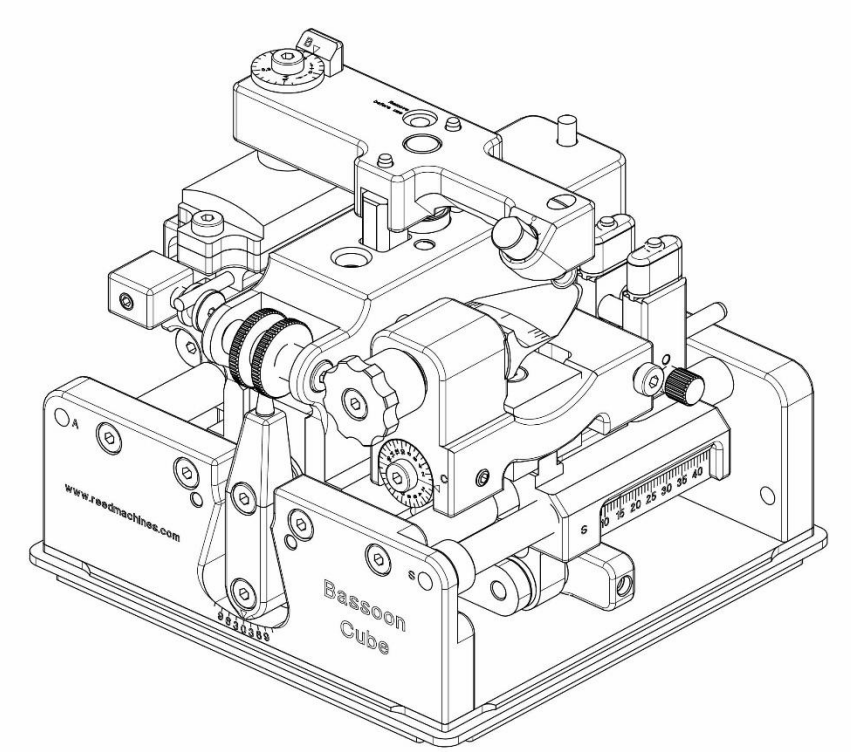
Bassoon tip profiler manual



Preface

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Contact information

You can contact Reed Machines at:

E-mail address: contact@reedmachines.com

Website: www.reedmachines.com

Or through a reseller. You can find contact information of resellers on the contact page of our website. See: www.reedmachines.com

Table of Contents

1 About this manual

1.1 Described product

The described product is the bassoon tip profiler. The bassoon tip profiler can also be used for bagpipe reeds.

1.2 Purpose of this manual

The purpose of this manual is:
- To describe the product.
- To explain adjustment, operating and maintenance procedures.
- To ensure good results and safety for the user and product.

1.3 Audience

The target audience for this manual is the user of the product. The procedures in this manual include the tasks for the operator in accordance with the operator and maintenance philosophy of Reed Machines V.O.F.

1.4 Notation conventions

Warning
Warns you about a situation that can cause serious injury. Obey this warning to prevent injury.

Caution
Gives information about a situation that can cause damage to the machine and/or reed. Obey this information to prevent damage.

Note
Gives more information about a topic.

1.5 Chapters

Chapters are defined by a chapter number. For example:
- 1 refers to chapter 1.

1.6 Paragraphs

Paragraphs are defined by a chapter number followed by an index number. Chapter and index numbers are separated by a point. For example:
- 1.4 refers to paragraph 4 of chapter 1.

1.7 Images

Images are defined by a paragraph number followed by an index number if a paragraph has more than 1 image. Paragraph and index numbers are separated by a point.

Details are defined by detail numbers which are preceded by a paragraph number and an index number if necessary. Image and detail numbers are separated by a dash.

Image numbers are represented in bold. In an image, details are indicated by a line that runs from the box around the detail number to the detail.

For example:
- **4.1.2** refers to image 2 of paragraph 4.1.
- **4.1.2**-3 refers to detail 3 of image 2 of paragraph 4.1.
- **5.1** refers to the image of paragraph 5.1.
- **5.1**-3 refers to detail 3 of the image of paragraph 5.1.

A number in a text that refers to an image or detail is enclosed in square brackets.

1.8 Additional information

Refer to the support section of the Reed Machines website for:
- Manuals and, if available, quick start guides of machines and tools.
- Reed Related Part (RRP) overviews of machines and tools.
- General information about Reed Machines and ordering.

Every effort has been made to make this manual as accurate and complete as possible. However, if you find any errors or omissions, it would be appreciated if these were brought to the attention of Reed Machines.

1.9 Environment

Reed Machines is committed to the environment. Please:
- Consider the environment before you print manuals, quick start guides, reed related part overviews or other documents.
- Dispose packing materials separated in an environment friendly way and in accordance with the rules.

2 Introduction

2.1 Contents of the delivery

The bassoon tip profiler delivery contains the following:

- 1 bassoon tip profiler with:
  - 1 standard template.
  - 1 knife.
- 1 reed alignment set.
- 1 Allen key 2mm.
- 1 Allen key 2,5mm.
- 1 stroke limitation pin.

Warning
Keep packing materials away from children.

Note
Contact your supplier in case of transport damage.

2.2 About the bassoon tip profiler

The bassoon tip profiler copies the shape of a template to a reed. Depending on the template this can be done for all types of bassoon reed.

Features of the bassoon tip profiler:

- Unique compact design with a hard cover.
- Adjustments:
  - Position of the profile in the length direction.
  - Thickness of the scrape.
  - Thickness at the back of the scrape.
  - Length of the scrape.
  - Position of the profile in the cross direction.
- Reed related adjustments have a designation character and a scale, so it is easy to switch between different settings.
- It is possible to:
  - Scrape the tip but also the complete blade of the reed.
  - Scrape only a V shaped area of the tip of the reed.
  - Scrape only the sides or only the middle of the reed.
- The reed can be rotated 180° without taking the reed from the profiler.
- The template is exchangeable, multiple templates are available.

2.3 Specifications

The bassoon tip profiler has the following specifications:

- Maximum width of the tip: 24mm.
- Maximum length of the scrape: 42mm.
- Length: 126mm.
- Width: 126mm.
- Height: 118mm.
- Weight: 1,8kg.

3 Safety information

3.1 Mechanical hazards

Incorrect use of the bassoon tip profiler can cause injury, malfunctioning, and damages. Always obey the following instructions.

Warning
Never position your fingers between the moving parts and the knife.

Never touch the cutting edge of the knife.

Caution
Use the bassoon tip profiler on a horizontal and even surface to prevent that it slides away or falls.

Take care that the bassoon tip profiler does not fall (for example from a table or shelf) because it can lead to malfunctioning and damages.

