



Motorized Pulley 138LS

Ø 5.45 in. (138 mm), helical steel gearbox

Product description

This Motorized Pulley is ideal for most package handling and food processing applications.

Characteristics

- Asynchronous 3 phase AC induction motor
- Integral motor protection
- Hardened steel helical gearbox
- Low noise operation
- Reversible operation
- Motorized Pulleys with RL greater than 31.50 inches have reinforced shaft.

Applications

- Package handling conveyors with frequent use
- Airport luggage check-in conveyors
- Dynamic weighing equipment
- Metal detectors
- Pharmaceutical equipment
- Food processing equipment
- Positive drive and modular belt conveyors
- Dry, humid and wash down applications

Technical data

| | |
|---|--|
| Type of Motor | Asynchronous squirrel-cage, IEC 34 (VDE 0530) |
| Insulation class of motor windings | Class F, IEC 34 (VDE 0530) |
| Available power supplies* | 115v/1ph/60Hz, 230v/1ph/60Hz, 230v/3ph/60Hz, 460v/3ph/60Hz |
| Seal protection rating (standard) | IP66 |
| Seal protection rating (optional) | IP69 |
| Thermal protection | Bimetallic contact |
| Allowable ambient temp, 3-ph motor | -13° F to +104° F |
| Max. Roller length (RL) | 70.87 in |

* Other power supply voltages and frequencies are available.



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Materials

| Component | Version | Aluminum | Steel | Stainless steel |
|-------------------------------|--------------------------------------|----------|-------|-----------------|
| Shell | Crowned | - | Std | Opt |
| | Cylindrical | - | Std | Opt |
| | Cylindrical with key (for sprockets) | - | Opt | Opt |
| | Special profiles | - | Opt | Opt |
| End housing | Standard | Std | - | Opt |
| Shaft | Standard | - | Std | Opt |
| | Cross-drilled and threaded, M6 | - | Opt | Opt |
| Electrical termination | Power cord, straight ss connector | - | - | Std |
| | Power cord, elbow ss connector | - | - | Std |
| | Terminal box | Std | - | Opt |

Options

- Rubber lagging for standard belts
- Profiled lagging for positive drive belts
- Profiled ss shells for positive drive belts
- Mechanical backstop
- Special smooth stainless steel end housings, slotted screw oil plugs, Viton® shaft seals and PTFE deflection seals (option TS8N) for IP69 sealing.
- Special smooth stainless steel end housings, slotted screw oil plugs, labyrinth seals (option TS7N) for IP66 sealing.
- Electromagnetic brake
- Rectifier
- Encoder
- Food grade oil (EU, FDA and USDA)
- Non-horizontal mounting (more than $\pm 5^\circ$)

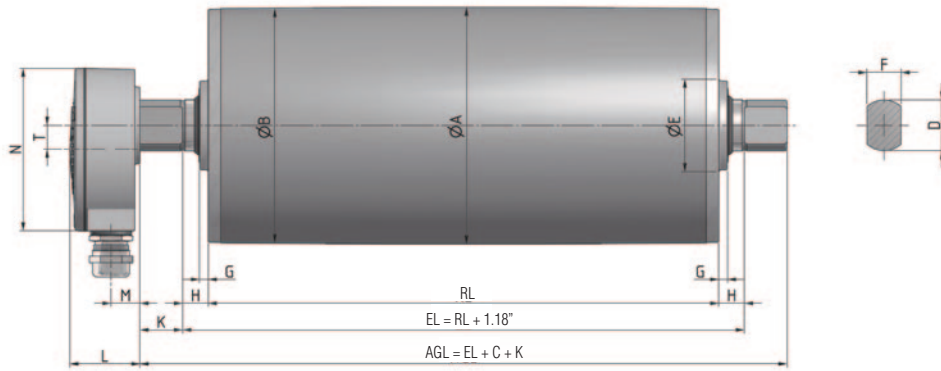
Power Cord Specifications

- Standard, shielded, 10 feet long
- Other types & lengths available upon request

