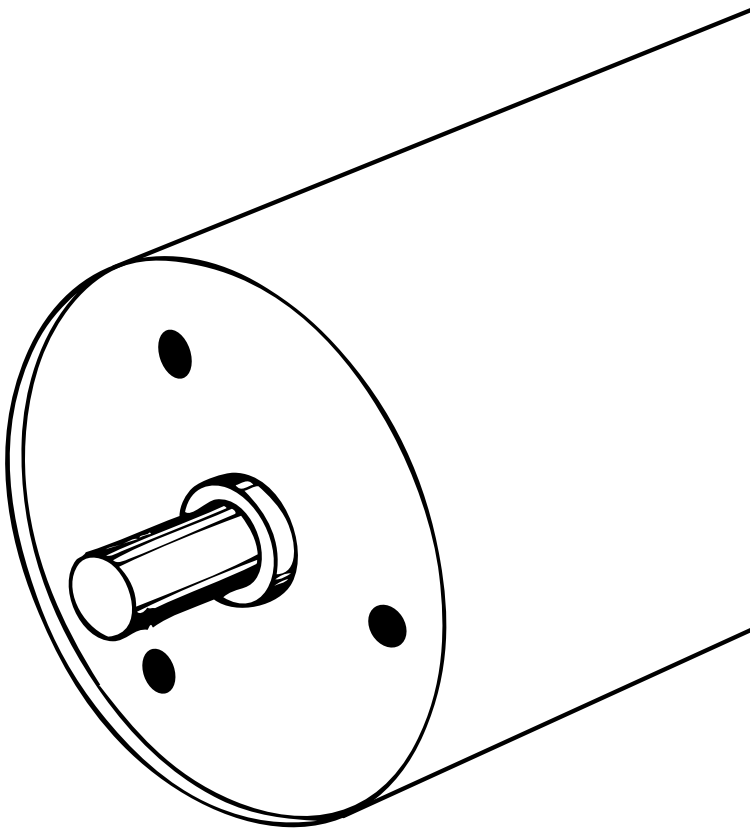
Instructions for rubber cylinder coatings



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Contents

4 - 5 Material requirements and legend

6 - 7 Safety instructions

1. Preparations

8 1.1 Preparing the cylinder surface

8 1.2 Activating the adhesive

9 1.3 Cutting the cylinder covering to size

9 1.4 Coating the covering and the cylinder

10 1.5 Marking the cylinder

2. Joint types and how to process them

10 2.1 Joint types

11 A Superimposed joint

11 Cutting the front side to size

12 Covering the cylinder

13 B Dull joint

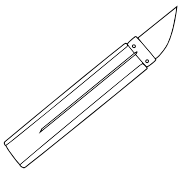
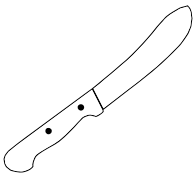
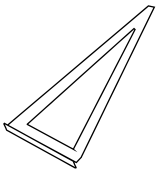
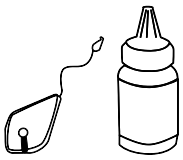
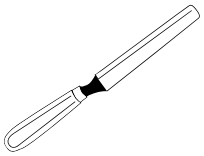
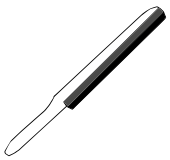
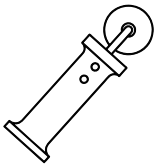
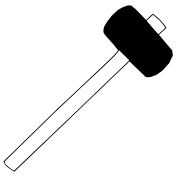
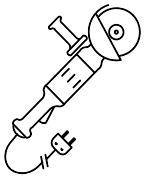
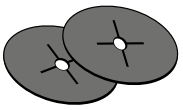
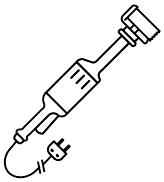
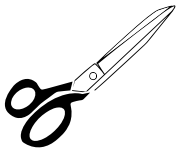
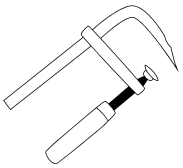
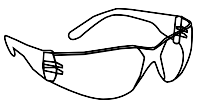
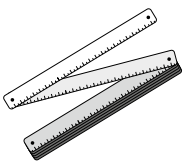
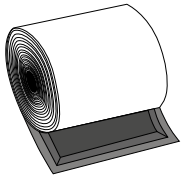
13 Covering the cylinder

14 C V seam

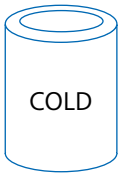
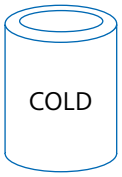
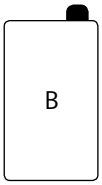
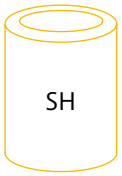
14 Measuring the cylinder circumference/ cutting the front sides to size

15 - 16 Convering the cylinder

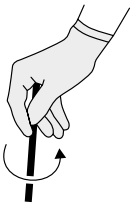
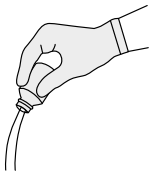
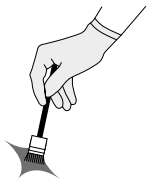
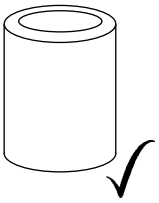
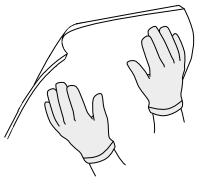
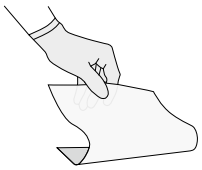
Material requirements

Material	Item No.	Material	Item No.	Material	Item No.
	K 0605 Cobbler's knife		K 0604 Saddler knife		K 0482 Stop bracket
	K 0661 + K 0661A Chalked string with powder		K 0609 Angled blade		K 0634 Whetstone with wooden handle
	H 0612 Knurled roller		K 0615 Flat roller		K 0628 Rubber hammer
	K0791-A Angle grinder for working steel		(For item no. see page 19 of tool catalogue) Fibre discs		K 0626 Brush
	K0792-A + K0731 Rotary sander for working rubber		K 0620 Scissors		K 0654 Screw clamp
	K 0627 Hand brush		K 0747 / 62 / 61 Wheel wire brush		K 0658 Safety goggles
	K 0624 Folding rule		H 0100 TOPGUM TS Filling layer with adhesive covering on both sides		H 0102 TOPGUM TD Filling layer with adhesive covering on one side

Material requirements and legend

Material	Item No.	Material	Item No.	Material	Item No.
	H 0050-K TOPGUM TL-T50, 700 g can Benzine-based two-component cold adhesive		H 0259-K TOPGUM TL-T60, 700 g can Benzine-based two-component cold adhesive		H 0050-H Universal hardener, 40 g bottle
	H 0315 Type B, 0.5 L Benzine-based cleaning agent		H 1139 SH Primer, 750 g		K 0662 Protective gloves

