Straightened rollers / roller lengths

In principle, the rollers manufactured by Interroll have a high concentric precision. The concentric precision is sufficient for almost all applications. On top of that, Interroll offers a 100% inspection for rollers made out of steel.

During the inspection, the concentric precision of each roller is measured. If the concentric precision falls outside the specified tolerance (page 28), the tube is straightened. The concentric deviation is corrected only if it falls outside the tolerance.

When measuring the concentric precision and also for the straightening process, the tube is the reference point. The concentricity between shaft and tube is not checked.

Technical data

Straightening is possible for tubes with a thickness up to 3 mm made of uncoated steel, zinc-plated steel, chrome-plated steel, stainless steel, aluminum and anodized aluminum.

Straightening is possible for the following tubes or tube lengths:

Ø Tube [mm]	Tube wall thickness [mm]	Min. length [mm]	Max. length [mm]
16	1	300	1000
20	1.5	490	1200
30	1.2	400	1200
40	1.5	600	1700
50	1.5	800	2000
51	2	600	1500
60	1.5	1000	2000
80	2	1500	2000

Straightening is possible for rollers with the following features:

- Rollers with grooves
- Rollers with flange
- Rollers with sleeve or lagging
- Rollers with tapered elements
- Carbonitrided and chrome-plated rollers and PVC rollers

Roller lengths

The Interroll conveyor rollers can be manufactured in different lengths utilizing millimeter increments. Most versions can be manufactured starting at a length of approx. 200 mm. The longest dimension for many series is approx. 2000 mm. The shortest and longest dimension depends on many factors, such as shaft design, tube material, production process or packaging options.

Definitions

RL = Reference length / ordering length
EL = Installation length, inside diameter between side profiles
AGL = Total length of shaft
U = Usable tube length, length without bearing housing and for flanged metal tube without length of flanging

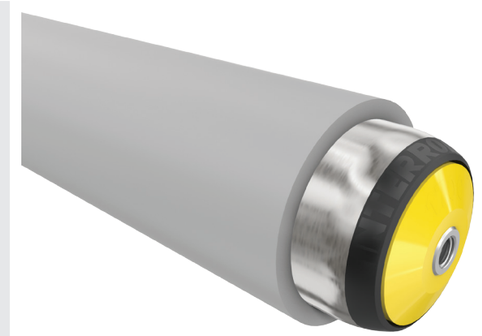
For conveyor rollers with female threaded shaft, the total shaft length corresponds to the installation length.

The installation length can be measured via the total shaft length only for rollers with female threaded shaft. For all other shaft designs, the installation length cannot be measured precisely at the conveyor roller. The axial play of approx. 0.5 mm or at the driven sides of approx. 1 mm is part of the installation length and does not allow an exact measurement of the installation length.

The reference length / ordering length has measurable reference edges on the conveyor roller for the following series:

- 1100
- 1700
- 1700 light (exception: Ø 20 mm)
- 3500 light
- 3500
- 3500 heavy
- 3800

PVC sleeve



The PVC sleeve ensures a particularly high noise reduction and offers a high level of protection for sensitive materials. An improved conveyance of materials is achieved with the higher coefficient of friction compared with a steel tube. Materials can easily be separated since the larger diameter leads to a higher speed with the same rotational speed.

Technical data

General technical data	
Min. sleeve length	50 mm
Min. installation length of the conveyor roller	100 mm
Max. installation length of the conveyor roller	2000 mm
Temperature range	−28 to + 50 °C Risk of fracture when cold starting at −30 °C
Material	
Tube	PVC, zinc-plated steel, chrome-plated steel, stainless steel, aluminum
PVC sleeve	• Soft PVC, RAL7030 (stone gray) • Silicone-free • RoHS-compliant • REACH-compliant • Not food-safe • Non-conductive • Not oil or gasoline-resistant
Sleeve hardness	62 + 5 Shore A (at 20 °C); the hardness increases at lower temperatures

Tapered rollers cannot be fitted with a PVC sleeve.

Design versions

Ø Tube [mm]	Sleeve material thickness [mm]	
30	2	5
40	2	5
50	2	5
60	2	5
80	2	

The PVC sleeve is not glued onto the conveyor roller. The conveyor roller is pushed into the sleeve widened with compressed air by using a pressing machine. Then the sleeve is cut to the length of the tube or to the specified dimension.

Conveyor rollers with welded drive element can also be fitted with a PVC sleeve. This requires a drive element whose diameter is not greater than 12 mm of the tube.

