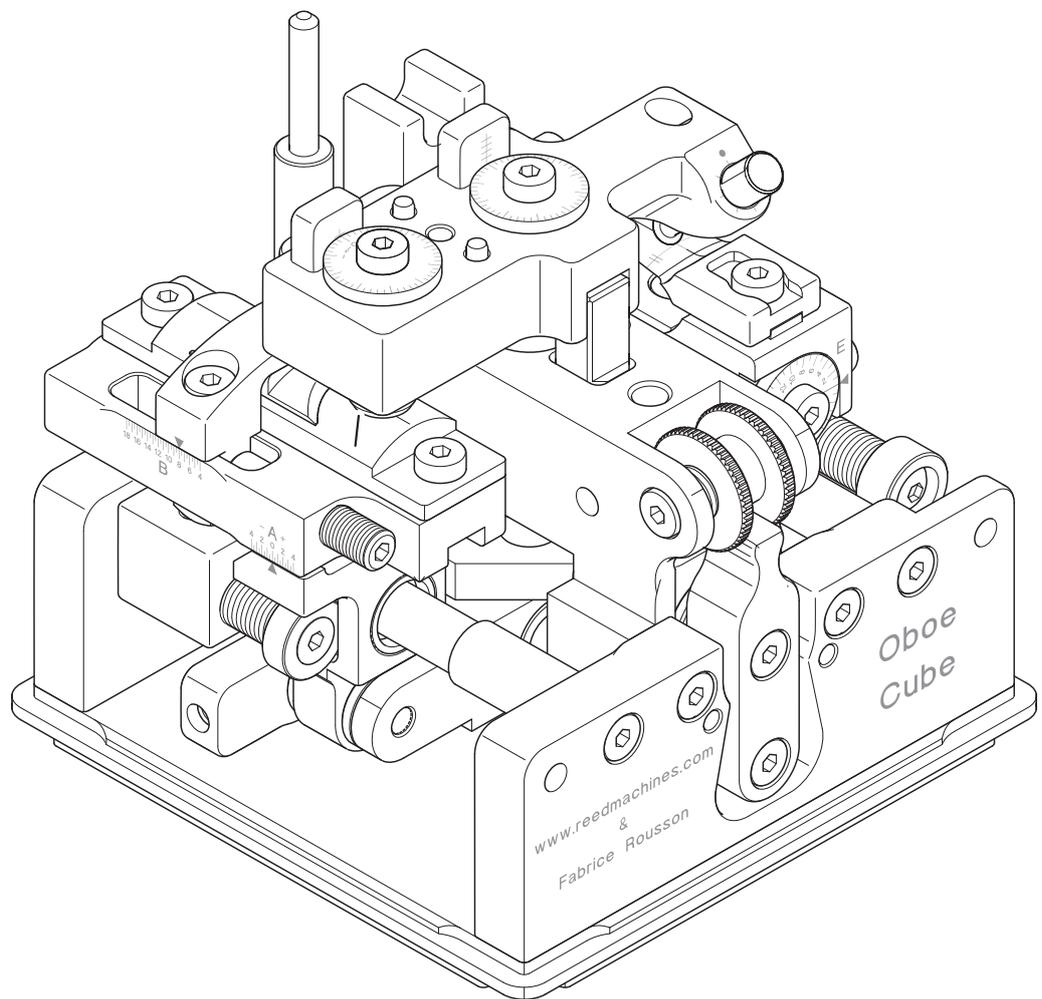


Oboe Profiler manual



Version 1.0

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Preface

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Although Reed Machines V.O.F. tried to make this manual correct and up to date, there can be errors. Tell us, if you find an error or if you think that information is missing. This information helps Reed Machines V.O.F. to increase the quality of the manual.

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1 About this manual

1.1 Purpose of this manual

The manual gives a description of the oboe profiler and gives the day-to-day procedures to operate the machine safely.

