Elbow connector in Polyamide									12,5	33	24	45		
Cable Connector 90° with threaded shaft									12,5		6			
Cross-drilled and threaded shaft									12,5		6,25		M6	
Straight/Elbow Connector with shaft cap in Stainless Steel			20	35	37	21		3	20	5	1,5	35		
Elbow Connector with shaft cap in Stainless Steel									18	11	4	28		

Motorized Pulley 113LP

A powerful drive for light duty conveyors

Product description

This Pulley is the ideal operator for light and medium conveyors, for non-continuous use.

Characteristics

- 3-phase or 1-phase AC induction motor
- Single supply voltage
- on request: 3-phase dual supply voltage (possible delta/star connection)
- Integral motor protection
- Gearbox planetary-type polymer or polymer / steel combination
- Low noise operation
- Light and distributed weight
- Maintenance free
- Reversible operation

Applications

- Conveyors for light loads, non continuous use
- Recycling bottles
- Packaging equipment
- X-ray inspection systems at airports
- Pharmaceutical industry
- Food processing
- Cash desks in supermarkets
- Dry, Damp and frequent wash down applications

Technical data	
Motor Data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	230 or 400 V ± 5% (IEC 34/38)
Frequency	50/60 Hz
internal shaft sealing system	Double-lipped of nitrile rubber, NBR
External shaft sealing system	Deflection seal nitrile rubber, NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	+5 to +40 °C
Ambient temperature, 1-phase motor	+10 to +40 °C
General technical data	
Max. Roller length (RL)	1206 mm

Motorized Pulleys with RL length greater than 706 mm have reinforced shaft.
All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 113LP

A powerful drive for light duty conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Component	Version	Material			
		Standard	Option		
		Aluminium	Steel	Stainless Steel	Brass/Nickel
Shell	Crowned	Std	✓	✓	
	Cylindrical	✓	✓	✓	
	Special crownes with grooves	✓	✓	✓	
End housing	Standard	Std		✓	
Shaft cap	Standard	Std			
	With cable protection			✓	✓
Electrical connection	Straight or 90° cable connector			✓	✓
	Elbow connector	✓		✓	

Please contact Rulmeca for further versions.

Options

- Rubber lagging for standard belts
- Dynamic balancing
- 3-phase dual supply voltage (possible delta/star connection)
- Oil for Food (EU, FDA and USDA)
- Oil for low temperatures
- Non-horizontal mounting (more than ± 5°)
- For special versions, please contact RULMECA.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors

Cable specifications

Cable options available:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1,5 / 3,0 m (other lengths available on request).

Motorized Pulley 113LP

A powerful drive for light duty conveyors

Technical data for Motorized Pulley 113LP - 3-phase - 50Hz								
Rated Power [kW]	Poles n.	Gear Stages n.	Rated speed of the shell [m/s]	Rated revolutions of the shell [min-1]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,06	4	4	0,06	10,1	56,0	1000	2000	256
			0,08	13,5	42,0	750		
		3	0,12	20,3	28,0	500		
			0,15	25,4	22,5	400		
			0,20	33,8	17,0	300		
			0,26	43,9	13,0	231		
			0,31	52,4	11,0	194		
			0,36	60,8	9,5	167		
		2	0,50	84,5	7,0	120	1500	
			0,69	116,6	5,0	87		
0,12	4	3	0,12	20,3	56,5	1000	2000	256
			0,15	25,4	45,0	800		
			0,20	33,8	34,0	600		
			0,26	43,9	26,0	462		
			0,31	52,4	22,0	387		
			0,36	60,8	19,0	333		
		2	0,50	84,5	13,5	240	1500	
			0,69	116,6	10,0	174		
			0,81	136,9	8,5	148		
0,18	4	3	0,20	33,8	51,0	900	2000	256
			0,26	43,9	39,0	692		
			0,31	52,4	33,0	581		
			0,36	60,8	28,5	500		
		2	0,50	84,5	20,5	360	1500	
			0,69	116,6	14,5	261		
			0,81	136,9	12,5	222		
			0,91	153,8	11,0	198		
			1,05	177,5	9,5	171		
0,25	4	3	0,26	43,9	54,5	962	2000	276
			0,31	52,4	45,5	806		
			0,36	60,8	39,0	694		
		2	0,50	84,5	28,5	500	1500	
			0,69	116,6	20,5	362		
			0,81	136,9	17,5	309		
			0,91	153,8	15,5	275		
			1,05	177,5	13,5	238		
0,37	4	3	0,36	60,8	58,0	1028	2000	294
		2	0,50	84,5	42,0	740	1500	
			0,69	116,6	30,5	536		
			0,81	136,9	26,0	457		
			0,91	153,8	23,0	407		
			1,05	177,5	20,0	352		

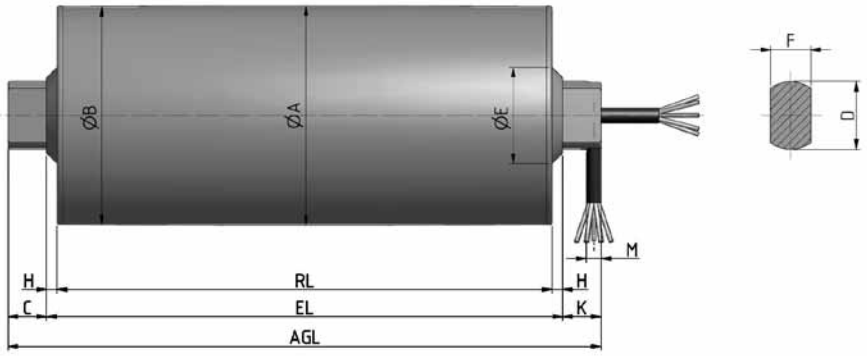
Motorized Pulley 113LP

A powerful drive for light duty conveyors

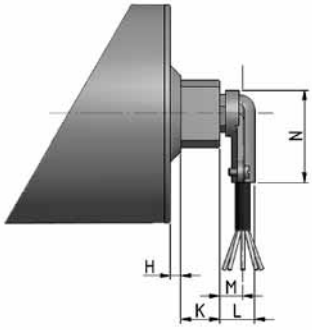
Technical data for Motorized Pulley 113LP - 1-phase - 50Hz								
Rated Power [kW]	Poles n.	Gear Stages n.	Rated speed of the shell [m/s]	Rated revolutions of the shell [min-1]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,06	4	4	0,06	10,1	56,0	1000	2000	256
			0,08	13,5	42,0	750		
		3	0,12	20,3	28,0	500		
			0,15	25,4	22,5	400		
			0,20	33,8	17,0	300		
			0,26	43,9	13,0	231		
			0,31	52,4	11,0	194		
			0,36	60,8	9,5	167		
		2	0,50	84,5	7,0	120	1500	
			0,69	116,6	5,0	87		
0,12	4	3	0,12	20,3	56,5	1000	2000	256
			0,15	25,4	45,0	800		
			0,20	33,8	34,0	600		
			0,26	43,9	26,0	462		
			0,31	52,4	22,0	387		
			0,36	60,8	19,0	333		
		2	0,50	84,5	13,5	240	1500	
			0,69	116,6	10,0	174		
			0,81	136,9	8,5	148		
0,18	4	3	0,20	33,8	51,0	900	2000	276
			0,26	43,9	39,0	692		
			0,31	52,4	33,0	581		
			0,36	60,8	28,5	500		
		2	0,50	84,5	20,5	360	1500	
			0,69	116,6	14,5	261		
			0,81	136,9	12,5	222		
			0,91	153,8	11,0	198		
			1,05	177,5	9,5	171		
0,25	4	3	0,26	43,9	54,5	962	2000	294
			0,31	52,4	45,5	806		
			0,36	60,8	39,0	694		
		2	0,50	84,5	28,5	500	1500	
			0,69	116,6	20,5	362		
			0,81	136,9	17,5	309		
			0,91	153,8	15,5	275		
			1,05	177,5	13,5	238		

Motorized Pulley 113LP

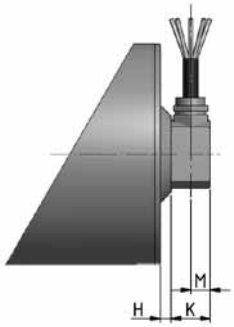
A powerful drive for light duty conveyors



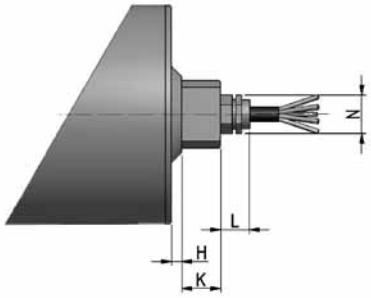
Motorized Pulley standard Version.



Elbow connector in aluminium.



Cable connection 90°.



Straight connector.

Type/Option	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized Pulley Standard Version	113,6	112,6	20	35	50	21		5,5	20		8			
Elbow Connector in aluminium									20	18	12	48		
Cable Connector 90°									20		10			
Straight Connector									20	15		20		

Std. RL shell lenghts (mm)	300 306	350 356	400 406	450 456	500 506	550 556	600 606	650 656	700 706	750 756	800 806	+ 50 mm up to	1200 1206
Average weigth (kg)	6,8	7,1	7,5	7,9	8,2	8,6	8,9	9,3	9,7	11	11,3	+ 0,45 kg up to	14,9

- Min lengths: see table at pages 22-23
- Max length: 1206 mm
- Weights are orientative due to different shell executions and motor powers

Motorized Pulley 113LS

Superior tough and powerful drive for high use light and medium duty conveyors

Product description

This Motorized Pulley has been designed specifically for applications that require a strong drive.

Characteristics

- Salt water resistant aluminum bearing housing
- Three phase alternating current induction motor
- 3-phase dual voltage standard
- Integral motor protection
- Hardened steel helical gear type
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation
- Reinforced internal shaft for RL exceeding 800 mm

Applications

- Heavy and frequent use Conveyors
- Conveyors for check-in at airports
- Packaging equipment
- Weighing Machines
- Metal detector
- Pharmaceutical industries
- Food processing
- Plastic or modular belt applications
- Dry, damp and wash down applications

Technical data	
Motor data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Derated windings (20% power reduction)	On request for applications without belt
Voltage	230/400 V ± 5% (IEC 34/38) single voltage Dual voltage or special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped of nitrile rubber, NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	+5 to +40 °C
General technical data	
Max. Roller length (RL)	1200 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 113LS

Superior tough and powerful drive for high use light and medium duty conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Components	Version	Material				
		Aluminium	Steel	Stainless Steel	Brass/Nickel	Polymer
Shell	Crowned		Std	TS8N		
	Cylindrical		Std	TS8N		
	Cylindrical + key (for sprockets)		Std	TS8N		
	Special crowns and grooves		Std	TS8N		
End housing	Standard	Std		TS8N		
	With V-grooves			TS8N		
	With O-grooves			TS8N		
Shaft	Standard			Std		
	Cross-drilled and threaded, M8			Std		
Electrical connection	Straight connector			TS8N	Std	
	Elbow connector			TS8N		Std
	Terminal box	Std		TS8N		

Please contact Rulmeca for further versions.
TS8N Version - End Caps in stainless steel with PTFE lip seals.

Options

- Rubber Lagging for standard belts
- Profiled lagging for plastic modular belts
- Profiled lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop / Anti run-back bearing
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than ± 5°)

Note: The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Shaft caps
- Frequency Converters

Motorized Pulley 113LS

Superior tough and powerful drive for high use light and medium duty conveyors

Technical data for Motorized Pulley 113LS - 3-phase - 50Hz									
Rated Power [kW]	Poles n.	Gear Stages n.	Gear Ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,035	12	3	42,66	0,05	8,3	38,4	679	6550	250
			36,35	0,06	9,7	32,7	579		
			31,36	0,07	11,3	28,2	499		
0,07	12	3	42,66	0,05	8,3	76,8	1358	6550	300
			36,35	0,06	9,7	65,4	1157		
			31,36	0,07	11,3	56,4	999		
0,08	8	3	42,66	0,09	15,9	45,5	806	6550	250
0,10	6	3	42,66	0,11	20,3	44,7	792	6550	
			36,35	0,13	23,8	38,1	675		
			31,36	0,16	27,6	32,9	582		
			27,32	0,18	31,7	28,7	507		
			23,99	0,22	36,1	25,2	445		
			21,18	0,25	40,8	22,2	393		
		2	15,17	0,32	57,0	15,9	282	4550	
			12,92	0,40	66,9	13,6	240		
			11,15	0,45	77,6	11,7	207		
0,15	8	3	42,66	0,09	15,9	85,6	1516	6550	300
			36,35	0,11	18,7	73,0	1291		
			31,36	0,13	21,6	62,9	1114		
	4	3	42,66	0,18	32,1	42,4	750	6550	250
			36,35	0,22	37,7	36,1	639		
			31,36	0,25	43,7	31,1	551	4550	
			27,32	0,30	50,1	27,1	480		
			23,99	0,32	57,1	23,8	422		
			21,18	0,38	64,7	21,0	372		
		2	15,17	0,50	90,3	15,1	267		
			12,92	0,63	106,0	12,8	227		
			11,15	0,70	122,9	11,1	196	3400	
0,20	6	3	42,66	0,13	21,4	84,6	1497	6550	300
			36,35	0,14	25,2	72,1	1276		
			31,36	0,16	29,2	62,2	1101		
			27,32	0,20	33,5	54,2	959		
			23,99	0,22	38,1	47,6	842		
			21,18	0,25	43,2	42,0	744		
		2	15,17	0,35	60,3	30,1	532	4550	
			12,92	0,40	70,8	25,6	454		
			11,15	0,50	82,1	22,1	391		
0,24	2	3	42,66	0,38	64,5	33,8	598	4550	250
			36,35	0,45	75,7	28,8	509		
			31,36	0,50	87,7	24,2	439		
			27,32	0,60	100,7	21,6	383		
			23,99	0,70	114,6	19,0	333	3400	
			21,18	0,80	129,8	16,8	297		

Motorized Pulley 113LS

Superior tough and powerful drive for high use light and medium duty conveyors

Technical data for motorized pulley 113LS - 3-phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,24	2	2	15,17	1,10	181,3	12,0	213	3400	250
			12,92	1,25	212,8	10,2	181		
			11,15	1,50	246,6	8,8	156		
0,30	4	3	42,66	0,20	32,6	83,5	1479	6550	300
			36,35	0,22	38,2	71,2	1260		
			31,36	0,25	44,3	61,4	1087	4550	
			27,32	0,30	50,9	53,5	947		
			23,99	0,35	57,9	47,0	824		
			21,18	0,38	65,6	41,5	734		
		2	15,17	0,50	91,6	29,7	526		
			12,92	0,63	107,6	25,3	448		
			11,15	0,70	124,7	21,8	386		
0,37	4	3	42,66	0,18	31,9	105,4	1865	6550	
			36,35	0,22	37,4	89,8	1589		
			31,36	0,25	43,3	77,5	1371	4550	
			27,32	0,30	49,7	67,5	1194		
			23,99	0,32	56,7	59,2	1094		
			21,18	0,38	64,2	52,3	926		
		2	15,17	0,50	89,6	37,5	663		
			12,92	0,60	105,2	31,9	565		
			11,15	0,70	121,9	27,5	487		
	2	3	21,18	0,80	134,8	24,9	441	3400	
		2	15,17	1,10	188,3	17,8	316		
			12,92	1,25	221,0	15,2	269		
			11,15	1,50	256,1	13,1	232		

Standard weights for Motorized Pulley 113LS

P_N [kW]	np	standard weight [kg] for standard RL [mm]														
		250	260	300	310	360	410	460	510	560	610	660	710	810	910	1010
0,04	12	7,20	7,35	7,95	8,10	8,85	9,60	10,35	11,10	11,85	12,60	13,35	14,10	18,80	20,30	21,80
0,07	12	---	---	10,10	10,25	11,00	11,75	12,50	13,25	14,00	14,75	15,50	16,25	20.95	22,45	23,95
0,08	8	7,20	7,35	7,95	8,10	8,85	9,60	10,35	11,10	11,85	12,60	13,35	14,10	18,80	20,30	21,80
0,10	6	7,20	7,35	7,95	8,10	8,85	9,60	10,35	11,10	11,85	12,60	13,35	14,10	18,80	20,30	21,80
0,15	8	---	---	10,10	10,25	11,00	11,75	12,50	13,25	14,00	14,75	15,50	16,25	20.95	22,45	23,95
	4	7,20	7,35	7,95	8,10	8,85	9,60	10,35	11,10	11,85	12,60	13,35	14,10	18,80	20,30	21,80
0,20	6	7,20	7,35	7,95	8,10	8,85	9,60	10,35	11,10	11,85	12,60	13,35	14,10	18,80	20,30	21,80
0,24	2	7,20	7,35	7,95	8,10	8,85	9,60	10,35	11,10	11,85	12,60	13,35	14,10	18,80	20,30	21,80
0,30	4	---	---	10,10	10,25	11,00	11,75	12,50	13,25	14,00	14,75	15,50	16,25	20.95	22,45	23,95
0,37	4	---	---	10,10	10,25	11,00	11,75	12,50	13,25	14,00	14,75	15,50	16,25	20.95	22,45	23,95
	2	---	---	10,10	10,25	11,00	11,75	12,50	13,25	14,00	14,75	15,50	16,25	20.95	22,45	23,95

Other RL dimension within the min & max RL available on request.

Motorized Pulley 113LS

Superior tough and powerful drive for high use light and medium duty conveyors

Cable specification

Available cable options:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1 / 3 / 5 m.

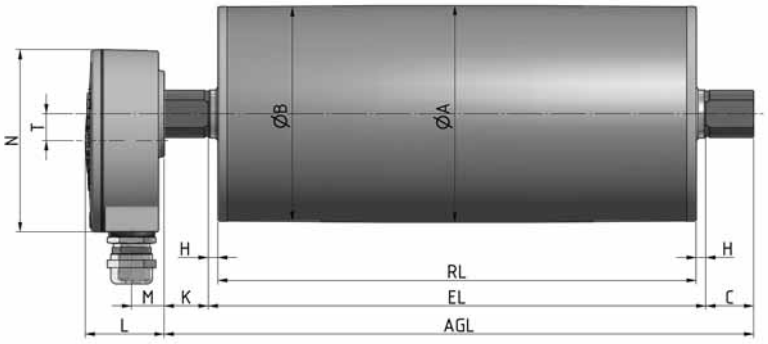
Min.Length with option

The following options increase the minimum length of the motorized pulley.

