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a cornerstone of first-class rodent exclusion

## **How to Rodent Proof Swing Doors and Other Horizontally Opening Doors October 2022**

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# 1 IMPORTANT INTRODUCTION

## 1.1 Seals and Doors

This is a guide on how to rodent proof horizontally opening doors with RodeXit's All-In-One seal or RodeXit's WAVE seal. When the word “seal” is used in the following it shall be understood as referring to either the All-In-One seal or the WAVE door sweep.

With a single layer you can proof up to 1.4 in (35 mm) high threshold gaps. With a double layer you can proof up to 2 in (5 cm) high threshold gaps.

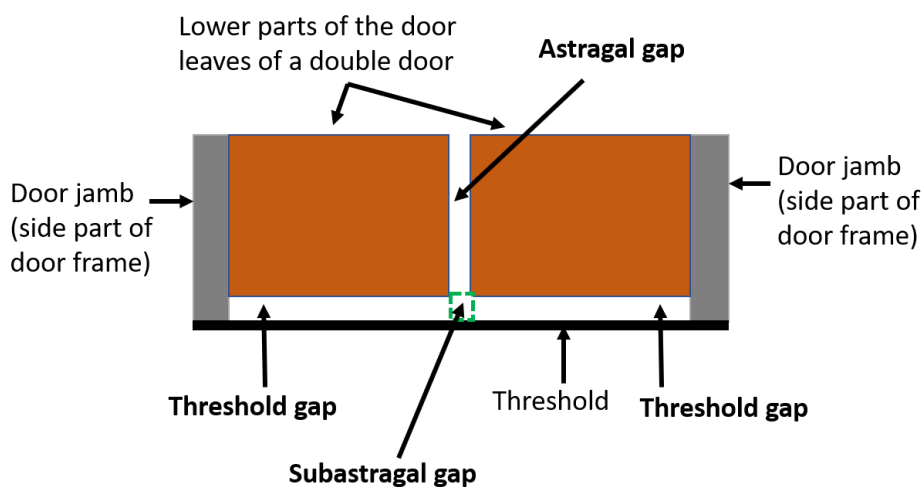
The proofing of single and double swing doors by means of screws and washers are described in sections 2 and 3. The proofing of other horizontally opening doors is described in section 4. The use of mounting strips is explained in section 5. Section 6 is about the use of double sided tape. In section 7 you will find some valuable tips and tricks.

## 1.2 Gaps and Astragals

The “threshold gap” of a single door is the horizontal gap between the door leaf and the underlying threshold. There's a threshold gap under each of the door leaves of a double door.

The “astragal gap” of a double swing door is the vertical gap between the 2 door leaves. The astragal gap is covered by a vertical strip called an “astragal” on at least one side of the door, unless it is a saloon type door.

The “subastragal gap” of a double swing door is the small gap right under the astragal gap and between the 2 threshold gaps.



The All-In-One seal and the WAVE seal can both be used for proofing all 3 gap types.

### 1.3 Motorized Doors

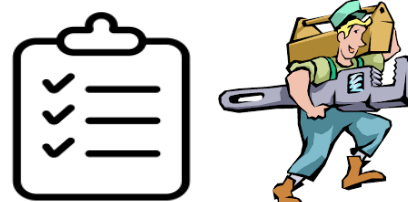
When installed on a motorized door with a safety sensor, the seal should not rub against the ground during opening and closing of the door. That is because the friction may trigger the safety sensor, so the operation of the door will be compromised.

Especially when the door is a motorized sliding door, it may be difficult to avoid the problem.

Problems with too much friction can sometimes be solved simply by adjusting the sensor.

### 1.4 Monitoring and Maintenance

All rodent proofed doors should at regular intervals be monitored for maintenance needs. The seals should be fixed or replaced if they are seriously compromised – for example due to severe rodent attacks.