The manual includes these topics:

- Safety information.
The safety information gives warnings about safety and gives a description to the functions of the machine that have a relation to safety.
- Description.
The oboe description gives information about the hardware layout of the machine and the most important parts of the machine.
- Operational procedures.
The operational procedures give the information for the operational tasks that an operator is permitted to do.
- Maintenance procedures.
The maintenance procedures give information for the maintenance tasks that an operator is permitted to do.

1.2 Audience

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

1.3



Note

Note – Gives more information on a topic.



Caution

CAUTION – Gives information about a situation that can cause damage to the machine. Obey the instruction to prevent this situation.



Warning

WARNING - Warns you about a situation that can cause serious injury. Obey the instruction to prevent this situation.

1.4

Additional information

Refer to the support page on the website of [Reed Machines](#) for more information about:

- Product updates
- Manual updates, corrections and additions
- Presets and adjustment examples

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.

2

Introduction

2.1

Contents of the delivery

The box of the oboe profiler contains the following tools and accessories:

- oboe profiler
- 1 template
- 1 staple holder for oboe (for staple diameter 7.0 mm)
- 1 staple holder for cor anglais (for staple diameter 5.8 mm)
- 1 knife
- 1 stroke pin
- 1 stroke limitation pin
- 1 allen key 2 mm
- 1 allen key 2.5 mm



Note

In case of transport damage, contact your supplier.



Warning

Keep packing materials away from children.

2.2

About the oboe profiler

The oboe profiler copies the geometry of a template to a reed. Depending on the template the oboe can do this for all types of oboe reed.

Features of the oboe profiler:

- Unique compact design with a hard cover.
- Possible adjustments:
 - Thickness of the tip
 - Length of the tip
 - Length of the scrape
 - Thickness of the collar
 - Force on the knife
- The adjustments have a designation character and scale so it is possible to switch between different settings.
- The collar can have a 'V' or 'W' shape.
- It is possible to scrape only the tip of the reed.

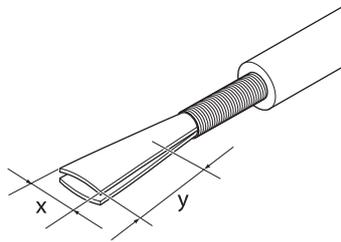
2.3

Specifications

The oboe profiler has the following specifications:

Maximum width of the scrape (x):	13 mm
Maximum length of the scrape (y):	30 mm
Length:	100 mm
Width:	100 mm
Height:	100 mm
Weight:	1.4 kg

Maximum length and width of the scrape



3

Safety

3.1

Mechanical hazards

If incorrectly used the oboe profiler can cause injury. Always obey the instructions below.



Warning

Never position your fingers between moving parts and the knife.



Warning

Be careful when you pick-up, exchange or position a knife.



Warning

Never hold or touch the knife at the cutting edge.



Caution

Install the profiler on a horizontal and even nonslip surface to prevent that it slips away or falls.