4 Description

4.1 Overview of the bassoon tip profiler

Image **4.1.1**

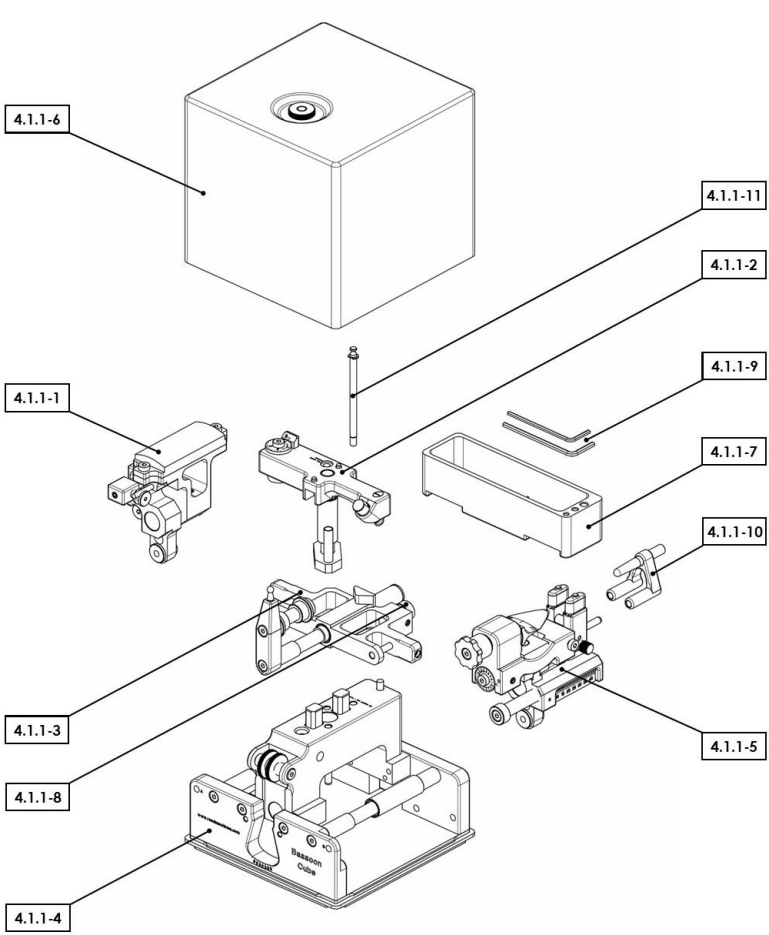


Image **4.1.2**

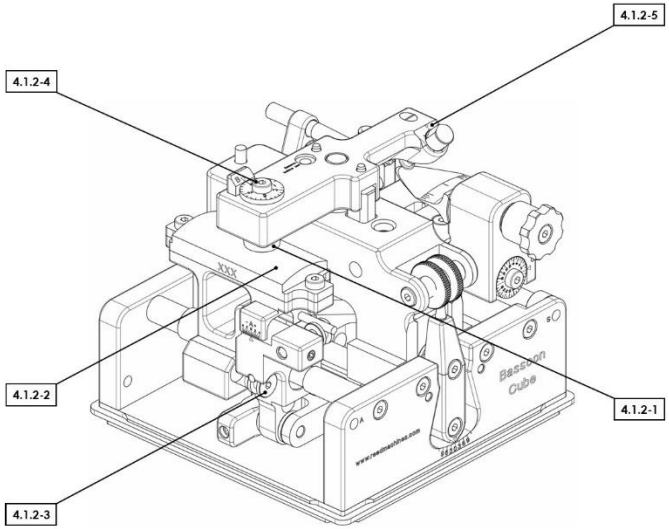
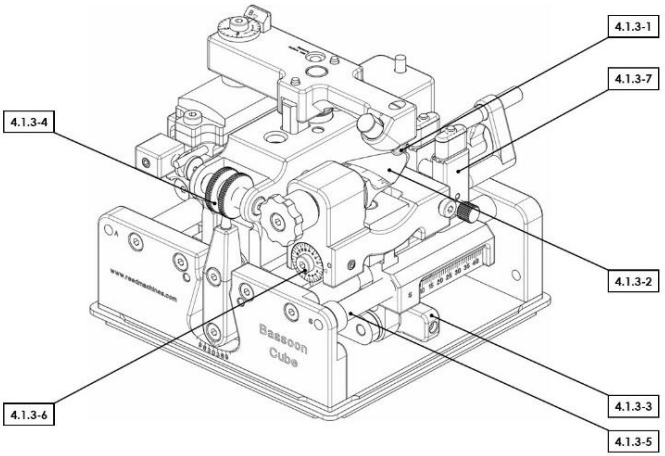


Image **4.1.3**



4.2 General information

General information:

- Use the bassoon tip profiler only for the intended use.
- Read this manual before you prepare, adjust, operate, or do maintenance on, the bassoon tip profiler.

4.3 Working principle

Ball element [**4.1.2**-1] copies the shape of template [**4.1.2**-2] through knife [**4.1.3**-1] to the reed that is positioned on reed holder [**4.1.3**-2].

The template and the reed are moved manually in the length and cross direction. While doing so the knife scrapes the complete reed. It is possible to limit the stroke to scrape only a V shaped area of the tip of the reed. There is a scale for the cross movement which can be used to scrape only the sides or only the middle of the reed.

4.4 Main components of the bassoon tip profiler

4.4.1 Template set [4.1.1-1]

The template set holds template [**4.1.2**-2] that defines the profile and adjustment A [**4.1.2**-3] that defines the length position of the profile.

Note
Reed Machines can supply different standard templates and personal templates.

4.4.2 Carriage set [4.1.1-2]

The carriage set holds ball element [**4.1.2**-1] that scans template [**4.1.2**-2], knife [**4.1.3**-1] that scrapes the reed and adjustment B [**4.1.2**-4] that defines the thickness of the scrape. When the carriage set is pulled completely upwards it can be rotated 90° to the park or scrape position. The carriage set in the park position gives free view on, and access to, template set [**4.1.1**-1] and reed set [**4.1.1**-5].

4.4.3 Knife [4.1.3-1]

The knife scrapes the reed. The knife has a round shape of which only a part is used tor scraping. When this part of the knife is worn out it can be rotated so a fresh part of the knife becomes active. The knife can be used in 8 positions which are defined by a scale on carriage [**4.1.2**-5]. The knife is made of an extremely hard corrosion resistant material. In normal use the knife has a lifetime of thousands of reeds.

Warning
Never touch the cutting edge of the knife.

Caution
The material of the knife is extremely hard, but it is also bridle. Take care not to hit the knife because chips can break out easily.

4.4.4 Connection set [4.1.1-3]

The connection set connects template set [**4.1.1**-1] to reed set [**4.1.1**-5] to ensure they make the same movement, and it holds end of stroke stop [**4.1.1**-8]. Connection block [**4.1.3**-3] is used to make the stroke movement. Control wheel [**4.1.3**-4] is used to make the movement in the cross direction.

4.4.5 Base set [4.1.1-4]

The base set is the fundament of the bassoon tip profiler. It holds template set [**4.1.1**-1], carriage set [**4.1.1**-2], reed set [**4.1.1**-5], connection set [**4.1.1**-3],

stroke limitation pin [**4.1.1**-11] and control wheel [**4.1.3**-4]. The stroke limitation pin is used to scrape only a V shaped area the tip of the reed. The control wheel is used to make the movement in the cross direction.

4.4.6 Reed set [4.1.1-5]

The reed set holds reed holder [**4.1.3**-2] with the 180° rotation function, adjustment S [**4.1.3**-5] for the length of the scrape, adjustment C [**4.1.3**-6] for the thickness at the back of the scrape, reed clamp set [**4.1.3**-7] and reed alignment set [**4.1.1**-10]. The reed holder supports the reed during scraping and acts as an anvil, the reed clamp set clamps the reed during scraping, and the reed alignment set ensures correct aligned of the reed with the length movement.

4.4.7 Cover set [4.1.1-6]

The cover set protects the profiler when it is not used or during transport like in a bag or suitcase. Beside this it prevents parts can come out of the toolbox [**4.1.1**-7].

4.4.8 Toolbox [4.1.1-7]

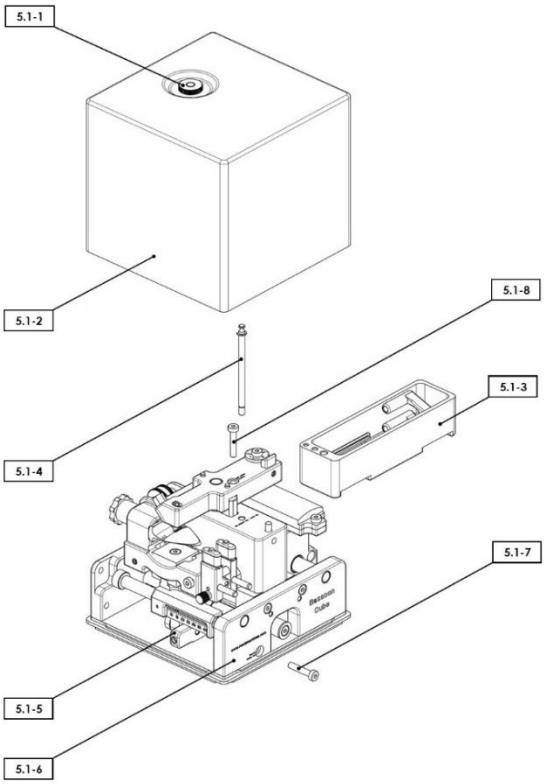
The toolbox contains Allen keys [**4.1.1**-9] and reed alignment set [**4.1.1**-10]. Beside this it can be used to store transport screws [**5.1**-7] and [**5.1**-8], stroke limitation pin [**4.1.1**-11] and other parts.