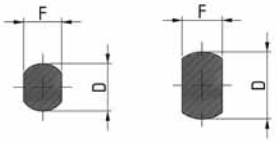
Option	RL min with option mm
Brake	RL min + 50 mm
Encoder SKF	RL min + 0 mm
Encoder RLS	RL min +50 mm

Motorized Pulley 113LS

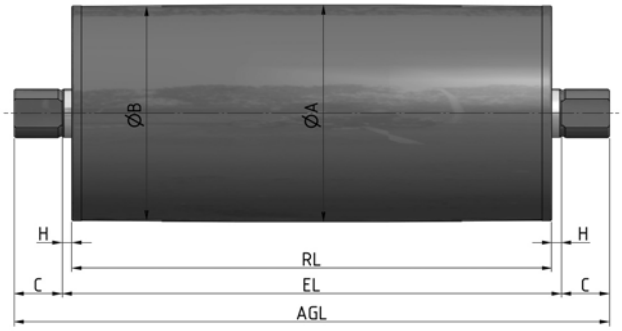
Superior tough and powerful drive for high use light and medium duty conveyors



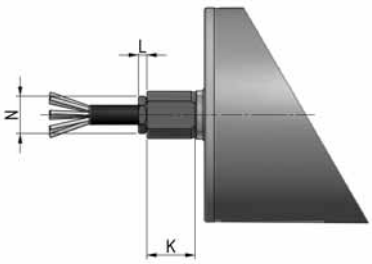
Motorized pulley standard version with aluminium Terminal box.



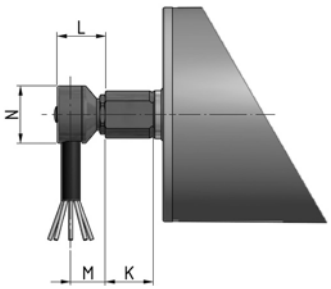
Shaft Cap.



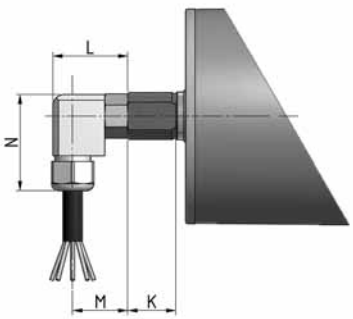
Idler Pulley in stainless Steel (TS8N).



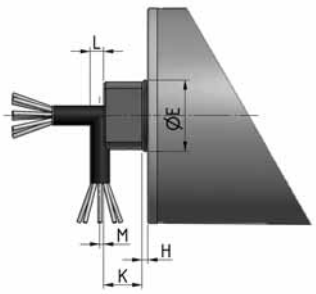
Straight connector in stainless steel.



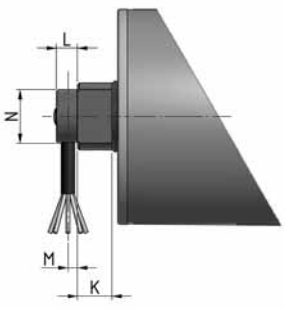
Elbow connector in stainless steel.



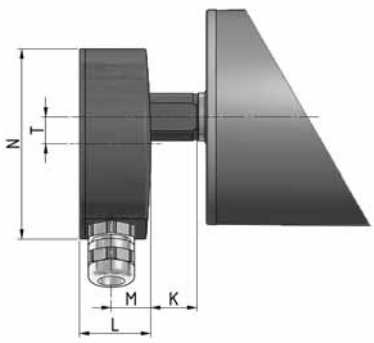
Elbow connector in polyamide.



Straight/Elbow connector with shaft cap in stainless steel.



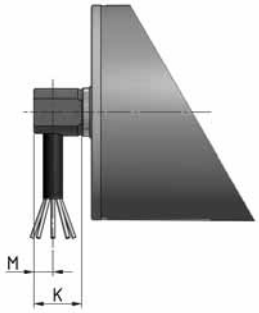
Elbow connector with shaft cap in stainless steel.



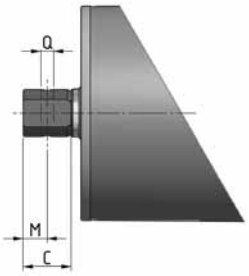
Terminal box in stainless steel.

Motorized Pulley 113LS

Superior tough and powerful drive for high use light and medium duty conveyors



Cable connector 90° with threaded shaft.



Shaft, cross-drilled and threaded.

Type/Option	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized pulley 113LS standard version with aluminium terminal box	113	111,5	25	25		20		5	23	41	17	95		14
Terminal Box in Stainless steel									23	37	20,5	99		14
Straight Connector in stainless steel									25	4,5		19,5		
Elbow Connector in Stainless steel									25	25	18	30		
Elbow connector in Polyamide									25	39	28,5	50		
Cable connector 90° with threaded shaft									25		10			
Shaft, cross-drilled and threaded									25		12,5		M8	
Straight/Elbow connector with shaft cap in stainless steel			20	35	37	21		3	20	7	2	35		
Elbow connector with shaft cap in stainless steel									18	11	4	28		

Motorized Pulley 138LS

Power packed drive for high duty conveyors

Product Description

The motorized pulley 138LS is a very flexible component thanks to the wide range of powers and speeds.

Characteristics

- Salt water resistant aluminum bearing housing
- Induction motor three phases alternating current
- Dual power supply
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation
- Reinforced shaft for RL greater than 800 mm

Applications

- Conveyors for heavy and frequent use
- Conveyors for transportation of packages
- Logistics applications
- Check-in desks at airports
- Conveyors for furniture manufacture
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent wash down applications

Technical data	
Motor data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Derated windings (20% power reduction)	On request for applications without belt
Voltage	230/400 V ± 5% (IEC 34/38) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped FPM or nitrile rubber, NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	-25 to +40 °C
General technical data	
Max. Roller length (RL)	1800 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 138LS

Power packed drive for high duty conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Components	Version	Material				
		Aluminium	Steel	Stainless steel	Brass/Nickel	Polymer
Shell	Crowned		Std	TS8N		
	Cylindrical		Std	TS8N		
	Cylindrical + key (for sprockets)		Std	TS8N		
	Special crowns and grooves		Std	TS8N		
End housing	Standard	Std		TS8N		
	With V-grooves		Std	TS8N		
	With O-grooves		Std	TS8N		
	With chain sprockets		Std	TS8N		
Shaft	Standard		Std	TS8N		
	Cross-drilled and threaded, M8		Std	TS8N		
Electrical connection	Straight connector			TS8N	Std	
	Elbow connector			TS8N		Std
	Terminal box	Std		TS8N		

Please contact Rulmeca for further versions.
TS8N Version - End Caps in stainless steel with PTFE lip seals.

Options

- Rubber Lagging for standard belts
- Profiled lagging for plastic modular belts
- Profiled lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop / Anti run-back bearing
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than ± 5 °)
- TS8N with mild steel shell is possible

Note: The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Frequency Converters

Motorized Pulley 138LS

Power packed drive for high duty conveyors

Technical data for Motorized pulley 138LS - 3 phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,10	12	3	78,40	0,04	5,6	159	2295	8300	300
			66,00	0,05	6,7	138	1990		
			52,96	0,06	8,3	111	1600		
		2	29,56	0,10	14,9	62	895		
0,18	8	3	66,00	0,08	10,2	163	2350	8300	300
			52,96	0,10	12,7	131	1890		
			43,65	0,13	15,5	108	1555		
		2	29,56	0,16	22,8	73	1050	4850	
			25,20	0,20	26,8	62	890		
0,24	6	3	66,00	0,10	13,9	163	2350	8300	300
			52,96	0,13	17,4	131	1890		
			43,65	0,16	21,1	108	1555	4850	
		2	29,56	0,20	31,1	73	1050		
			25,20	0,25	36,5	62	890		
			20,22	0,32	45,5	50	720		
0,37	6	3	51,85	0,13	18,0	168	2425	8300	320
	4	3	66,00	0,16	21,2	153	2205	4850	300
			52,96	0,20	26,4	126	1815		
			43,65	0,25	32,1	104	1500		
		2	29,56	0,32	47,4	70	1010		
			25,20	0,40	55,6	60	865		
			20,22	0,50	69,2	48	690		
			16,67	0,63	84,0	40	575		
			12,44	0,80	112,5	30	430	3650	
0,55	2	3	77,41	0,25	35,3	152	2190	4850	300
			66,00	0,32	41,4	129	1860		
			52,96	0,40	51,5	104	1500		
			43,65	0,50	62,5	86	1240		
		2	29,56	0,63	92,4	58	835		
			25,20	0,80	108,3	49	705	3650	
			20,22	1,00	135,0	40	575		
			16,67	1,25	163,8	33	475		
			12,44	1,60	219,5	24	345		
0,75	4	3	32,59	0,32	41,9	159	2295	4850	320
		2	25,20	0,40	54,2	127	1830		
			20,22	0,50	67,5	102	1470		
			16,67	0,63	81,9	84	1210		
	2	2	25,20	0,80	112,9	67	965	3650	
			20,22	1,00	140,7	54	775		
			16,67	1,25	170,7	44	635		
			12,44	1,60	228,7	33	475		

Motorized Pulley 138LS

Power packed drive for high duty conveyors

Technical data for Motorized Pulley 138LS - 3 phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
1,0	2	3	43,65	0,50	64,4	145	2090	4850	350
			32,59	0,63	86,2	109	1570		
		2	25,20	0,80	111,5	84	1210	3650	
			20,22	1,00	139,0	67	965		
			16,67	1,25	168,6	56	805		
			12,44	1,60	225,9	41	590		

Standard weight for Motorized pulley 138LS

Rated power [kW]	Poles n.	Standard weight [kg] for standard RL [mm]													
		300	320	350	400	450	500	550	600	650	700	750	800	900	1000
0,10	12	14,0	14,5	15,0	16,0	17,0	18,0	19,0	20,0	21,5	23,0	24,0	25,0	27,0	29,0
0,18	8	14,0	14,5	15,0	16,0	17,0	18,0	19,0	20,0	21,5	23,0	24,0	25,0	27,0	29,0
0,24	6	14,0	14,5	15,0	16,0	17,0	18,0	19,0	20,0	21,5	23,0	24,0	25,0	27,0	29,0
0,37	6	---	15,0	15,6	16,5	17,5	18,5	19,5	20,5	22,0	23,5	24,5	25,5	27,5	29,5
	4	14,0	14,5	15,0	16,0	17,0	18,0	19,0	20,0	21,5	23,0	24,0	25,0	27,0	29,0
0,55	2	14,0	14,5	15,0	16,0	17,0	18,0	19,0	20,0	21,5	23,0	24,0	25,0	27,0	29,0
0,75	4	---	15,0	15,6	16,5	17,5	18,5	19,5	20,5	22,0	23,5	24,5	25,5	27,5	29,5
	2														

Motorized Pulley 138LS

Power packed drive for high duty conveyors

Cable Specification

Available cable options:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1 / 3 / 5 m.

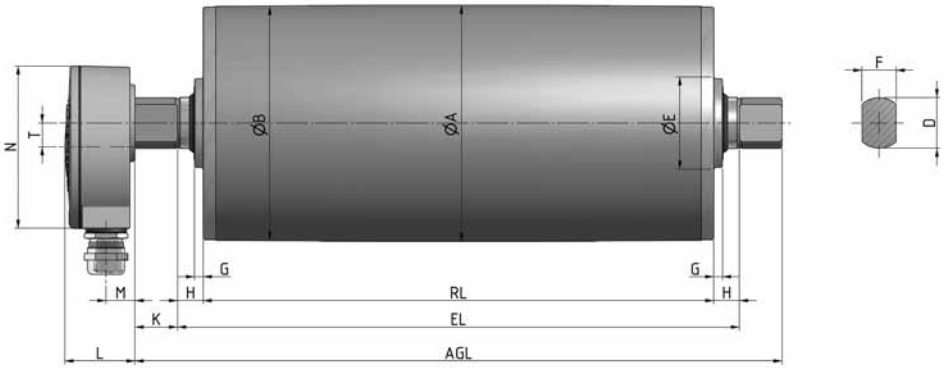
Min.Length with option

The following options increase the minimum length of the motorized pulley.

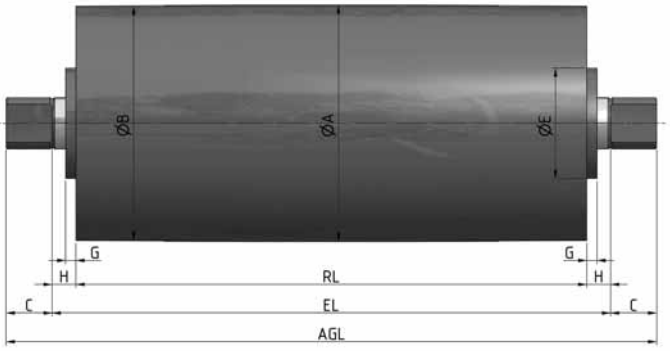
Option	RL min. with option mm
Brake	RL min. + 50 mm
Encoder SKF	RL min. + 0 mm
Encoder RLS	RL min. + 50 mm

Motorized Pulley 138LS

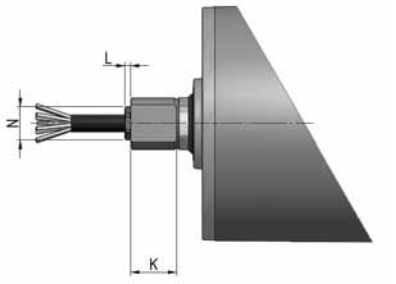
Power packed drive for high duty conveyors



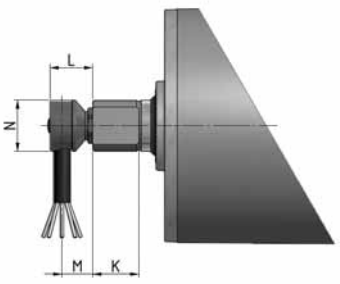
Motorized pulley standard version with Terminal Box in aluminium.



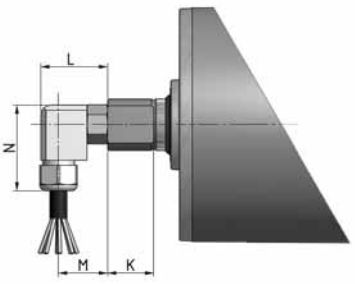
Idler Pulley in stainless steel (TS8N).



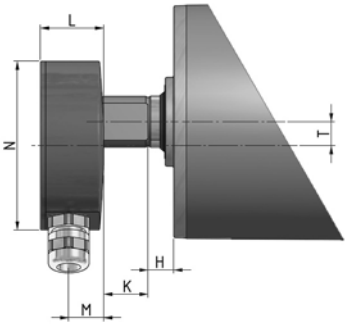
Straight connector in brass or stainless steel.



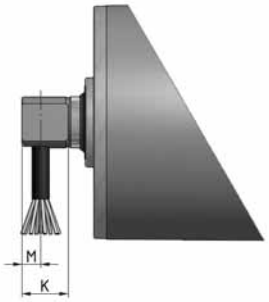
Elbow connector in stainless steel.



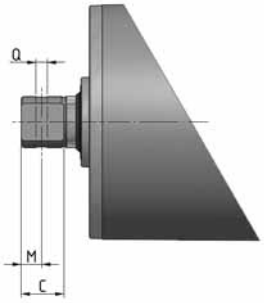
Elbow connector in polyamide.



Terminal box in stainless steel.



Cable connector 90° with threaded shaft.



Shaft, cross-drilled and threaded.

Motorized Pulley 138LS

Power packed drive for high duty conveyors

Type/Option	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized pulley 138LS Standard version with Terminal Box in Aluminium	138,5	137	25	30	54	20	5	15	25	41	17	95		14
Terminal Box in Stainless steel									25	37	20,5	99		14
Idler Pulley in stainless steel (TS)					64,5		6		27					
Straight connector in brass or stainless steel									27	3,5		19,5		
Elbow connector in stainless steel									27	25	18	30		
Elbow connector in Polyamide									27	39	29	50		
Cable Connector 90° with threaded shaft									27		8-11			
Cross-drilled and threaded shaft									27		12		M8	

Motorized Pulley 165LS

Solid powerful drive for high use conveyors

Product description

Motorized pulley very robust and able to provide high torques and withstand high radial loads.

Characteristics

- Salt water resistant aluminum bearing housing
- Induction motor three phases alternating current
- Dual power supply
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation

Applications

- Conveyors for heavy and frequent use
- Logistics applications
- Airport and postal conveyors
- Warehouse loading conveyors
- Telescopic conveyors
- Agricultural plants
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent wash applications

Technical data	
Motor data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Derated windings (20% power reduction)	On request for applications without belt
Voltage	230/400 V ± 5% (IEC 34/38) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped FPM or nitrile rubber, NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	-25 to +40 °C
General technical data	
Max. Roller length (RL)	1800 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 165LS

Solid powerful drive for high use conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Components	Version	Materiale				
		Aluminium	Steel	Stainless steel	Brass/Nickel	Polymer
Shell	Crowned		Std	TS8N		
	Cylindrical		Std	TS8N		
	Cylindrical + key (for sprockets)		Std	TS8N		
	Special crowns and grooves		Std	TS8N		
End housing	Standard	Std		TS8N		
	With V-grooves		Std	TS8N		
	With O-grooves		Std	TS8N		
	With chain sprockets		Std	TS8N		
Shaft	Standard		Std	TS8N		
	Cross-drilled and threaded, M10		Std	TS8N		
Electrical connection	Straight connector			TS8N	Std	
	Elbow connector			TS8N		Std
	Terminal box	Std		TS8N		

Please contact Rulmeca for further versions.
TS8N Version - End Caps in stainless steel with PTFE lip seals.