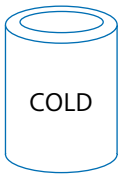
Legend

	Work waiting time		Stir		Add hardener - activate cold adhesive
	Brush on thinly and evenly		Adhesion test using test on back of hand		Ready for processing
	Apply cylinder covering		Remove protective film		

Instructions for rubber cylinder coatings

Emergency information
Phone: +49 173 5306827

TOPGUM TL-T50/60

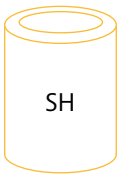


Danger

Safety instructions:
P 210: Keep away from heating, spark, open flames,hot surfaces. Do not smoke! **P 280:** Wear safety gloves/safety clothes/safety glasses and face mask. **P 273:** Avoid effluent on environment. **P 243:** Avoid electronstatic charging. **P 301+310:** IF SWALLOWED: Contact poison center or doctor immediately. **P 303+361+353:** If contact with skin or hair: Remove all wet clothes and wash/shower skin/hair. **P 305+351+338:** Rinse with water for a few minutes. Remove lenses and rinse again. **P 331:** Do not bring to anacatharsis.

Danger instructions:
H 225: Liquid and vapours inflammable. **H 315:** Skin irritation possible. **H 319:** Provoke strong irritation of eyes. **H 336:** Can bring sleepiness and numbness. **H 304:** Can bring death if swallowed. **H 410:** Toxic for water organism by longtime effect.

SH Primer

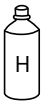


Danger

Safety instructions:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. **P280:** Wear protective gloves/protective clothing/eye protection/face protection. **P302+P352:** IF ON SKIN: Wash with plenty of soap and water. **P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. **P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P370+P378:** In case of fire: Use ABC powder for extinction. **P501:** Dispose of contents/container to local/regional/national/international regulations.

Danger instructions:
H332: Harmful if inhaled. **H319:** Causes serious eye irritation. **H225:** Highly flammable liquid and vapour. **H315:** Causes skin irritation. **H335:** May cause respiratory irritation.

Poison Control Center Berlin
Phone: +49 30 19240

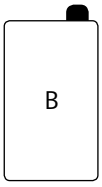


Danger

Universal hardener

Safety instructions:
P101: If medical advice is needed, have product container or label at hand. **P102**: Keep out of reach of children. **P232**: Protect from moisture. **P270**: Do no eat, drink or smoke when using this product. **P273**: Avoid release to the environment. **P280**: Wear protective gloves/protective clothing/eye protection/face protection. **P284**: Wear respiratory protection. **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P405:** Store locked up.

Danger instructions:
H302+H312+H332: Harmful if swallowed, contact with skin or by inhalation. **H312+H332:** Harmful in contact with skin or by inhalation. **H319:** Causes serious eye irritation. **H332:** Harmful if inhaled. **H336:** May cause drowsiness or dizziness. **H351:** Suspected of causing cancer. **H372:** Causes damage to organs. **H410:** Very toxic to aquatic life with long lasting effects.



Danger

Cleaning agent type B

Safety instructions:
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. **P243:** Take precautionary measures against static discharge. **P261:** Avoid breathing mist/vapours/spray. **P280:** Wear protective gloves/protective clothing/eye protection/face protection. **P273:** Avoid release to the environment. **P301+P310:** IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. **P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. **P331:** Do NOT induce vomiting.

Danger instructions:
H225: Highly flammable liquid and vapour. **H315:** Causes skin irritation. **H336:** May cause drowsiness or dizziness. **H304:** May be fatal if swallowed and enters airways. **H411:** Toxic to aquatic life with long lasting effects.

Observe rules of occupational safety

Safety instructions

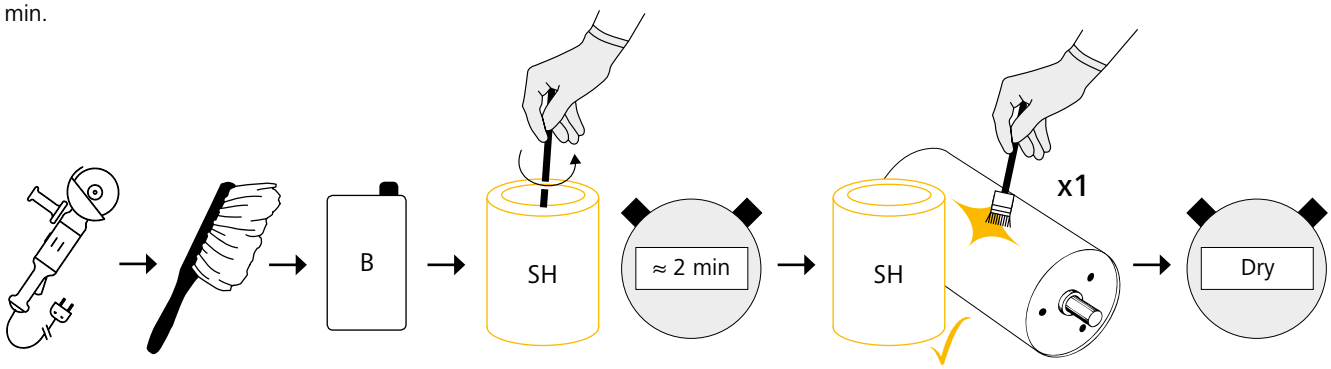
Abide by the safety instructions on the sleeves, labels and data sheets as well as the occupational safety regulations.

We would be happy to send you safety datasheets on request. Alternatively you can find these at www.nilos.de under Downloads.

1. Preparations

1.1 Preparing the cylinder surface

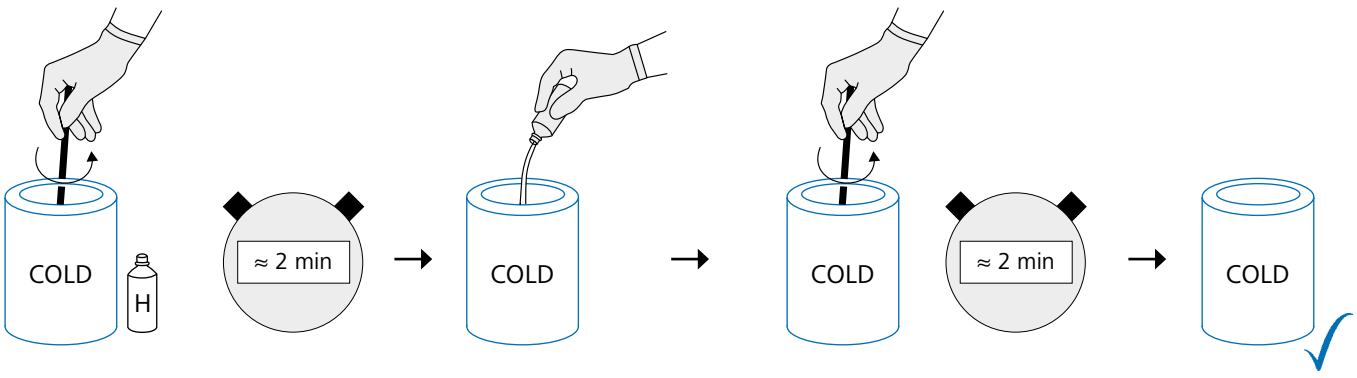
Remove the old cylinder covering in its entirety. Metallically clean the steel body by sandblasting or roughing-down, clean carefully with hand brushes and wash down with type B cleaning agent. Prepare the bonding agent (SH) and then brush it onto the grease-free surface. Then leave to dry for at least 30 min.