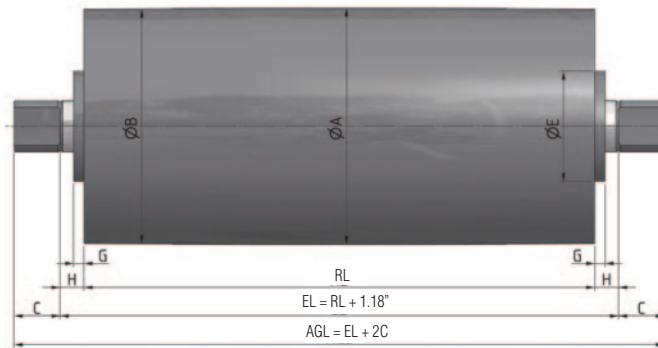


Motorized Pulley 138LS

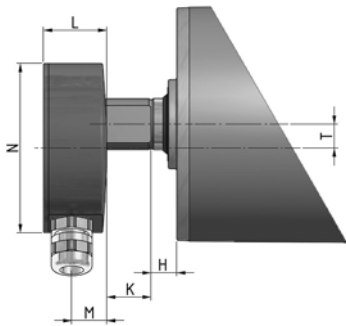
Ø 5.45 in. (138 mm), helical steel gearbox



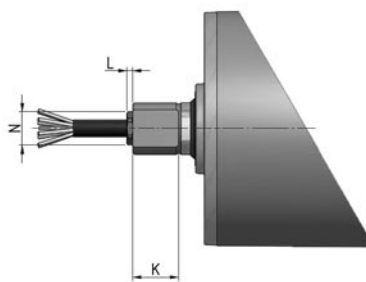
Standard Motorized Pulley with aluminum terminal box



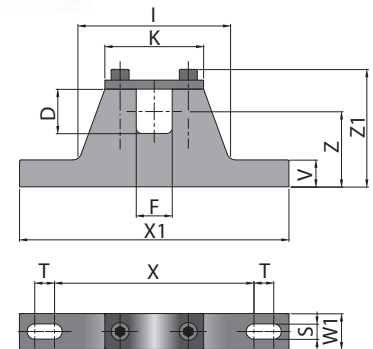
Idler Pulley in stainless steel



Terminal box in stainless steel.

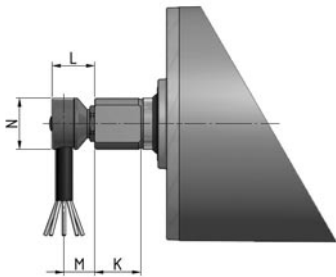


Straight connector in stainless steel.

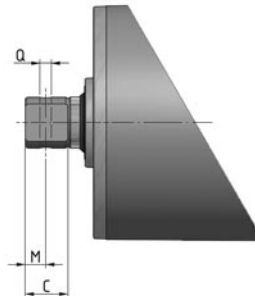


MC = Mounting bracket center-to-center spacing = $RL + 2.12''$

Mounting bracket



Elbow connector in stainless steel.



Shaft, cross-drilled and threaded.

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Dimensions for Motorized Pulley 138LS

| Type/Option | A in | B in | C in | D in | E in | F in | G in | H in | K in | L in | M in | N in | Q in | T in |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Standard version with aluminum terminal box | 5.45 | 5.39 | 0.98 | 1.18 | 2.13 | 0.79 | 0.20 | 0.59 | 0.98 | 1.61 | 0.67 | 3.74 | | 0.55 |
| Terminal box in stainless steel | | | | | | | | | 0.98 | 1.46 | 0.81 | 3.90 | | 0.55 |
| Idler pulley in stainless steel | | | | | 2.54 | | 0.24 | | 1.06 | | | | | |
| Straight connector in stainless steel | | | | | | | | | 1.06 | 0.14 | | 0.77 | | |
| Elbow connector in stainless steel | | | | | | | | | 1.06 | 0.94 | 0.71 | 1.18 | | |
| Cross-drilled and threaded shaft | | | | | | | | | 1.06 | | 0.47 | | M8 | |

Revised Dimensions for options

The following options increase the minimum roller length (RL)

| Option | Optional RL min. |
|-----------------------|--------------------------|
| Electromagnetic brake | Standard RL min + 1.97in |
| Encoder - SKF | Standard RL min + 0 in |
| Encoder - RLS | Standard RL min +1.97in |