Options

- Rubber Lagging for standard belts
- Profiled lagging for plastic modular belts
- Profiled lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop / Anti run-back bearings
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than ± 5 °)
- Dual speed motor
- Version TS7N - as TS8N but with re-greasable labyrinth seals

Note: The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Frequency Converters

Technical data for motorized pulley 165LS - 3 phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
0,37	6	3	61,56	0,13	14,9	236	2865	19000	400
			49,75	0,16	18,5	194	2350		
	4	3	61,56	0,20	22,3	158	1910	11000	350
			49,75	0,25	27,6	128	1545		
			37,93	0,32	36,3	97	1175		
			30,05	0,40	45,8	77	930		
			23,76	0,50	57,9	61	735		
			19,20	0,63	71,6	49	595		
			14,64	0,80	93,9	38	455		
			11,60	1,00	118,5	30	360	7600	
0,75	6	3	46,23	0,16	20,4	340	4100	19000	400
	4	3	61,56	0,20	22,8	304	3685	11000	400
			49,75	0,25	28,2	246	2980		
			37,93	0,32	37,0	187	2270		
			30,05	0,40	46,8	148	1800		
		2	23,76	0,50	59,1	117	1425		
			19,20	0,63	73,2	95	1150		
			14,64	0,80	96,0	72	880		
			11,60	1,00	121,1	57	695	7600	
1,10	4	3	46,23	0,25	30,7	325	3940	11000	400
			37,93	0,32	37,4	267	3230		
	2	2	61,56	0,40	46,0	222	2695		400
			49,75	0,50	56,9	180	2180		
			37,93	0,63	74,6	137	1660		
			30,05	0,80	94,2	108	1315		
		2	23,76	1,00	119,1	86	1040	7600	
			19,20	1,25	147,4	69	840		400
			14,64	1,60	193,3	53	640		
			11,60	2,00	244,0	42	510		400
			9,43	2,50	300,1	34	415		
1,50	2	3	46,23	0,50	61,6	237	2880	11000	400
			37,93	0,63	75,1	195	2360		
			30,05	0,80	94,8	154	1870		
		2	23,76	1,00	119,9	121	1465	7600	
			19,20	1,25	148,4	98	1185		400
			14,64	1,60	194,7	74	900		
			11,60	2,00	245,7	59	715		400
			9,43	2,50	302,2	48	580		
			7,80	3,15	365,4	40	480	7100	

Motorized Pulley 165LS

Solid powerful drive for high use conveyors

Technical data for Motorized pulley 165LS - 3phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length RL [mm]
2,20	2	3	46,23	0,50	61,9	330	3990	11000	430
			37,93	0,63	75,4	270	3280		
			30,05	0,80	95,2	215	2600		
			12,43	1,00	230,1	175	2110	7600	430
			20,21	1,25	141,5	145	1750		
		2	14,64	1,60	195,4	105	1270		
			11,60	2,00	246,6	84	1010		430
			9,43	2,50	303,3	68	820		
			7,80	3,15	366,7	55	675	7100	

Standard weights for Motorized pulley 165LS

Rated power [kW]	Poles n.	Standard weight [kg] for standard RL [mm]													
		350	400	450	500	550	600	650	700	750	800	850	900	950	1000
0,37	6	---	30,0	31,5	33,0	34,0	35,0	36,0	37,5	39,0	40,0	41,0	42,5	44,0	45,0
	4	26,0	28,0	29,5	31,0	32,0	33,0	34,0	35,5	37,0	38,0	39,0	40,5	42,0	43,0
0,75	6	---	33,0	34,5	36,0	37,0	38,0	39,0	40,5	42,0	43,0	44,0	45,5	47,0	48,0
	4	---	31,0	32,5	34,0	35,0	36,0	37,0	38,5	40,0	41,0	42,0	43,5	45,0	46,0
1,10	4	---	34,0	35,5	37,0	38,0	39,0	40,0	41,5	43,0	44,0	45,0	46,5	48,0	49,0
	2	---	33,0	34,5	36,0	37,0	38,0	39,0	40,5	42,0	43,0	44,0	45,5	47,0	48,0
1,50	2	---	34,0	35,5	37,0	38,0	39,0	40,0	41,5	43,0	44,0	45,0	46,5	48,0	49,0
2,20	2	---	37,0	37,5	38,0	39,0	40,0	41,0	42,5	44,0	45,0	46,0	47,5	49,0	50,0

Motorized Pulley 165LS

Solid powerful drive for high use conveyors

Cable Specification

Available cable options:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1 / 3 / 5 m.

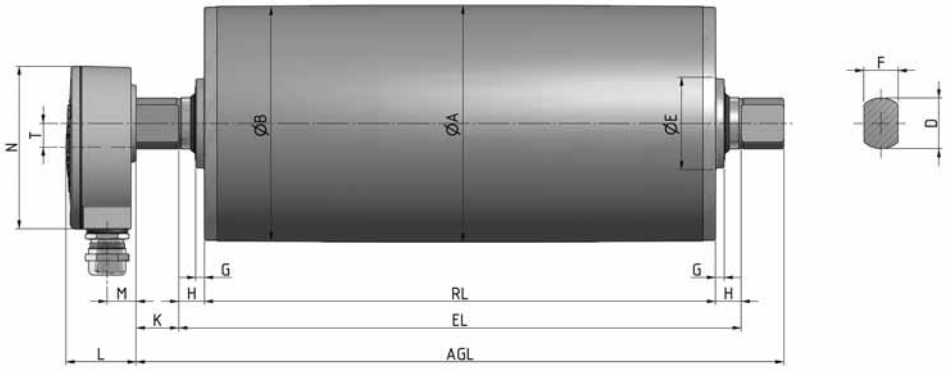
Min.Length with Option

The following options increase the minimum length of the motorized pulley.

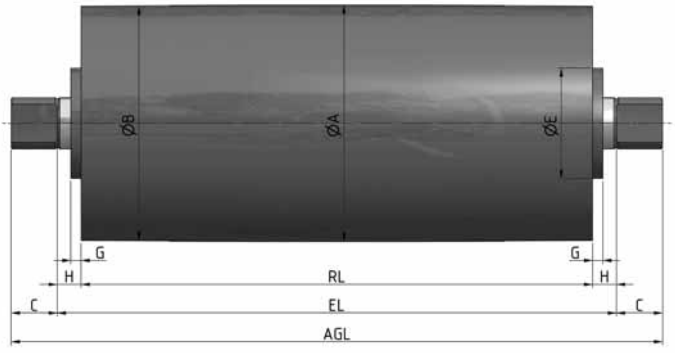
Option	RL min. with option mm
Brake	RL min. + 50 mm
Encoder SKF	RL min. + 0 mm
Encoder RLS	RL min. + 50 mm

Motorized Pulley 165LS

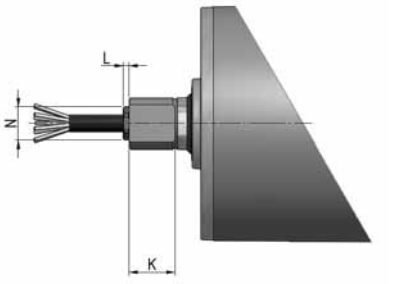
Solid powerful drive for high use conveyors



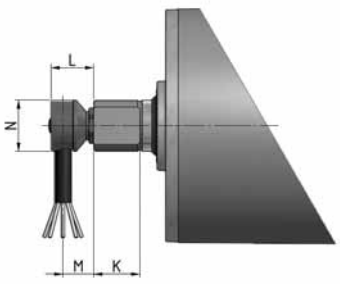
Motorized pulley standard version with Terminal box in aluminium.



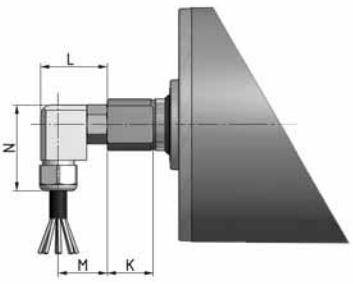
Idler pulley in stainless steel (TS).



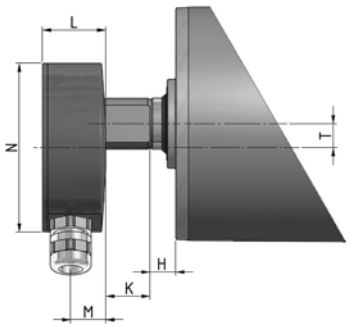
Straight connector in brass or in stainless steel.



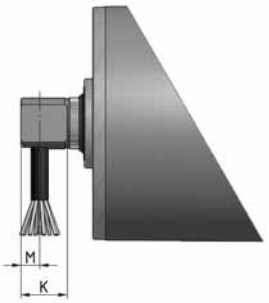
Elbow connector in stainless steel.



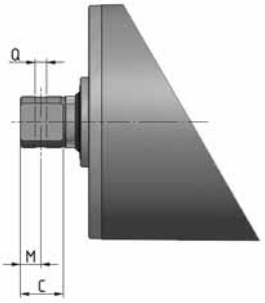
Elbow connector in polyamide.



Terminal box in stainless steel.



Cable connector 90° with threaded shaft.



Shaft, cross-drilled and threaded.

Motorized Pulley 165LS

Solid powerful drive for high use conveyors

Type/Option	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized Pulley 165LS Standard version with Terminal Box in Aluminium	165	163,5	45	40	80	30	10	20	45	41	17	95		14
Terminal Box in Stainless steel									45	37	20,5	99		14
Idler Pulley in stainless steel (TS)					64,5		8		47					
Straight connector in brass or stainless steel									47	4		27		
Elbow connector in stainless steel									47	25	18	30		
Elbow connector in Polyamide									47	39	29	50		
Cable Connector 90° with threaded shaft									47		8-11			
Cross-drilled and threaded shaft									47		23,5		M10	

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

Product description

Motorized Pulley very robust able to provide high torques and withstand high radial loads.

Characteristics

- Salt water resistant aluminum bearing housing
- Induction motor three phases alternating current
- Dual power supply
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation

Applications

- Conveyors for heavy and frequent use
- Logistics applications
- Airport and postal conveyors
- Warehouse loading conveyors
- Telescopic conveyors
- Agricultural plants
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent wash down applications

Technical data	
Motor Data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	iClass F, IEC 34 (VDE 0530)
Voltage	230/400 V ± 5% (IEC 34/38) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped FPM or nitrile rubber, NBR
Protection rate	IP66
Thermal protection	bimetallic Contact
Ambient temperature, 3-phase motor	-25 to +40 °C
General technical data	
Max. Roller length (RL)	1800 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Components	Version	Material				
		Aluminium	Steel	Stainless steel	Brass/Nickel	Polymer
Shell	Crowned		Std	TS10N		
	Cylindrical		Std	TS10N		
	Cylindrical + key (for sprockets)		Std	TS10N		
	Special crowns and grooves		Std	TS10N		
End housing	Standard	Std		TS10N		
	With V-grooves		Std	TS10N		
	With O-grooves		Std	TS10N		
	With chain sprockets		Std	TS10N		
Shaft	Standard		Std	TS10N		
	Cross-drilled and threaded, M10		Std	TS10N		
Electrical connection	Straight connector			TS10N	Std	
	Elbow connector			TS10N		Std
	Terminal box	Std		TS10N		

Please contact Rulmeca for further versions.
TS10N Version - End Housing in stainless steel with NBR lip seals.

Options

- Rubber Lagging for standard belts
- Profiled Lagging for plastic modular belts
- Profiled Lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop /Anti run-back bearing
- Dynamic balancing
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than ± 5 °)
- Dual speed motor
- Version TS9N - as TS10N but with re-greasable labyrinth seals

Note: The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Frequency Converters

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

Technical data for motorized pulley 220M/H - 3phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length [mm]
0,37	8	3 (220H)	59,72	0,13	11,8	291	2707	25000	450
			49,84	0,16	14,1	236	2195		
		2 (220M)	37,49	0,20	18,8	190	1767	11500	400
			29,62	0,25	23,8	152	1414		
			24,17	0,32	29,2	118	10989		
			20,17	0,40	35,0	95	884		
			15,84	0,50	44,5	76	707		
			12,74	0,63	55,3	60	558		
			9,77	0,80	72,2	47	437		
			8,10	1,00	87,0	38	353		
			6,36	1,25	110,8	30	279		
0,55	8	3 (220H)	59,72	0,13	11,9	432	4019	25000	500
			49,84	0,16	14,2	351	3265		
		2 (220M)	37,49	0,20	18,9	282	2623	11500	450
			29,62	0,25	24,0	226	2102		
			24,17	0,32	29,4	176	1637		
			20,17	0,40	35,2	141	1312		
			15,84	0,50	44,8	113	1051		
			12,74	0,63	55,7	89	828		
			9,77	0,80	72,7	70	651		
			8,10	1,00	87,7	56	521		
			6,36	1,25	111,6	45	419		
0,75	8	3 (220H)	59,72	0,13	11,6	592	5510	25000	500
			49,84	0,16	13,8	481	4476		
		2 (220M)	37,49	0,20	18,4	385	3581	11500	450
			29,62	0,25	23,3	307	2856		
			24,17	0,32	28,5	239	2223		
			20,17	0,40	34,2	191	1777		
			15,84	0,50	43,6	153	1423		
			12,74	0,63	54,2	122	1135		
			9,77	0,80	70,6	96	893		
			8,10	1,00	85,2	77	716		
			6,36	1,25	108,5	62	577		
1,10	6	3 (220H)	59,72	0,16	15,9	705	6558	22500	500
			49,84	0,20	19,1	564	5246		
	4		59,72	0,25	23,8	452	4205		450
			49,84	0,32	28,5	353	3284		

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

RULMECA

Technical data for motorized pulley 220M/H - 3phase - 50Hz									
Rated power [kW]	**Poles n.**	**Gear stages n.**	**Gear ratio i**	**Rated speed of the shell [m/s]**	**Rated revolutions of the shell [min^{-1}]**	**Rated torque of Motorized pulley [Nm]**	**Forza tangenziale nominale [N]**	**Max. belt tension T1+T2 [N]**	**Min. length [mm]**
1,10	4	2 (220M)	37,49	0,40	37,9	282	2623	11500	400
			29,62	0,50	47,9	226	2102		
			24,17	0,63	58,8	178	1656		
			20,17	0,80	70,4	141	1312		
			15,84	1,00	89,6	112	1042		
			12,74	1,25	111,5	90	837		
			9,77	1,60	145,3	70	651		
			8,10	2,00	175,3	56	521		
			6,36	2,50	223,3	45	419		
1,50	4	3 (220H)	59,72	0,25	23,9	646	5730	25000	450
			49,84	0,32	28,7	481	4476		
		2 (220M)	37,49	0,40	38,1	385	3581	11500	450
			29,62	0,50	48,3	307	2856		
			24,17	0,63	59,2	243	2260		
			20,17	0,80	70,9	191	1777		
			15,84	1,00	90,3	153	1423		
			12,74	1,25	112,2	123	1144		
			9,77	1,60	146,4	96	893		
			8,10	2,00	176,5	77	716		
			6,36	2,50	224,8	62	572		
2,20	4	3 (220H)	49,84	0,32	28,7	705	6558	2500	500
			39,14	0,40	36,5	564	5246		
		2 (220M)	29,62	0,50	48,3	451	4195	11500	450
			24,17	0,63	59,2	358	3330		
			20,17	0,80	70,9	282	2623		
			15,84	1,00	90,3	226	2102		
			12,74	1,25	112,2	180	1674		
			9,77	1,60	146,4	140	1302		
			8,10	2,00	176,5	115	1070		
			6,36	2,50	224,8	90	837		
3,00	4	3 (220H)	31,49	0,50	44,3	616	5730	25000	550
			24,15	0,63	57,8	481	4476		
		2 (220M)	20,17	0,80	69,2	385	3581	11500	500
			15,84	1,00	88,1	307	2856		
			12,74	1,25	109,5	245	2279		
			9,77	1,60	142,8	192	1786		
			8,10	2,00	172,2	154	1433		
			6,36	2,50	219,3	123	1144		

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

Technical data for Motorized Pulley 220M/H - 3phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length [mm]
4,00	2	3 (220H)	49,84	0,63	56,6	649	6037	25000	550
			39,14	0,80	72,0	511	4754		
			29,62	1,00	95,2	409	3805	11500	500
			24,17	1,25	116,7	327	3042		
			20,17	1,60	139,8	255	2372		
			15,84	2,00	178,0	204	1898		
			12,74	2,50	221,4	163	1516		
5,50	2	3 (220H)	40,21	0,80	71,1	702	6530	25000	550
			31,87	1,00	89,7	562	5228		
			25,80	1,25	110,9	450	4186		
			19,89	1,60	143,8	351	3265		
			15,56	2,00	183,8	281	2614		
			13,00	2,50	220,0	225	2093		

Standard weight for Motorized Pulley 220M/H

Rated power [kW]	Poles n.	Gear stages	Standard weight [kg] for standard RL [mm]												
			400	450	500	550	600	650	700	750	800	850	900	950	1000
0,37	8	3	---	64,0	67,0	70,0	73,0	76,0	79,0	82,0	85,0	88,0	91,0	94,0	97,0
		2	48,0	51,0	54,0	57,0	60,0	63,0	66,0	69,0	72,0	75,0	78,0	81,0	84,0
0,55	8	3	---	---	71,0	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0	98,0	101,0
		2	---	55,0	58,0	61,0	64,0	67,0	70,0	73,0	76,0	79,0	82,0	85,0	88,0
0,75	8	3	---	---	71,0	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0	98,0	101,0
		2	---	55,0	58,0	61,0	64,0	67,0	70,0	73,0	76,0	79,0	82,0	85,0	88,0
1,10	6	3	---	---	68,0	71,0	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0	98,0
	4	3	---	61,0	64,0	67,0	70,0	73,0	76,0	79,0	82,0	85,0	88,0	91,0	94,0
		2	46,0	49,0	52,0	55,0	58,0	61,0	64,0	67,0	70,0	73,0	76,0	79,0	82,0
1,50	4	3	---	61,0	64,0	68,0	71,0	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0
		2	48,0	51,0	54,0	57,0	60,0	63,0	66,0	69,0	72,0	75,0	78,0	81,0	84,0
2,20	4	3	---	---	68,0	72,0	75,0	78,0	81,0	84,0	87,0	90,0	93,0	96,0	99,0
		2	---	55,0	58,0	61,0	64,0	67,0	70,0	73,0	76,0	79,0	82,0	85,0	88,0
3,00	4	3	---	---	---	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0	98,0	101,0
		2	---	---	60,0	63,0	66,0	69,0	72,0	75,0	78,0	81,0	84,0	87,0	90,0
4,00	2	3	---	---	---	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0	98,0	101,0
		2	---	---	60,0	63,0	66,0	69,0	72,0	75,0	78,0	81,0	84,0	87,0	90,0
5,50	2	3	---	---	---	74,0	77,0	80,0	83,0	86,0	89,0	92,0	95,0	98,0	101,0

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

Cable specification

Available cable options:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1 / 3 / 5 m.

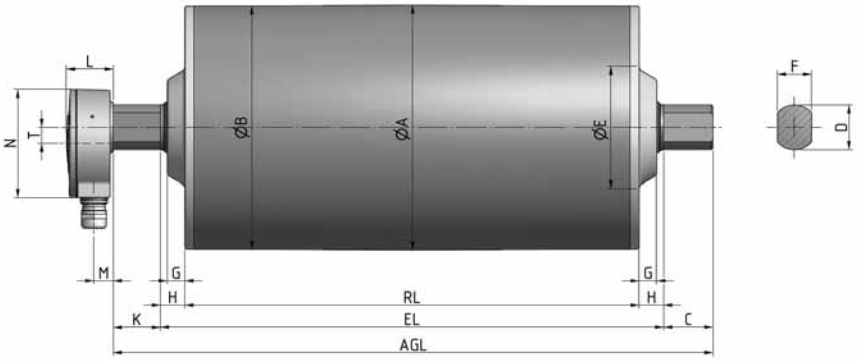
Min.Length with option

The following options increase the minimum length of the motorized pulley.

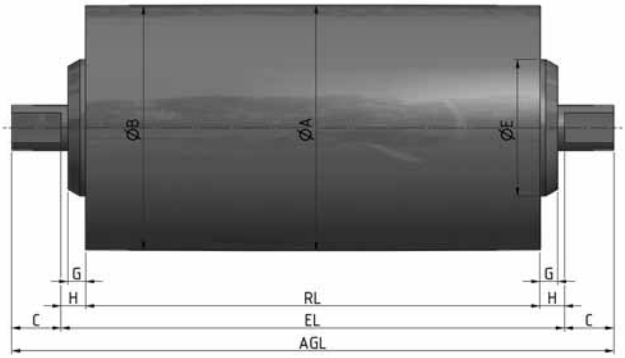
Option	RL min. with option mm
Brake	RL min. + 50 mm
Encoder SKF	RL min. + 0 mm
Encoder RLS	RL min. + 50 mm

Motorized Pulley 220M-H

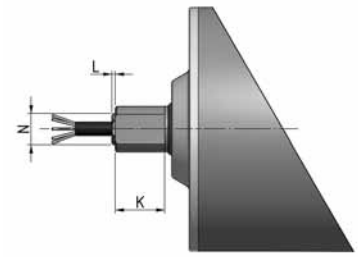
High torque powerful drive for high duty conveyors



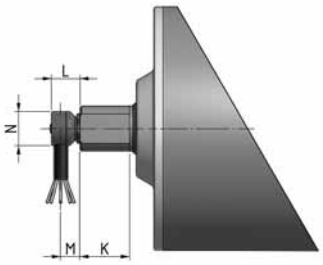
Motorized pulley standard version with terminal box in aluminium ≤ 4,0 kW.