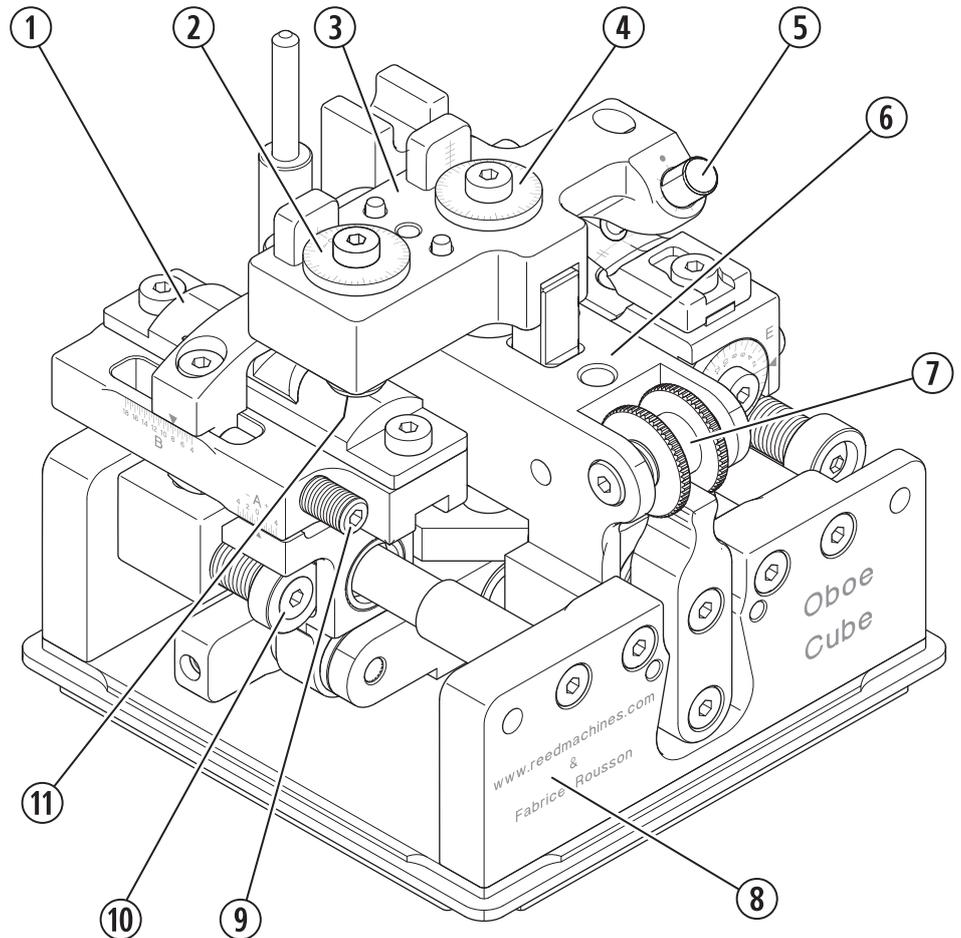
4

Description

4.1

Overview of the oboe profiler

Structure of the oboe profiler 1/2



① Template set

⑤ Knife

⑨ Scrape length
adjustment 'B'

② Tip thickness
adjustment 'C'

⑥ Connection set

⑩ Tip length adjustment
'A'