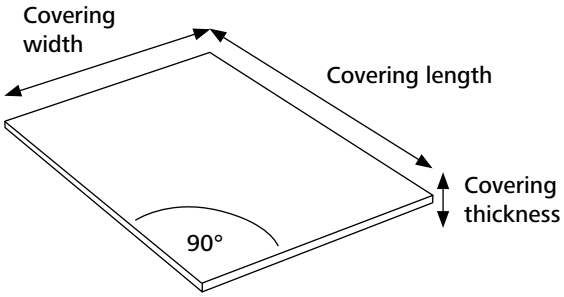
1.2 Activating the adhesive

CAUTION: Please observe the respective working instructions of the adhesive which you are using!

Stir the adhesive for 2 min.
Mix the adhesive thoroughly with the universal hardener for 2 min.



1.3 Cutting the cylinder covering to size

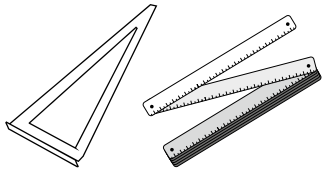


Cylinder circumference	Covering thickness	*Cutting excess
< 500 mm	8 mm	70 mm
from 500 to 800 mm	10 mm	90 mm
from 800 to 1,250 mm	12 mm	120 mm
< 1,250 mm	15 mm	150 mm

The calculation and the cut of the cylinder covering depend on the size of the cylinder and the cylinder covering. When using cover strips from rolls, these
must be cut to size accordingly, e.g. before processing the cylinder dimensions.

Cylinder circumference	= 3.14 x cylinder diameter
Covering length	= cylinder circumference + cutting excess
Covering width	= cylinder width + 100 mm
Covering thickness	= see table

* for superimposing joints, shorten by 30 mm for dull joints, without cutting excess for V seams (see also 2.)



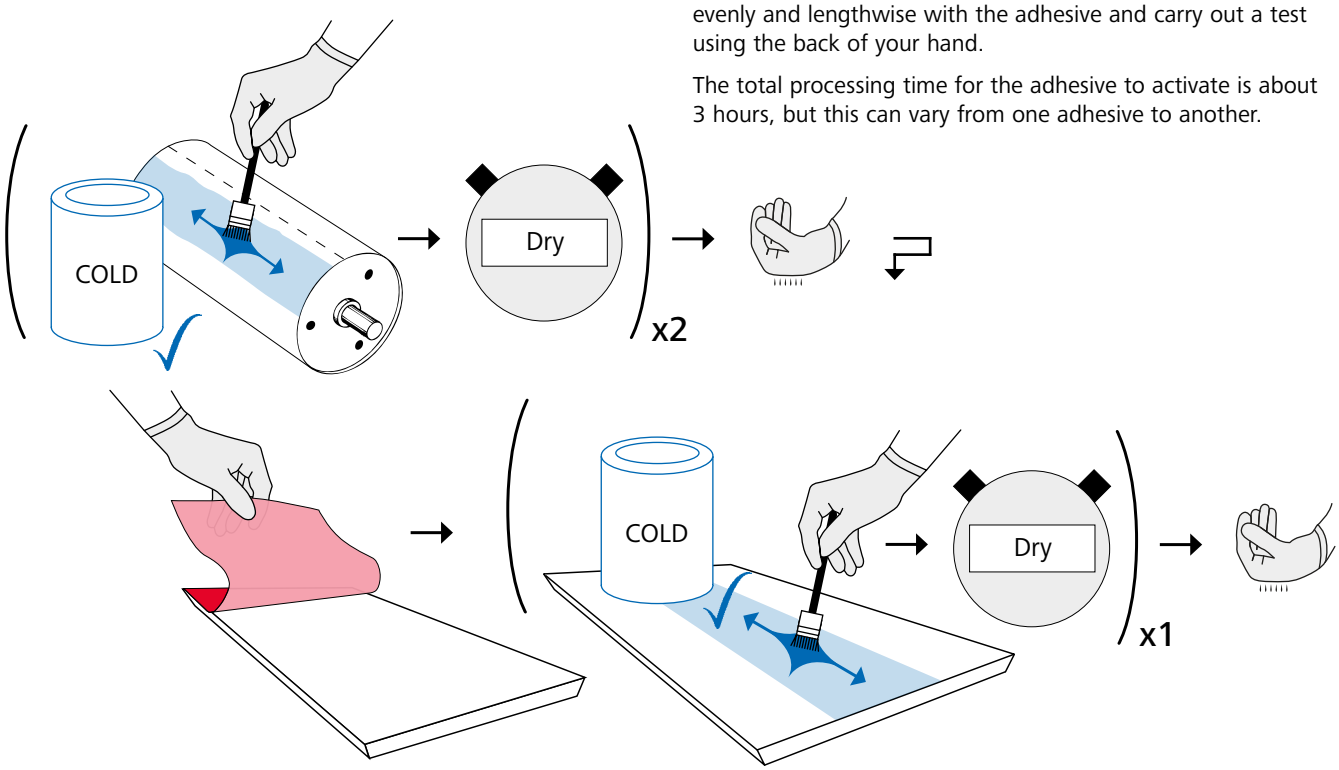
1.4 Coating the covering and the cylinder

Carefully brush the cylinder along its length with adhesive and leave to dry. Repeat the process a second time and carry out the test using the back of your hand.

CAUTION: if using cover strips always ensure that the second coat is applied only in the direction of the strips. Here you must ensure that the coating is a little wider than the cover strip.