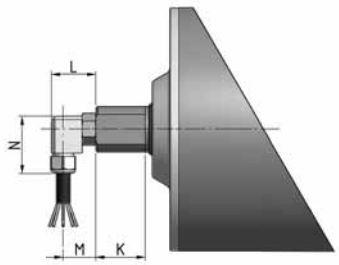
Idler Pulley in stainless steel (TS10N/TS12N).



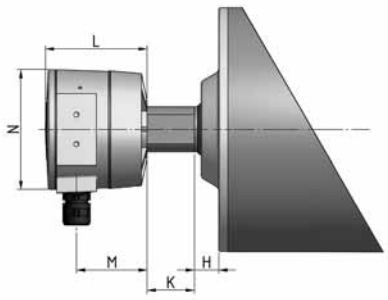
Straight connector in brass or stainless steel ≤ 4,0 kW.



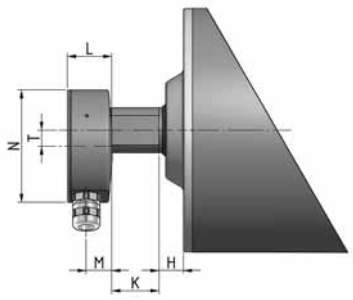
Elbow connector in stainless steel ≤ 4,0 kW.



Elbow connector in polyamide ≤ 4,0 kW.



Large terminal Box ≥ 5,5 kW.



Terminal box in stainless steel ≤ 4,0 kW.

Motorized Pulley 220M-H

High torque powerful drive for high duty conveyors

Type/Version	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized Pulley 220M-H standard version with terminal box in aluminium	216	214,5	43,5	40	100	30	15,5	21,5	41,5	41	17	95		14
Large terminal box									41,5	87	62	105		
Terminal box in stainless steel									41,5	37	20,5	99		14
Idler Pulley in stainless steel (TS10N/TS12N)					120				43,5					
Straight connector in brass or stainless steel									43,5	4		27		
Elbow connector in stainless steel									43,5	25	18	30		
Elbow connector in polyamide									43,5	39	29	50		

Motorized Pulley 320L-M-H

Power packed high torque drives for heavy duty conveyors

Product description

Motorized Pulley very robust able to provide high torques and withstand high radial loads.

Characteristics

- Salt water resistant aluminum bearing housing
- Induction motor three phases alternating current
- Dual power supply
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation

Applications

- Conveyors for heavy and frequent use
- Logistics applications
- Airport and postal conveyors
- Warehouse loading conveyors
- Telescopic conveyors
- Agricultural plants
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent wash down applications

Technical data	
Motor data	
Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	230/400 V ± 5% (IEC 34/38) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped FPM or nitrile rubber, NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	-25 to +40 °C
General technical data	
Max. Roller length (RL)	1800 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.

Motorized Pulley 320L-M-H

Power packed high torque drives for heavy duty conveyors

Materials

The following Motorized Pulley components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Components	Version	Material				
		Aluminium	Steel	Stainless steel	Brass/Nickel	Polymer
Shell	Crowned		Std	TS10N		
	Cylindrical		Std	TS10N		
	Cylindrical + key (for sprockets)		Std	TS10N		
	Special crowns and grooves		Std	TS10N		
End housing	Standard	Std		TS10N		
	With V-grooves		Std	TS10N		
	With O-grooves		Std	TS10N		
	With chain sprockets		Std	TS10N		
Shaft	Standard		Std	TS10N		
	Cross-drilled and threaded, M10		Std	TS10N		
Electrical connection	Straight connector			TS10N	Std	
	Elbow connector			TS10N		Std
	Terminal box	Std		TS10N		

Please contact Rulmeca for further versions.
TS10N Version - End housing in stainless steel with NBR lip seals.

Options

- Rubber Lagging for standard belts
- Profiled lagging for plastic modular belts
- Profiled lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop / Anti run-back bearings
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than ± 5 °)
- Dual speed motor
- Version TS9N - as TS10N but with re-greasable labyrinth seals

Note: The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Frequency Converters

Motorized Pulley 320L-M-H

Power packed high torque drives for heavy duty conveyors

Technical data for Motorized pulley 320L - 3phase - 50Hz									
Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length [mm]
0,75	8	2	37,49	0,32	18,4	356	2218	11500	450
			29,62	0,40	23,3	285	1776		
			24,17	0,50	28,5	228	1421		
			20,17	0,63	34,2	181	1128		
			15,84	0,80	43,6	142	885		
			12,74	1,00	54,2	114	710		
			9,77	1,25	70,6	92	573		
1,10	4	2	37,49	0,63	37,9	265	1651	11500	400
			29,62	0,80	47,9	209	1302		
			24,17	1,00	58,8	167	1040		
			20,17	1,25	70,4	134	835		
			15,84	1,60	89,6	105	654		
			12,74	2,00	111,5	84	524		
			9,77	2,50	145,3	67	417		
1,50	4	2	37,49	0,63	37,9	362	2255	11500	400
			29,62	0,80	47,9	285	1776		
			24,17	1,00	58,8	228	1421		
			20,17	1,25	70,4	182	1134		
			15,84	1,60	89,6	143	891		
			12,74	2,00	111,5	114	710		
			9,77	2,50	145,3	92	573		
2,20	4	2	29,62	0,80	48,3	418	2604	11500	450
			24,17	1,00	59,2	334	2081		
			20,17	1,25	70,9	165	1651		
			15,84	1,60	90,3	109	1302		
			12,74	2,00	112,2	167	1040		
			9,77	2,50	146,4	134	835		
3,00	4	2	20,17	1,25	69,2	362	2255	11500	500
			15,84	1,60	88,1	285	1776		
			12,74	2,00	109,5	228	1421		
			9,77	2,50	142,8	182	1134		
4,00	2	2	29,62	1,60	95,2	380	2368	11500	500
			24,17	2,00	116,7	304	1894		
			20,17	2,50	139,8	234	1514		

Technical data for Motorized pulley 320M-H - 3phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length [mm]
0,75	12	3 (320H)	61,21	0,13	7,5	876	5475	35000	550
		2 (320M)	43,50	0,16	10,6	712	4453	20000	500
			36,11	0,20	12,7	570	3562		
			28,64	0,25	16,1	456	2841		
			23,46	0,32	19,6	356	2218		
			18,13	0,40	25,4	285	1776		
			14,47	0,50	31,8	228	1421		
			11,82	0,63	38,9	181	1128		
			9,23	0,80	49,8	142	885		
1,10	12	3 (320H)	61,21	0,13	7,7	1286	8039	35000	550
			50,15	0,16	9,4	1045	6531		
		2 (320M)	35,42	0,20	13,3	836	5225	20000	500
	8	2 (320M)	43,50	0,25	16,6	669	4181	20000	500
			36,11	0,32	19,9	522	3252		
			28,64	0,40	25,1	418	2604		
			23,46	0,50	30,7	334	2081		
			18,13	0,63	39,7	265	1651		
			14,47	0,80	49,8	209	1302		
			11,82	1,00	60,9	167	1040		
			9,23	1,25	78,0	134	835		
1,50	8	3 (320H)	75,20	0,16	9,4	1425	8906	35000	550
			61,21	0,20	11,6	1140	7125		
		2 (320M)	43,50	0,25	16,3	912	5700	20000	500
			35,42	0,32	20,0	712	4436		
			28,64	0,40	24,8	570	3551		
			23,46	0,50	30,3	456	2841		
			18,13	0,63	39,2	362	2255		
			14,47	0,80	49,1	285	1776		
			11,82	1,00	60,1	228	1421		
			9,23	1,25	76,9	182	1134		
2,20	8	3 (320H)	61,21	0,20	11,4	1672	10450	35000	550
			50,15	0,25	14,0	1338	8362		
		2 (320M)	36,11	0,32	19,4	1045	6531	20000	500
			28,64	0,40	24,4	836	5225		
			23,46	0,50	29,8	669	4181		

Motorized Pulley 320L-M-H

Power packed high torque drives for heavy duty conveyors

Technical data for Motorized Pulley 320M/H - 3 phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length [mm]
2,20	4	2 (320M)	36,11	0,63	40,0	522	3252	20000	500
			28,64	0,80	50,5	418	2604		
			23,46	1,00	61,6	334	2081		
			18,13	1,25	79,7	265	1651		
			14,47	1,60	99,9	209	1302		
			11,82	2,00	122,3	167	1040		
			9,23	2,50	156,6	134	835		
3,00	6	3 (320H)	61,21	0,25	15,4	1824	11400	35000	550
			50,15	0,32	18,8	1425	5906		
			38,74	0,40	24,4	1140	7125		
	4	2 (320M)	43,50	0,50	33,1	912	5700	20000	500
			35,42	0,63	40,7	727	4525		
			28,64	0,80	50,3	570	3562		
			23,46	1,00	61,4	456	2841		
			18,13	1,25	79,4	362	2255		
			14,47	1,60	99,5	285	1776		
			11,82	2,00	121,8	228	1421		
			9,23	2,50	156,0	182	1134		
4,00	6	3 (320H)	50,15	0,32	18,8	1900	11875	35000	550
			38,74	0,40	24,4	1520	9499		
			30,94	0,50	30,5	1216	7600		
	4	2 (320M)	35,42	0,63	40,7	965	6031	20000	500
			28,64	0,80	50,3	760	4735		
			23,46	1,00	61,4	608	3788		
			18,13	1,25	79,4	486	3028		
			14,47	1,60	99,5	380	2368		
			11,82	2,00	121,8	304	1894		
			9,23	2,50	156,0	243	1514		
5,50	4	3 (320H)	61,21	0,40	23,2	2090	13062	35000	550
			50,15	0,50	28,3	1672	10450		
			38,74	0,63	36,7	1327	8294		
			30,94	0,80	45,9	1045	6531		
		2 (320M)	23,46	1,00	60,5	836	5225	20000	500
			18,13	1,25	78,3	671	4180		
			14,47	1,60	98,1	524	3259		
			11,82	2,00	120,1	418	2604		
			9,23	2,50	153,8	334	2081		

Technical data for Motorized Pulley 320M/H - 3 phase - 50Hz

Rated power [kW]	Poles n.	Gear stages n.	Gear ratio i	Rated speed of the shell [m/s]	Rated revolutions of the shell [min^{-1}]	Rated torque of Motorized pulley [Nm]	Rated tangential force [N]	Max. belt tension T1+T2 [N]	Min. length [mm]
7,50	2	3 (320H)	61,21	0,80	47,0	1424	8909	35000	550
			50,15	1,00	57,3	1140	7125		
			38,74	1,25	74,2	911	5700		
		2 (320M)	28,64	1,60	100,4	712	4453	20000	500
			23,46	2,00	122,5	570	3562		
			18,13	2,50	158,6	456	2850		

Standard weight for Motorized Pulley 320L

Rated power [kW]	Poles n.	Gear stages n.	Standard weight [kg] for standard RL [mm]												
			400	450	500	550	600	650	700	750	800	850	900	950	1000
0,75	8	2	---	78,0	82,0	86,0	90,0	94,0	98,0	102,0	106,0	110,0	114,0	118,0	122,0
1,10	4	2	73,0	76,0	80,0	84,0	88,0	92,0	96,0	100,0	104,0	108,0	112,0	116,0	120,0
1,50	4	2	75,0	78,0	82,0	86,0	90,0	94,0	98,0	102,0	106,0	110,0	114,0	118,0	122,0
2,20	4	2	---	82,0	86,0	90,0	94,0	98,0	102,0	106,0	110,0	114,0	118,0	122,0	126,0
3,00	4	2	---	---	90,0	94,0	98,0	102,0	106,0	110,0	114,0	118,0	122,0	126,0	130,0
4,00	2	2	---	---	90,0	94,0	98,0	102,0	106,0	110,0	114,0	118,0	122,0	126,0	130,0

Standard weight for Motorized Pulley 320M/H

Rated power [kW]	Poles n.	Gear stages n.	Standard weight [kg] for standard RL [mm]												
			400	450	500	550	600	650	700	750	800	850	900	950	1000
0,75	12	3	---	---	---	135,0	139,0	144,0	149,0	154,0	159,0	164,0	169,0	174,0	179,0
		2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
1,10	12	3	---	---	---	135,0	139,0	144,0	149,0	154,0	159,0	164,0	169,0	174,0	179,0
		2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
	8	2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
1,50	8	3	---	---	---	135,0	139,0	144,0	149,0	154,0	159,0	164,0	169,0	174,0	179,0
		2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
2,20	8	3	---	---	---	135,0	139,0	144,0	148,3	152,8	157,3	161,8	166,3	170,8	175,3
		2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
	4	2	---	---	100,0	104,0	108,0	112,0	116,0	120,0	124,0	128,0	132,0	136,0	140,0
3,00	6	3	---	---	---	135,0	139,0	144,0	148,3	152,8	157,3	161,8	166,3	170,8	175,3
	4	2	---	---	100,0	104,0	108,0	112,0	116,0	120,0	124,0	128,0	132,0	136,0	140,0
4,00	6	3	---	---	---	135,0	139,0	144,0	148,3	152,8	157,3	161,8	166,3	170,8	175,3
	4	2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
5,50	4	3	---	---	---	135,0	139,0	144,0	148,3	152,8	157,3	161,8	166,3	170,8	175,3
		2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0
7,50	2	3	---	---	---	135,0	139,0	144,0	148,3	152,8	157,3	161,8	166,3	170,8	175,3
		2	---	---	110,0	114,0	118,0	122,0	126,0	130,0	134,0	138,0	142,0	146,0	150,0

Motorized Pulley 320L-M-H

Power packed high torque drives for heavy duty conveyors

Cable specification

Available cable options:

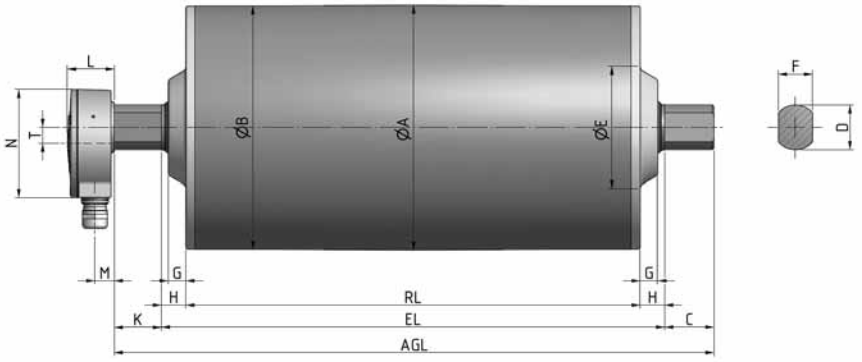
- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1 / 3 / 5 m.

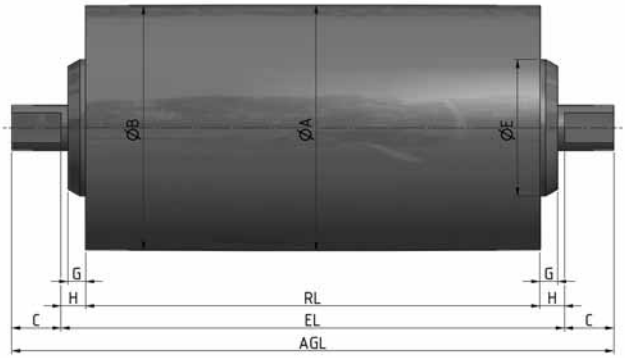
Min.Length with option

The following options increase the minimum length of the motorized pulley.

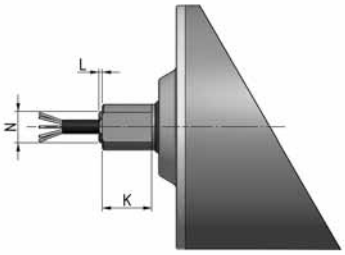
Option	RL min. with option mm
Brake	RL min. + 50 mm
Encoder SKF	RL min. + 0 mm
Encoder RLS	RL min. + 50 mm



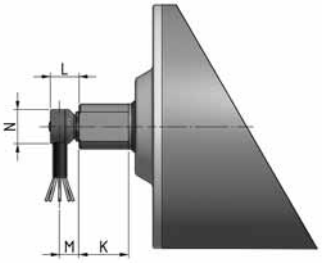
Motorized Pulley standard version with terminal box in aluminium ≤ 4,0 kW.



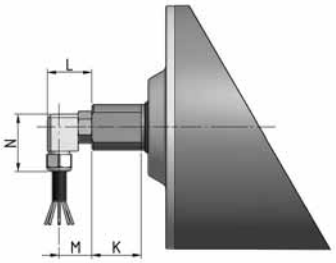
Idler Pulley in stainless steel (TS10N/TS12N).



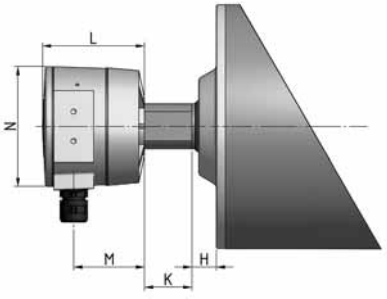
Straight connector in brass or stainless steel ≤ 4,0 kW.



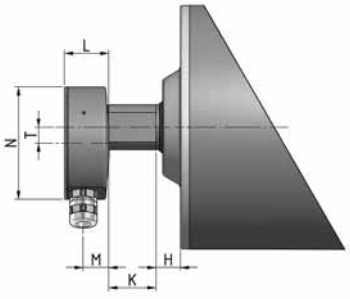
Elbow connector in stainless steel ≤ 4,0 kW.



Elbow connector in Polyamide ≤ 4,0 kW.



Large terminal box ≥ 5,5 kW.



Terminal box in stainless steel ≤ 4,0 kW.