5 Basic actions

The bassoon tip profiler comes with an Allen key 2mm and 2,5mm. Use Allen key 2,5mm if a screw must be tightened or untightened or an adjustment must be made. Allen key 2mm is only used for special screws and adjustments. Be careful to use Allen key 2mm because it can lead to malfunction of the bassoon tip profiler.

5.1 Make the bassoon tip profiler ready to use

Image **5.1**



To make the bassoon tip profiler ready to use:

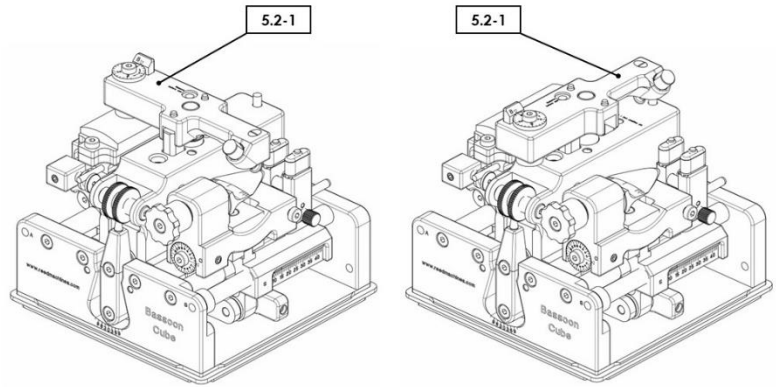
1. Untighten cover spindle [**5.1**-1].
2. Remove cover [**5.1**-2].
3. Remove toolbox [**5.1**-3].
4. Remove stroke limitation pin [**5.1**-4].
5. Push connection block [**5.1**-5] to back plate [**5.1**-6] by a pinch force between the thumb and forefinger. While doing so remove transport screw [**5.1**-7] and slowly release the pinch force.
6. Remove transport screw [**5.1**-8].

Note
Put the stroke limitation pin and transport screws in the toolbox once they are removed to avoid losing them.

You can put the stroke limitation pin and Allen keys in special holes in the side of the toolbox for easy access.

5.2 Put the carriage set in the scrape or park position

Image **5.2**



Scrape position

Park position

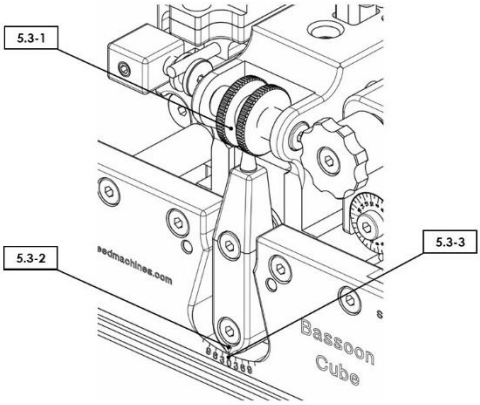
For some actions it is necessary to put the carriage set in the scrape or park position.

To put the carriage set in the scrape or park position:
1. Pull carriage set [**5.2**-1] up.
2. Turn the carriage set as far as possible clockwise (scrape position) or counterclockwise (park position).
3. Let the carriage set move down.

5.3 Put the template set and reed set in the middle position

For some actions it is necessary to put the template set, and reed set in the middle position. This position is reached when the lever is in the zero position.

Image **5.3**



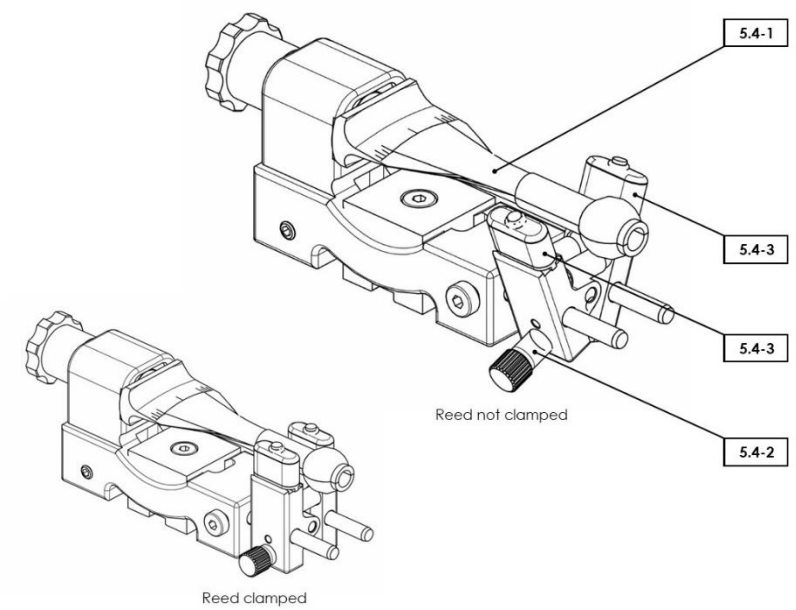
To put the template set and reed set in the middle position:
1. Turn control wheel [**5.3**-1] so mark [**5.3**-2] of the lever points to the zero mark [**5.3**-3] of the scale on the base set.

5.4 Close or open the reed clamp set

The reed is clamped by the reed clamp set so it will stay in position when it is scraped. The clamp force is defined by how far you turn the clamp spindle. After some experience you will know how much you must turn the clamp spindle to get enough clamp force.

How to position a reed is described in paragraph 7.3.

Image **5.4**



To close or open the reed clamp set:

1. When reed [**5.4**-1] is not clamped, turn clamp spindle [**5.4**-2] clockwise till the reed is clamped.
2. When the reed is clamped, turn the clamp spindle counterclockwise till the reed clamps [**5.4**-3] are opened more than the width of the reed tip.

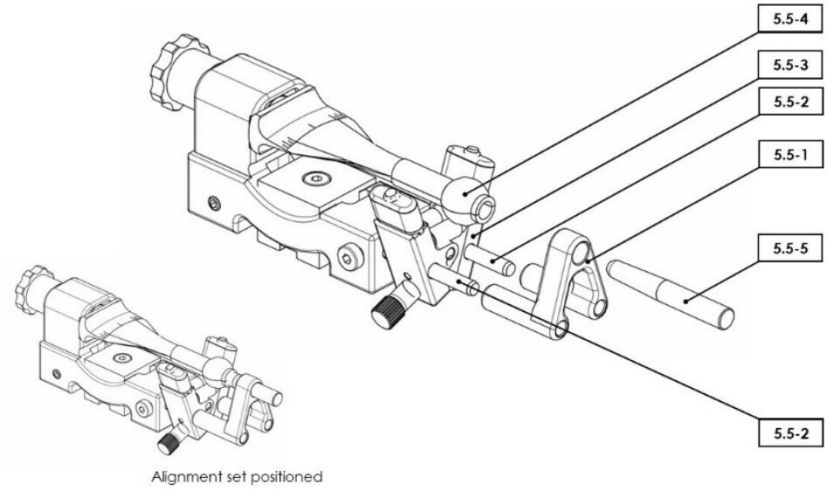
5.5 Position the reed alignment set

The reed alignment set is used to align the reed in the length direction with the template. If the reed alignment is incorrect the back of the reed is too high or too low. The result is an incorrect position of the profile on the reed.

The reed alignment set is positioned when the reed is on the reed holder and the reed clamp set is open (see paragraph 5.4).

How to position a reed is described in paragraph 7.3.

Image **5.5**



Alignment set positioned

To position the reed alignment set:

1. Push reed alignment base [**5.5**-1] over the shafts [**5.5**-2] against reed clamp set [**5.5**-3].

Note
Push the legs of the reed alignment base slightly together so their holes align with the shafts.

2. Hold reed [**5.5**-4] with one hand and push reed alignment shaft [**5.5**-5] with the other hand through the upper hole of the reed alignment base into the reed.