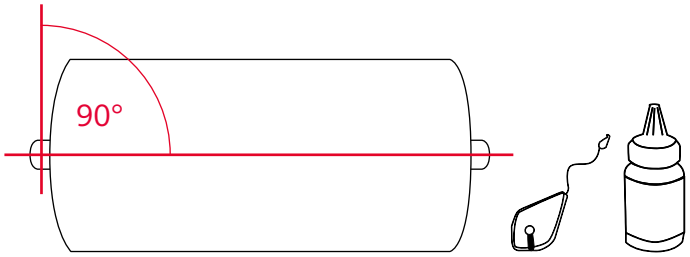
Next remove the protective film – if there is one – from the contact layer of the cylinder covering. Then brush the surface evenly and lengthwise with the adhesive and carry out a test using the back of your hand.

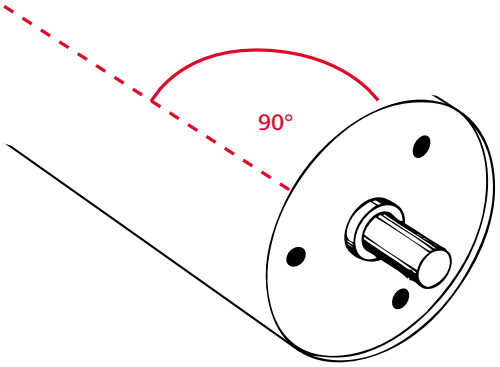
The total processing time for the adhesive to activate is about 3 hours, but this can vary from one adhesive to another.



1.5 Marking the cylinder

Mark the cylinder with a guide line along the cylinder axis using grease-free chalk powder in order to position the cylinder covering correctly when applying.





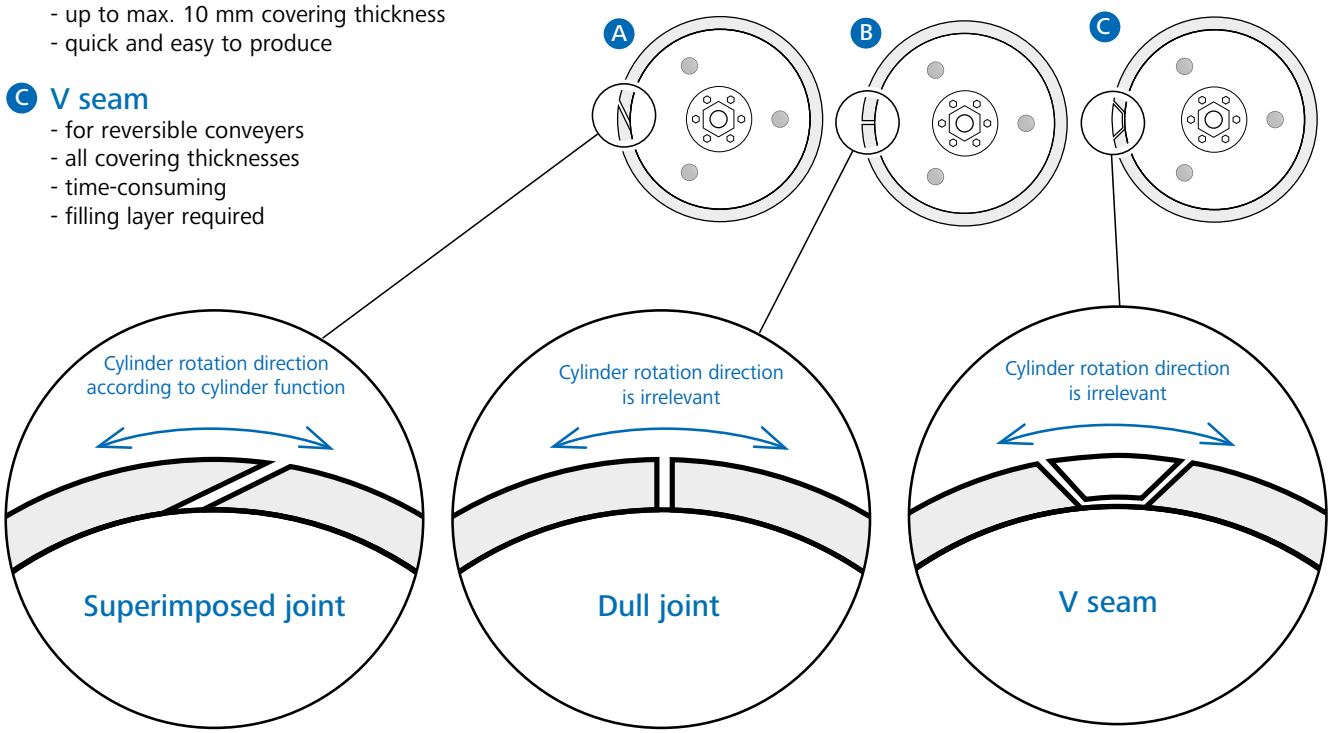
2. Joint types and how to process them

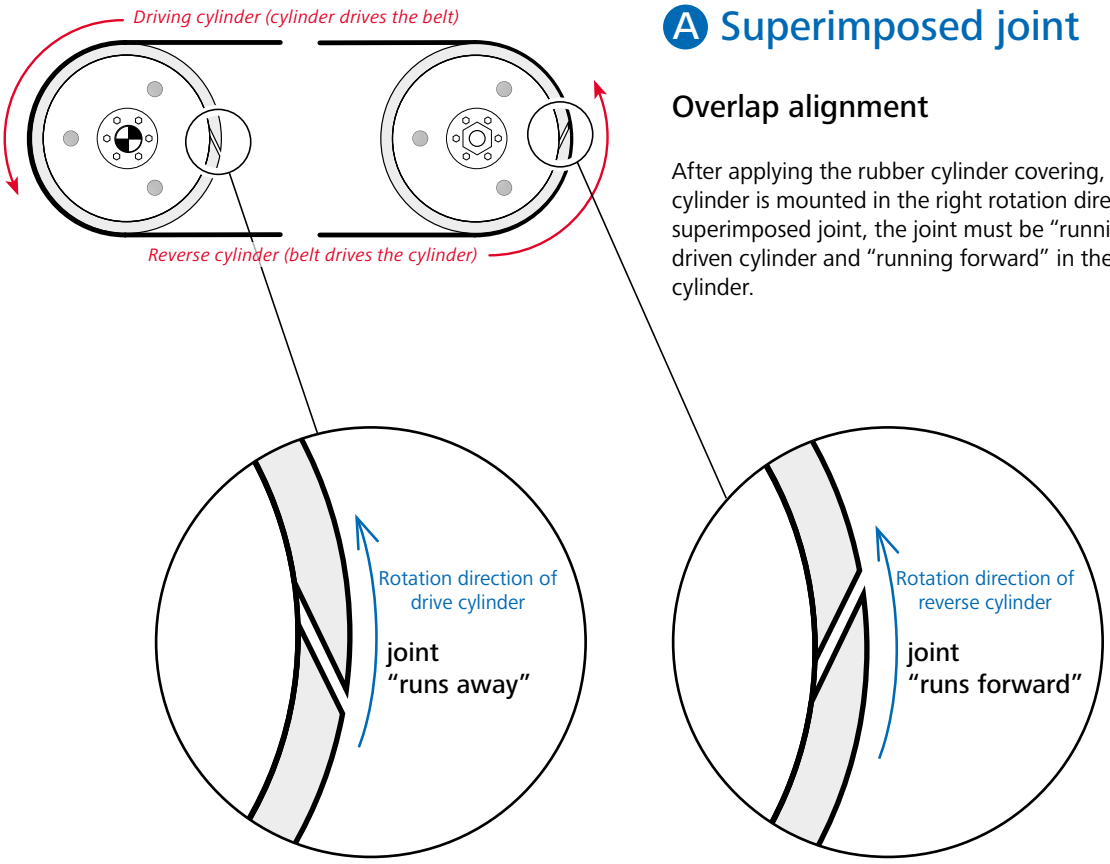
Depending on which rubber covering you have opted for or what the circumference of the cylinder is, various joint types are available and these and these are described below:

A Superimposed joint
- not for reversible conveyers
- good adhesion of the joint
- overlap direction depends on the cylinder's rotation direction
- all material thicknesses

B Dull joint
- for reversible conveyers
- for cover strips
- up to max. 10 mm covering thickness
- quick and easy to produce

C V seam
- for reversible conveyers
- all covering thicknesses
- time-consuming
- filling layer required





A Superimposed joint

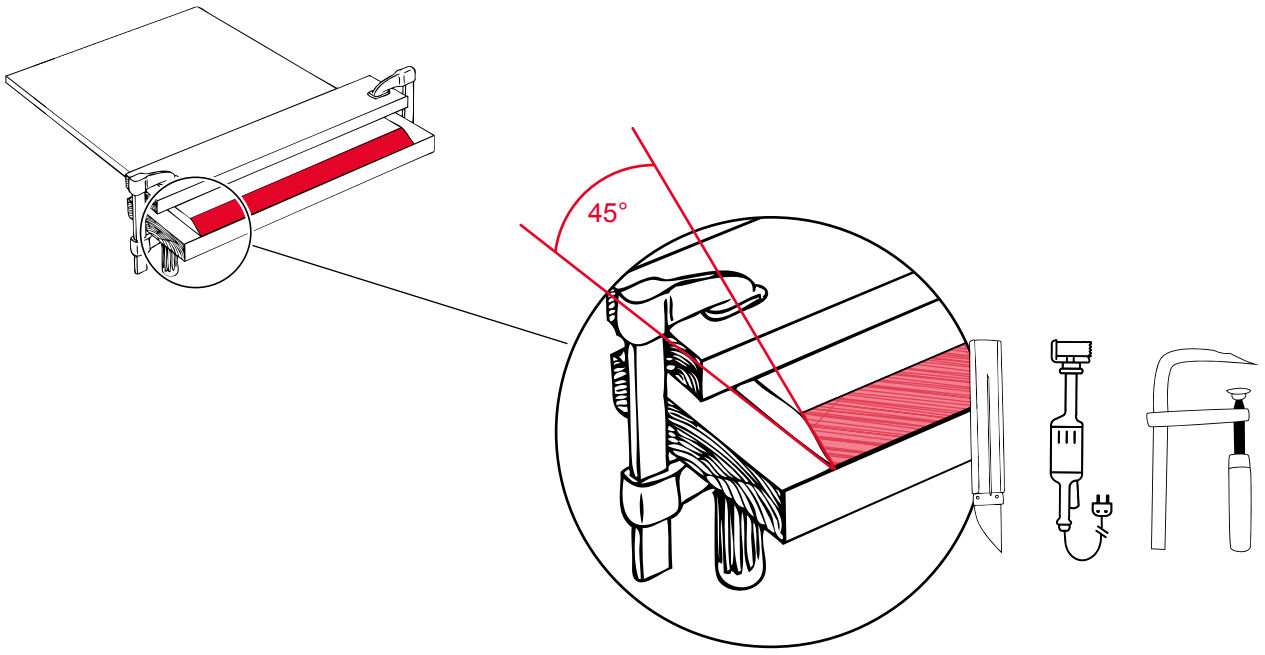
Overlap alignment

After applying the rubber cylinder covering, ensure that the cylinder is mounted in the right rotation direction. If using a superimposed joint, the joint must be "running away" on a driven cylinder and "running forward" in the case of the reverse cylinder.

Cutting the joint edge to size

Fix the cylinder covering with 2 screw clamps.

Cut the front side of the cylinder covering at a 45° angle.
Roughen the angled joint edge carefully using a rotary sander.



Instructions for rubber cylinder coatings

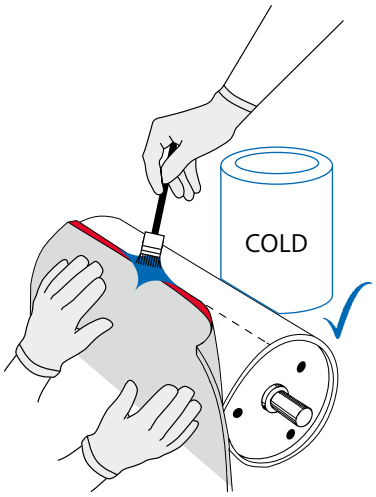
Covering cylinders with superimposed joints

1. Carry out the work steps from 1.4 (Coating the covering and the cylinder) before covering the cylinder.

   Caution: note cylinder rotation direction!

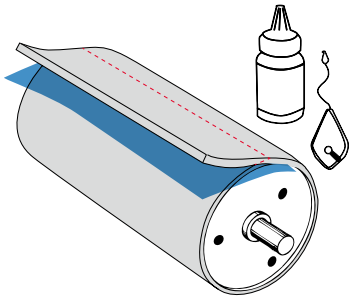
2. Position the cylinder covering with the roughened joint edge along the guide line and press down from the centre to the outer edge in a wiping motion.

   Using a flat roller, ensure that there are no air gaps between the covering and the cylinder. To do so, gently roll out from the centre of the cylinder to the outer edge. Repeat until the entire covering has been completely rolled. Then hammer on the covering from the cylinder centre outwards using the rubber hammer.



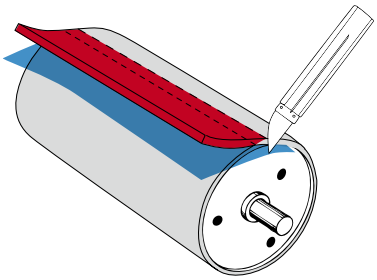
3. Brush the joint edge of the cylinder covering with adhesive.

4. Before rolling the cylinder covering over the joint edge, place a protective film between the covering and the cylinder in the area of the joint edge. Then roll out the covering over the film and beyond the joint edge.