Motorized Pulley 320L-M-H

Power packed high torque drives for heavy duty conveyors

Type/Option		A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N mm	Q mm	T mm
Motorized pulley 320L-M-H Standard version with Terminal Box in Aluminium	320L 320M 320H	323 321 321	319	50	40 40 50	96 125 148	30 30 40	15 17,5 11	25	54	41	17	95		14
Large terminal box	320L 320M 320H									54	87	62	105		
Terminal box in stainless steel	320L 320M 320H									54	37	20,5	99		14
Idler Pulley in stainless steel (TS10N/TS12N)	320L 320M 320H					120		19 22,5 20,5		54					
Straight connector in brass or stainless steel	320L 320M 320H									54	4		27		
Elbow connector in stainless steel	320L 320M 320H									54	25	18	30		
Elbow connector in polyamide	320L 320M 320H									54	39	29	50		

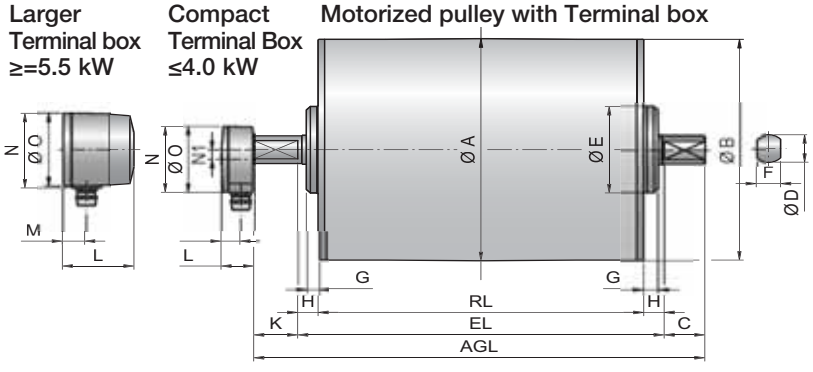
Summary table

For further information on the below listed Motorized Pulleys please consult our technical catalogue 'Motorized Pulleys for belt conveyors'.

Clas. mm	Power Kw	Type	Speed	Torque	tangential force	Max belt tension mm	RL min	A	B	C	D	E	F	G	H	K
400	2,20	L	0,80÷2,50	522÷167	2584÷835	20000	500	404	400	50	40	125	30	20	25	54
		M	0,32÷1,60	1306÷265	6465÷1325	40500	600				60	194	45	23		50
		H	0,16÷0,25	2638÷1688	13062÷8360	50000	650									
	3,00	L	0,80÷2,50	712÷228	3562÷1140	20000	500				40	125	30	20		54
	4,00	L	0,80÷2,50	950÷304	4750÷1520	20000	500				40	125	30	20		54
		M	0,50÷1,60	1520÷475	7525÷2375	40500	600				60	194	45	23		50
		H	0,25÷0,40	3070÷1919	15200÷9500	50000	650									
	5,50	L	1,25÷2,50	836÷418	4180÷2090	20000	500				40	125	30	20		54
		M	0,80÷3,15	1306÷332	6465÷1659	40500	600				60	194	45	23		50
		H	2638÷1675	2638÷1675	13063÷8294	50000	650									
	7,50	L	2,00÷3,15	712÷3,15	3525÷2238	20000	500				40	125	30	20		54
		M	1,00÷3,15	1425÷452	7054÷2238	40500	600				60	194	45	23		50
		H	0,50÷0,80	2878÷1799	14250÷8906	50000	710									
	11,00	M	1,60÷3,15	1306÷660	6465÷3265	40500	660									
		H	0,80÷1,25	2638÷1688	13063÷8360	50000	710									
	15,00	M	2,00÷3,15	1439÷907	7125÷4523	40500	660									
		H	1,00÷1,60	2878÷1799	14250÷8906	50000	710									
500	2,20	L	0,40÷1,00	1306÷522	5224÷2088	35000	600	501	497	50	60	194	42	23	25	50
		M	0,20÷0,32	2613÷1633	10542÷6532	42200	650									
	4,00	L	0,63÷2,00	1508÷475	6032÷1900	35000	600									
		M	0,32÷0,50	2969÷1900	11876÷7600	42200	650									
	5,50	L	1,00÷3,15	1306÷424	5214÷1696	35000	600									
		M	0,50÷0,80	6212÷1632	10448÷6528	42200	650									
		H	0,50÷2,50	2612÷522	10427÷2084	46000	750			-	65	192	-	95	-	-
	7,50	L	1,25÷3,15	1425÷570	5700÷22870	35000	600			50	60	194	42	23	25	50
		M	0,63÷1,00	2827÷1781	11308÷7124	42200	710									
		H	0,63÷2,50	2827÷712	11285÷2843	46000	750			-	65	192	-	95	-	-
	11,00	L	2,00÷3,15	1306÷829	5224÷3316	35000	660			50	60	194	42	23	25	50
		M	1,00÷1,60	2612÷1633	10448÷6532	42200	710									
		H	1,00÷2,50	2611÷1045	10423÷4172	46000	750			-	65	192	-	95	-	-
	15,00	L	2,50÷3,15	1425÷1131	5700÷4524	35000	660			50	60	194	42	23	25	50
		M	1,25÷2,00	2850÷1782	11400÷7128	42200	710									
		H	1,00÷3,15	3644÷1131	14450÷4515	46000	750			-	65	192	-	95	-	-
	18,50	H	1,25÷3,15	3596÷1395	14356÷5569					-	65	192	-	95	-	-
	22,00	H	1,60÷3,15	3444÷1600	13750÷6385		850/750			-	65	192	-	95	-	-
	30,00	H	1,60÷4,00	4236÷1901	16977÷7618		850	521	417	-	65	235	-	95	-	-

Motorized Pulleys 400-1000

Clas. mm	Power Kw	Type	Speed	Torque	Tangential force	Max belt tension mm	RL min	A	B	C	D	E	F	G	H	K
630	5,50	M	0,63÷3,15	2612÷522	8292÷1657	46000	750	630	626	-	65	192	-	95	-	-
	7,50	M	0,80÷3,15	2805÷712	8905÷2261					-			-		-	-
	11,00	M	1,25÷3,15	2631÷1045	8356÷3318					-			-		-	-
	15,00	M	1,60÷3,15	2804÷1424	8902÷4521					-			-		-	-
	18,50	M	2,00÷3,15	2767÷1757	8784÷5578					-			-		-	-
	22,00	M	2,00÷3,15	3222÷2090	10450÷6635					-			-		-	-
		H	1,00÷3,15	6583÷2089	20899÷6632	73600	950			-	90	268	-	84	-	-
	30,00	H	1,25÷3,15	7179÷2894	22791÷9045	98100				-			-		-	-
	37,00	H	1,60÷3,15	6920÷3513	21969÷11153					-			-		-	-
	45,00	H	2,50÷4,00	5384÷3365	17092÷10683	88300				-			-		-	-
	55,00	H	2,50÷4,00	6584÷4113	20902÷13057					-			-		-	-
800	22,0	M	1,25÷3,15	6688÷2653	16720÷6630	73600	950	800	796	-	90	268	-	88	-	-
	30,0	M	1,60÷3,15	7122÷3617	17805÷9043	98100				-			-		-	-
	37,0	M	2,00÷4,00	7030÷3513	17575÷8783					-			-		-	-
	45,0	M	3,15÷4,00	5426÷4273	13565÷10683	88300				-			-		-	-
	55,0	M	3,15÷4,00	6584÷5223	14581÷13058					-			-		-	-
		H	1,60÷4,50	13052÷4644	32630÷11610	200000	1150			-	120	330	-	80	-	-
		HD	1,00÷1,25	20884÷16707	54974÷41300		1300			-			-		-	-
	75,0	H	2,00÷4,50	14244÷6331	35610÷15828		1150			-			-		-	-
		HD	1,25÷1,60	22527÷18496	56318÷46240		1300			-			-		-	-
	90,0	H	2,50÷4,50	13674÷7597	34185÷18993		1400			-			-		-	-
		HD	1,60÷2,00	21181÷18496	52,953÷46,240		1550			-			-		-	-
	110,0	H	3,15÷4,50	13264÷9265	33160÷26163	180000	1400			-			-		-	-
		HD	2,00÷2,50	21915÷17994	54789÷44984		1550			-			-		-	-
	132,0	H	4,00÷4,50	12535÷11142	31338÷27855		1400			-			-		-	-
		HD	2,50÷3,15	21592÷15153	53981÷37882		1550			-			-		-	-
1000	160	HD	2,50÷5,50	30300÷14000	59400÷27400	300000	1400	1020	1014	-	203	520	-	145	-	-
	200	HD	2,50÷5,50	37900÷17600	74300÷34500		1450			-			-		-	-
	250	HD	2,50÷5,50	47400÷22000	92900÷43100		1500			-			-		-	-



Options

Lagging for Standard Belts

Smooth or specially grooved lagging to increase friction between the shell and conveyor belt

Product description

Characteristics

- High resistance to oil, fuel and other chemicals
- Increases friction between the shell of the Motorized Pulley and conveyor belt
- Prevents slip between the shell of the Motorized Pulley and conveyor belt
- Longitudinal grooved lagging reduces liquid build up between belt and shell
- Centered V-groove for belt tracking
- Multiple V-grooves for V-belt or round belt conveyors

Applications

- Wet applications
- For standard motorized pulleys
- Food and hygienic applications
- Flat belt, round belt or multi V-belt applications
- Hot vulcanisation for high-torque motorized pulleys

Note: The Lagging influences the outer diameter of the motorized pulley and increases its speed to that stated in the catalogue. The tangential force and the speed of the motorized pulley must be recalculated according to the increased diameter.

Cold Vulcanization lagging (R)

Lagging profile	Colour	Characteristics	Shore Hardness	Thickness mm
Smooth (S)	Black (B)	Oil and Fat resistant	70 ± 5 Shore A	3, 5, 6, 8, 10, 12
	White (W)	FDA food approved	70 ± 5 Shore A	
Longitudinal grooves (Ri)	White (W)	FDA food approved	70 ± 5 Shore A	8
Diamond Patterned (DP)	Black (B)	Oil and Fat resistant	60 ± 5 Shore A	8

Hot Vulcanization lagging (VR or XN)

Lagging profile	Colour	Characteristics	Shore Hardness	Thickness mm
Smooth (S)	Black (B)	Oil and Fat resistant	65 ± 5 Shore A	3, 5, 6, 8, 10, 12, 14
	White (W)	FDA food approved	70 ± 5 Shore A	
	Blue (BL)	FDA food approved	70 ± 5 Shore A	
Longitudinal grooves (Ri)	Black (B)	Oil and Fat resistant	65 ± 5 Shore A	6, 8, 10, 12, 14
	White (W)	FDA food approved	70 ± 5 Shore A	
	Blue (BL)	FDA food approved	70 ± 5 Shore A	
Diamond Patterned (DP)	Black (B)	Oil and Fat resistant	65 ± 5 Shore A	6, 8

For a short description of the type of lagging.

Example:

R3 / S - W

- R3 — Cold Vulcanisation
- / — 3mm thickness
- S — Smooth
- W — White

Lagging for Standard Belts

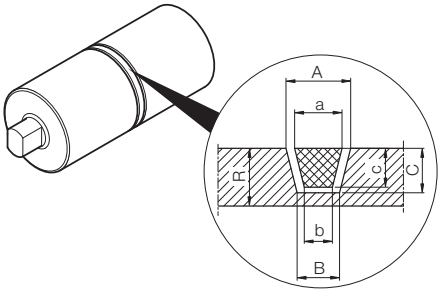
Smooth or specially grooved lagging to increase friction between the shell and conveyor belt

V-groove

Hot Vulcanization

A machined centre groove in the hot vulcanized rubber coating, allows the use of conveyor belts manufactured with a tracking profile on the underside of the belt. Designed to help maintain tracking and to prevent belt wander. Conveyors using this type of belt should be designed in such a way that the slider bed or roller bed primarily tracks the belt and not the Motorized Pulley.

Fig.: V-grooved lagging



Groove	R Standard mm	R Stainless steel	Groove A	Groove B	Groove C	Belt a	Belt b	Belt c
K6	8	5	10	8	5	6	4	4
K8	8	6	12	8	6	8	5	5
K10	10	8	14	10	7/8*	10	6	6
K13	12	10	17	11	9/10*	13	7.5	8
K15	12	10	19	13	9/10*	15	9.5	8
K17	14	12	21	13	12	17	9.5	11

* for shell in stainless steel.
All dimensions are expressed in mm.

Rule:

1) R-C >=2 for shell in steel

2) R=C for shell in stainless steel

Example for the groove description:

Central Groove K6

or for non standard measures:

Groove 11/8 x 5 Central

A/B x C

Profiled Lagging for Plastic Modular Belts

Specially produced lagging, profiled to suit the belt manufacturers series of plastic modular belt.

Product description

Characteristics

- Resistance to abrasion
- Low noise during operation
- Reduced wear of the belt
- Easy to clean
- High resistance to oil, grease and chemicals applications

Applications

- Applications for food environments
- Profiles to suit most manufacturer's standard plastic modular belts
- Motorized Pulleys with de-rated motors
- For standard Motorized Pulleys with frequency converters. The frequency converter must be prepared to reduce the power by 18%

Note: The Lagging influcences the outer diameter of the motorized pulley and increases its speed to that stated in the catalogue. The tangential force and the speed of the motorized pulley must be recalculated according to the increased diameter.

Technical data	
Material	Hot Vulcanized nitrile rubber NBR
Lagging temperature	40 /+120 °C (consider the temperature allowed for the motorized pulley)
Shore Hardness	From 65 to 70 ± 5 Shore A

Plastic modular belts manufacturer	Series	Lagging			
		80LS Z	113LS Z	138LS Z	165LS Z
Intralox	800		9	10	12
	1600	13	16	20	23
	1100 FT PE/AC		27		
	1100 FT PP	20	27	32	38
Siegling	LM50 Series 3		9	10	
Uni Chains / Ammeraal	CNB		16	20	
	MPB		9	10	
	S-MPB	12	16	20	

Z Number of teeth

Sprockets for Plastic Modular Belts

Special laser cut sprockets based on the specification of modular belt manufacturers

Product description

Characteristics

- Laser cut for excellent fitting accuracy
- Stainless steel sprockets to avoid rust
- Low friction

Applications

- For the control of plastic modular belts
- For standard Motorized Pulleys with frequency converters . The frequency converter should be prepared to reduce the power by 18%
- For Motorized Pulleys with de-rated motor
- For Motorized Pulleys with cylindrical shell and locking key
- For food processing applications

Note: The Sprockets influence the outer diameter of the motorized pulley and increases its speed to that stated in the catalogue. The tangential force and the speed of the motorized pulley must be recalculated according to the increased diameter. Please refer to the velocity factor (VF) in the table below.

Order Information

Different belt variants and materials may affect the operational characteristics. Rulmeca try to show the most popular basic profile options in this catalogue. If you are unable to find the required profiled lagging or sprocket you need, or if you have some doubts, please answer the following questions and send them to Rulmeca with your enquiry:

- Lagging or sprockets preferred?
- Thermoplastic non-modular belt or plastic modular belt?
- Motorized Pulley diameter?
- Required belt speed?
- Belt manufacturer?
- Belt series?
- Belt type and variant?
- Belt material?
- Number of teeth?
- Tooth Pitch?
- Reversible, yes or no?
- Outside diameter (D) in mm?
- Pitch circle diameter (PCD) in mm?
- Sprocket thickness (B) in mm?

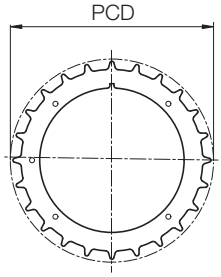
Modular belt manufacturer	Series	Sprocket 80LS				113LS				Sprocket 138LS				165LS			
		Z	PCD mm	Vf	B mm	Z	PCD mm	Vf	B mm	Z	PCD mm	Vf	B mm	Z	PCD mm	Vf	B mm
Intralox	800	8	133.00	1.63	6.00	10	164.00	1.45	6.00								
	1100	24	116.00	1.42	18.00												
		24	116.00	1.42	6.00												
	1600	14	114.00	1.40	8.00												
	2400	15	122.00	1.49	6.00	19	154.00	1.36	6.00	24	195.00	1.42	6.00	26	211.00	1.30	6.00
HabasitLINK	M1220	25	101.00	1.24	3.00												
	M2520	15	122.00	1.49	12.00												
	& M2530	15	122.00	1.49	4.00	20	164.00	1.45	4.00								
Uni Chains / Ammeraal	Flex SNB	14	114.00	1.40	3.00	18	146.00	1.29	3.00	21	170.00	1.24	3.00	24	195.00	1.20	3.00
	M-SNB & M-QNB	24	97.00	1.19	5.00												

Sprockets for Plastic Modular Belts

Special laser cut sprockets based on the specification of modular belt manufacturers

Product Range

Motorized pulleys that require sprockets, must be ordered with a cylindrical shell.



Z	Number of teeth
PCD	Pitch circle diameter in mm
Vf	Velocity factor
B	Width of sprocket in mm
Rev.	Reversible sprocket
Ref. no.	Reference number

Backstop / Anti run-back bearing

Product Description

Backstops prevent the roll-back of the belt and carried load in case of shutdown or lack of power supply.

Characteristics

- The backstop runs only in one direction
- Mounted on the rotor shaft, except for the 80LS
- Mounted in the end housing on the 80LS
- No need for an electrical connection
- Higher holding torque than an electromagnetic brake

Application

- Single direction inclined belt conveyors
- For preventing run-back of the belt and load when the power supply is off

The rotational direction of the motorized pulley with backstop is indicated by an arrow on the end housing at the electrical connection side.

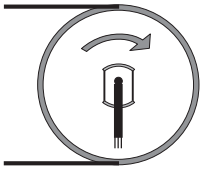


Fig.: Rotation arrow.

Product range

Rotation direction from the electrical connector side	Clockwise Anti-Clockwise

Electromagnetic brakes

Product description

The Electromagnetic brake stops and holds the load in position according to the stated holding torque.

Characteristics

- Low noise
- Wear contained
- Powered by a separate external rectifier
- Applied directly on the rotor of the motorized pulley
- When the power to the motor is lost or stopped the brake will close (mechanically engage)

Applications

- For reversible inclined and declined conveyors
- For reduced stopping times*
- For stopping and holding loads
- For approximate positioning

(*) For faster stopping times and accurate positioning, please use a frequency converter with braking function and if necessary an encoder with feedback control.

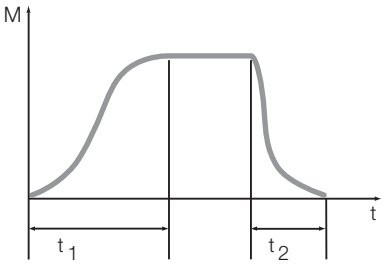


Fig.: Time t/Torque M brake closure

t_1 Closing response time (de-excitation coil): Stop

t_2 Opening response time (excitation coil): start

Response time

The response time for opening of the brake (motorized pulley start) and closing (stop motorized pulley), may vary substantially according to:

- Type and viscosity of the oil
- Level of oil in the drum motor
- Ambient temperature
- Internal motor working temperature
- Switching at input (AC-switching) or at output (DC-switching)
- Control contact of the coil brake into the alternating current supply of the rectifier (long response times), or on the output DC of the rectifier (fast response)
- Type and output voltage of the rectifier control of the brake coil

The difference between the control in alternating current and direct current is shown in the following table:

	AC Switching	DC Switching
Intervention time	Slow	Fast
Braking voltage	Nearly 1Volt	Nearly 500volt

Note: For the brake coil command in DC, the contacts must be protected against surges.

Reduction of braking torque

The declared braking torque M, is strongly influenced by the operating conditions of the motorized pulley (with oil at high temperatures) and the ambient temperature. For the calculation of the load that can be braked in safety, the braking torque provided in the tables should be reduced by 50%.