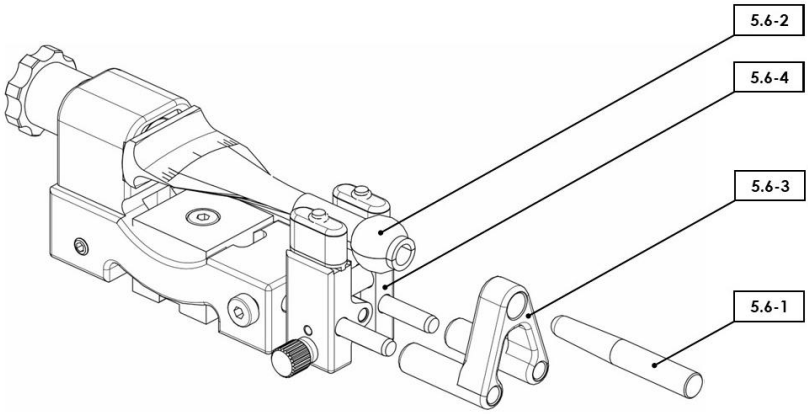
Note
The reed alignment shaft must enter the reed with the tapered side and pushed into the reed, so it is clamped in the reed.

5.6 Remove the reed alignment set

The reed alignment set is removed when the reed is still on the reed holder and the reed clamp set is still closed (see paragraph 5.4).

How to remove a reed is described in paragraph 7.4.

Image **5.6**



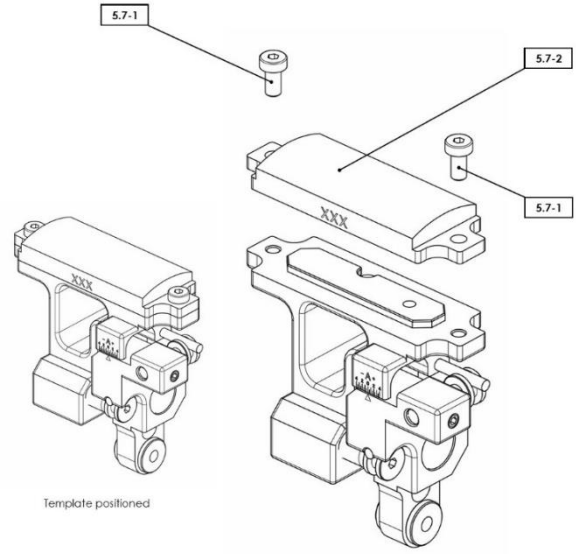
To remove the reed alignment set:
1. Pull reed alignment shaft [**5.6**-1] out of the reed [**5.6**-2] and reed alignment base [**5.6**-3].
2. Pull the reed alignment base from the reed clamp set [**5.6**-4].

5.7 Exchange the template

The bassoon tip profiler works with standard and personal templates. Due to the unique adjustment possibilities most customers make their reeds based on one of the standard templates. We can make a personal template based on a scan of a reed that you send us.

Please contact Reed Machines or a reseller for information about available standard templates and personal templates.

Image **5.7**



To exchange the template:

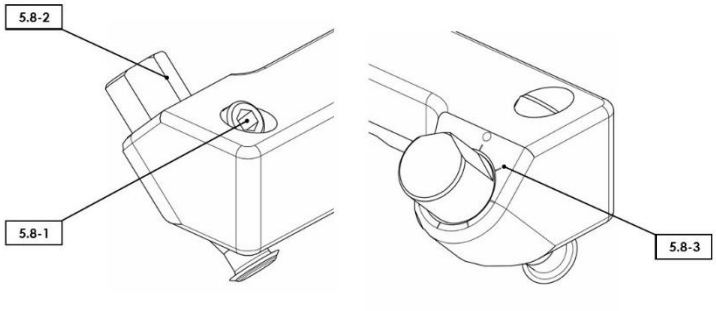
1. Put the carriage set in the park position (see paragraph 5.2).
2. Put the template set and reed set in the middle position (see paragraph 5.3).
3. Remove the template screws (**5.7**-1).
4. Remove template (**5.7**-2) and position another template.
5. Position the template screws.
6. Put the carriage set in the scrape position (see paragraph 5.2).

5.8 Change to a new part of the knife

Warning
Never touch the cutting edge of the knife.

Only a small part of the knife is used during scraping. The knife is round so when a part of the knife is worn out a new part can be activated by turning the knife. The knife can be used in 8 positions.

Image **5.8**



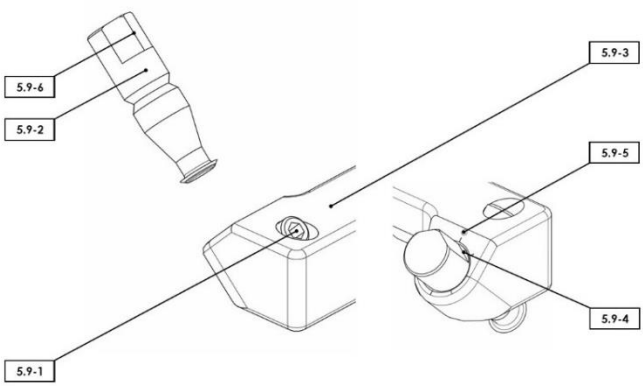
To change to a new part of the knife:

1. Put the carriage set in the park position (see paragraph 5.2).
2. Untighten knife screw [**5.8**-1] for 0,25 revolution.
3. Turn the knife with reference line [**5.8**-2] to the next mark of scale [**5.8**-3].
4. Tighten the knife screw.
5. Put the carriage set in the scrape position (see paragraph 5.2).

5.9 Exchange a (worn-out) knife

Warning
Never touch the cutting edge of the knife.

Image **5.9**



To exchange a (worn-out) knife:

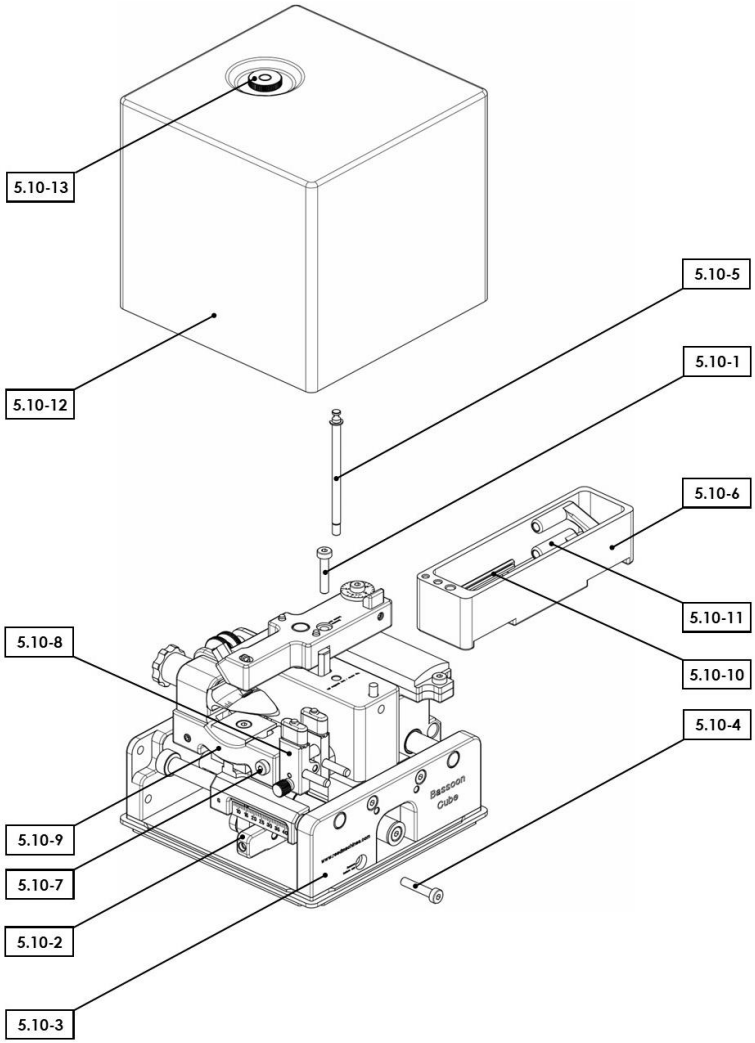
1. Put the carriage set in the park position (see paragraph 5.2).
2. Untighten knife screw [**5.9**-1] for 2 revolutions while holding knife [**5.9**-2].
3. Pull the (worn-out) knife out of carriage [**5.9**-3].
4. Position a new knife in the carriage with the flat surfaces [**5.9**-4] equal to the surface with the dot mark [**5.9**-5] and reference line [**5.9**-6] pointing to the dot mark.

Caution
Be careful not to hit the cutting edge of the knife against a hard object because this can damage the knife.