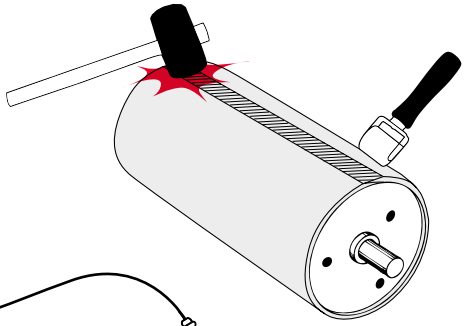


5. Plot the cutting edge along the length of the cylinder on the cylinder covering.

6. Cut off the overhanging rubber at a flat angle in the mapped direction, thus adjusting the cylinder's rotation direction.



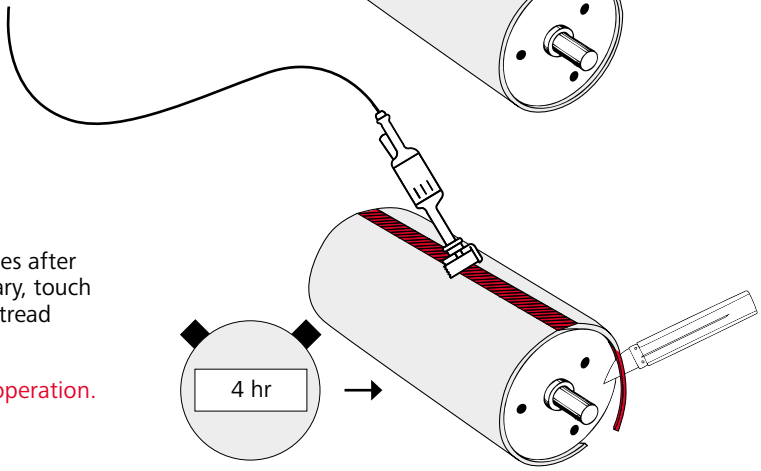
7. Remove the protective film and stick down the remainder of the cylinder covering. Use the flat roller and the rubber hammer here to apply the covering carefully and without any air gaps.

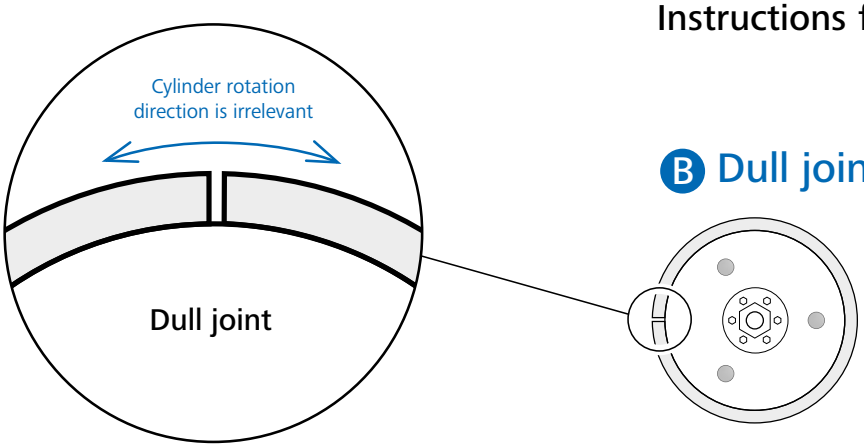


8. Grind the cutting edges smoothly and evenly. Do not grind against the joint when doing so.

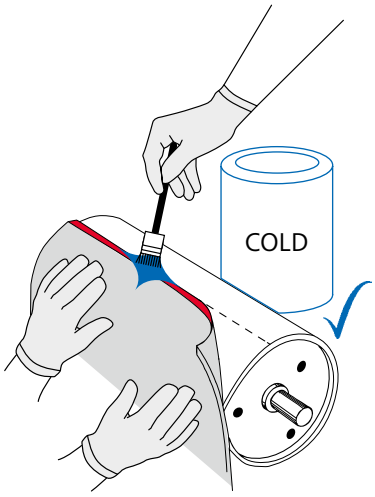
9. Cut the overhanging rubber from the cylinder edges after approx. 4 hours and grind until smooth. If necessary, touch up loose areas using cold adhesive or silicon. Trim tread grooves if necessary.

   Wait at least 4 hours before putting cylinders into operation.





B Dull joint

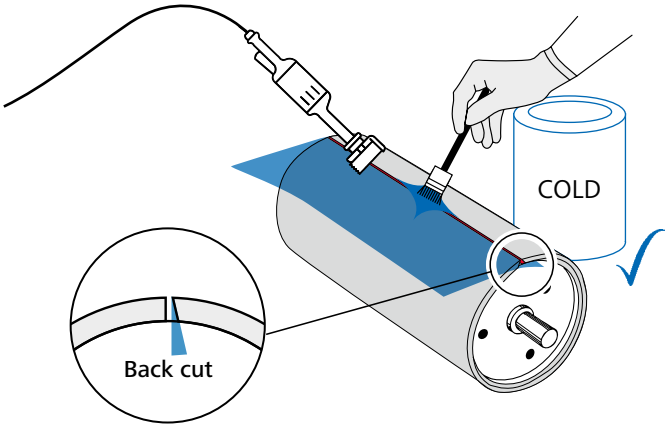


Covering cylinders with dull joints

1. Carry out the work steps from 1.4 (Coating the covering and the cylinder) before covering the cylinder.

2. Position the cylinder covering with the roughened joint edge along the guide line and press down from the centre to the outer edge in a wiping motion.

   Using a flat roller, ensure that there are no air gaps between the covering and the cylinder. To do so, gently roll out from the centre of the cylinder to the outer edge. Repeat until the entire covering has been completely rolled. Then hammer on the covering from the cylinder centre outwards using the rubber hammer.



3. Brush the joint edge of the cylinder covering with adhesive.

4. Before rolling the cylinder covering over the joint edge, place a protective film between the covering and the cylinder in the area of the joint edge. Then roll out the covering over the film and beyond the joint edge.

5. Draw the cutting line onto the overhanging covering edge in line with the bottom covering edge. Position a bar along the cut line and cut the covering lengthwise along the bar at a 90° angle. Cut downwards with a gentle “back cut”.

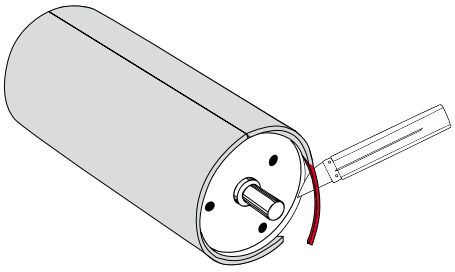
6. Roughen the cut edge, remove the dust and, as described under 1.4, coat twice with the activated adhesive.

