



## Motorized Pulley 138LS, Ø 5.45 in. (138 mm)

Motorized Pulley 138LS, with machined helical gearbox, performs with a gearbox efficiency of 95% of nominal power, in a compact diameter of 5.45 inches. With a minimum roller length (RL) of 11.81" and powers ranging from 0.13 to 1.0 HP, this Motorized Pulley is suitable for most small diameter applications. These include:

- Light agricultural conveyors
- Light C & D debris conveyors
- Mobile and portable conveyors

Motorized Pulley 138LS features a standard enclosure class of IP66/67 and is also available in stainless steel for wash down applications.

### STANDARD SPECIFICATION of Motorized Pulley

- Crowned mild steel 5.45" shell treated with anti-rust wax
- Die cast aluminum bearing housing
- Mild steel shaft treated with anti-rust wax
- Die cast lightweight aluminum gearbox housing
- Sealing system – degree of protection IP66/67 (EN60034-5.) See page 37.
- Compact die cast aluminum terminal box with WAGO connectors
- Voltage: All common voltages available. Please specify.
- Three phase induction motor
- One out of two oil plugs is fitted with a magnet to filter the oil.
- Motor winding insulation class F
- Dynamically balanced rotor
- Oil change recommended every 50,000 operational hours for synthetic oil and 10,000 operational hours for standard oil.
- Maximum RL 70.87"
- Non standard RL lengths available
- Single phase is available in 0.33, 0.50, and 0.75 HP, supplied with a running capacitor
- To be used in the horizontal position only.

### STAINLESS STEEL options

#### TS8N

- Stainless steel shell – AISI 304 range
- Stainless steel shafts – AISI 303 range
- Stainless steel covered aluminum bearing housings – AISI 304 range
- Stainless steel oil plugs with magnet – AISI 304 range
- Compact stainless steel terminal box – AISI 304 range
- Alternatively, straight stainless steel connector – AISI 303 range with power cord.
- Regreasable stainless steel seals – AISI 303 range
- Degree of protection IP66/67 (EN60034-5.) See page 37.
- FDA & USDA food grade grease
- Option: FDA & USDA food grade recognized oil.
- Special mounting brackets are available

#### Please note:

- **Noise-sensitive Areas:** High speed 2-pole motors can cause higher noise levels and are not recommended for noise-sensitive areas
- **Technical Precautions for Design, Installation, and Maintenance:** pages 80-90
- **Environmental Considerations:** pages 78-79
- **Optional Extras:** pg 7
- **Electrical Connection Diagrams:** pages 94-100



# OPTIONAL EXTRAS

## Motorized Pulley 138LS

Specification	Availability	
Total stainless steel option AISI 304 range	TS8N with regreasable labyrinth seals	x
Food grade oil & grease - FDA & USDA recognized		x
Dust explosion proof Motorized Pulleys - ATEX 95 - Zone 22 - for applications handling dusty grain etc. According to European Directive 94/9/EC.		x
Total acid resistant stainless steel option - AISI 316		x
Black rubber lagging - Standard specifications (See page 80.) 1/8" smooth lagging - Hardness 60 ±5 Shore A		o
White smooth rubber lagging (FDA). Oil, fat & grease resistant		o
Special lagging (e.g. hot vulcanized)		o
Electromagnetic brake	Min. RL increases by 1.97"	x
Mechanical backstop	Min. RL does not increase with backstop option	x
Modified for vertical mounting		o
Modified for mounting between 5° and 90° (e.g. for magnetic separators)		o
Insulation class F with standard oil: (Allowable ambient temperature: -13°F/+104°F)		Std.
Insulation class H with synthetic oil: (Allowable ambient temperature: -13°F/+120°F)		x
Special motors for applications with no belt contact		o
Low noise drives for noise sensitive areas		x
Parallel shell		x
Thermal protector		Std.
IP66/67 Compact unpainted aluminum terminal box		Std.
IP66/67 Compact stainless steel terminal box- AISI 304 or 316 range		x
Straight or elbow connector with standard power cord		x
Straight connector with screened power cord	(See page 77 for VFD precautions)	x
Straight connector with standard power cord	(Stainless steel in AISI 304 range)	x
Voltage: single voltage (460) stator (Y winding) wired for 460v/3ph/60 Hz at terminal box		Std.
single voltage (230) stator (YY winding) wired for 230v/3ph/60 Hz at terminal box		x
2 speed motors		x
Special voltage motors		x
Single phase motors		o
CSA approved motors		x