5. Tighten the knife screw.
6. Put the carriage set in the scrape position (see paragraph 5.2).

5.10 Make the bassoon tip profiler ready to store

Image **5.10**



To make the bassoon tip profiler ready to store:

1. Make the bassoon tip profiler free of chips and make it dry.
2. Put the template set and reed set in the middle position (see paragraph 5.3).
3. Put the carriage set in the scrape position (see paragraph 5.2).
4. Screw transport screw [**5.10**-1] in the carriage set. This brings the carriage set in a lifted and safe position.
5. Move connection block [**5.10**-2] to back plate [**5.10**-3] by a pinch force between the thumb and forefinger and screw transport screw [**5.10**-4] in the connection block.
6. Position stroke Limitation pin [**5.10**-5]. If positioned the stroke limitation pin becomes one of the position pins of toolbox [**5.10**-6].
7. Remove the reed alignment set (see paragraph 5.6).
8. Untighten clamp screw [**5.10**-7] for 0,5 revolution, position reed clamp set [**5.10**-8] against reed holder base block [**5.10**-9] and tighten the clamp screw.
9. Put Allen keys [**5.10**-10] and reed alignment set [**5.10**-11] in the toolbox and position the toolbox on the bassoon tip profiler.

Note
The reed alignment set must be positioned in the toolbox as shown in image 5.10.

10. Position cover [**5.10**-12] and tighten cover spindle [**5.10**-13].

6 Adjustments

The bassoon tip profiler comes with an Allen key 2mm and 2,5mm. Use Allen key 2,5mm if a screw must be tightened or untightened or an adjustment must be made. Allen key 2mm is only used for special screws and adjustments. Be careful to use Allen key 2mm because it can lead to malfunction of the bassoon tip profiler.

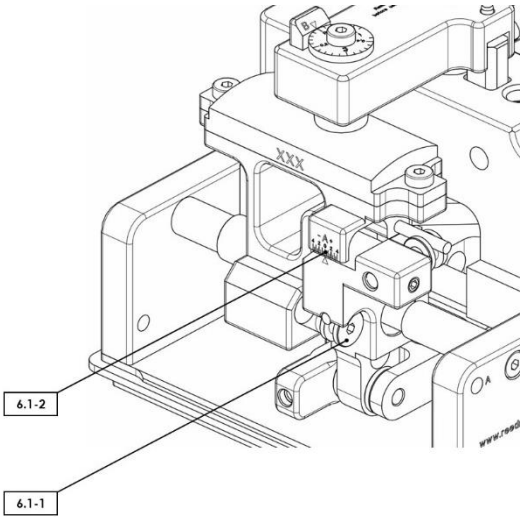
Note
When in doubt we advise you to start with settings that leave too much cane on the reed and make little adjustments. In this way profiling a reed takes more time but you will lose less reeds.

Once you have experience with the bassoon tip profiler you can make bigger and faster steps.

6.1 Adjust the profile in the length direction (adjustment A)

The bassoon tip profiler copies the profile of the template to the reed. If adjustment A is set to "0", the position of the profile is equal to the position of the profile on the reed that was used to make the template. The position of the profile is adjustable in the length direction from -4mm to +4mm.

Image **6.1**



To adjust the profile in the length direction (adjustment A):

1. Turn spindle A [**6.1**-1] clockwise to move the profile towards the reed tip.
2. Turn spindle A counterclockwise to move the profile away from the reed tip.

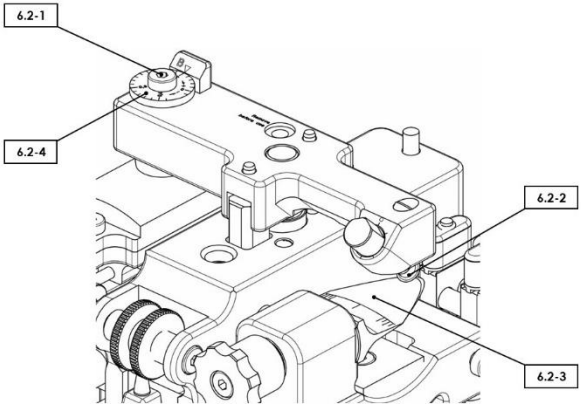
Note
Use scale A [**6.1**-2] to see the position of the profile in the length direction. 1 digit is 0,5mm.

When in doubt start with a position that is too close to the reed tip.

6.2 Adjust the thickness of the scrape (adjustment B)

How to adjust the scale disc of adjustment B is described in paragraph 6.8.

Image **6.2**



To adjust the thickness of the scrape (adjustment B):

1. Turn spindle B [**6.2**-1] clockwise to make the scrape thicker.
2. Turn spindle B counterclockwise to make the scrape thinner.

Caution
Take care when you make the thickness of the scrape thinner. The thickness of the scrape can be set to zero or a negative value. This can cause damages to knife [**6.2**-2] and/or reed holder [**6.2**-3].

Notes
Use scale B [**6.2**-4] to see the thickness of the scrape. 1 digit is 0,02mm.

When in doubt start with a scrape that is too thick.

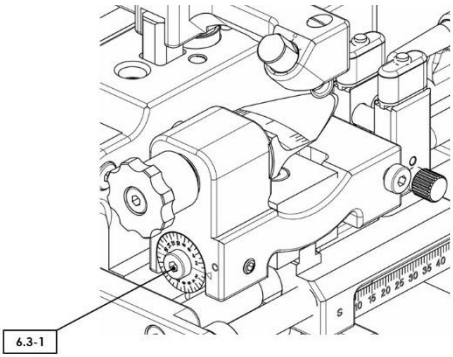
6.3 Adjust the thickness at the back of the scrape (adjustment C)

When the thickness at the back of the scrape is changed the thickness at the tip stays the same. The result is that the ratio between the amount of cane at the tip and the amount of cane at the back of the scrape changes.

This adjustment has a big influence on the character of the reed and makes it possible to personalize the reed to a high level.

How to adjust the scale disc of adjustment C is described in paragraph 6.8.

Image **6.3**



To adjust the thickness at the back of the scrape (adjustment C):

1. Turn spindle C [**6.3**-1] clockwise to make the thickness at the back of the scrape thicker.
2. Turn spindle C counterclockwise to make the thickness at the back of the scrape thinner.

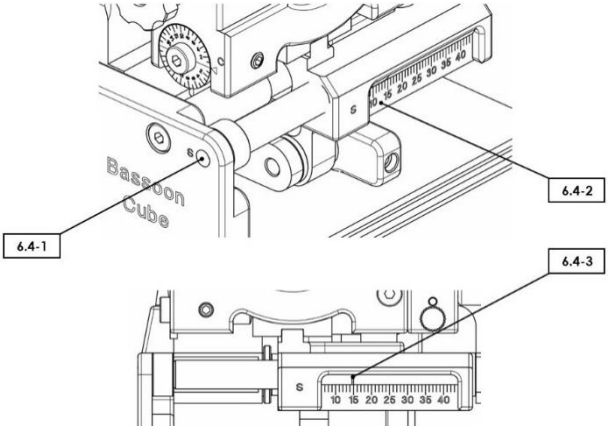
Note
When adjustment C is set to "0" the center line of the reed is parallel to the scrape movement.

When in doubt start with a high black value.

6.4 Adjust the length of the scrape (adjustment S)

The length of the scrape can be adjusted from 6mm till 42mm. This means it is possible to scrape the tip but also the complete blade of the reed. It is also possible to scrape a V shaped area of the tip (see paragraph 7.8).

Image **6.4**



To adjust the length of the scrape (adjustment S):

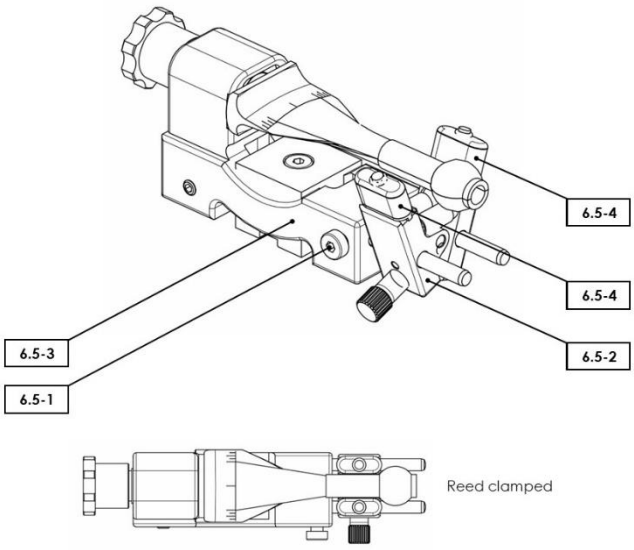
1. Put the template set and reed set in the middle position (see paragraph 5.3).
2. Turn spindle S [**6.4**-1] clockwise to make the scrape longer.
3. Turn spindle S counterclockwise to make the scrape shorter.