7. After the right degree of dryness has been obtained (test on back of hand), remove the film strips and press the cut edges against one another firmly. Roll out from the centre towards the edge of the cylinder and roll the joint surfaces against one another firmly using a narrow roller. Hammer down gently with a rubber hammer.

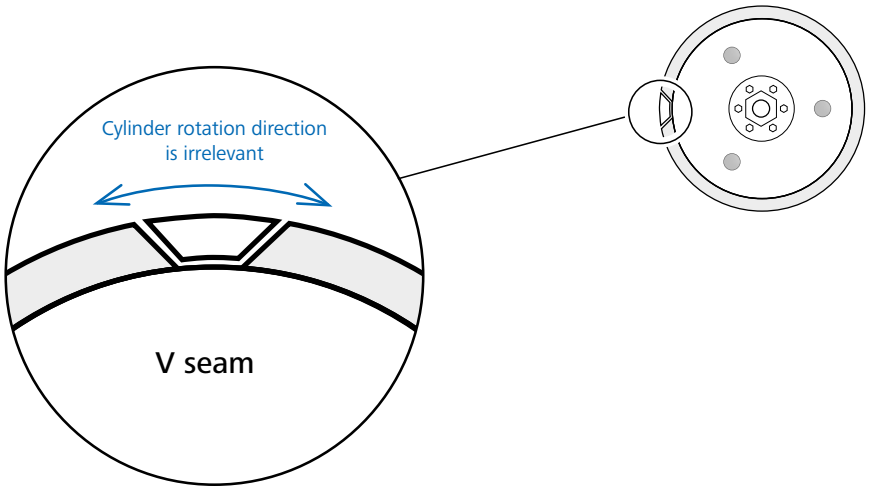
8. Sand down the joint area if need be.

9. Cut the overhanging rubber from the cylinder edges after approx. 4 hours and grind until smooth. If necessary, touch up loose areas using cold adhesive or silicon. Trim tread grooves if need be.

Wait at least 4 hours before putting cylinders into operation.



C V seam

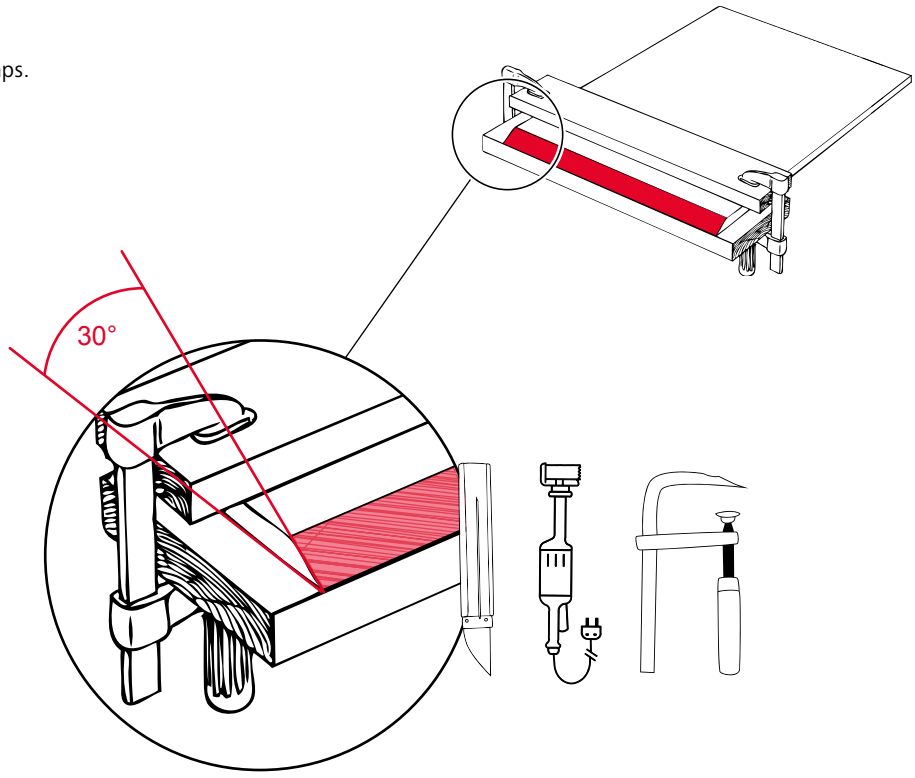


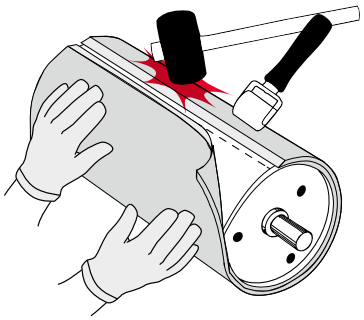
Cutting the joint edge to size

Fix the cylinder covering with 2 screw clamps.

Cut a front side of the cylinder covering at a 30° angle.

Roughen the angled joint edge carefully using a rotary sander.



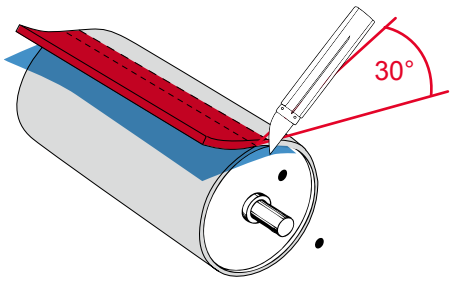


Covering the cylinder with a V seam

1. Carry out the work steps from 1.4 (Coating the covering and the cylinder) before covering the cylinder.

2. Position the cylinder covering with the roughened joint edge along the guide line and press down from the centre to the outer edge in a wiping motion.

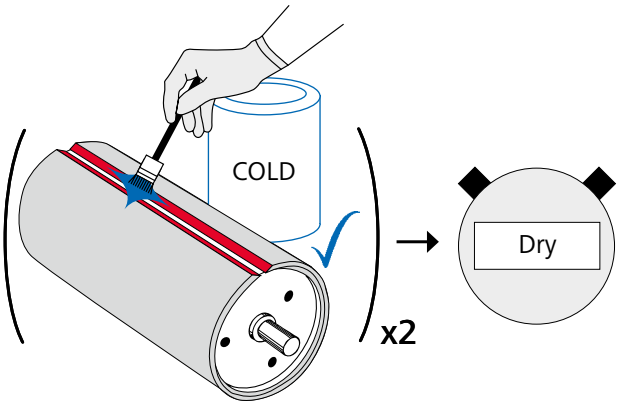
   Using a flat roller, ensure that there are no air gaps between the covering and the cylinder. To do so, gently roll out from the centre of the cylinder to the outer edge. Repeat until the entire covering has been completely rolled. Then hammer on the covering from the cylinder centre outwards using the rubber hammer.