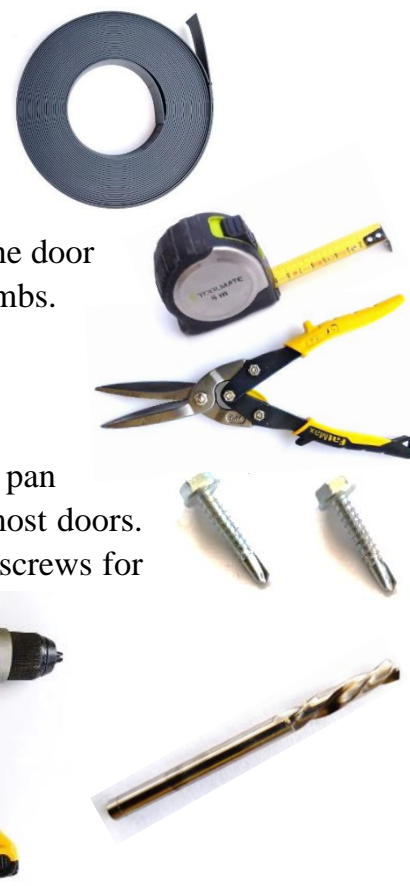


## 2 SINGLE SWING DOORS

### 2.1 Tools and Materials

You will need these tools and materials:

- 1) A roll of All-In-One seal or WAVE seal.
- 2) A tape measure or another measuring device.
  - A telescopic measuring stick is extremely practical especially when the seal is to be installed on the push side of the door and you have to measure the distance between the 2 side jambs.
- 3) Tin snips for trimming the length of the seal
  - preferably straight tin snips with long blades.
- 4) Suitable flatheaded screws.
  - 1 inch (25 mm) long No. 10 (4.8 mm) hex head screws or pan head screws with a No. 2 Philips recess are suitable for most doors. It is generally a good idea to use self-drilling sheet metal screws for sheet metal doors.
- 5) Washers.
- 6) A screw bit.
- 7) A cordless screwdriver.
- 8) Possibly: A drill bit for drilling pilot holes.



If you want to get both hands free for screwing the seal onto the door, it is handy also to have some around 1 lb (½ kg) heavy objects that can hold the seal in place during installation:

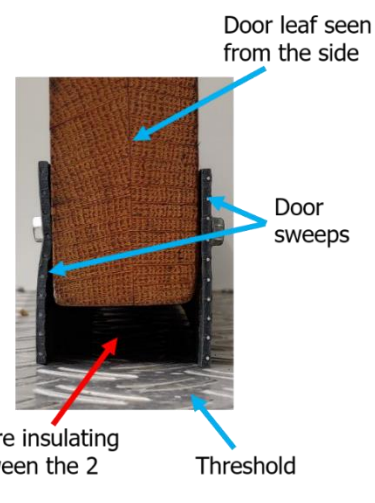


## 2.2 The Seal may be Installed on Either Side

You can install the seal on the push side, on the pull side or on both sides.

Installation on both sides is always worth considering because:

- It will increase the protection against rodents and other pests.
- It will considerably improve the insulating properties of the door.
- The extra cost will usually be more than compensated by saved heating or cooling costs.

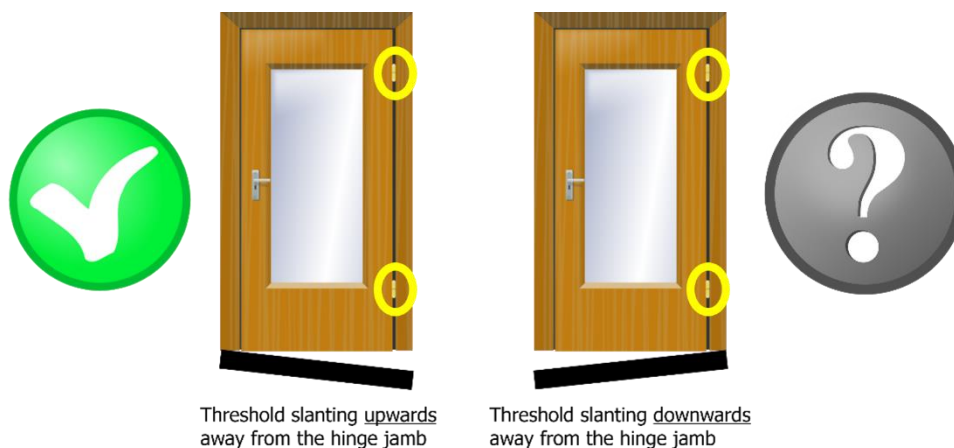


## 2.3 Heavily Slanting Thresholds

The threshold should always be level, but sometimes it isn't. Sometimes the threshold slants upward away from the hinge jamb and sometimes it slants downward away from the hinge jamb.

If the threshold slants upwards away from the hinge jamb, the seal shall be installed in the usual way.

If it slants heavily downwards away from the hinge jamb, the seal should be installed with the door leaf in an open position. The seal should furthermore be supplemented with a brush door sweep installed on the other side of the door while the door is closed (see section 7.6).