Note
Use scale S [**6.4**-2] to see the length of the scrape. The numbers represent the stroke in millimeter. 1 digit is 1mm.

The back side of spindle S [**6.4**-3] is the pointer for the length of the scrape.

6.5 Adjust the position of the reed clamp set

Image **6.5**



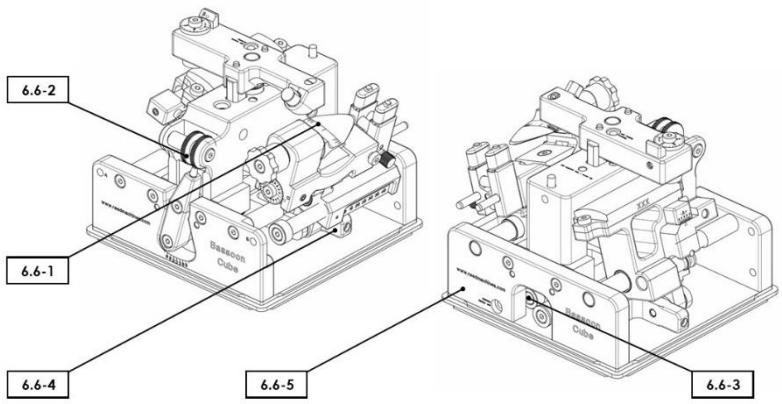
To adjust the position of the reed clamp set:

1. Position a reed (see paragraph 7.3).
2. Untighten clamp screw [**6.5**-1] for 0,5 revolution.
3. Move reed clamp set [**6.5**-2] out of or into reed holder base block [**6.5**-3] till the 2 reed clamps [**6.5**-4] are positioned between the back of the reed blade and the wiring that holds the 2 reed halves.
4. Tighten the clamp screw.

6.6 Adjust the end of scrape position

To be sure that the reed is completely scraped, the knife must be about 0,5mm beyond the reed tip, and so beyond reference line [**6.6**-1] of the reed holder, at the end of the scrape movement. This is a factory setting, in a normal situation it should not be needed to change this adjustment.

Image **6.6**



To adjust the end of scrape position:

1. Turn control wheel [**6.6**-2] completely to the right so spindle [**6.6**-3] is accessible.
2. Move connection block [**6.6**-4] to back plate [**6.6**-5] by a pinch force between the thumb and forefinger.
3. Turn the spindle clockwise to move the end of scrape position further beyond the reed tip.
4. Turn the spindle counterclockwise to move the end of scrape position less beyond the reed tip.
5. Release the pinch force once the knife position is correct.

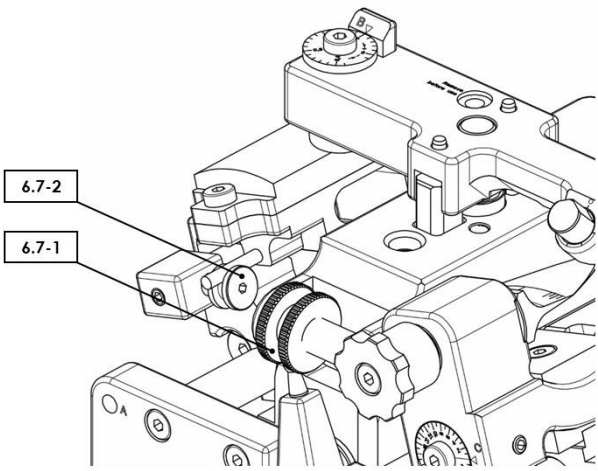
Note
A visual estimation of the position of the knife is good enough. 1 revolution of the spindle is 1mm.

6.7 Adjust the profile in the cross direction

If the profile is on the right position the 2 sides of the scraped reed tip have the same thickness. If this is not the case the template has to be adjusted in the cross direction.

This is a factory setting, in a normal situation it should not be needed to change this setting. Because this is a critical adjustment it is not easily accessible and done with the Allen key 2mm.

Image **6.7**



To adjust the profile in the cross direction:

1. Scrape a reed (see paragraph 7.7) but leave the reed tip too thick.
2. Remove the reed (see paragraph 7.4) and measure the thickness of the sides of the reed tip.
6. Turn control wheel [**6.7**-1] completely to the left so spindle [**6.7**-2] is accessible.
3. When the left side of the reed tip is thinner than the right side, turn the spindle clockwise.
4. When the right side of the reed tip is thinner than the left side, turn the spindle counterclockwise.

Note
This adjustment is sensitive. Turn the spindle only by 0,1 revolution a time and scrape the reed again to see the result.

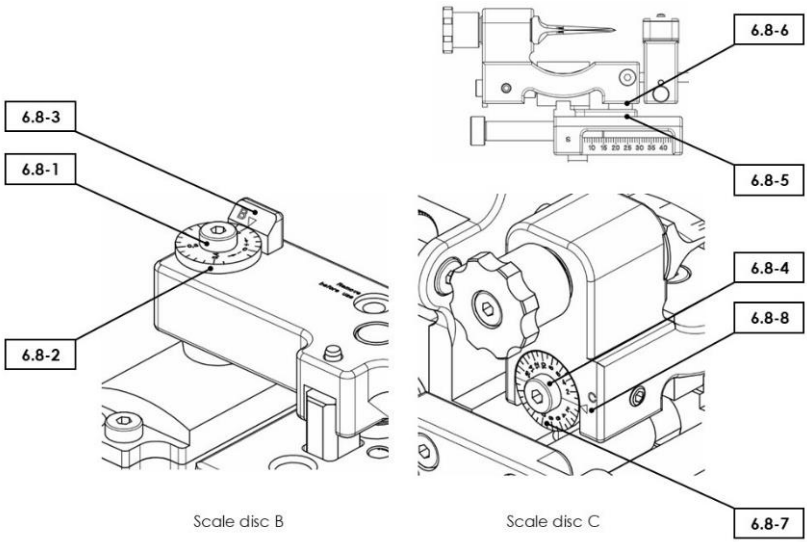
5. Repeat step 1 to 4 until the sides of the reed tip are equal in thickness.

6.8 Adjust a scale disc

Due to manufacturing tolerances scale disc B and C are adjusted in the factory on the assembled bassoon tip profiler.

For scale disc B (the thickness of the scrape) it can be necessary to re-adjust the scale disk when a template is exchanged (see paragraph 5.7).

Image **6.8**



To adjust scale disc B:

1. Scrape a reed (see paragraph 7.7) but leave the reed tip too thick. By keeping the reed tip too thick you have less risk of losing a reed due to an incorrect positioned scale disc.
2. Remove the reed (see paragraph 7.4) and measure the thickness of the reed tip.
3. Hold spindle B [**6.8**-1] on its position with Allen key 2,5mm in one hand while turning scale disc B [**6.8**-2] with the thumb and forefinger of the other hand with the measured value to pointer [**6.8**-3].

To adjust scale disc C:

1. Turn spindle C [**6.8**-4] to a high white value.
2. Turn spindle C so the distance between base block surface [**6.8**-5] and reed holder base block surface [**6.8**-6] is 5,5mm.
3. Hold spindle C on its position with Allen key 2,5mm in one hand while turning scale disc C [**6.8**-7] with the thumb and forefinger of the other hand with the "0" value to pointer [**6.8**-8].