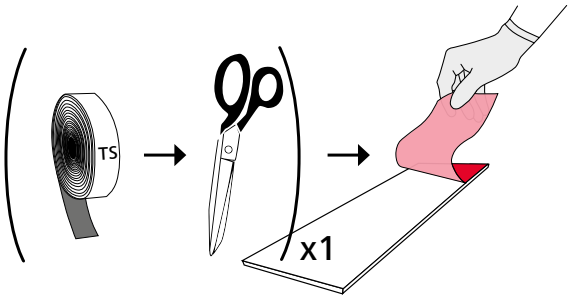
3. Position until both covering ends are in front of one another, roll out firmly and tap using a rubber hammer.

4. Cut the second joint edge parallel to the first joint edge slanted at an angle of 30° to the cylinder surface. Cut in until the covering-free area on the cylinder surface is as wide as the thickness of the covering.

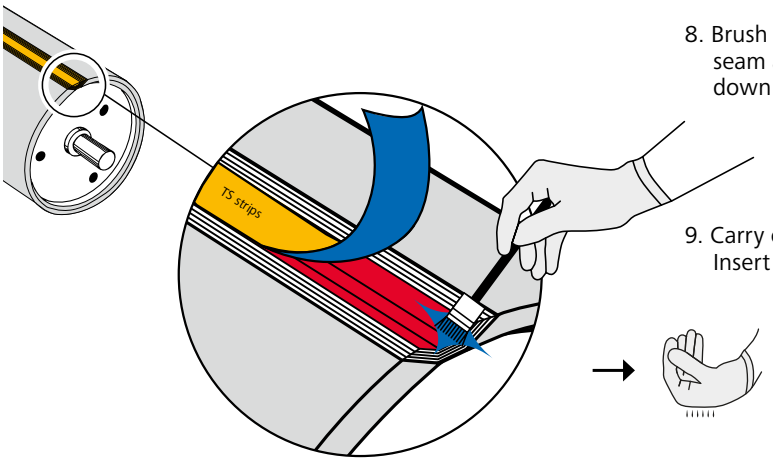
5. Remove the cut-off strips, sand the cutting edge and remove the dust.



6. Paste in the edges of the seam and repeat the process a second time. Both coats must be completely dry before any further processing.



7. Cut off NILOS TOPGUM TS strips from the roll in the length of the cylinder and remove the protective film if necessary.



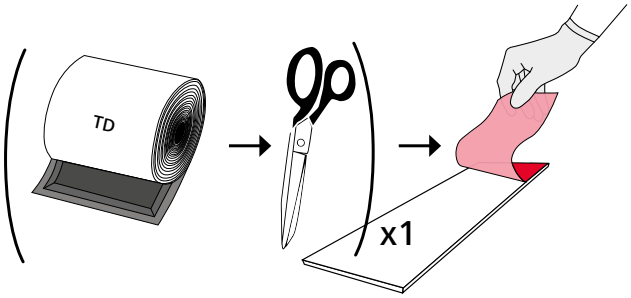
8. Brush both the TS layers on the light side and the slanted seam areas of the cylinder covering which is already stuck down with one coat of cold adhesive.

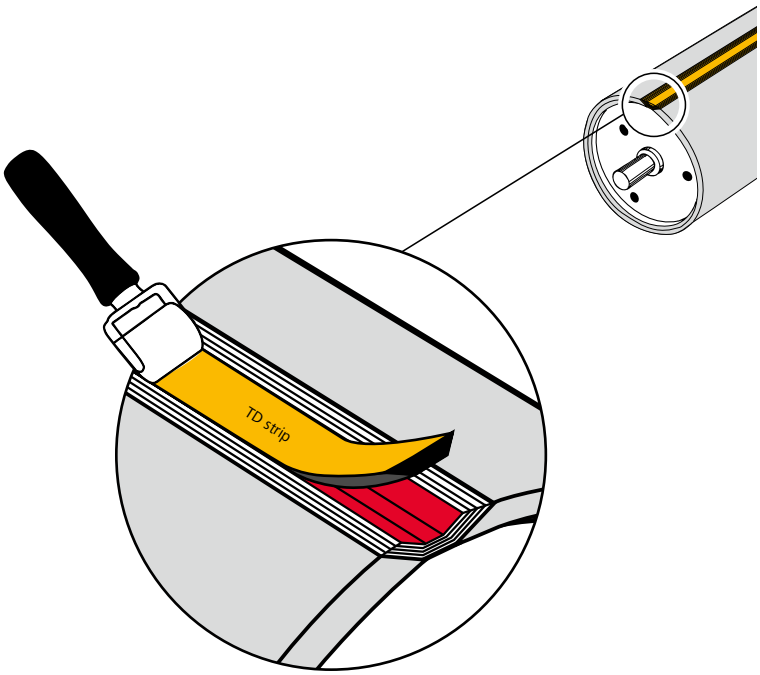
9. Carry out a test using the back of your hand.
   Insert the strip into the V seam and roll down gently.

10. Repeat steps 3–6 until the V seam is filled with TS layers.

Instructions for rubber cylinder coatings

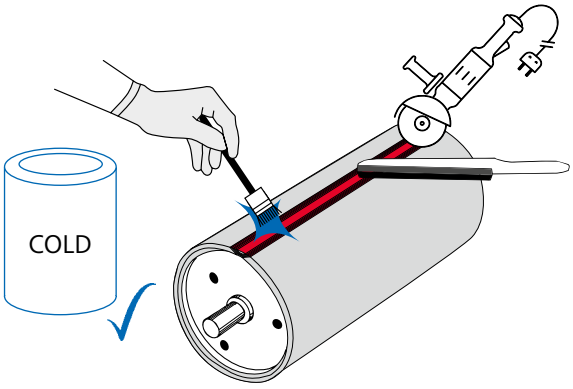
11. Cut off a NILOS TOPGUM TD strip from the roll in the length of the cylinder and remove the protective film if necessary.





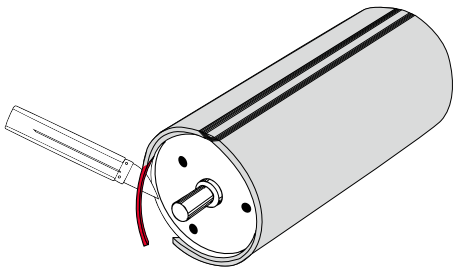
12. Finally, place the TD strip into the gap remaining and press down gently using a knurled roller.

13. Cut off excess material to fit the curvature of the cylinder. Smooth out the surface using the sanding machine



14. Cut the overhanging rubber from the cylinder edges after approx. 4 hours and grind until smooth. If need be, seal the cutting edges with cold adhesive or silicon and trim tread grooves if necessary.

Wait at least 4 hours before putting cylinders into operation. NILOS recommends a curing time of 12 hours.



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