x = Optional extras

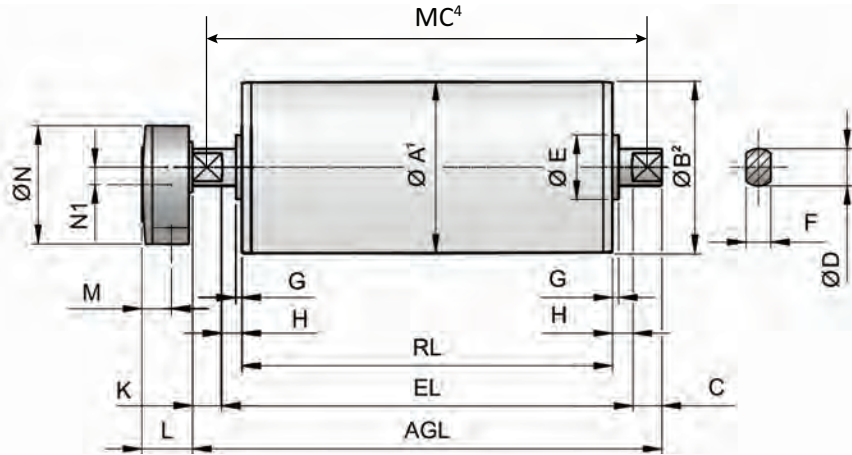
o = An option with certain limitations. Please refer to Technical precautions pages 80-90.

Std. = Fitted as standard

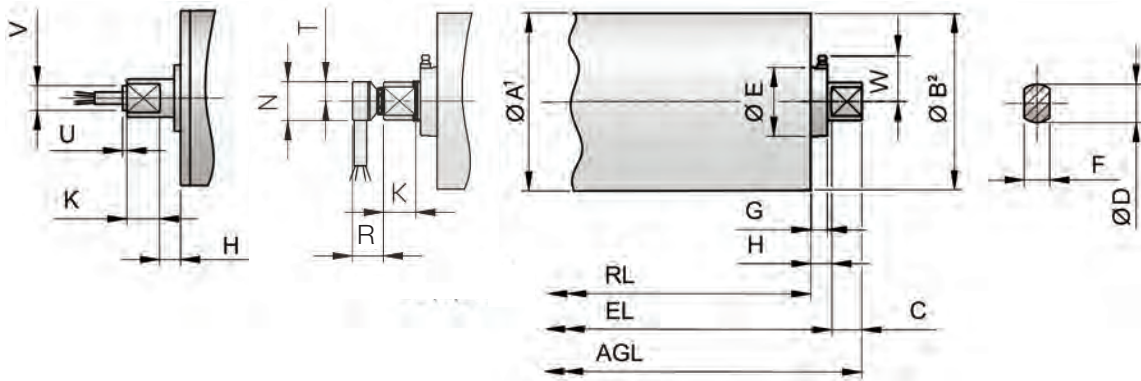


# Motorized Pulley 138LS, Ø 5.45 in. (138 mm)

Motorized Pulley with Terminal box

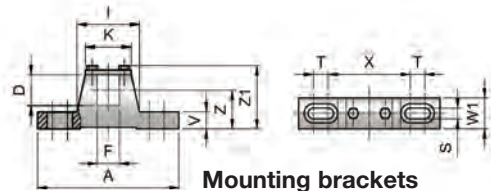


Straight connector    Elbow connector    TS8N version<sup>3</sup>



Version	Dimensions										Compact terminal box				Straight connector		Elbow connector		
	A in	B in	C in	D in	E in	F in	G in	H in	K in	W in	L in	M in	N in	N1 in	U in	V in	N in	R in	T in
Standard	5.45	5.39	0.93	1.18	2.13	0.79	0.20	0.65	0.93	-	1.61	0.95	3.74	0.55	0.14	0.77	1.18	0.85	0.59
TS8N	5.45	5.39	0.93	1.18	2.13	0.79	0.53	0.65	0.93	1.42	1.61	0.95	3.74	0.55	0.14	0.77	1.18	0.85	0.59

- 1 A dimension is outer diameter of crowned unlagged pulley shell at pulley centerline.
- 2 B dimension is outer diameter of crowned unlagged pulley shell at each end of shell.
- 3 Pulley shown is TS8N version with regreasable seals.
- 4 Mounting centers = MC = RL + W1



Motorized Pulleys	Material	Bracket Size	Part Number	Dimensions													Weight		
				A in	D in	F in	I in	K in	S in	T in	V in	W1 in	X in	Z in	Z1 in				
138LS	Cast iron painted	KL30	S2YAKL																
	Cast iron Ni plated		S2YAKM	7.09	1.18	0.79	3.39	2.24	0.43	0.67	0.47	0.95	4.33	1.75	2.83	1.54			
	Stainless steel		S3KL33																