7 Operating instructions

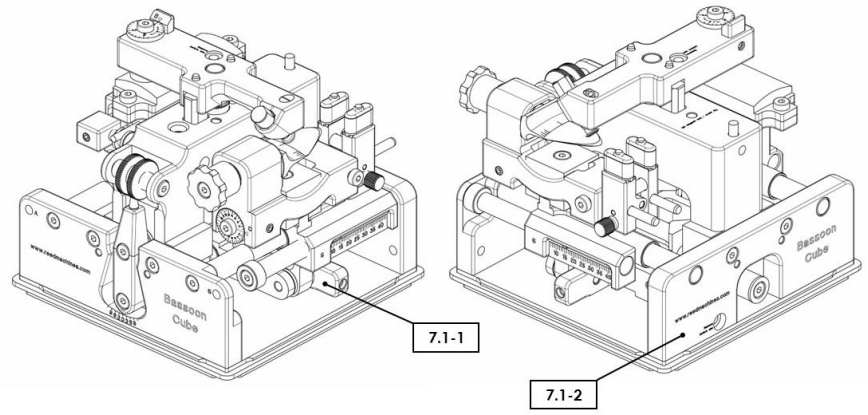
Scraping a reed is a repeating and well-timed combination of a scrape movement (see paragraph 7.1) and a cross movement (see paragraph 7.2). Mastering this technique can take some time.

The descriptions in this chapter assume that:

- The bassoon tip profiler is on a horizontal and even surface.
- The bassoon tip profiler is ready to use (see paragraph 5.1).
- The reed clamp set is on the right position (see paragraph 6.5).
- The tip of the reed is open.
- The reed is wet.

7.1 Make a scrape movement

Image **7.1**

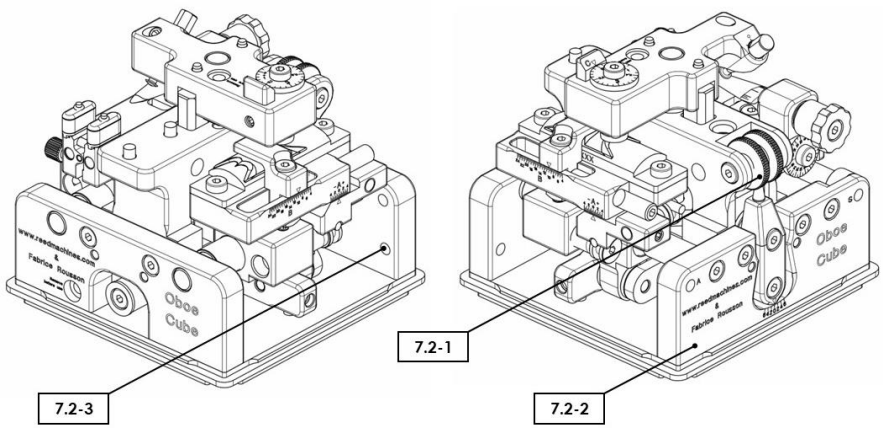


A scrape movement is made by a pinch force between the thumb and forefinger of the right hand. During the scrape movement the thumb is on connection block surface [**7.1**-1] and the forefinger is on back plate surface [**7.1**-2].

The pinch force between the thumb and forefinger will move the template set and reed set to the end of the scrape position. Releasing the pinch force will move the template set and reed set back to the start of the scrape position.

7.2 Make a cross movement

Image **7.2**



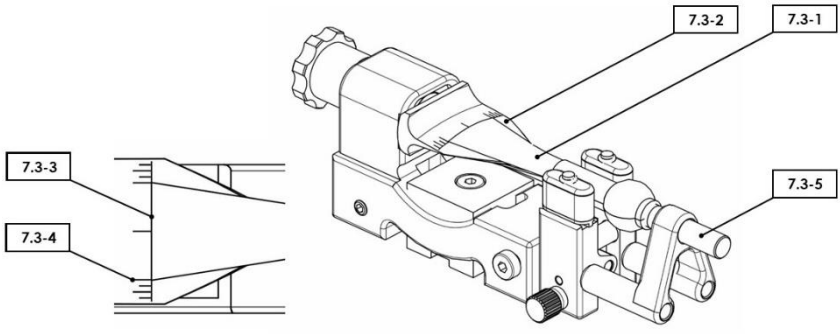
A cross movement is made with the thumb of the left hand while the bassoon tip profiler is hold on its place by keeping the front plate between the forefinger and middle finger of the left hand. The thumb turns control wheel [**7.2**-1], the forefinger is on front plate surface [**7.2**-2] and the middle finger on front plate surface [**7.2**-3].

Every time the control wheel is turned the reed moves in the cross direction. Once the knife is outside the reed the control wheel must be turned in the opposite direction.

7.3 Position a reed

It is assumed there is no reed alignment set, or reed on the bassoon tip profiler.

Image **7.3**



To position a reed:

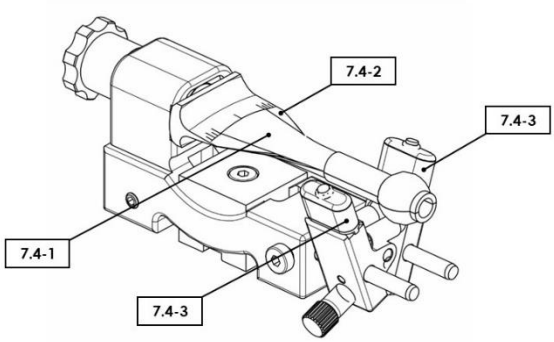
1. Put the carriage set in the park position (see paragraph 5.2).
2. Put the template set and reed set in the middle position (see paragraph 5.3).
3. Open the reed clamp set (see paragraph 5.4).
4. Roughly position reed [**7.3**-1] over reed holder ([**7.3**-2].
5. Position the reed alignment set (see paragraph 5.5).
6. Position the reed with the reed tip exactly at reference line [**7.3**-3] and exactly between equal width-lines [**7.3**-4].

Note
Alignment shaft [**7.3**-5] should move with the reed during this exact positioning.

7. Put the forefinger of the left hand on the reed tip and close the reed clamp set (see paragraph 5.4).
8. Put the carriage set in the scrape position (see paragraph 5.2).

7.4 Remove a reed

Image **7.4**



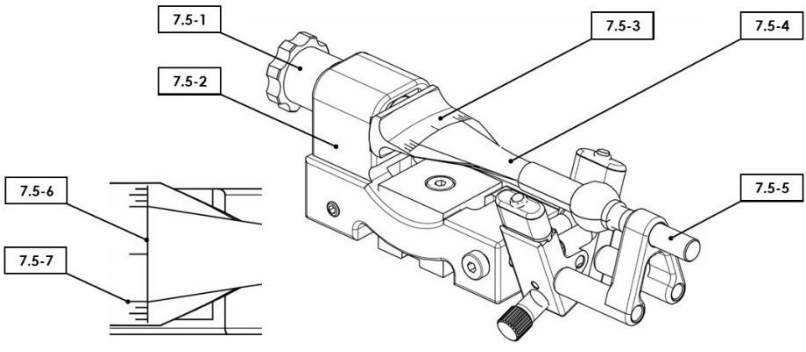
To remove a reed:

1. Put the carriage set in the park position (see paragraph 5.2).
2. Put the template set and reed set in the middle position (see paragraph 5.3).
3. Remove the reed alignment set (see paragraph 5.6).
4. Open the reed clamp set (see paragraph 5.4).
5. Pull reed [**7.4**-1] from reed holder [**7.4**-2].

Note
Take care not to hit the reed clamps [**7.4**-3] with the sides of the reed tip because they can get damaged.

7.5 Rotate a reed 180°

Image **7.5**



To rotate a reed 180°:

1. Put the carriage set in the park position (see paragraph 5.2).
2. Put the template set and reed set in the middle position (see paragraph 5.3).
3. Open the reed clamp set (see paragraph 5.4).
4. Make a scrape movement (see paragraph 7.1) and keep it blocked at the end of scrape position until step 7.
5. Push knob [**7.5**-1] against reed holder base block [**7.5**-2].
6. Turn the knob (and so reed holder [**7.5**-3], reed [**7.5**-4], and alignment shaft [**7.5-**5]) 180°.

Caution
Be sure the carriage set is in the park position (see paragraph 5.2). If the carriage set is not in the park position, turning the reed will damage the knife, reed holder and/or reed.

---

7. Let the knob move back to its original position.

Note
Be sure the reed tip is still exactly at reference line [**7.5**-6] and exactly between equal width-lines [**7.5**-7] before you go to step 8. If needed you must reposition the reed.