Product range							
Motorized pulley	Rated torque M (Nm)	Rated power (W)	Rated voltage (V CC)	Rated current (A)	DC switching t1 (ms)	AC switching t1 (ms)	Opening delay time t2 (start) (ms)
80LS	1.1	12	24	0.5	13	80	20
			104	0.12	13	80	20
113LS 138LS	6	24	24	1.00	26	200	30
			104	0.23	26	200	30
			207	0.12	26	200	30
165LS	12	33	24	1.38	46	260	40
			104	0.32	46	260	40
			207	0.16	46	260	40

Rectifiers

The rectifier operates the electromagnetic brake

Product description

Characteristics

- The Rectifier for the electromagnetic brake (external component), must be installed in a protective box as close as possible to the Motorized Pulley

Applications

- Motorized pulleys with electromagnetic brake
- Frequent start and stop applications
- Positioning applications
- Half-wave rectifier for standard applications
- Fast acting and multiswitch rectifier for applications in which short opening delay times are necessary

Product range

Input Voltage V AC	Brake voltage V DC	Starting voltage V DC	Holding voltage V DC	Rectifier type	Application
115	104	104	52	Fast acting rectifier	C L
230	207	207	104	Fast acting rectifier	C L
230	104	207	104	Fast acting rectifier	CS
230	104	190	52	Phase rectifier	CSL
230	104	104	104	Half wave rectifier	C
400	104	180	104	Multiswitch rectifier	C S
460	104	180	104	Multiswitch rectifier	C
460	207	207	207	Half wave rectifier	C

C Continuous running application

S Frequent start/stop application

L Less heat*

*Using a fast acting rectifier or a phase rectifier will save energy and the brake coil heats up less. These types of rectifiers generate a holding voltage lower than the starting voltage of the brake coil itself.

General rules for voltages of rectifiers

One way / Half wave rectifier:

- Output DC voltage = 0.45 x input AC voltage

Fast acting rectifier:

- 1. Bridge rectifier: output DC voltage = 0.9 x input AC voltage for 0.004- 2 s (overexitation time influenced by external resistance)
- 2. One way rectifier: output DC voltage = 0.45 x input AC voltage

Phase rectifier: - input 230 VAC (only for 104 VDC brakes)

- 1. Overexitation voltage 190 VDC for 0.15 sec fixed
- 2. Holding brake voltage 52 VDC (50% of the brake voltage is enough to keep the brake open)

Encoder SKF Bearing

Product description

Characteristics

- Supplies low resolution signals to an external control unit
- Embedded in the rotor bearing
- Cannot be combined with the electromagnetic brake option

Application

- For applications which require the continuous control of the speed, direction, and position of the Motorized Pulley belt or load

Technical data	
Rated voltage	From 5 to 24 V Cc
Max.operated current	From 8 to 10 mA
Max.output current	20 mA
High level Voltage	> 3.5 V
Low level voltage	<0.1 V

INC resolution

The INC resolution (n° of pulses per pulley revolution) depends on encoder type and can be calculated as follows:

INC = Z x i

i Gear ratio of the motorized pulley

Z Number of encoder pulses per rotor revolution

Product range		
Motorized pulley	**Bearing type**	**Pulses for rotor revolution**
from 80LS to 138LS	6202	32
165LS	6205	48

Nota: The Motorized Pulley 80LS with encoder has 2 cables-one exiting through each shaft at either end.

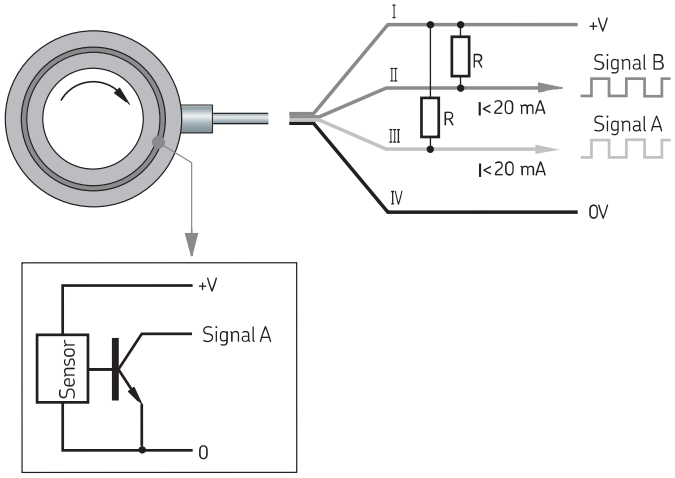
Control interface

The encoder has open collector NPN transistor outputs. When connected to the input of a control interface the required load resistances (R) have to be used. The load resistances are stated in the table overleaf. When using different interfaces or, should you have any doubts, please refer to Rulmeca or to a local electronic specialist.

Rulmeca recommends the use of an Opto-coupler for the following reasons:

- To protect the encoder
- To enable connection to other levels such as PNP
- To get the maximum potential between high and low signal

Encoder SKF



Voltage +V DC	Load Resistances R Ω
5	270
9	470
12	680
24	1500

Encoder RLS

Product description

Characteristics

- Supplies high resolution signals to an external decoder and control unit
- Embedded in the rotor bearing
- Cannot be combined with an electromagnetic brake

Applications

- For applications which require control of speed, direction, and position of the Motorized Pulley belt or load

The INC resolution

The INC resolution (n° of pulses per pulley revolution) depends on encoder type and can be calculated as follows:

INC = Z x i

i Gear ratio of the motorized pulley

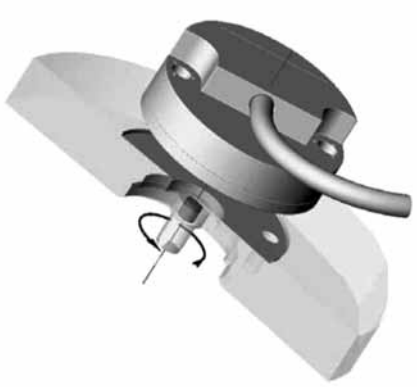
Z Number of encoder pulses per rotor revolution

Product range

Motorized pulley	Encoder type	Rated voltage V DC	Max. operating current mA	Pulses per rotor revolution p	Max.cable length m	Precision °
80LS - 320H	RS422A 5V	5	50	1024	50	0.5

Note: Other resolutions are available on request.

Encoder RLS

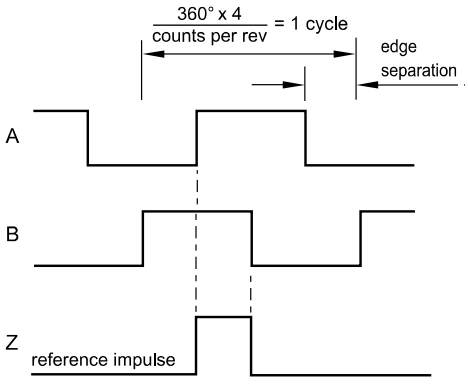


Data sheet
RM44D01_04
RM44IC - Incremental, RS422A, 5V

Alternative for optical encoders

Power supply	V_{dd} = 5 V ± 5%
Power consumption	35 mA
Output signals	A, B, Z, A-, B-, Z- (RS422A)
Max cable length	50 m
Operating temperature	-25 °C to +85 °C
Ext. operat. temp.	-40 °C to +125 °C (IP64)
Edge separation	1 µs minimum

Timing diagram
(complementary signals not shown)

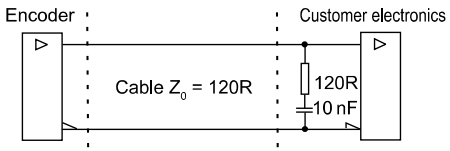


B leads A for clockwise rotation of magnetic actuator.

Resolution options (counts per rev)	Maximum speed (rpm)	Accurancy	Hysteresis
320, 400, 500, 512	30000	±0.7°	0.18°
800, 1000, 1024	20000	±0.5°	0.18°
1600, 2000, 2048	10000	±0.5°	0.18°
4096	5000	±0.5°	0.18°
8192	2500	±0.5°	0.18°

* Worst case within operational parameters including magnet position and temperature.

Recommended signal termination

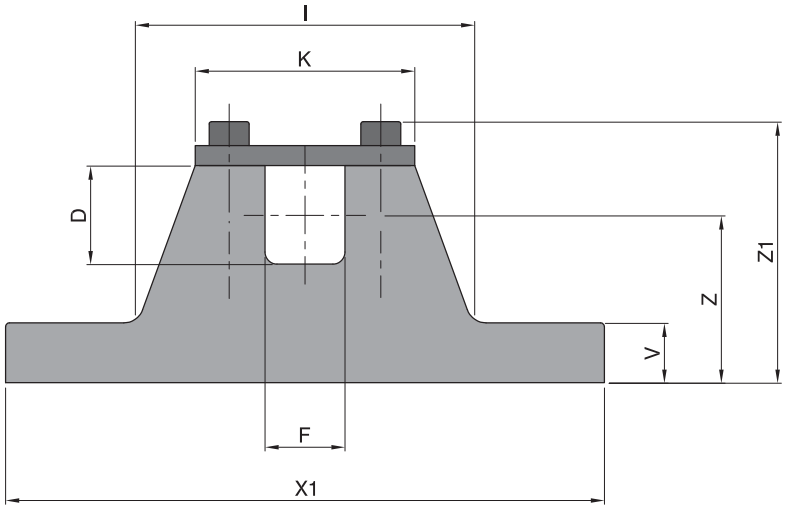


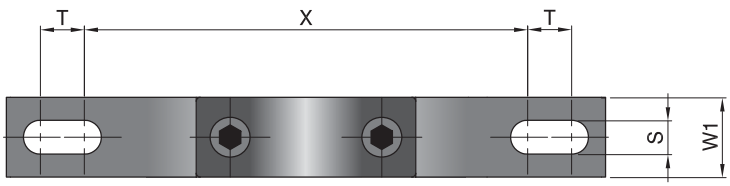
Connections		
Pin Nr.	**Function**	**Wire colour**
1	Shield	-
2	Z	White
3	B	Green
4	A	Grey
5	V_{dd}	Red
6	Z-	Brown
7	B-	Yellow
8	A-	Pink
9	GND	Blue

Accessories

Mounting brackets for Motorized Pulley and Idler

Product range																
Motorized pulley	Type	Material	D [mm]	F [mm]	I [mm]	K [mm]	S [mm]	T [mm]	V [mm]	W1 [mm]	X [mm]	X1 [mm]	Z [mm]	Z1 [mm]	Thread	Weight [kg]
80LS	KL 20	Aluminium	20	14	57	38	6,5	9	12	10	72	103	35	55	M6	0,14
113LS	KL 25	Aluminium	25	20	85	55	8,5	11	15	20	110	150	42	66	M6	0,51
138LS	KL 30-A	Aluminium	30	20	89	55	8,5	11	15	20	110	150	44,5	71	M6	0,54
138LS	KL 30-B	Cast iron with black powder coat	30	20	86	57	11	17	12	24	110	180	44,5	72	M8	1,4
165LS-320M	KL 41-HD	Steel with black powder coat	40	30	84	62	14	20	22	40	110	190	50	83	M8	2,1
165LS-320M	KL 41-S/S	Stainless steel	40	30	84	62	14	20	22	40	110	190	50	83	M8	1,9
320H	KL 42	Steel with black powder coat	50	40	121	90	18	30	25	50	150	250	70	110	M8	4,5





Tension Rollers

Alternatives to standard Idler Pulleys

General characteristics

APPLICATION: For use on unit handling belt conveyors where Motorized Pulleys up to 165LS are used. Can be applied to most environments including wet, with specifications suitable for food handling.

NOTE: when required smaller roller diameters are available for limited space or weight applications.

STANDARD EXECUTION: steel or galvanized steel tube, steel shaft, shaft executions milled or drilled and threaded, labyrinth seals or external bearings 2RS.

Roller type:

RSP: With 2RS bearings seated in counter bored tube.

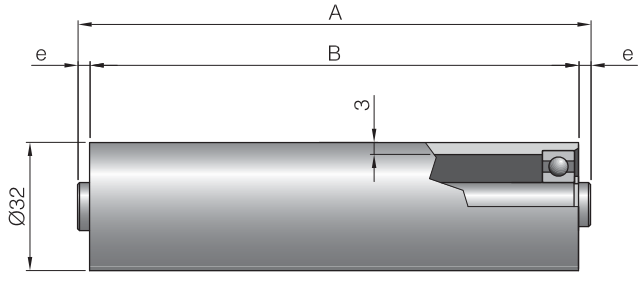
MPS: With 2RS bearings seated in counter bored tube and labyrinth seals with semi-hermetic outer trim in galvanized steel.

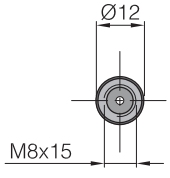
117: with polymer PA6 bearing seats and dual screen 2Z bearings lubricated for life.

RTL: with polymer PA6 bearing seats and labyrinth seals with semi-hermetic outer trim in galvanized steel.

OPTIONS: Electrolytic galvanized or stainless steel shaft, galvanized or stainless steel tube for food and / or wet applications.

Roller type	Dimensions mm								Standard execution		
	Ø D	s	d	e	Ch x g	M	C max	Bearing	Shaft	Tube	Sealings
RSP/6H	32 J	3	12	4		M8 x 15	500	6001 2RS	steel	galvanized steel	2RS Bearings
MPS/3	38 N	2,6	15	6,5	17 x 9		500	6202	steel	steel	labyrinth
MPS/3	38 N	2,6	15	6,5		M10 x 18	600	6202	steel	steel	
117/15	51 J	2	15	4	12 x 9		700	6202 2Z	steel	galvanized steel	Metal screen
117/15	51 J	2	15	4		M10 x 18	700	6202 2Z	steel	galvanized steel	2Z Bearings
RTL/1	60 J	2	15	4	17 x 9		600	6202	steel	galvanized steel	labyrinth
RTL/1	60 J	2	15	4		M10 x 18	700	6202	steel	galvanized steel	
RSP/C9	50 N	3	20	4	14 x 12		800	6204 2RS	steel	steel	2RS Bearings
RSP/C9	50 N	3	20	4		M12 x 20	800	6204 2RS	steel	steel	
RSP/C9	50 N	6	20	4	14 x 12		800	6204 2RS	steel	steel	
RSP/C9	50 N	6	20	4		M12 x 20	800	6204 2RS	steel	steel	
RSP/3C	60 N	6	25	4	18 x 12		1000	6205 2RS	steel	steel	
RSP/3C	60 N	6	25	4		M16 x 25	1000	6205 2RS	steel	steel	



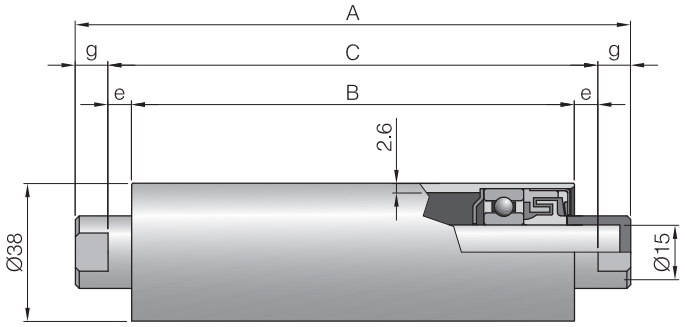


RSP/6H

Drilled and threaded shaft execution

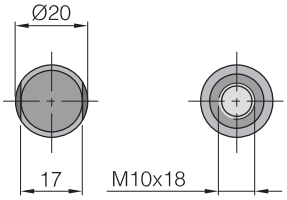
Tension rollers

Alternatives to standard Idler Pulleys



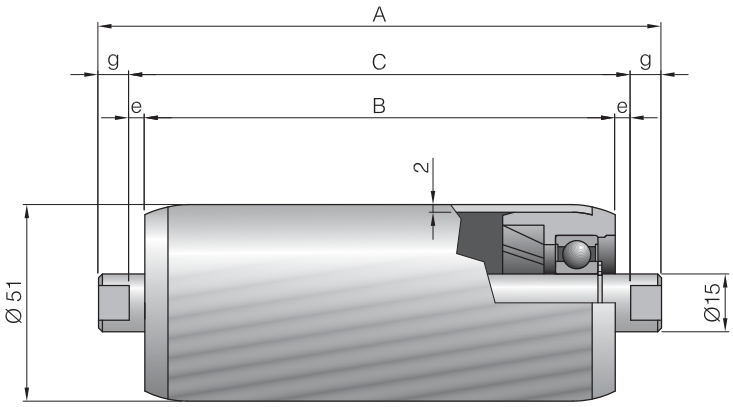
MPS/3

shaft execution with key obtained with metal sleeve



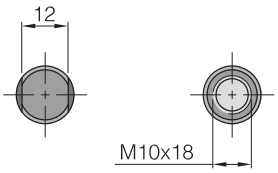
MPS/3

drilled and threaded shaft execution



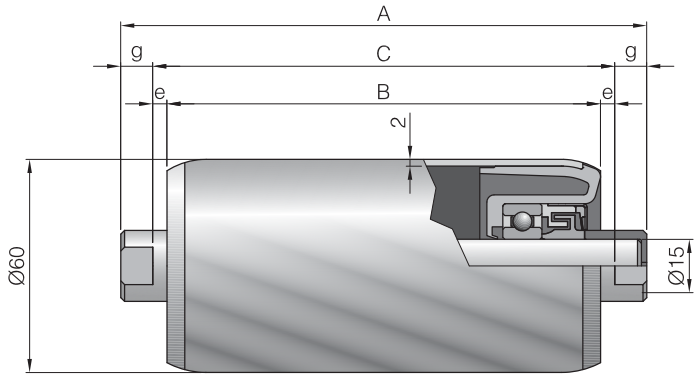
117/15

flats shaft execution



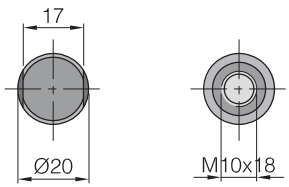
117/15

drilled and threaded shaft execution



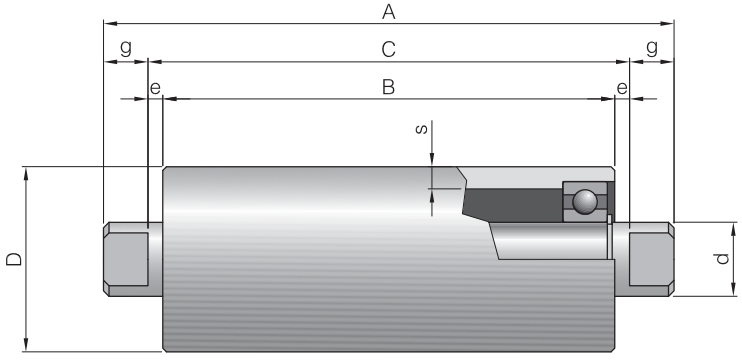
RTL/1

shaft execution with key obtained with metal sleeve



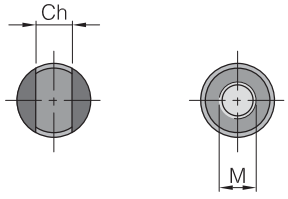
RTL/1

drilled and threaded shaft execution



RSP/C9, 3C

flats shaft execution



RSP/C9, 3C

drilled and threaded shaft execution

Tension rollers

Alternatives to standard Idler Pulleys

Technical data and options on request						
Roller type	Ø D	Max Speed rev/min	Max Speed m/s	Max Capacity daN	Options Shaft	Options Tube
RSP/6H	32 J	600	1	100	J, I	N, I
MPS/3	38 N	600	1.2	110	J, I	J, I
MPS/3	38 N	600	1.2	150	J, I	J, I
117/15	51 J	600	1.3	120	J, I	N, I
117/15	51 J	600	1.3	150	J, I	N, I
RTL/1	60 J	500	1.6	120	J, I	N, I
RTL/1	60 J	500	1.6	160	J, I	N, I
RSP/C9	50 N	700	1.8	180	J, I	J, I
RSP/C9	50 N	700	1.8	180	J, I	J, I
RSP/C9	50 N	700	1.8	230	J, I	J
RSP/C9	50 N	700	1.8	230	J, I	J
RSP/3C	60 N	700	2.2	280	J, I	J
RSP/3C	60 N	700	2.2	280	J, I	J

Calculated flow rate at full load and maximum speed for a theoretical bearing life of 10,000 hours.