The hinges on the hinge jambs are marked by yellow circles.

## 2.4 How to Proof a Single Swing Door

Follow these steps:

- 1) Close and lock the door.



- 2) If there is a door holder in the way, dismount it. Remount it after proofing the door. If remounting isn't possible, replace the old door holder with a new and compatible one.

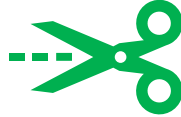


## 3) Measure the door:

- If you install the seal on the push side measure the width of the door opening.
- If you install the seal on the pull side measure the width of the door leaf.



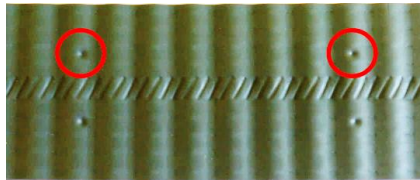
## 4) Cut off a corresponding length of seal.



## 5) Place the seal on the ground. It is a good idea to use 2 heavy objects for holding it in place, so you get both hands free.



## 6) If the gap is up to 35 mm, place a screw with a washer in each of the upper screw-hole markings marked with red or yellow circles.



WAVE door sweep



All-In-One seal

If the gap is wider than 35 mm, you may have to place the screws somewhat closer to the upper edge.

Do not to press the seal hard downwards. It should make only featherlight contact with the ground:



If you install the seal on the pull side, and the seal touches the hinge-side jamb, the seal will rub against the jamb and thereby upset the operation of the door. Therefore, don't let the seal touch the hinge-side jamb on the pull side. The width of the gap between the seal and the hinge-side jamb should not exceed 0.1 in (2½ mm).

Too close to the hinge jamb on the pull side

OK



Make sure that there is a screw about 1 inch (2½ cm) or closer to each end.



If the door leaf is equipped with a flush bolt take care not to hit it with a screw:



- 7) Open and close the door to check if it operates satisfactorily. It is quite OK if there is moderate friction between the seal and the ground. If it is difficult to open and close the door, there is something wrong with the door. E.g. the hinge jamb may be out of true, or the ground may be sloping negatively towards the door. If it is very difficult to open and close the door, the door problem should be fixed.



### 3 DOUBLE SWING DOORS

#### 3.1 Threshold Gaps and Subastragal Gaps of Double Doors

You proof threshold gaps and subastragal gaps of double doors in much the same way as you proof threshold gaps of single doors.

The only differences are:

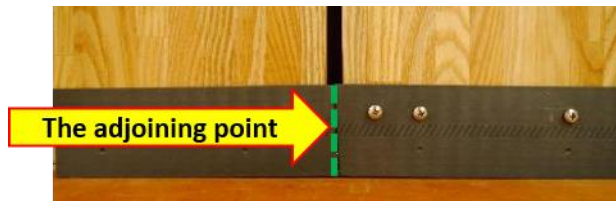
- 1) that you use 2 seals instead of 1 and
- 2) that there is a subastragal gap.

The way you proof subastragal gaps depends on whether there is an astragal or not on the mounting side of the door. In section 3.1.1 it is described how to do it when there isn't an astragal on the mounting side. In section 3.1.2 it is described how to do it when there is.

##### 3.1.1 When There Isn't an Astragal on the Mounting Side

You proof the double door in the same way as a single door except for this:

- 1) Trim the 2 seals, so they can adjoin in the middle of the astragal gap:



- 2) Do not make them overlap.

### 3.1.2 When There Is an Astragal on the Mounting Side

You proof the double door in the same way as a single door except for this:

- 1) Trim the 2 seals, so they can adjoin at the free edge of the astragal:



Do not make them overlap.

- 2) Loosen the lowermost part of the astragal.
  - e.g. unscrew the lowermost 2 screws.
- 3) Tuck one of the 2 seals behind the loosened astragal and align the end of the seal with the free edge of the astragal:
- 4) Screw the 2 seals onto the 2 door leaves.
- 5) Retighten the astragal.



### 3.2 Astragal Gaps of Double Doors

If there isn't an astragal on the mounting side, you should consider rodent proofing at least the lowermost 20 in (50 cm) of the astragal gap on that side of the door.

You should also consider proofing the entire astragal gap because:

- 1) It will improve the protection against pests such as climbing and flying insects including cockroaches.
- 2) It will considerably improve the insulating properties of the door.
- 3) The extra cost will usually be more than compensated by saved heating or cooling costs.

