

ROLLERDRIVE SERIES EC5000

Based on \varnothing 50 mm, tapered, IP54, for 0 to 40 °C



24V

Application area

Drive for unit handling conveyor systems, such as transporting cardboard cartons, containers, platens or tires at normal ambient temperature. Suitable for roller/belt curves as well as constantly driven or zero pressure accumulation conveyor technology.

48V

20W

35W

50W

AI

BI

Compact design

The drive integrated in the tube allows a very compact design of the curve.

Very energy-efficient

The brushless drive features energy recovery when braking. The conveyor system can operate without pneumatics or conventional drives, which must be operated continually.

Robust design

In contrast to conventional designs, the tapered elements (gray and black) are secured against axial shifting. This safeguard prevents the tapered elements from shifting on the tube, similar to the matching conveyor rollers.

Flexible possible applications

RollerDrive is available in many variations, allowing it to be used in all types of different conveyor systems. For the user, this translates into a single interface instead of many. Depending on the application area, PolyVee or round belts can be used for the transmission of force. Nine gear ratios allow selecting the perfect pairing between speed and torque.

Low-noise

The use of decoupling elements achieves particularly low-noise running.

Maintenance-free and installation-friendly

The drive with internal commutation electronics does not require any maintenance. It features an overload protection that prevents damages due to overtemperature or blockage. It is connected securely without complex screw connection by using a motor cable with 5-pin snap-in plug.



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Technical data

Rated voltage	24 V	24 V	24 V	48 V	48 V	48 V
Power	20 W	35 W	50 W	20 W	35 W	50 W
Rated current	1.4 A	2.4 A	3.4 A	0.7 A	1.2 A	1.7 A
Starting current	3.0 A	5.5 A	7.5 A	1.5 A	2.8 A	1.7 A
Max. noise emission (mounted)	55 dB(A), application-dependent					
Length of motor cable	500 mm					
Max. reference length	1100 mm					
Ambient temperature in operation	0 to 40 °C					
Maximum load capacity per RollerDrive without drive head	500 N					
Max. load capacity per RollerDrive with drive head (PolyVee or round belt)	350 N					
Motor shaft	Stainless steel, 11 mm HEX, thread M12 x 1					
Anti-static version	Yes (< 10 ⁶ Ω) black design					
Tube wall thickness	1.5 mm					
Tube material	Zinc-plated steel, stainless steel					
Tapered cones	1.8° in gray and black (antistatic) 2.2° in gray					

Design versions

20 W

Gear ratio	Max. conveying speed [m/s]	Min. conveying speed [m/s]	Rated torque [Nm]	Acceleration torque [Nm]	Continuous blocking torque [Nm]
9:1	2.01	0.09	0.25	0.63	0.63
13:1	1.39	0.06	0.36	0.91	0.91
18:1	1.00	0.04	0.50	1.26	1.26
21:1	0.86	0.04	0.59	1.47	1.47
30:1	0.60	0.03	0.85	2.13	2.13
42:1	0.43	0.02	1.18	2.95	2.95
49:1	0.37	0.02	1.37	3.44	3.44
78:1	0.23	0.01	2.02	5.43	5.43
108:1	0.17	0.01	2.82	7.57	7.57

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Gear ratio	Max. conveying speed [m/s]	Min. conveying speed [m/s]	Rated torque [Nm]	Acceleration torque [Nm]	Continuous blocking torque [Nm]
9:1	2.01	0.09	0.44	1.11	1.11
13:1	1.39	0.06	0.64	1.60	1.60
18:1	1.00	0.04	0.89	2.22	2.22
21:1	0.86	0.04	1.04	2.59	2.59
30:1	0.60	0.03	1.49	3.74	3.74
42:1	0.43	0.02	2.07	5.18	5.18
49:1	0.37	0.02	2.42	6.04	6.04
78:1	0.23	0.01	3.55	9.54	9.54
108:1	0.17	0.01	4.95	13.00	13.00

50 W

Gear ratio	Max. conveying speed [m/s]	Min. conveying speed [m/s]	Rated torque [Nm]	Acceleration torque [Nm]	Continuous blocking torque [Nm]
9:1	2.01	0.09	0.63	1.58	1.58
13:1	1.39	0.06	0.91	2.29	2.29
18:1	1.00	0.04	1.27	3.17	3.17
21:1	0.86	0.04	1.48	3.70	3.70
30:1	0.60	0.03	2.13	5.34	5.34
42:1	0.43	0.02	2.96	7.40	7.40
49:1	0.37	0.02	3.45	8.63	8.63
78:1	0.23	0.01	5.07	13.00	13.00
108:1	0.17	0.01	7.07	13.00	13.00

Before the run-in, the values may differ up to ± 20 %. After a run-in phase, the values vary only in the range of ± 10 % for 95 % of all RollerDrive used.

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Dimensions

The minimum reference length depends on the gear box variant, the grooves in the tube and the drive or the bearing assembly. A sufficient axial play is already taken into account, so that the actual lane width between side profiles is required. When using the tapered hexagon spring shaft, it must be ensured that the design of the axial play is not too high. If the RollerDrive selected is too short, the shaft may have play in the hexagon hole. A hexagon hole with a size of at least 11.2 mm is recommended. If the RollerDrive is installed obliquely, the fastening hole must be designed larger accordingly.