③ Carriage set

⑦ Control wheel

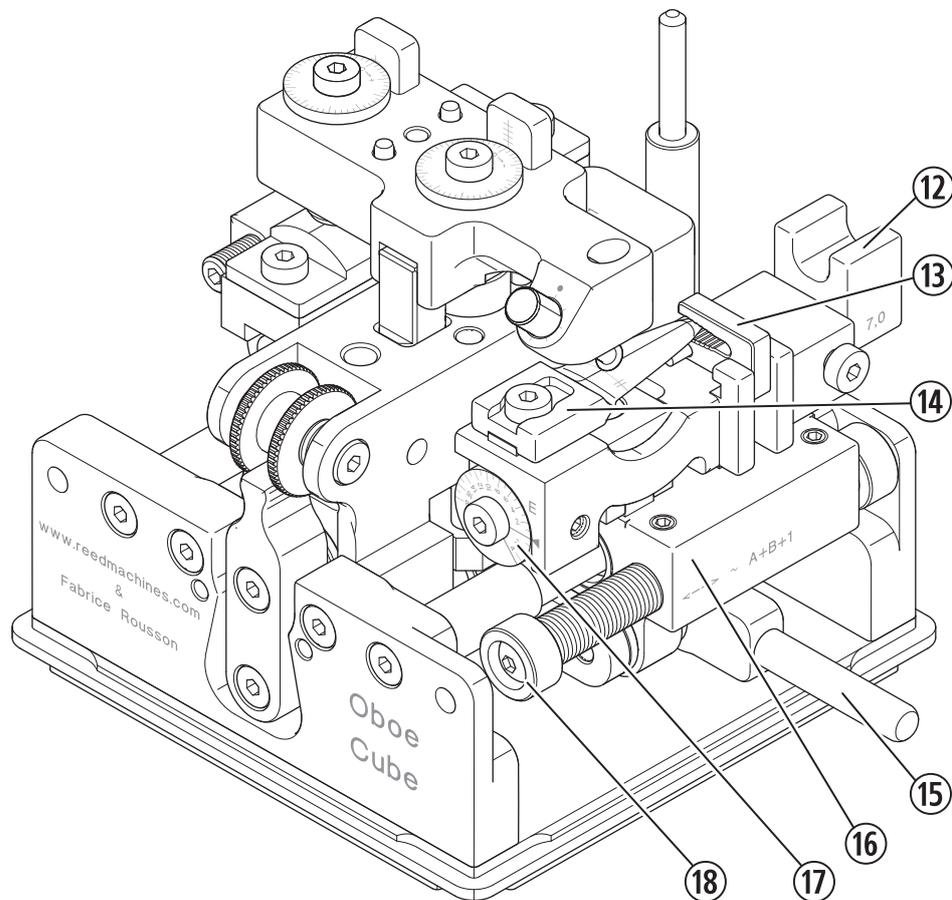
⑪ Ball

④ Knife force adjustment

⑧ Base set

'D'

Structure of the oboe profiler 2/2



⑫ Reed holder	⑮ Stroke pin	⑱ Stroke adjustment
⑬ Reed clamp	⑯ Reed set	
⑭ Reed holder	⑰ Collar thickness adjustment 'E'	

4.2

General safety information

This section gives information about the safety of the oboe profiler.

General:

- Use the oboe profiler only for the intended use.
- Read this manual before you operate or do maintenance on the oboe profiler.

4.3

Working principle

A ball ⑪ copies the shape of a template set ① thru a knife to the reed. The template set is positioned under the ball and contains the template and the part that defines the 'V' or 'W' shape of the collar.

The reed is positioned under the knife ⑤ and is held by the reed holder ⑭. The template set and reed are moved manually in the length and cross direction of the reed. While doing so the knife scrapes the reed. It is possible to limit the movement in the length direction to 1 mm or 4 mm to work only on the tip of the reed.

4.4 Components of the oboe profiler

4.4.1 Template set

The template set holds the template, the part that defines the shape of the collar (V or W), adjustment 'A' for the length of the tip and adjustment 'B' for the length of the scrape (the total length of the scrape is A+B). Reed Machines can supply standard templates and personal templates. The unique [adjustment 'E'](#), see "Adjust thickness of the collar 'E'" (on page 32) sets the ratio between the tip thickness and the thickness at the collar. This feature makes it possible to make many different types of scrape from one template.

4.4.2 Carriage set

The carriage set holds the ball that copies the shape of the template, the knife that scrapes the reed, adjustment 'C' for the tip thickness and adjustment 'D' for the force on the knife. When the carriage set is pulled up completely the carriage set can be turned 90° to a parking position (turn the knife to the back side of the oboe profiler). This position gives view on, and working space for, the template set and the reed set.

4.4.3 Knife

The knife scrapes the reed. The knife has a round shape of which only a part is used for scraping. When a part of the knife is worn out it can be rotated to activate a fresh part. The knife can be used on 8 positions which are defined by a scale on the carriage set. The knife is made of a special extremely hard and corrosion resistant material to ensure a long life time. In normal use and when the knife is not damaged the life time of a knife should be at least thousands of reeds.

4.4.4 Connection set

The connection set couples the template set to the reed set to ensure that the template and the reed make exactly the same movement. The connection set is used to move the reed in the length and cross direction.

4.4.5 Base set

The base set of the profiler supports the template set, carriage set, reed set and connection set.