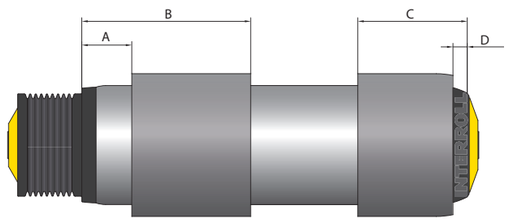
Friction rollers (Series 3800, 3800 light, 3870) can be fitted only with 2-mm PVC sleeve. Rollers with PVC sleeve are always designed with an antistatic element. The PVC sleeve is not antistatic.

Dimensions

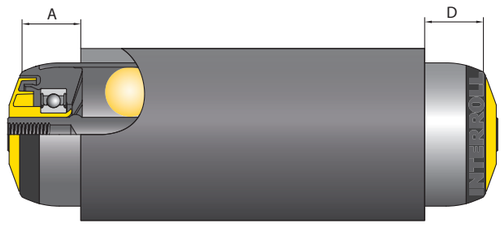
The PVC sleeve generally covers the entire tube length. It is possible not to fit sections of the roller with the PVC sleeve, e.g. the free space for grooves. A minimum length of 50 mm is required for a firm seating of the sleeve. With existing axial forces, a greater minimum length must be selected.

When ordering a roller with sleeve, always specify the dimensions A to D.

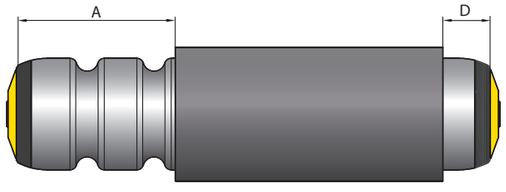
Split PVC sleeve and PolyVee drive head



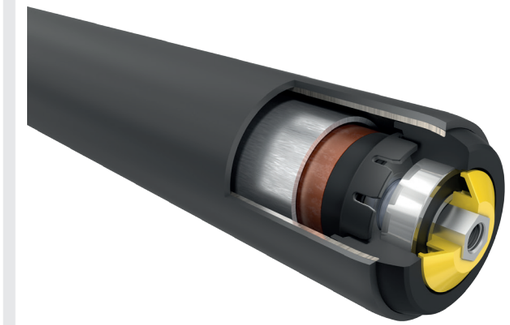
PVC sleeve with clean cuts



PVC sleeve and 2 grooves



PU sleeve



The PU sleeve ensures a high level of noise reduction, particularly for steel containers, and offers a high level of protection of sensitive materials. An improved conveyance of materials is achieved with the higher coefficient of friction compared with a steel tube. Materials can easily be separated since the larger diameter leads to a higher speed with the same rotational speed. With mechanical stress, e.g. with abrasion, it offers a higher robustness than a PVC sleeve.

Technical data

General technical data	
Min. sleeve length	50 mm
Max. installation length of the conveyor roller	1500 mm
Min. installation length of the conveyor roller	100 mm
Temperature range	–28 to +80 °C
Material	
Tube	Zinc-plated steel, chrome-plated steel, stainless steel, aluminum
PU sleeve	• Polyurethane, RAL9005 (jet black), gloss • Softener-free • Silicone and halogen-free • FDA-compliant • RoHS-compliant • Non-conductive • Oil or gasoline-resistant
Sleeve hardness	75 + 5 Shore A (at 20 °C); the hardness increases at lower temperatures

Tapered rollers cannot be fitted with a PU sleeve.

Design versions

Ø Tube [mm]	Sleeve material thickness [mm]
50	2
51	2

With the lower elasticity, the PU sleeve cannot be applied to any other tube diameters or tubes with welded-on elements.

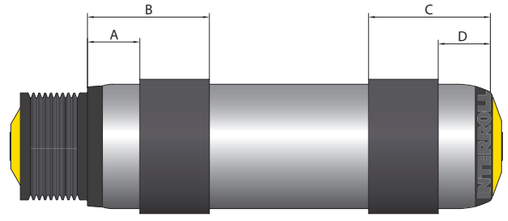
The PU sleeve is not glued onto the conveyor roller. The conveyor roller is pushed into the sleeve widened with compressed air by using a pressing machine. Then the sleeve is cut to the length of the tube or to the specified dimension. Rollers with PU sleeve are always designed with an antistatic element. The PU sleeve is not antistatic.