Contact Rulmeca for limit loads or other technical details.

The roller capacity must be greater than the belt tension T1 plus the carried load to avoid over deflection of the shaft and bearings.

Key options

Tube:
N = black steel
J = electrolytically galvanized
I = stainless steel AISI 304

Shaft:
J= electrolytically galvanized
I = stainless steel AISI 304

For higher flow rates and protection ratings up to IP67, please use Idler pulleys of the same series and diameters of Motorized Pulleys, presented in the relative drawings and tables. For special rollers contact Rulmeca.

Planning Section

Environmental conditions

Hygienic conditions

For food processing and other applications where hygiene is paramount we recommend the following materials, connectors and accessories:

- Stainless steel Shell,
- Stainless steel Shaft,
- Stainless steel End housing - TS8N/10N version.,
- IP66 Sealing with NBR or FPM with stainless steel labyrinth motorized pulleys
- Hot vulcanized Lagging, FDA approved, white nitrile rubber NBR or in polyurethane PU
- Oil, food-grade, synthetic
- Stainless steel Terminal box
- Straight or elbow connectors in stainless steel
- Diamond patterned lagging is not suitable for food processing as it can be difficult to clean and leave traces of bacteria

Conveyor frame

According to EHEDG design rules, it is highly recommended to incorporate rust-free open conveyor frames to facilitate easy cleaning, wash down and disinfection of the conveyor, motorized pulley and belt. The rubber material shall be USDA/FDA and EC1935/2004 compliant.

Wet and wash down applications

Wet and wash-down subject applications require rust-free or stainless steel materials for the motorized pulley shell and sealing system.

The following materials and accessories are available:

- Stainless steel or mild steel Shell with hot vulcanised lagging
- Stainless steel Shaft,
- End housing for saltwater resistant (80 LS-138LS) powder coating (165LS-320H) or with stainless steel shell (80LS-320M)- TS8N/10N version
- End housings for S-series, aluminium with stainless steel cover
- IP66 seal, nitrile rubber NBR or FPM, with stainless steel labyrinth
- Lagging, all types possible
- Diamond patterned lagging can be used for non-food wet applications
- Cable connectors, all types possible
- Max. 50 bar at a distance of 0.3 m
- Max. 60°C water temperature for nitrilic rubber NBR regreasable sealing
- Max. 80°C water temperature for nitrilic rubber NBR or FPM sealing

Environmental conditions

Dry and dusty applications

All Rulmeca Motorized Pulleys regardless of specification or material, are sealed to IP66 protection rating. For applications in hazardous areas requiring intrinsically safe or explosion proof motors, please contact Rulmeca.

High temperature

With Rulmeca Motorized Pulleys, the cooling is due to the contact of the shell with the conveyor belt. It is essential that every motorized pulley, has an adequate temperature difference between the internal motor and its ambient operating temperature.

All Motorized Pulleys in the catalogue are designed and tested, without lagging and with a belt for use in a maximum ambient temperature of +40 °C.

- The maximum ambient temperature for standard Rulmeca Motorised Pulleys is 40° C according to EN 60034
- Every execution is possible, stainless steel versions allow a lower heat dissipation
- Before installing, make sure that the type of oil, declared on the label of the motorized pulley, ensures a temperature range compatible with the temperature of the applications environment.
- The rubber coating for modular belts can cause overheating of the Motorized Pulley, therefore only use recommended specifications
- De-rated motors or standard motors with frequency converters, properly configured for reducing running temperatures (Reduced power and inrush current)
- The rubber lagging to increase the friction with the belts can cause overheating; comply with the limits allowed for the lagging and always connect the motors internal thermal protection.
- For motorized pulleys with motors 6, 8, 12 poles and lagging thicker than 8 mm, use standard motors with frequency converters or de-rated Motorized Pulleys
- For applications with ambient temperatures above +40 ° C, please contact Rulmeca

Environmental conditions

Low temperature

When a Motorized Pulley is operated in low temperatures (less than +5 °C), the viscosity of the oil and temperature of the motor when it is not running should be considered. Consider also that condensation inside the motorized pulley and terminal box may occur with varying wide ranging temperatures.

We recommend the use of the following materials, cables and accessories:

- Mild steel with hot vulcanised lagging or stainless steel Shell
- Stainless steel Shaft,
- End housing in salt water resistant aluminium or solid stainless steel-TS version
- Sealing stainless steel with labyrinth
- Optional special oils for low temperatures
- Use special low temperature seals in temperatures below -25 °C
- System Activation of pre-heating, to prevent condensation
- Lagging, all types possible
- Very low temperatures reduce the effectiveness of the rubber to increase friction
- Cable connections: possible all kinds
- Use of anti rust materials

Anti Condensation heating

In ambient temperatures below +1 °C, consider heating the motor windings to keep the oil viscosity, seals and internal parts at a constant temperature.

If the motor current is switched off for some time and the ambient temperature is very low, then the motor oil becomes viscous. In these situations opt for the use of condensation heating systems, also in order to avoid the formation of ice crystals within the oil seals that would result in a premature damage.

Please refer to Rulmeca.

Altitude higher than 1000 m

The operation of a motorized pulley at an altitude above 1000 m above sea level may result in a loss of power and overheating due to low atmospheric pressure and the lower density of the air, which cools the motor. The altitude of the final application should be taken into consideration when calculating the required power. For more information please contact Rulmeca.

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.

Industrial solutions

Rulmeca offers a wide range of industrial solutions for different applications and market sectors. This chapter will only give an overview of some the most important areas covered.

General logistics

Conveying in internal logistics, warehousing and storage handling covers a wide spectrum of applications, such as electronics, chemicals, food, automotive and general manufacturing. All Motorized Pulleys in this catalogue are suitable for general logistics applications.

Food application

Rulmeca motorized pulleys are ultra-hygienic and easy to clean. All motorized pulleys for food processing comply with EC 1935-2004 and FDA.

Airport logistics

Airport applications, such as check-in conveyors, X-Ray machines and scanning equipment, require low noise and frequent start / stops. Most applications use friction drive belts made of PU, PVC or rubber.

Suitable motorized pulleys:

- Standard motorized pulleys with 4 or 6 poles offer low noise levels that are typically below 56 dB.
- Motorized pulleys with Lower noise levels can be supplied on request
- Baggage handling systems (138LS-320M)
- X-Ray and check-in conveyors (113LS-138LS)
- Lagging for standard belts to increase friction
- Backstops for inclined conveyors
- Brakes for holding the belt stationary
- Halogen-free cables available

Power calculation and selection of the Motorized Pulley for unit handling

Calculation of the tangential force

F = Tangential Force [N]. $F = F_0 + F_1 + F_2 + F_3$
The tangential forces for motorized pulleys are given in the tables of the range of standard products

P_n = Belt weight per linear metre [kg/m]

P_{pr} = Weight of rotating parts of the belt conveyor per metre length (carrying and return section) [kg/m]

P_{m1} = Weight in Kg of the conveyed product on the load section, for each metre of length of the belt conveyor [kg/m]

P_{m2} = Weight in Kg of the conveyed product on the return section, for each metre of length of the belt conveyor [kg/m]

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 = Length of the conveyor in metres [m]

H = Height difference in conveyor [m]

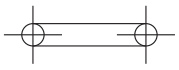
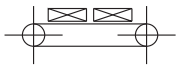
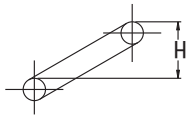
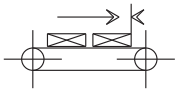
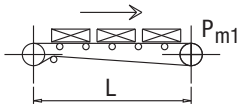
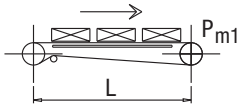
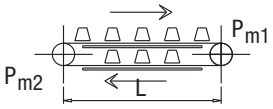
F_0–F_3 = Force [N]

Coefficient of friction

C_2 o C_4	Belt PE	Belt PP	Belt POM
Slide bed	0.30	0.15	0.10
Steel or stainless steel scroll plan slide bed	0.15	0.25	0.20

C_1 o C_3	Belt PE	Belt PP	Belt POM
Steel product	0.15	0.30	0.20
Glass product	0.15	0.15	0.15
Plastic product	0.10	0.15	0.15

Calculation of the tangential force

Conveying system	 Force without load	 Force to convey materials horizontally	 Force to convey materials on incline	 Accumulation
 Roller bed conveyor	$F_0 = 0.4 \cdot L \cdot (2P_n + P_{pr})$	$F_1 = 0.4 \cdot L \cdot P_{m1}$	$F_2 = 10 \cdot H \cdot P_{m1}$	$F_3 = 10 \cdot L \cdot P_{m1} \cdot C_1$
 Slide bed conveyor	$F_0 = 11 \cdot L \cdot P_n \cdot C_2$	$F_1 = 11 \cdot L \cdot P_{m1} \cdot C_2$	$F_2 = 10 \cdot H \cdot P_{m1}$	$F_3 = 10 \cdot L \cdot P_{m1} \cdot C_1$
 Double slide bed conveyor	$F_0 = 10 \cdot L \cdot P_n \cdot (C_2 + C_4)$	$F_1 = 10 \cdot L \cdot (P_{m1} \cdot C_2 + P_{m2} \cdot C_4)$	$F_2 = 10 \cdot H \cdot (P_{m1} - P_{m2})$	$F_3 = 10 \cdot L \cdot (P_{m1} \cdot C_1 + P_{m2} \cdot C_3)$

Required data for power calculation

Section A - Order detail

	Q.ty	Ø [mm]	Type	[kW]	Phase	Voltage [V]	[Hz]	[m/s]	RL [mm]	EL [mm]	AGL [mm]
Motorized Pulley (TM)											
Idler Pulley (UT)	Q.ty	Ø [mm]	Type						RL [mm]	EL [mm]	AGL [mm]

TM	**UT**			
Note: please mark the required options with a cross			New EDP code:	Additional comments:
		Terminal box stainless steel:	Terminal box aluminium:	
		Elbow connector stainless steel:	Elbow connector polyamide:	
		Straight connector stainless steel:	Straight connector brass:	
		Cable length [m]:	Cable type (screened/halogen free):	
		Insulation class:		
		Special certification:	CSA: FDA:	
		Backstop:	Motor turning direction (at connection side):	
		Elektromagn. brake:	AC voltage to rectifier [V]:	
		Ø 80 - 220 RLmin + 50 mm	Fail safe unit: Starts/Stops:	
		Special thermal controller:	(PTC):	
		Encoder option: SKF:	RLS: Special:	
		VFD-operation:	delivered with VFD:	
		Reversible operation:	Starts/Stops per hour:	
		Stainless steel option:		
		TS8N/TS10N:	TS7N/TS9N (with regreasable labyrinths):	
		Oil: FDA:	Synthetic:	
		Special environmental condition - kind of aggressivity:		
		Temperature of material to be conveyed if higher than 70°C:		
		Ambient temperature if higher than 40°C or lower than - 25°C:		
		Special mounting vertical:	or with an angle of: degrees	
		Cylindric shell:	Diameter (if special) [mm]:	
		Additional motor data plate required:		
		Special shell: (customer drawing has to be included)		
		Special shaft design: (customer drawing has to be included)	H [mm]:	
		F (key width) [mm]:	D [mm]: K or C (flat length) [mm]:	
		Special end housings: (customer drawing has to be included)		
		Low noise requirements [dBA]: dBA		
		Rubber lagging black/white/blue:	hot/cold vulcan. Special:	
		Thickness of the lagging [mm]:		
		Special groove measurements: (customer drawing has to be included)		
		Groove type: Groove dimens. [mm]:	Top: Bottom: Depth:	

Section B - Necessary details for power calculation

Type of conveyor:	Slider bed:	Roller bed:	Special:	Inclining/Declining:
Conveyor length [m]:		Load [kg/m]:	Belt width [mm]:	Belt material:
Belt type:		Belt thickness [mm]:	Belt manufacturer:	

Additional comments:

Environmental conditions:

Accessories:

Oil types and contents

Motorized Pulley Oil type	IEC34 Insulation Class	Ambient Temp.	ISO 3498 DIN51519	DIN 51517	Castrol	BP	ESSO Mobil	Shell	Texaco	Fuchs
80LS Standard mineral	F	-5°C +40°C	CC ISOVG 68	CLP ISOVG 68	ALPHA SP 68	ENERGOL GR-XP 68	MOBILGEAR 600 XP 68	OMALA 68	MEROPA 68	
80LS Synthetic option	F & H	-25°C +40°C	CC ISOVG 68	CLP ISOVG 68	ALPHA SYN T 68		SHC 626 68			
80LS Synthetic food grade	F & H	-40°C +40°C	CC ISOVG 68	CLP ISOVG 68						CASSIDA FLUID HFS 68
113LS Standard mineral	F	-5°C +40°C	CC ISOVG 150	CLP ISOVG 150	ALPHA SP 150	ENERGOL GR-XP 150	MOBILGEAR 600 XP 150	OMALA 150	MEROPA 150	
113LS Synthetic option	F & H	-25°C +40°C	CC ISOVG 150	CLP ISOVG 150	ALPHA SYN T 150		SHC 629 150			
113LS Synthetic food grade	F & H	-30°C +40°C	CC ISOVG 150	CLP ISOVG 150						CASSIDA GL150
138LS - 320H Standard mineral	F	-5°C +40°C	CC ISOVG 150	CLP ISOVG 150	ALPHA SP 150	ENERGOL GR-XP 150	MOBILGEAR 600 XP 150	OMALA 150	MEROPA 150	
138LS - 320H Synthetic option	F & H	-25°C +40°C	CC ISOVG 220	CLP ISOVG 220	ALPHA SYN T 220		SHC 630 220			
138LS - 320H Synthetic food grade	F & H	-30°C +40°C	CC ISOVG 220	CLP ISOVG 220						CASSIDA GL220

Oil contents in litres for vertical mounting regardless of drum width

	Litres	Special construction
Ø 80	0.2	Electrical connection to be located at the top
Ø 113	0.6	
Ø 138	1,4	
Ø 165	3.0	
Ø 220	10	
Ø 320	25	

Note: The given oil contents are valid for standard unlagged drum motors only.
For special options the oil quantity can deviate. Therefore always use the given oil quantity shown on the data plate.

Oil types and contents

RL	80LS	113LS	138LS	165LS	220M & 220H 0.37 - 0.55kW 1.1-1.5kW	220M & 220H 0.75kW 2.2-5.5kW	320L 0.75 - 4.0kW	320M & 320H 0.75 - 3.0kW	320M & 320H 4.0 - 5.5kW	320M & 320H 7.5 - 11.0kW
200	0,10									
250	0,14	0,32								
300	0,18	0,43	0,7							
350	0,22	0,54	0,9	1,2						
400	0,26	0,65	1,1	1,4	3,00		6,5			
450	0,30	0,76	1,3	1,6	3,50	4,00	7,0			
500	0,34	0,87	1,5	1,8	4,00	5,00	7,5	3,50	8,0	10,0
550	0,38	0,98	1,8	2,0	4,25	5,25	8,0	3,75	8,5	10,5
600	0,42	1,09	2,0	2,3	4,50	5,50	9,0	4,00	9,0	11,0
650	0,46	1,20	2,2	2,5	4,75	5,75	9,5	4,25	9,5	12,0
700	0,50	1,31	2,4	2,7	5,00	6,00	10,0	4,50	10,0	13,0
750	0,54	1,42	2,6	2,9	5,25	6,25	10,5	5,00	10,5	13,5
800	0,58	1,53	2,8	3,1	5,50	6,50	11,0	5,50	11,0	14,0
850	0,62	1,64	3,0	3,3	5,75	6,75	11,5	5,75	11,5	15,0
900	0,66	1,75	3,2	3,5	6,00	7,00	12,5	6,00	12,0	16,0
950	0,70	1,86	3,4	3,7	6,25	7,25	13,0	6,25	13,0	17,0
1000	0,74	1,97	3,7	3,9	6,50	7,50	14,0	6,50	14,0	18,0
1050		2,08	3,8	4,1	6,75	7,75	14,5	6,75	14,5	18,5
1100		2,19	4,0	4,4	7,00	8,00	15,0	7,00	15,0	19,0
1150		2,30	4,2	4,6	7,25	8,25	16,5	7,50	16,5	20,5
1200		2,41	4,4	4,8	7,50	8,50	18,0	8,00	18,0	23,0
1250			4,6	5,0	7,75	8,75	19,0	8,50	19,0	24,0
1300			4,8	5,2	8,00	9,00	20,0	9,00	20,0	25,0
1350			5,0	5,4	8,25	9,25	21,0	9,50	21,0	26,5
1400			5,1	5,6	8,50	9,50	22,0	10,00	22,0	28,0
1450			5,3	5,8	8,75	9,75	23,0	10,50	23,0	29,0
1500			4,8	6,0	9,00	10,00	24,0	11,00	24,0	30,0
1550			5,0	5,8	9,25	10,25	25,0	12,00	25,0	31,5
1600			5,1	6,0	9,50	10,50	26,0	13,00	26,0	33,0
1650			5,3	6,2	10,00	11,00	27,0	14,00	27,0	34,0
1700			5,5	6,4	11,50	11,50	28,0	15,00	28,0	35,0
1750			5,6	6,6	12,00	12,00	29,0	16,00	29,0	36,0
1800			5,8	6,8	13,00	13,00	30,0	17,00	30,0	37,0
1850			5,9	7,0	13,50	13,50	30,5	18,00	30,5	38,5
1900				7,1	14,00	14,00	31,0	19,00	31,0	40,0
1950				7,3	15,50	14,50	31,5	20,00	31,5	40,5
2000				7,5	15,00	15,00	32,0	21,00	32,0	41,0

80LP-113LP Connection diagrams

Connection diagrams for Motorized Pulley cable connection 80LP - 113LP

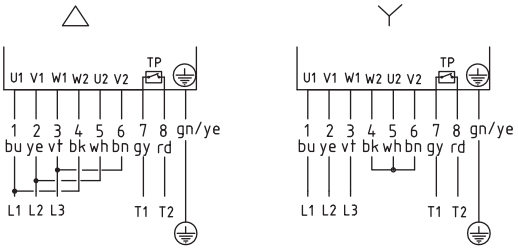
Colors or lead numbers for standard turning direction clockwise.
(lead numbers for screened cable)

TP - Thermal protector T1 & T2

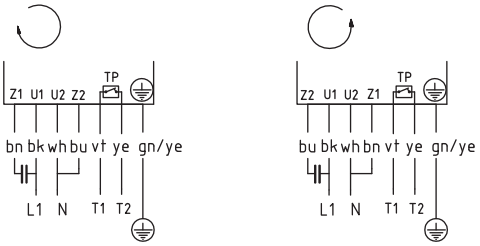
Color code

gn - green
ye - yellow
bu - blue
bn - brown
vt - violette
bk - black
wh - white
rd - red
gy - grey

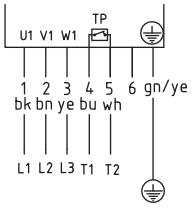
3-Ph motor
dual voltage
with TP



1-Ph motor
with TP



3-Ph motor
single voltage
with TP &
6 leads



Lead 6 not used

80LS-165LS Connection diagrams

Connection diagrams for Motorized Pulley cable connection 80LS - 165LS
ELB - only single voltage

Lead numbers for standard turning direction clockwise.