Dimensions, materials, and weights for Mounting Brackets

| Motorized Pulley | Standard Material | Optional Material | D in | F in | I in | K in | S in | T in | V in | W1 in | X in | X1 in | Z in | Z1 in | Thread | Wt lbs |
|------------------|-----------------------------|-------------------|---------|---------|---------|---------|---------|---------|---------|----------|---------|----------|---------|----------|--------|-----------|
| 138LS | Cast iron black powder coat | Stainless steel | 1.18 | 0.79 | 3.39 | 2.24 | 0.43 | 0.67 | 0.47 | 0.94 | 4.33 | 7.09 | 1.75 | 2.83 | M8 | 3.1 |

Standard weights for Motorized Pulley 138LS

| Power HP | Poles | Standard weight [lbs] for standard RL [in] | | | | | | | | | | | | | |
|-------------|-------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 11.81 | 12.60 | 13.78 | 15.75 | 17.72 | 19.69 | 21.65 | 23.62 | 25.59 | 27.56 | 29.53 | 31.50 | 35.43 | 39.37 |
| 0.13 | 12 | 31.0 | 32.0 | 33.0 | 35.0 | 37.5 | 39.5 | 42.0 | 44.0 | 47.5 | 50.5 | 53.0 | 55.0 | 59.5 | 64.0 |
| 0.25 | 8 | 31.0 | 32.0 | 33.0 | 35.0 | 37.5 | 39.5 | 42.0 | 44.0 | 47.5 | 50.5 | 53.0 | 55.0 | 59.5 | 64.0 |
| 0.32 | 6 | 31.0 | 32.0 | 33.0 | 35.0 | 37.5 | 39.5 | 42.0 | 44.0 | 47.5 | 50.5 | 53.0 | 55.0 | 59.5 | 64.0 |
| 0.50 | 6 | --- | 33.0 | 34.5 | 36.5 | 38.5 | 41.0 | 43.0 | 45.0 | 48.5 | 52.0 | 54.0 | 56.0 | 60.5 | 65.0 |
| | 4 | 31.0 | 32.0 | 33.0 | 35.0 | 37.5 | 39.5 | 42.0 | 44.0 | 47.5 | 50.5 | 53.0 | 55.0 | 59.5 | 64.0 |
| 0.75 | 2 | 31.0 | 32.0 | 33.0 | 35.0 | 37.5 | 39.5 | 42.0 | 44.0 | 47.5 | 50.5 | 53.0 | 55.0 | 59.5 | 64.0 |
| 1.00 | 4 | --- | 33.0 | 34.5 | 36.5 | 38.5 | 41.0 | 43.0 | 45.0 | 48.5 | 52.0 | 54.0 | 56.0 | 60.5 | 65.0 |
| | 2 | 31.0 | 32.0 | 33.0 | 35.0 | 37.5 | 39.5 | 42.0 | 44.0 | 47.5 | 50.5 | 53.0 | 55.0 | 59.5 | 64.0 |
| 1.34 | 2 | --- | --- | 36.5 | 38.5 | 41.0 | 43.0 | 45.0 | 47.4 | 50.5 | 54.0 | 56.0 | 58.5 | 63.0 | 67.0 |