The seal shall be mounted:

- On the active door leaf (the one that opens first), when you mount it on the pull side.
- On the passive door leaf (the other door leaf) when you mount it on the push side.

#### 3.2.1 Tools and Materials

You will need:

- 1) The same tools and materials that you need when proofing the threshold gaps of single doors (see section 2.1).
- 2) Possibly a Stanley knife.



### 3.2.2 How to Install the Seal

Follow these steps:

1) Close and lock the door.



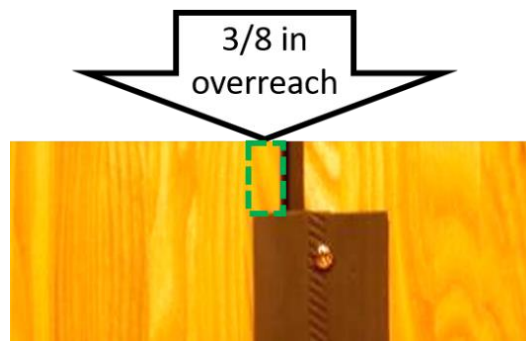
2) Cut off the required piece of seal.

3) If there is a door handle and/or a door lock in the way, trim the seal to accommodate the handle and/or the lock. Crosswise cuts (red dotted lines) can be made with tin snips while lengthwise cuts (green dotted line) are best made with a Stanley knife:

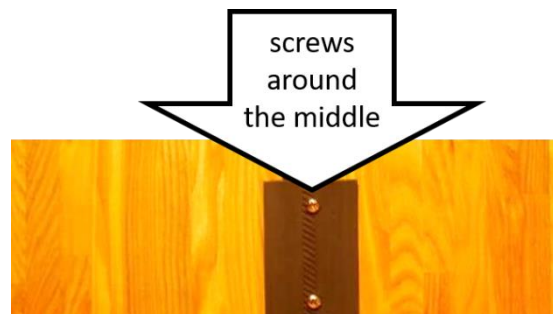


4) Screw the seal onto the door.

The seal shall be mounted, so it overreaches the astragal gap by around 3/8 inch (10 mm):



The screws should as a main rule be placed around the middle of the seal and not as indicated by the dot-shaped screw hole markings:



Fasten the uppermost screw first. Thereafter, continue downwards placing a screw for each around 4 inches (10 cm) until you reach the bottom end of the seal.





Take care not to place any screws in the lock box and/or the flush bolt if any:



There should be a screw about 1 inch (2½ cm) from each end.

5) Open and close the door to check if it operates satisfactorily.



#### 4 OTHER HORIZONTALLY OPENING DOORS

You proof other horizontally opening doors including saloon doors, sliding doors, folding doors, and carousel doors in much the same way as you proof swing doors. However, other horizontally opening doors vary a lot in construction and design, so you may occasionally have to be creative and tailor your own solutions.

When proofing the astragal gap of a saloon door, the seal should obviously not reach beyond the astragal gap as that would prevent the 2 door leaves from passing each other.



#### 5 MOUNTING BY MEANS OF MOUNTING STRIPS

Mounting strips are used when an aesthetically more pleasing finish is called for.

##### 5.1 The Mounting Strips

You can use numerous different strips as mounting strips e.g. strips of wood matching with the wood of the door. RodeXit recommends aluminum carpet trims of the angled flat bar type, because they are inexpensive and can cover the upper edge of the seal:



Carpet trim of the angled flat bar type



Upper edge of an installed carpet trim of the angled flat bar type

RodeXit recommends the following carpet trims from MD Building Products and similar carpet trims:

Recommended for	Height	Width	Length	Surface	Universal Product Code (UPC #)
Single layer installations	0.2 in (5 mm)	2 in (51 mm)	36-72 in (91-183 cm)	Fluted	e.g. 43374438581
Double layer installations	0.5 in (13 mm)	2 in (51 mm)	36- 72 in (91-183 cm)	Smooth	e.g. 43374660845

The carpet trims from MD Building Products come in different colors and lengths with different UPC numbers. The above stated UPC numbers are for the “silver” colored and 36 in (91 cm) long versions.

Double layer installations are used A) when the gap is more than 1.4 in (35 mm) and B) when a very high degree of protection is required – for example when the rodent pressure is very high.