# Motorized Pulley 138LS, Ø 5.45 in. (138 mm)

# 60 Hz

Motor		No. Gear Stages	Model	Nominal belt speed <sup>1</sup> at Full Load 60 Hz fpm	Actual belt speed <sup>1</sup> at Full Load 60 Hz fpm	Belt Pull <sup>2</sup> lbs	Max. Radial Load <sup>3</sup> T1 + T2 lbs	Min. RL in	RL Dimension inches (RL <sub>max</sub> = 70.87") Weight in lbs <sup>5</sup>										Type of Bracket
Power HP	No. of Poles								11.81	12.60	13.78	15.75	17.72	19.69	21.65	23.62	25.59	longer than 25.59	
0.13	12	3	138LS	10 12 14	10 14 16	397 318 263	1866	11.81	32	33	34	37	40	42	44	46	49	See Foot-note <sup>4</sup>	KL30 S2YAKL
		2	138LS	24 30	24 28	178 152													
0.25	8	3	138LS	18 24 30	20 24 29	384 309 254	1090												
		2	138LS	38 48	44 51	172 147													
0.33	6	3	138LS	24 30 38	25 31 38	404 325 265	1866												
		2	138LS	48 60 76	55 65 82	182 155 124													
0.50	4	3	138LS	38 48 60	38 47 58	412 331 273	1090												
		2	138LS	76 96 120 150	85 98 123 150	185 158 126 104													
0.75	2	3	138LS	48 60 76 96 120	55 64 74 93 113	416 363 310 249 205	820												
		2	138LS	150 192 240 300	166 196 244 296	139 119 95 78													
1.0	4	3	138LS	76	88	357	1090	12.60	-	34	37	41	43	45	47	49	53		
		2	138LS	96 120 150	104 129 157	304 244 201													
	2	138LS	192 240 300	207 258 314	152 122 100														

Standard RL →

- 1 Use "nominal belt speed" to specify pulley. "Actual belt speed" is presented (for pulley lagged with 1/8" thick rubber) to assist with process design calculations. See Technical Precautions page 81. Note that "actual belt speed" decreases when lagging is not used due to decreased pulley diameter.
- 2 Belt pull value allows for gearbox loss on a lagged pulley.
- 3 Pulley must not be subjected to radial load exceeding "Maximum radial load" defined above. See "Belt Tension" section in Technical Precautions, page 82.
- 4 Additional Motorized Pulley weight, specified per Roller Length:  
 25.59" ≤ RL < 39.37" Wt = 1.3 lbs/inch  
 39.37" ≤ RL < 59.06" Wt = 1.5 lbs/inch  
 59.06" ≤ RL < 70.87" Wt = 2.0 lbs/inch
- 5 All weights shown above are for pulleys with 1/8" thick rubber lagging. To calculate unlagged pulley weight subtract 0.1 lbs/in of Roller Length from above.

Rulmeca offers return, snub, and idler pulleys with dimensions to match our Motorized Pulleys on request.