Motorized Pulley 138LS

Ø 5.45 in. (138 mm), helical steel gearbox

| Power & Speed Combinations: 3 phase | | | | | | | | | |
|-------------------------------------|-------------|-------------------------|-----------------|------------|--|---|---------------|---|------------------------|
| Power HP | Poles (rpm) | FLA (amps) ¹ | No. Gear Stages | Gear Ratio | Nominal belt speed at Full Load 60 Hz fpm ² | Actual belt speed at Full Load 60 Hz fpm ² | Belt Pull lbs | Max. Radial Load T1 + T2 lbs ³ | RL in |
| 0.13 | 12 (550) | 1.5/ 0.7 | 3 | 78.40 | 10 | 10 | 424 | 1870 | min 11.81 max 72.83 |
| | | | | 66.00 | 12 | 12 | 357 | | |
| | | | | 52.96 | 14 | 15 | 287 | | |
| | | | 2 | 29.56 | 24 | 26 | 160 | | |
| 0.25 | 8 (835) | 2.1/ 1.1 | 3 | 66.00 | 18 | 18 | 424 | 1870 | min 11.81 max 72.83 |
| | | | | 52.96 | 24 | 22 | 340 | | |
| | | | | 43.65 | 30 | 27 | 280 | | |
| | | | 2 | 29.56 | 38 | 40 | 190 | | |
| 0.33 | 6 (1140) | 1.5/ 0.7 | 3 | 66.00 | 24 | 24 | 414 | 1870 | min 11.81 max 72.83 |
| | | | | 52.96 | 30 | 30 | 332 | | |
| | | | | 43.65 | 38 | 37 | 274 | | |
| | | | 2 | 29.56 | 48 | 54 | 185 | | |
| 0.50 | 4 (1710) | 2.2/ 1.1 | 3 | 25.20 | 60 | 64 | 158 | 1090 | min 11.81 max 72.83 |
| | | | | 20.22 | 76 | 80 | 127 | | |
| | | | | 2 | 51.85 | 30 | 31 | | |
| | | | 3 | 66.00 | 38 | 37 | 425 | | |
| 52.96 | 48 | 46 | | 341 | | | | | |
| 43.65 | 60 | 55 | | 281 | | | | | |
| 29.56 | 76 | 82 | | 190 | | | | | |
| 25.20 | 96 | 96 | | 162 | | | | | |
| 20.22 | 120 | 119 | | 130 | | | | | |
| 16.67 | 150 | 145 | | 107 | | | | | |
| 12.44 | 192 | 194 | 80 | 820 | | | | | |
| 0.75 | 2 (3380) | 2.4/ 1.2 | 3 | 77.41 | 60 | 62 | 375 | 1090 | min 11.81 max 72.83 |
| | | | | 66.00 | 76 | 72 | 320 | | |
| | | | | 52.96 | 96 | 90 | 257 | | |
| | | | | 43.65 | 120 | 109 | 211 | | |
| | | | 2 | 29.56 | 150 | 161 | 143 | | |
| | | | | 25.20 | 192 | 189 | 122 | | |
| | | | | 20.22 | 240 | 236 | 98 | | |
| | | | | 16.67 | 300 | 286 | 81 | | |
| 12.44 | 384 | 384 | 60 | 820 | | | | | |
| 1.00 | 4 (1690) | 3.6/ 1.8 | 3 | 52.96 | 48 | 45 | 700 | 1090 | min 12.60 max 72.83 |
| | | | | 43.65 | 60 | 55 | 577 | | |
| | | | | 32.59 | 76 | 73 | 431 | | |
| | | | | 25.20 | 96 | 95 | 333 | | |
| | 2 | 3.0/ 1.5 | 2 | 20.22 | 120 | 118 | 267 | | |
| | | | | 16.67 | 150 | 143 | 220 | | |
| | | | | 25.20 | 192 | 193 | 163 | | |
| | | | | 20.22 | 240 | 241 | 131 | | |
| 16.67 | 300 | 292 | 108 | | | | | | |
| 12.44 | 384 | 392 | 81 | | | | | | |

Refer to page 57 for all footnotes cited on page 56.

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| Power & Speed Combinations: 3 phase | | | | | | | | | |
|-------------------------------------|-------------|-------------------------|-----------------|------------|--|---|---------------|---|------------------------|
| Power HP | Poles (rpm) | FLA (amps) ¹ | No. Gear Stages | Gear Ratio | Nominal belt speed at Full Load 60 Hz fpm ² | Actual belt speed at Full Load 60 Hz fpm ² | Belt Pull lbs | Max. Radial Load T1 + T2 lbs ³ | RL in |
| 1.33 | 2 (3440) | 4.0/ 2.0 | 3 | 52.96 | 96 | 92 | 458 | 1090 | min 13.78 max 72.83 |
| | | | | 43.65 | 120 | 111 | 378 | | |
| | | | | 29.56 | 150 | 164 | 256 | | |
| | | | 2 | 25.20 | 192 | 193 | 218 | 820 | |
| | | | | 20.22 | 240 | 240 | 175 | | |
| | | | | 16.67 | 300 | 291 | 144 | | |
| | | | | 12.44 | 384 | 390 | 108 | | |
| | | | | 10.00 | 480 | 486 | 87 | | |