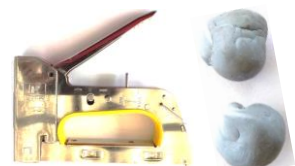
Double layer installation with a 2 in (51 mm) wide carpet trim



## 5.2 Tools and Materials

You will need the tools and materials listed in section 2.1 and on top of that:

- 1) A sufficiently long aluminum carpet trim with predrilled holes (hereinafter called: “the mounting strip”).
- 2) Widgets for temporarily attaching the seal to the door e.g.
  - a staple gun with suitable staples if the door is a wooden door, or
  - blobs of sticky power tack if the door is a metal door.
- 3) A couple of around 2 pounds (1 kg) heavy objects for holding the mounting strip in place during the installation.
- 4) Possibly a drill bit for drilling extra holes in the mounting strip.



## 5.3 Mounting with Mounting Strips on Swing Doors

### A. Mounting on Single Swing Doors

The seal is installed on a door by means of a proofing strip in the same way as by means of screws and

washers - except for the following:

1) With the tin snips trim the length of the mounting strip so it matches the shorter of:

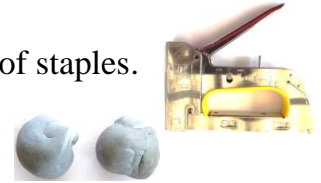
- the length of the seal and
- the width of the door blade.



2) If the first predrilled hole in the cut end of the strip is too far from the end, drill an extra hole around 1 in (2½ cm) from the end.

3) If the door is a wooden door, attach the seal to the door blade by means of staples.

If the door is a metal door, attach the seal to the door blade by means of tiny blobs of sticky power tack.



4) Use a couple of around 2 pounds (1 kg) heavy objects for holding the mounting strip in place.



5) Screw the mounting strip onto the door blade.

Use suitable screws – usually NOT the ones that come with the mounting strip if any as they tend to be of poor quality. It is no problem if the screws are slightly thicker than the predrilled holes. Thicker screws will automatically widen the holes when driven in.



Don't use too much force. You risk denting the mounting strip. You can reduce the risk by using washers.



Place a screw in each of the predrilled holes of the mounting strip (if necessary, after drilling pilot holes in the door):



## B. Mounting on Double Swing Doors

You use mounting strips when proofing double doors in much the same way as when proofing single doors.

The only differences are:

- You use more mounting strips.
- If there is no astragal on the mounting side of the door, the adjoining ends of the 2 horizontal mounting strips shall be aligned with the 2 adjoining edges of the door blades:



- If there is no astragal on the mounting side of the door, and the astragal gap is proofed with a RodeXit seal, a vertical mounting strip may be placed like this:



- If there is an astragal on the mounting side, the adjoining ends of the 2 mounting strips shall be aligned with the edges of the astragal:



#### 5.4 Mounting with Mounting Strips on Other Horizontally Opening Doors

You use mounting strips when proofing other horizontally opening doors - such as saloon doors, sliding doors, folding doors, and carousel doors - in much the same way as when proofing swing doors. However, other horizontally opening doors vary a lot in construction and design, so you may occasionally have to be creative and tailor your own solutions.

### 6 MOUNTING BY MEANS OF DOUBLE-SIDED TAPE

Using double-sided tape may be relevant:

- If screw holes are undesirable – e.g. if the seal is to be mounted on a very fine wooden door.
- If it is impossible to secure the seal by means of screws – e.g. if the seal is to be mounted on a glass door.
- If you are about to rodent proof a motorized door, and there is a risk that screws will damage the electronic safety mechanism of the door when they are driven in.



The All-In-One seal is mounted by means of double sided tape in much the same way as when it is mounted by means of screws and washers. The WAVE door sweep should, however, due to its wave-

shape not be mounted with double-sided tape.

On [www.rodexit.com](http://www.rodexit.com) you can download a PDF mounting guide to the use of double-sided tape for installing the All-In-One seal.

## 7 TIPS & TRICKS

### 7.1 The Instructional Video

On [www.rodexit.com](http://www.rodexit.com) you can watch an instructional video on how to proof horizontally opening doors.



rodent

### 7.2 Installation on the Push Side of a Swing Door Provides Tighter Proofing <sup>1</sup>

There are no side gaps on the push side of a swing door. Therefore, the proofing of the door will be tightest if you install the seal on the push side.