4.4.6 Reed set

The reed set holds the reed, the adjustment for the tip line, the adjustment for the stroke and adjustment 'E' for the thickness at the

4.4.7

collar. The reed holder holds the reed and also acts as an anvil during the scraping process. The staple is held by the staple holder to ensure the right alignment of the reed. The reed clamp clamps the reed to the reed holder. The reed holder has two similar sides. If the first side is damaged the reed holder can be turned 180° in order to use the second side.

Cover

The cover protects the oboe profiler when it is not used. When the cover is positioned the oboe profiler can be transported by just putting it in a bag or suitcase.

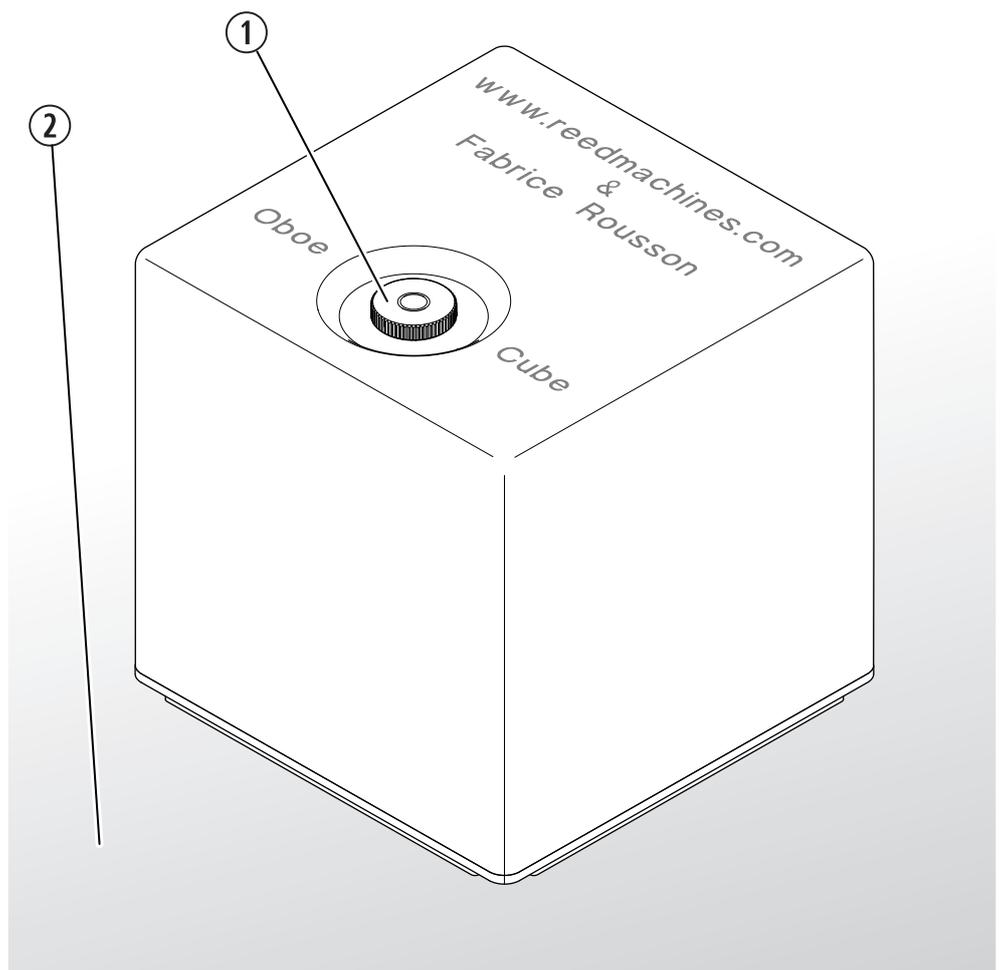
4.4.8

Toolbox

The toolbox contains the hand tools and other small parts like the stroke limit pin, etc. When the box and cover are on the oboe profiler the cover closes the box so no parts can come out of the box.