- 1 FLA = full load amps at 230volts and 460 volts, respectively.
- 2 Use "Nominal Speed" to specify pulley. "Actual belt speed" is presented (for unlagged pulley) to assist with process design calculations. See "Actual Speed vs Nominal Speed" section in Technical Precautions. Note that actual belt speed increases when lagging is used due to increased pulley diameter.
- 3 Pulley must not be subjected to radial load exceeding "Maximum Radial Load" defined above. See "Belt Tension" section in Technical Precautions.



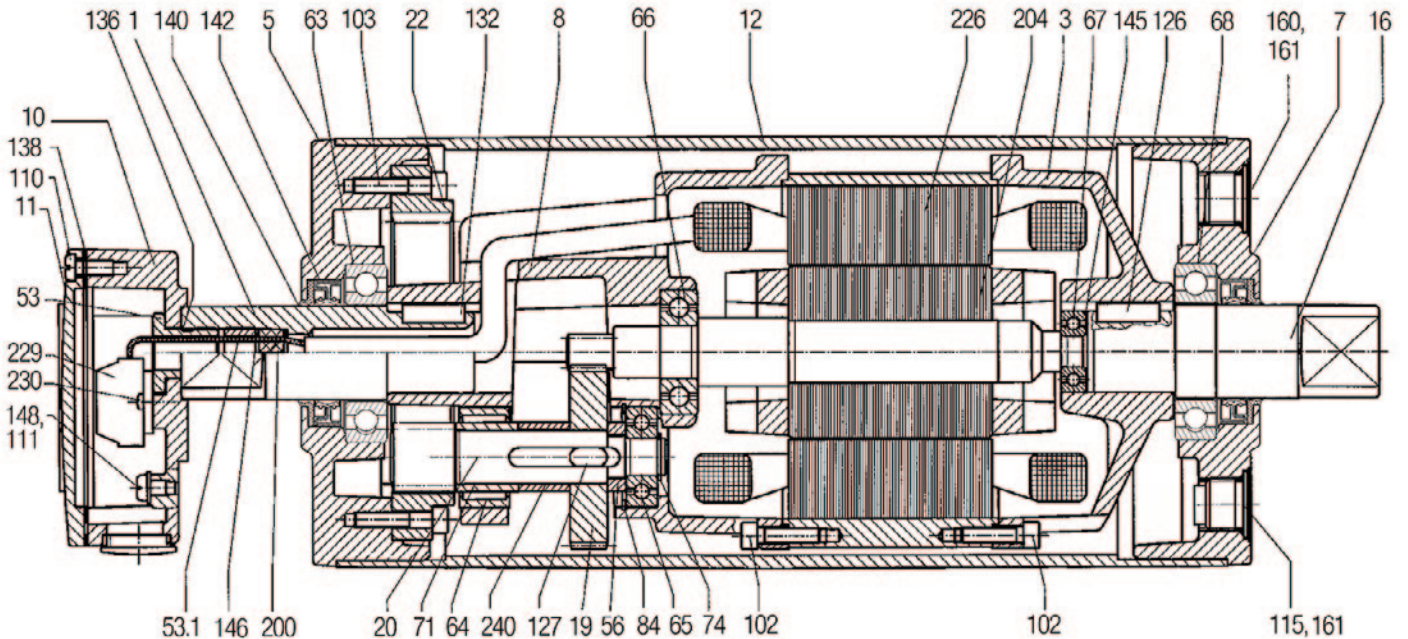
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Spare Parts List and Sectional Drawings