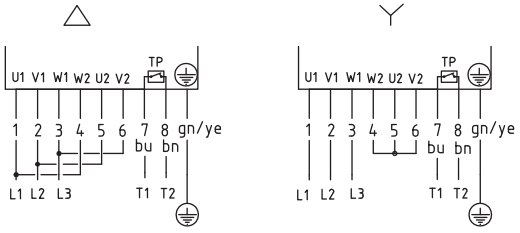
TP - Thermal protector T1 & T2

ELB - Electromagnetic brake B1 & B2

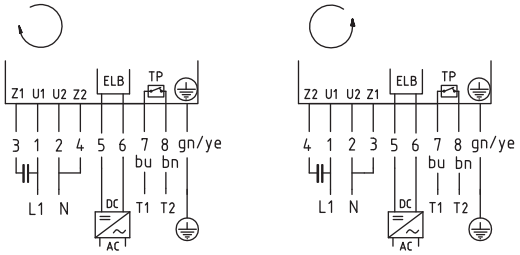
Color code

gn - green
ye - yellow
bu - blue
bn - brown

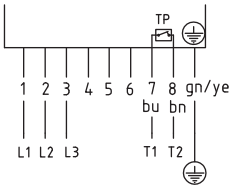
3-Ph motor dual voltage with TP



1-Ph motor with TP & ELB optional

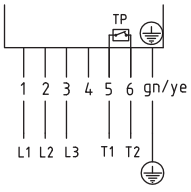


3-Ph motor single voltage with TP & 9 leads



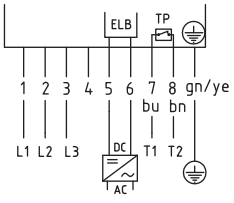
Leads 4, 5, 6 not used

3-Ph motor single voltage with TP & 7 leads



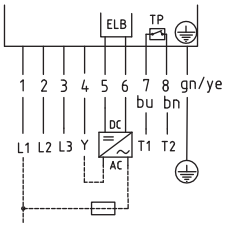
Lead 4 not used

3-Ph motor single voltage with TP & ELB



Lead 4 not used

3-Ph motor single voltage with TP & ELB



Use lead 4 for internal ELB only!

113LS Connection diagrams

Connection diagrams for Motorized Pulley
Terminal box with WAGO clamp 113LS
(ELB only single voltage)

Characters in brackets for 2 stage gearbox turning direction clockwise.

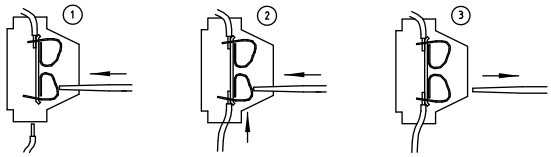
TP - Thermal protector T1 & T2

ELB - Electromagnetic brake B1 & B2

Color code

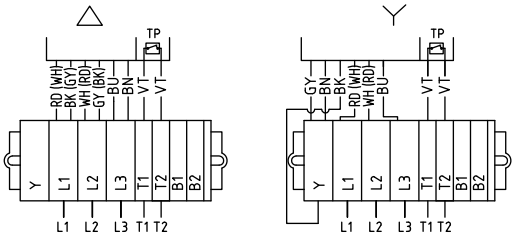
RD - Red
BN - Brown
BK - Black
GY - Grey
BU - Blue
VT - Violet
WH - White

Assembly instruction

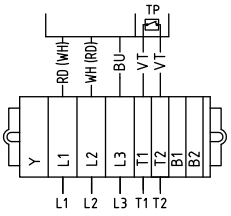


Push down clamp | Push in cable | Release clamp

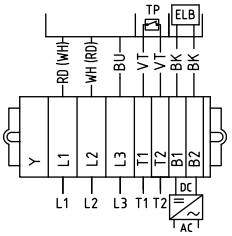
3-Ph motor
dual voltage
with TP



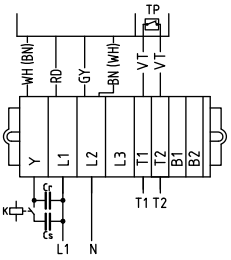
3-Ph motor
single voltage
with TP



3-Ph motor
single voltage
with TP & ELB

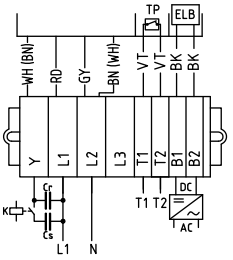


1-Ph motor
with TP



Cr - Run capacitor
Cs - Start capacitor

1-Ph motor
with TP & ELB



Cr - Run capacitor
Cs - Start capacitor

138LS - 400L Connection diagrams

Connection diagrams for Motorized Pulley Terminal box with WAGO clamp 138LS - 400L (138LS - ELB only single voltage)

Characters in brackets for 2 stage gearbox turning direction clockwise.

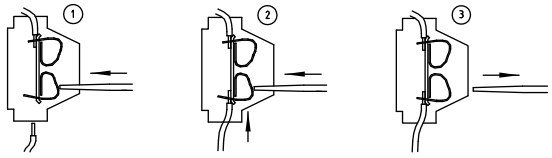
TP - Thermal protector T1 & T2

ELB - Electromagnetic brake B1 & B2

Color code

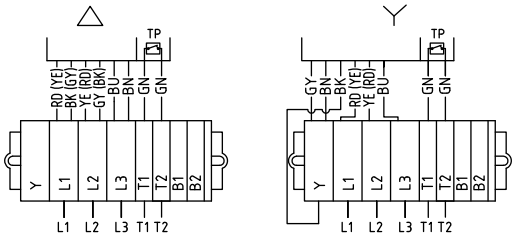
RD - Red
YE - Yellow
BK - Black
GY - Grey
BU - Blue
GN - Green
WH - White
BN - Brown

Assembly instruction

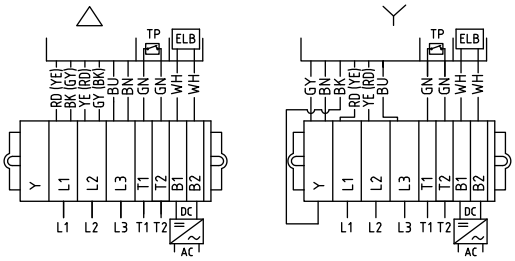


Push down clamp Push in cable Release clamp

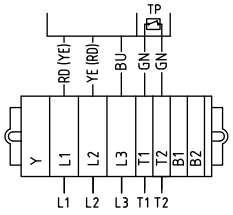
3-Ph motor dual voltage with TP



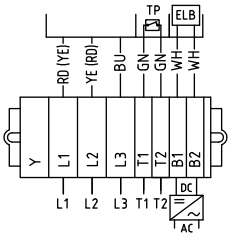
3-Ph motor dual voltage with TP & ELB



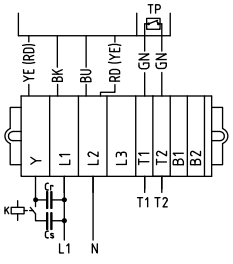
3-Ph motor single voltage with TP



3-Ph motor single voltage with TP & ELB

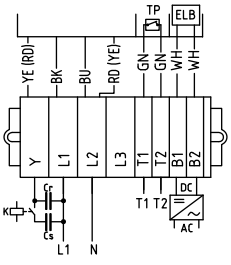


1-Ph motor with TP



Cr - Run capacitor
Cs - Start capacitor

1-Ph motor with TP & ELB



Cr - Run capacitor
Cs - Start capacitor

220M - 400L Connection diagrams

Connection diagrams for Motorized Pulley
Cable connection 220M - 400L

Lead numbers for turning direction clockwise.

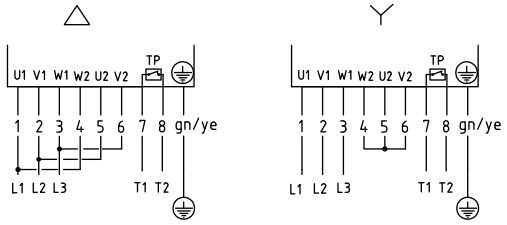
TP - Thermal protector T1 & T2

ELB - Electromagnetic brake

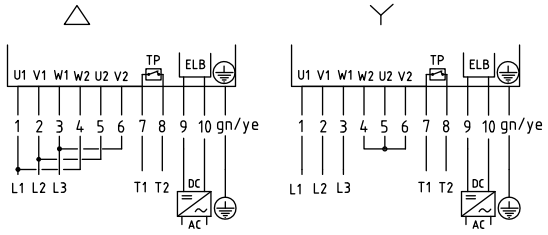
Color code

GN - Green
YE - Yellow

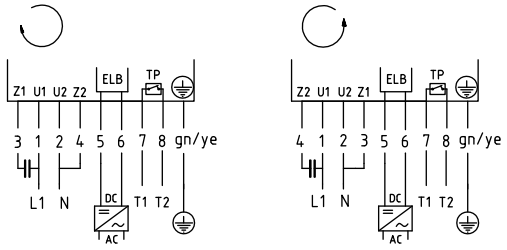
3-Ph motor dual voltage with TP



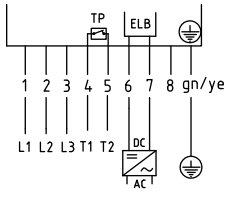
3-Ph motor dual voltage with TP & ELB



1-Ph motor with TP & ELB optional

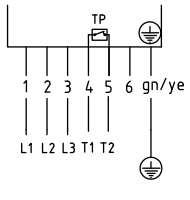


3-Ph motor single voltage with TP & ELB



Lead 8 not used

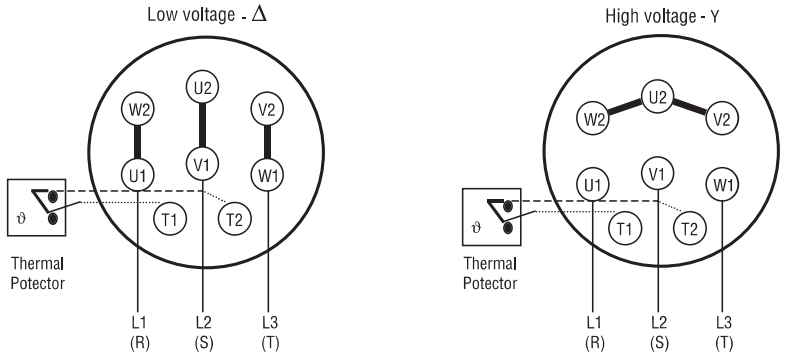
3-Ph motor single voltage with TP



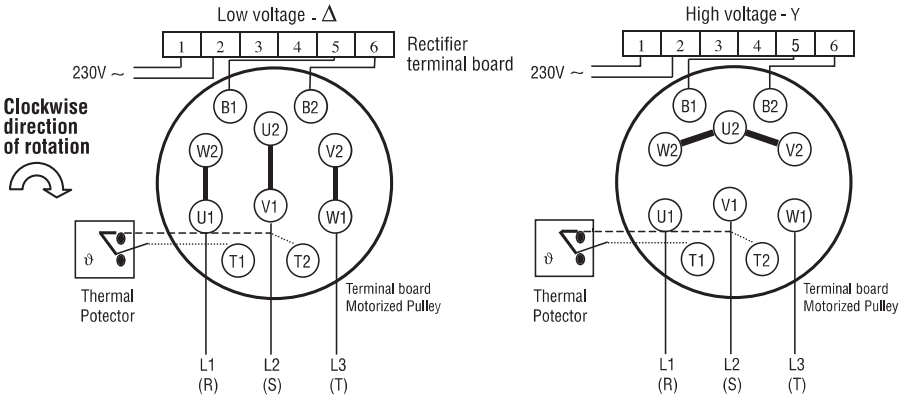
Lead 6 not used

External Connection Diagrams for Motorized Pulleys 5.5 kW - 7.5 kW

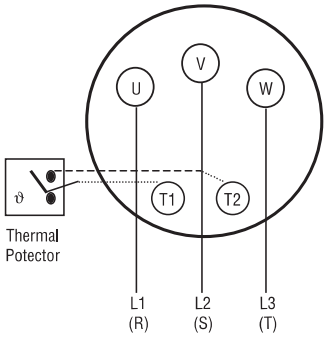
Terminal Box
5.5 kW - 7.5 kW



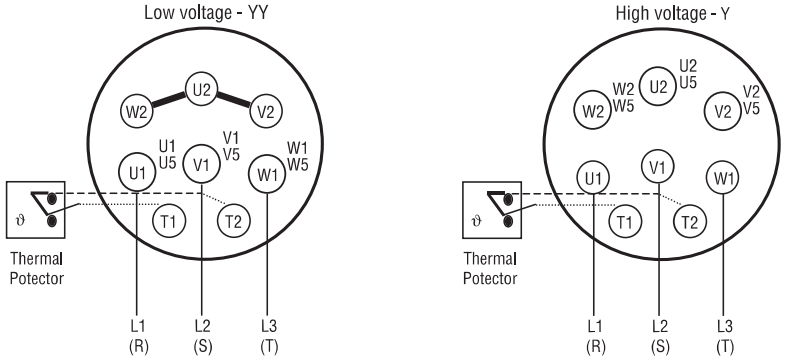
Electromagnetic Brake Configuration



3-phase single voltage
5.5 kW - 7.5 kW

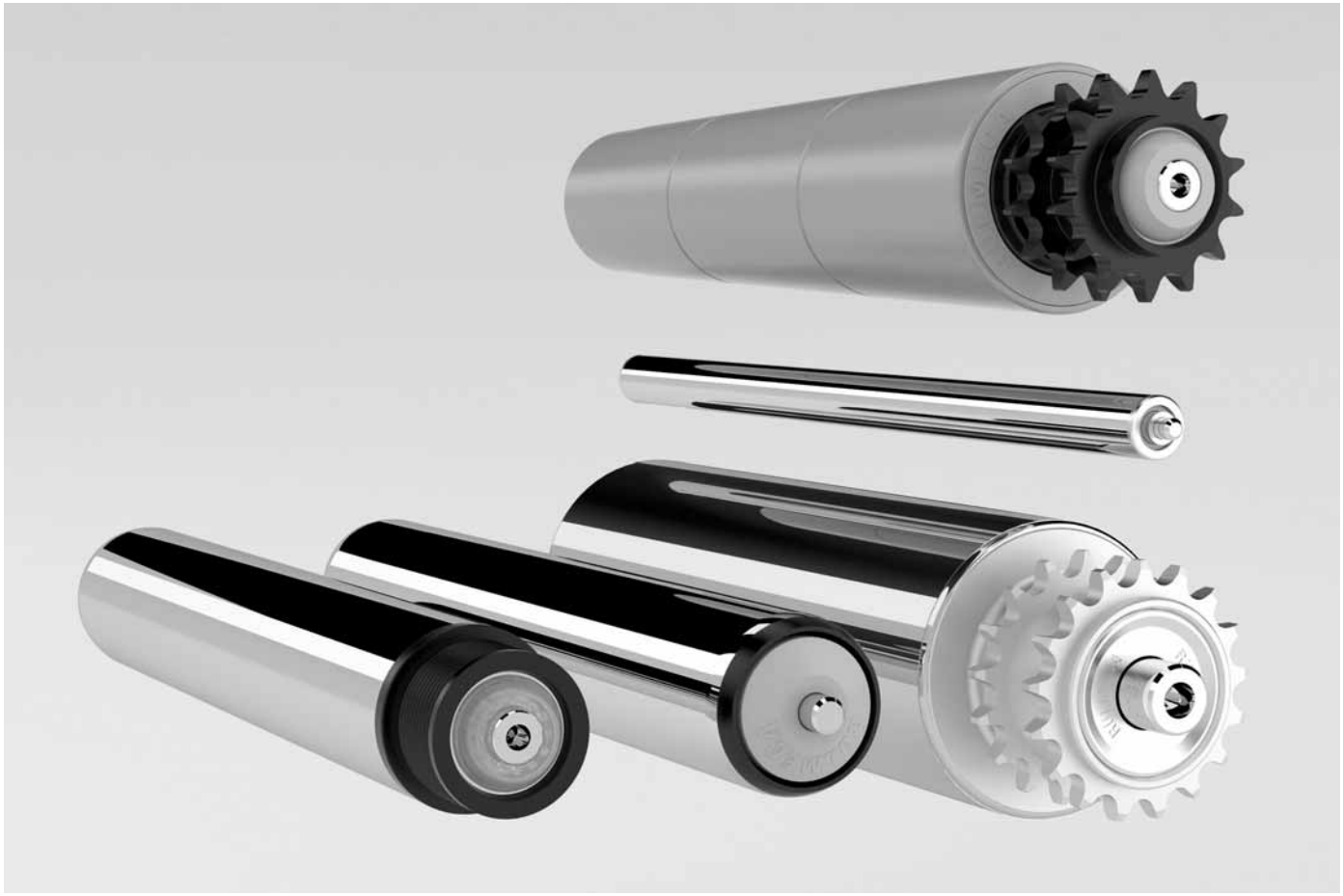


USA - Configuration



The Rulmeca product range

The Rulmeca product range for the Unit Handling sector comes complete with:



Rollers and Components for Unit Handling and Industrial Applications Catalogue

The Rulmeca product range

The Rulmeca product range for the Unit Handling sector comes complete with:

Solutions for Dynamic Warehouses Catalogue

Notes

Notes

2° ED. MOT EN 03/14

Moving ahead.

Rulmeca Holding S.p.A
Via A. Toscanini 1
I-24011 Almè (BG) Italy
Tel. +39 035 4300111
Fax +39 035 545523

Please contact your local Rulmeca Company, our contact details you will find in our web site:
www.rulmeca.com

RULMECA®