5 Preparations

5.1 Remove the cover



To remove the cover from the oboe profiler:

1. Position the oboe profiler on a horizontal surface ②.
2. Untighten the locking screw counterclockwise ①.

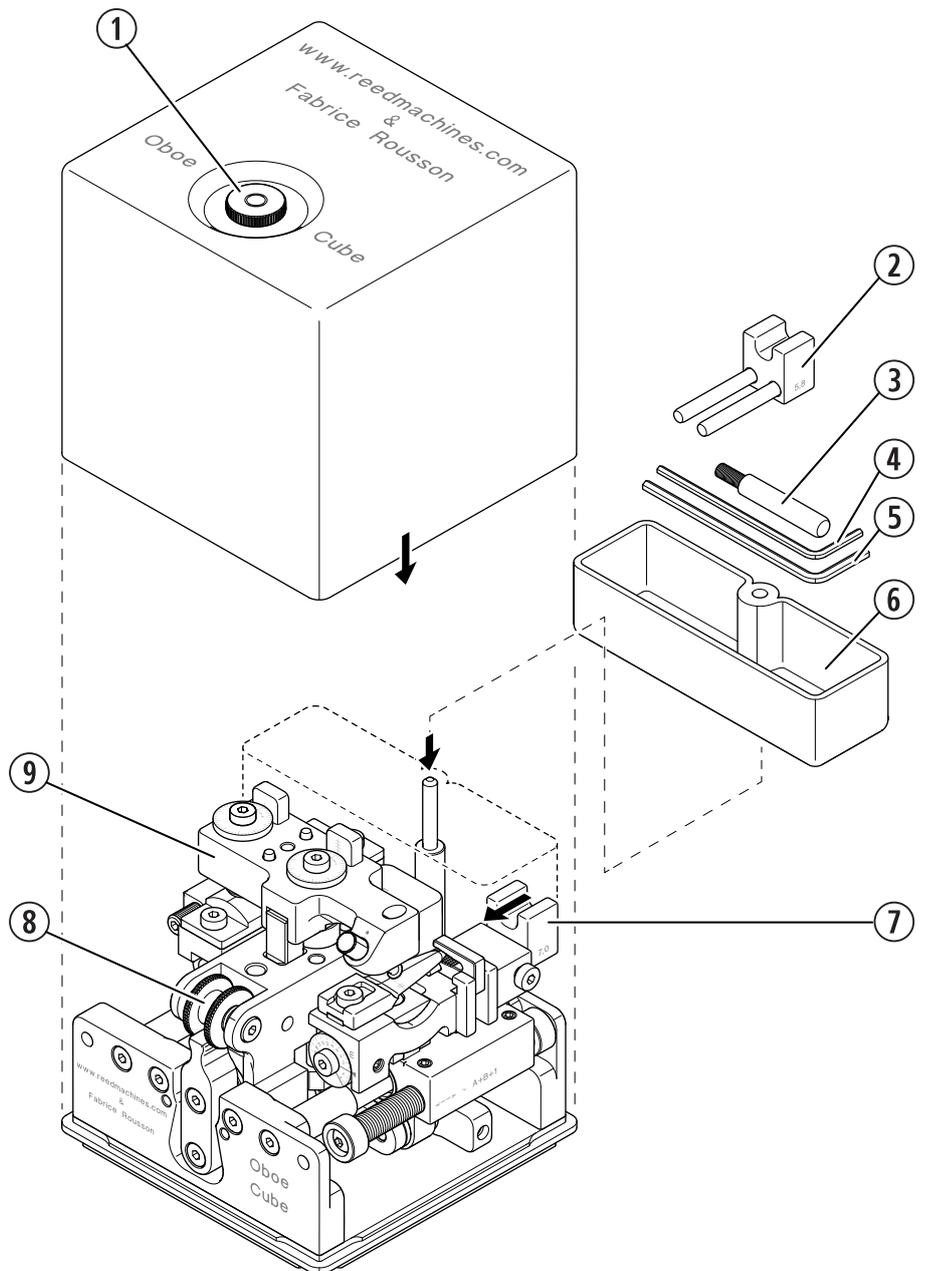


Caution

Always position the oboe profiler on a horizontal and flat surface before untying the locking screw. Untightening the locking screw when the unit is not placed on a surface can cause the oboe profiler to drop down and become damaged.