| | | | | | |
|----|--|-------|-----------------------------|-----|-----------------------|
| 1 | Front shaft | 53 | Terminal box nipple | 111 | Screw |
| 3 | Rear flange | 53.1 | Cable seal nipple | 113 | Screw |
| 5 | Bearing housing complete with geared rim | 55 | Spacer bushing | 114 | Socket set screw |
| 7 | Bearing housing complete | 56 | Spacer bushing | 115 | Oil plug with magnet |
| 8 | Gearbox | 63 | Ball bearing | 126 | Key |
| 10 | Terminal box - bottom part | 64 | Needle bearing | 127 | Key |
| 11 | Terminal box cover | 65-70 | Ball bearing | 132 | Key |
| 12 | Shell | 71 | Inner race | 136 | O-ring/Rubber seal |
| 16 | Rear shaft | 73 | Locking ring | 138 | Rubber seal |
| 19 | Input wheel | 74 | Locking ring | 140 | Deflection seal |
| 20 | Output pinion | 84 | Locking ring | 142 | Double lip seal |
| 22 | Geared rim | 86 | Locking ring | 143 | O-ring |
| 23 | Intermediate pinion shaft | 93 | Elbow or straight connector | 145 | Distance washer |
| 24 | Intermediate wheel | 102 | Screw | 146 | Washer |
| 31 | Labyrinth seal cover | 103 | Screw | 148 | Washer |
| | | 110 | Screw | 150 | Electromagnetic brake |

138LS Standard: 2 stage gearbox with terminal box



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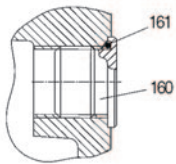
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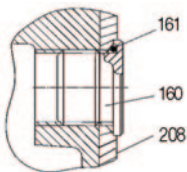
Spare Parts List and Sectional Drawings (cont.)

| | | | | | |
|-------|-----------------------|-----|----------------------------|-----|----------------------|
| 150.1 | Friction disc | 200 | Rubber seal | 223 | Cable |
| 156 | Rectifier (not shown) | 201 | Encoder (if applicable) | 226 | Stator complete |
| 160 | Oil plug | 204 | Rotor complete with pinion | 229 | WAGO clamp terminals |
| 161 | O-ring | 208 | Stainless steel cover | 230 | Fixing bolts |
| 167 | Screw | 210 | Fixing guard | 240 | Distance ring |

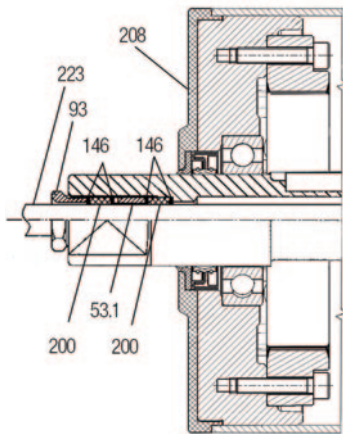
Standard oil plug



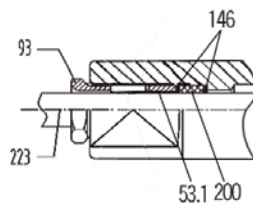
Stainless steel option oil plug



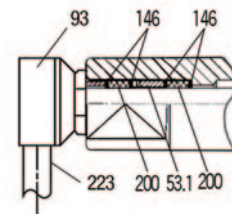
Stainless steel option with straight cable



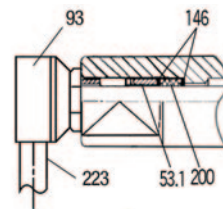
Standard straight cable connection



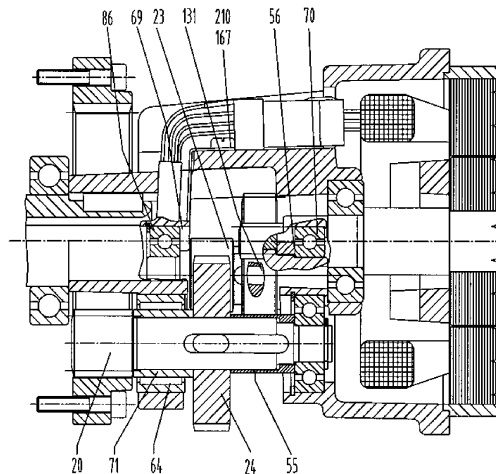
Elbow cable connection for stainless steel option



Standard elbow cable connection



3-stage gearbox



Electromagnetic brake