- RL = Reference length/ordering length
- EL = Installation length, inside diameter between side profiles
- U = Usable tube length: Length of tapered elements

Reference lengths with tapered elements

Conicity: 1.8°, color: gray (not antistatic)			Conicity: 1.8°, color: black (antistatic)		
Tapered rated length [mm]	Min. \varnothing [mm]	Max. \varnothing [mm]	Tapered rated length [mm]	Min. \varnothing [mm]	Max. \varnothing [mm]
150	55.6	64.8	150	55.6	64.8
200	52.5	64.8	200	52.5	64.8
250	55.6	71.2	250	55.6	71.2
300	52.5	71.2	300	52.5	71.2
350	55.6	77.6	350	55.6	77.6
400	52.5	77.6	400	52.5	77.6
450	55.6	84.0	450	55.6	84.0
500	52.5	84.0	500	52.5	84.0
550	55.6	90.4	550	55.6	90.4
600	52.5	90.4	600	52.5	90.4
650	55.6	96.8	650	55.6	96.8
700	52.5	96.8	700	52.5	96.8
750	55.6	103.2	750	55.6	103.2
800	52.5	103.2	800	52.5	103.2
850	55.6	109.9	–	–	–
900	52.5	109.9	–	–	–
950	55.6	116.0	–	–	–
1000	52.5	116.0	–	–	–

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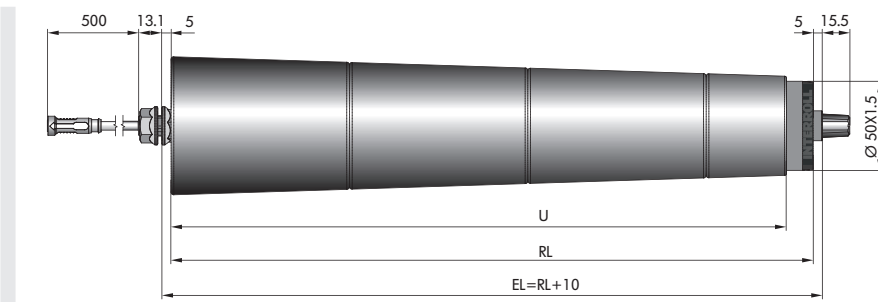
BI

Conicity: 2.2°, color: gray (not antistatic)		
Tapered rated length [mm]	Min. \varnothing [mm]	Max. \varnothing [mm]
190	56.0	70.6
240	56.0	74.4
290	56.0	78.3
340	56.0	82.1
440	56.0	89.8
540	56.0	97.5
640	56.0	105.2
740	56.0	112.8

For higher surface of the tube with respect to the tapered elements, it is also possible to obtain different reference lengths. The specified minimum diameters refer to the smallest diameter of the first tapered element. The reference lengths 150 mm and 200 mm as well as 950 mm and 1,000 mm do not receive an end cover.

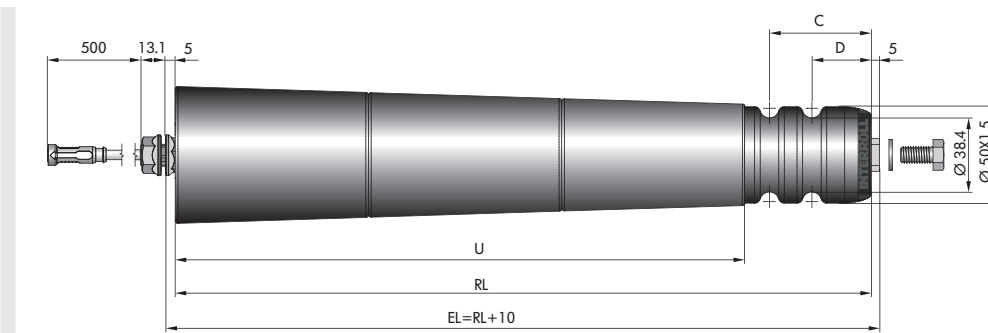
Gray tapered elements with 2.2° are not shown, but they follow the dimensional specifications (RL/EL) of the 1.8° elements shown.

Hexagon spring shaft/female thread*, without grooves



* Fastening via female thread is not shown here, but it follows dimensional specifications (RL/EL) of the hexagon spring shaft shown.

Female thread/hexagon spring shaft* with grooves

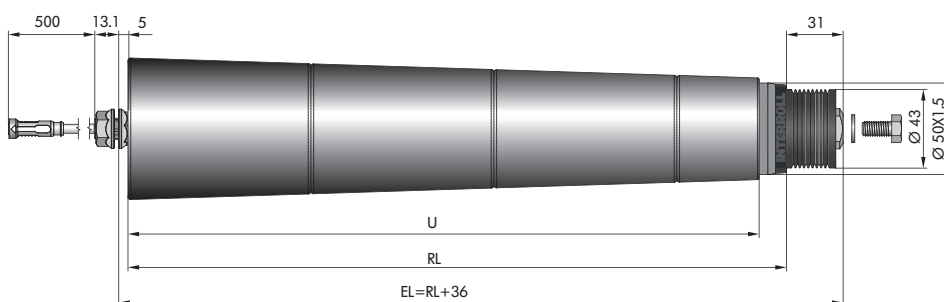


* Fastening via hexagon spring shaft (tapered shaft) is not shown here, but it follows dimensional specifications (RL/EL) of the female thread fastening solution.

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PolyVee drive head with female thread/hexagon spring shaft*



* Fastening via hexagon spring shaft (shaft not tapered) is not shown here, but it follows dimensional specifications (RL/EL) of the female thread fastening solution shown.

Round belt drive head

Round belt drive head is not shown here, but it follows the dimensional specifications (RL/EL) of the PolyVee drive head with female thread/hexagon spring shaft.