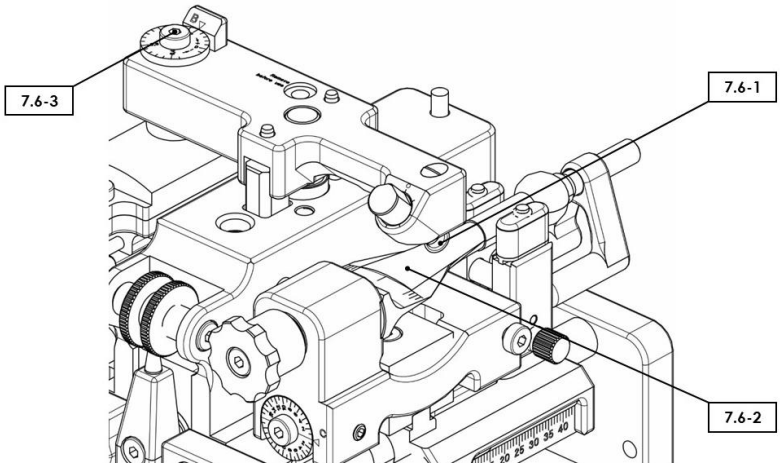
9. Put the forefinger of the left hand on the reed tip and close the reed clamp set (see paragraph 5.4).
10. Put the carriage set in the scrape position (see paragraph 5.2).

7.6 Scrape a new reed

A new reed has a lot of material which must be taken away. For the first scrape movement this results in high scrape forces with the risk to damage the reed or pull the reed from its position.

To prevent these high forces, you must start to scrape a new reed as described below.

Image **7.6**



To scrape a new reed:

1. Position a reed (see paragraph 7.3).
2. Make a slow scrape movement (see paragraph 7.1). If knife [**7.6**-1] scrapes reed [**7.6**-2] turn spindle B [**7.6**-3] clockwise until the knife does not scrape the reed during the complete scrape movement.
3. Make repeating scrape movements while slowly turning spindle B counterclockwise to a thickness of the scrape of 0,2mm more than the final tip thickness.
4. Scrape the reed (see paragraph 7.7).

Note
You must follow this instruction for both sides of a new reed.

7.7 Scrape a reed

A scraped reed is the result of scrape and cross movements in several depth steps on both sides of the reed. How big or small the movements and depth steps must be, depends on the cane properties, the phase of the scraping process and personal preferences.

After some experience with the bassoon tip profiler, you will find the method that suits you best. Guidelines for the scraping process are:

- Make 2 to 4 scrape and cross movements per second.
- Make cross movements of about 0,1 revolution.
- Scrape the reed in 2 to 4 depth steps if the result is known.
- Scrape the reed in multiple depth steps if the result is unknown with smaller steps when you are getting closer to a good reed.

To scrape a reed:

1. Position a reed (see paragraph 7.3).

Caution

Be sure the adjustments are on the right value or a value that leaves too much cane. If this is not the case the reed will be faulty.

It is possible to set adjustments to values where the knife and reed holder can be damaged.

2. Make repeating scrape movements (see paragraph 7.1) while making cross movements (see paragraph 7.2) to the **right** until the reed is not under the knife anymore.
3. Make repeating scrape movements (see paragraph 7.1) while making cross movements (see paragraph 7.2) to the **left** until the reed is not under the knife anymore.
4. Make repeating scrape movements (see paragraph 7.1) while making cross movements (see paragraph 7.2) to the **right** until the lever is at the "0" position.
5. Rotate the reed 180° (see paragraph 7.5).
6. Repeat steps 2 till 4.

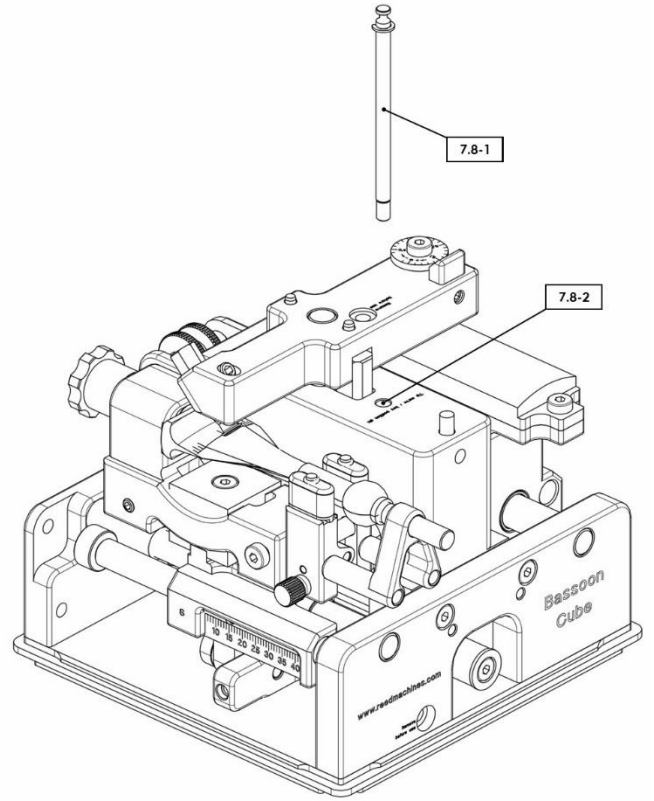
7.8 Scrape only a V shaped area of the tip of a reed

With the stroke limitation pin, it is possible to scrape only a V shaped area of the tip of a reed. In the middle this area starts 1mm from the tip and at the sides:

- 4mm from the tip at 8mm from the middle (typical bassoon reed).
- 5mm from the tip at 10mm from the middle (typical contra bassoon reed).
- 5,5mm from the tip at 11mm from the middle (typical contraforte reed).

The scrape process is the same as described in scrape a reed (see paragraph 7.7).

Image **7.8**



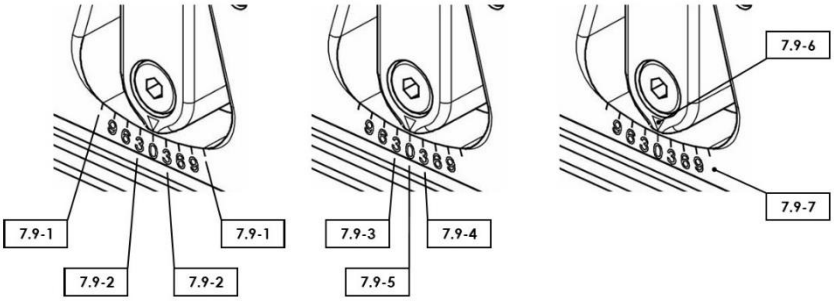
This description assumes there is a scraped reed in the bassoon tip profiler.

To scrape a V shaped area of the tip of a reed:

1. Make a scrape movement (see paragraph 7.1) and hold the end of scrape position.
2. Position stroke limitation pin [**7.8**-1] in base block hole [**7.8**-2].
3. Slowly release the pinch force.
4. Scrape the tip of the reed (see paragraph 7.7).

7.9 Scrape only the sides or only the middle of a reed

Image **7.9**



Scrape the sides Scrape the middle

If the cross movement is done from both outsides [**7.9**-1] till a certain position [**7.9**-2], it is possible to scrape only the sides of a reed.

If the cross movement is done from a position [**7.9**-3] till the same position [**7.9**-4] on the other side of the "0" mark [**7.9**-5], it is possible to scrape only the middle of a reed.

The position of the cross movement is read by pointer [**7.9**-6] and scale [**7.9**-7].

The scraping process is the same as described in scrape a reed (see paragraph 7.7).

8 Maintenance

8.1 Clean the bassoon tip profiler

Frequently remove/blow the chips from the bassoon tip profiler to avoid that chips accumulate in the bassoon tip profiler. An accumulation of chips can result in poor movements or blocked parts.

Because reeds are profiled wet some parts of the bassoon tip profiler can become wet. Make these parts dry with a soft cloth.

8.2 Store the bassoon tip profiler

To store the bassoon tip profiler:
1. Clean the bassoon tip profiler (see paragraph 8.1).
2. Make the bassoon tip profiler ready to store (see paragraph 5.10).
3. Store the bassoon tip profiler in a dry and safe place.

Caution
Be careful not to let the oboe profiler fall (for example from a table or shelf) as this can cause malfunctions and damages.

8.3 Lubrication of the bassoon tip profiler

The bearings and guides are pre-lubricated or lubricated during the assembly process. There is no need for additional lubrication.