Pull side

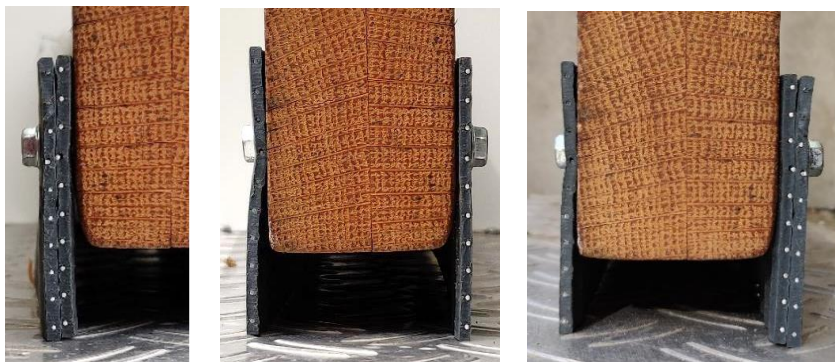


Push side

### 7.3 If a Very High Degree of Protection is Required

Under normal circumstances it is sufficient to install a single layer. If a particularly high degree of protection is required – e.g. because of a very high rodent pressure – you should install

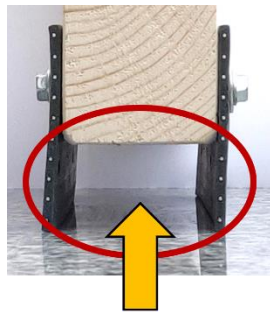
- a double layer on one side of the door and/or
- seals on both sides of the door:



<sup>1</sup> Photos by Sergey Nemykin / Industrial Pest Elimination.

A double layer is installed in the same way as a single layer.

A layer on both sides of the door has the added advantage of significantly improving the insulation properties of the door and thereby reducing the cost associated with heating or cooling the room behind the door:



Highly improved insulation



Significantly lower heating and air-conditioning costs

Trapped air → Excellent insulation properties

The cost reduction will more than pay for the installation.

#### 7.4 What if there is a Kickplate on the Door?

It is no problem if there is a Kickplate on the Door. You simply use it as a mounting strip:

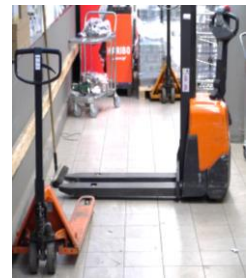
- 1) Unscrew the lowermost screws that hold the kickplate.
- 2) Tuck up the seal between the kick-plate and the door leaf.
- 3) Remount the screws.



#### 7.5 Protection Against Colliding Pallet Jacks

Pallet jack drivers often drive their pallet jacks into the push side of swing doors in order to force them open. That may damage the door and any rodent proofing seal mounted on that side of the door.

If there is pallet jack traffic through the door and you install a seal on the push side, you should therefore consider protecting the door and the seal with a kick-plate. You can use the kickplate as mounting strip when installing the seal.



#### 7.6 How to Handle Very Uneven Thresholds

If the threshold is so uneven or rough that there will be substantial gaps under the seal, the threshold should be repaired before installing the seal.

Though it is not the best solution, you can as an alternative supplement the seal with a brush door sweep that will conform better to the uneven or rough surface.

Such a brush door sweep may be installed on one side of the door while the RodeXit seal is installed on the other side.

The brush door sweep may also be installed on the same side as the RodeXit seal. In that case the brush door sweep may be used as mounting strip when securing the RodeXit seal to the door.



### 7.7 How to Use Tin Snips with Long Blades

It is not rocket science, but it makes a lot of difference.

You should open the gap of the tin snips completely and firmly drag the seal / the aluminum mounting strip as far as possible in between the 2 blades of the tin snips before cutting:



If the blades are forced apart when you cut, it may be because you do not hold the seal / mounting strip at a right angle to the blades of the tin snips. It may also be because the main screw of the tin snips isn't sufficiently tight.



### 7.8 Why Tin Snips with Long Blades are Best

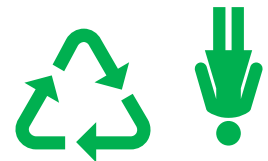
Straight tin snips with long blades are better than tin snips with ordinary blades because:

- It is a lot easier to make straight cuts with long blades.
- It is possible to cut the seal in a single clip.



### 7.9 Repair by Reuse

Because the seal is symmetrical, it can be reused if the lower part has been worn or otherwise damaged. You simply dismount the seal, turn it upside-down and remount it.



This is especially a beneficial option when the seal is mounted by means of a mounting strip, because the damaged part of the seal after the remounting will be hidden behind the mounting strip.