Dimensions

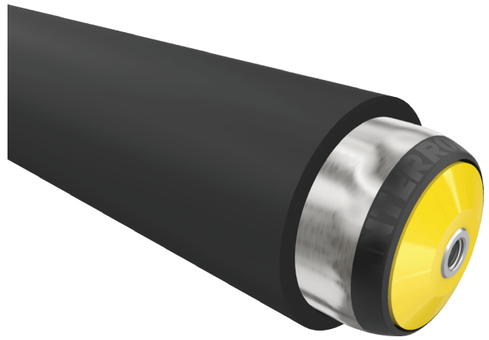
The PU sleeve generally covers the entire tube length. It is possible not to fit sections of the roller with the PU sleeve, e.g. the free space for grooves. A minimum length of 50 mm is required for a firm seating of the sleeve. With existing axial forces, a greater minimum length must be selected.

When ordering a roller with sleeve, always specify the dimensions A to D.

Split PU sleeve and PolyVee drive head



Lagging



The lagging ensures a high level of noise reduction and offers a high protection of medium-heavy to heavy materials. An improved conveyance of materials is achieved with the higher coefficient of friction compared with a steel tube. Materials can easily be separated since the larger diameter leads to a higher speed with the same rotational speed. The lagging offers a high robustness under mechanical stress and is very abrasion-proof. Compared to sleeves, that are not connected to the tube, axial forces are also allowed.

Technical data

General technical data	
Min. reference length of the roller	112 mm
Max. reference length of the roller	1350 mm
Temperature range	–30 to +80 °C
Min. installation length of the conveyor roller	110 mm
Material	
Tube	• Uncoated steel • Stainless steel
Black lagging	• Nitrile rubber • Silicone- and halogen-free • Good resistance to alkalis • RoHS-compliant • Not FDA-compliant • Not antistatic • Oil, grease or gasoline-resistant • Not resistant to aromatics • Hardness 65 ± 5 Shore A
White or blue lagging	• Nitrile rubber • Silicone- and halogen-free • Good resistance to alkalis • RoHS-compliant • FDA-compliant • Not antistatic • Oil, grease or gasoline-resistant • Not resistant to aromatics • Hardness 70 ± 5 Shore A

Tapered rollers cannot be fitted with a lagging. By default, rollers with lagging do not contain any antistatic element.

GENERAL TECHNICAL INFORMATION
LAGGING

Design versions

For tube diameters 40, 50, 51, 60, 80 and 89, a lagging of 2 to 5 mm thickness in increments of 0.1 mm is possible.

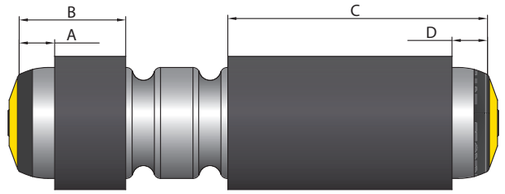
Roller series	Ø Tube [mm]	Bearing housing of drive side / non-drive side	Min. distance of lagging to left / right reference length [mm]
1450	80	Flanged / Flanged	15 / 15
1450	89	Flanged / Flanged	15 / 15
1700	40	Flanged / Flanged	16 / 16
1700	50	Flanged / Flanged	16 / 16
1700	50	Cylindrical / Cylindrical	6 / 6
1700	51	Flanged / Flanged	16 / 16
1700	51	Cylindrical / Cylindrical	6 / 6
1700	60	Flanged / Flanged	16 / 16
1700	80	Flanged / Flanged	16 / 16
1700 heavy	50	Flanged / Flanged	16 / 16
1700 heavy	51	Flanged / Flanged	16 / 16
1700 heavy	60	Flanged / Flanged	16 / 16
3500	40	Cylindrical / Flanged	0 / 16
3500	50	Flanged / Flanged	21 / 21
3500	50	Cylindrical / Flanged	6 / 16
3500	50	Cylindrical / Cylindrical	6 / 6
3600	80	Flanged / Flanged	25 / 25
3600	89	Flanged / Flanged	25 / 25
RollerDrive	50	Cylindrical / Flanged	6 / 21
RollerDrive	50	Cylindrical / Cylindrical	6 / 6

The lagging is applied through hot vulcanization and reground. This creates a high-strength joint of the lagging with the tube, resulting in a surface that is highly resistant to abrasion and very precise. For uncoated steel material, projecting tube sections are protected against corrosion with a black paint coating. For welded drive heads, the tube and drive head remain untreated.

Friction rollers (Series 3800, 3800 light, 3870, 3880) can be fitted only with 2-mm lagging.

Dimensions

Stainless steel tube with 2 grooves and split lagging



Uncoated steel tube with 1/2" polymer double sprocket head with 14 teeth and lagging