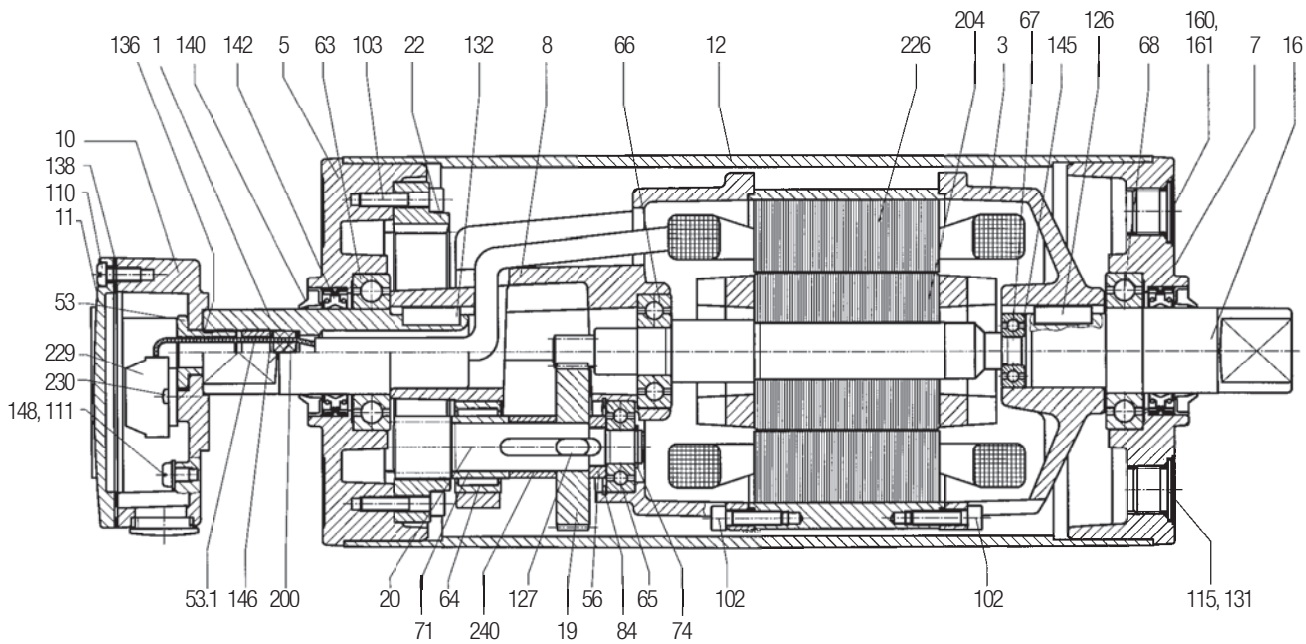


# Motorized Pulley 138LS, Ø 5.45 in. (138 mm)

## Spare parts list and sectional drawings

Pos.	Description	Pos.	Description	Pos.	Description
1	Front shaft	31	Labyrinth seal cover	110	Screw
3	Rear flange	53	Terminal box nipple	111	Screw
5	Bearing housing complete with geared rim	53.1	Cable seal nipple	113	Screw
7	Bearing housing complete	55	Spacer bushing	114	Socket set screw
8	Gearbox	56	Spacer bushing	115	Oil plug with magnet
10	Terminal box – bottom part	63	Ball bearing	126	Key
11	Terminal box cover	64	Needle bearing	127	Key
12	Shell	65-70	Ball bearing	131	Key
16	Rear shaft	71	Inner race	132	Key
19	Input wheel	74	Locking ring	136	O-ring/Rubber seal
20	Output pinion	84	Locking ring	138	Rubber seal
22	Geared rim	86	Locking ring	139	Grease nipple
23	Intermediate pinion shaft	93	Elbow or straight connector	140	Deflection seal
24	Intermediate wheel	102	Screw	142	Double lip seal
		103	Screw	143	O-ring

2-stage gearbox



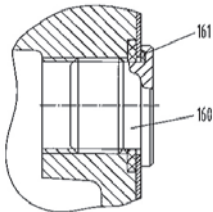


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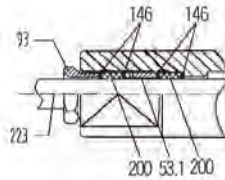
## Spare parts list and sectional drawings

Pos.	Description	Pos.	Description	Pos.	Description
145	Distance washer	160	Oil plug	210	Fixing guard
146	Washer	161	O-ring	223	Cable
148	Washer	167	Screw	226	Stator complete
150	Electromagnetic brake	200	Rubber seal	229	Terminal block
150.1	Friction disc	204	Rotor complete with pinion	230	Screw
156	Rectifier (not shown)	208	Stainless steel cover – gear end	240	Distance ring

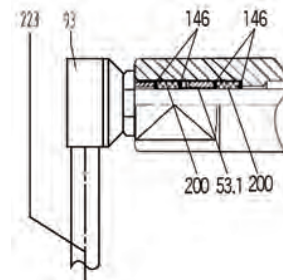
Oil plug



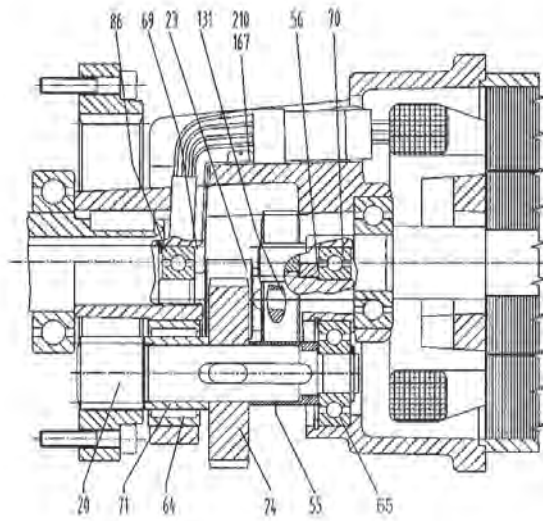
Straight cable connection



Elbow cable connection



3-stage gearbox



Electromagnetic brake