5.2

Position the cover



To position the cover:

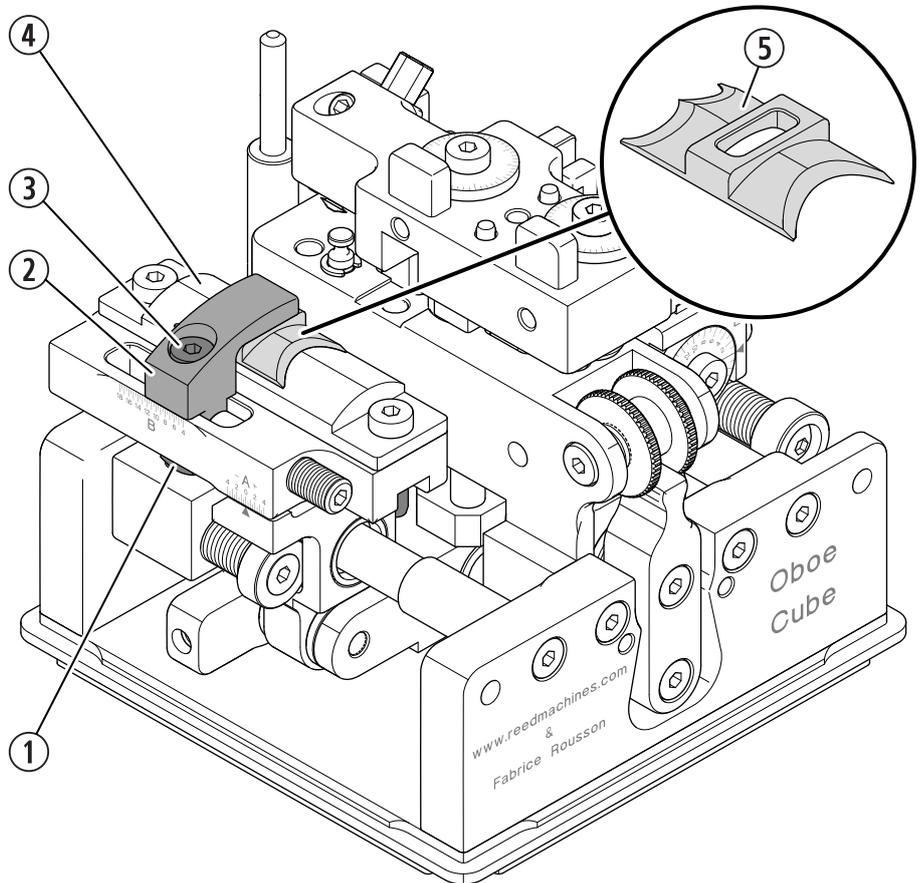
1. Position the oboe profiler on a horizontal and flat surface.
2. Position the carriage set in the scraping position ⑨.
3. Position the template set and reed set in the middle position with the control wheel ⑧.
4. Push the connection set to the end of the stroke and position the stroke limit pin in the 'P' position.
5. Position the staple holder completely inwards ⑦.
6. Put all parts (②, ③, ④, ⑤) in the box and position the box ⑥ on the oboe profiler.
7. Position the cover over the oboe profiler with the locking screw ① at the front side of the oboe profiler.

8. Fasten the locking screw.

5.3

Change collar shape

Change collar shape



To change the collar shape:

1. Position the carriage set in the parking position.
2. Position the template set in the middle position with the control wheel.



Note

Before proceeding to step 3, be sure the template clamp screw ③ is fully fastened. For now, this is the reference position of the screw.

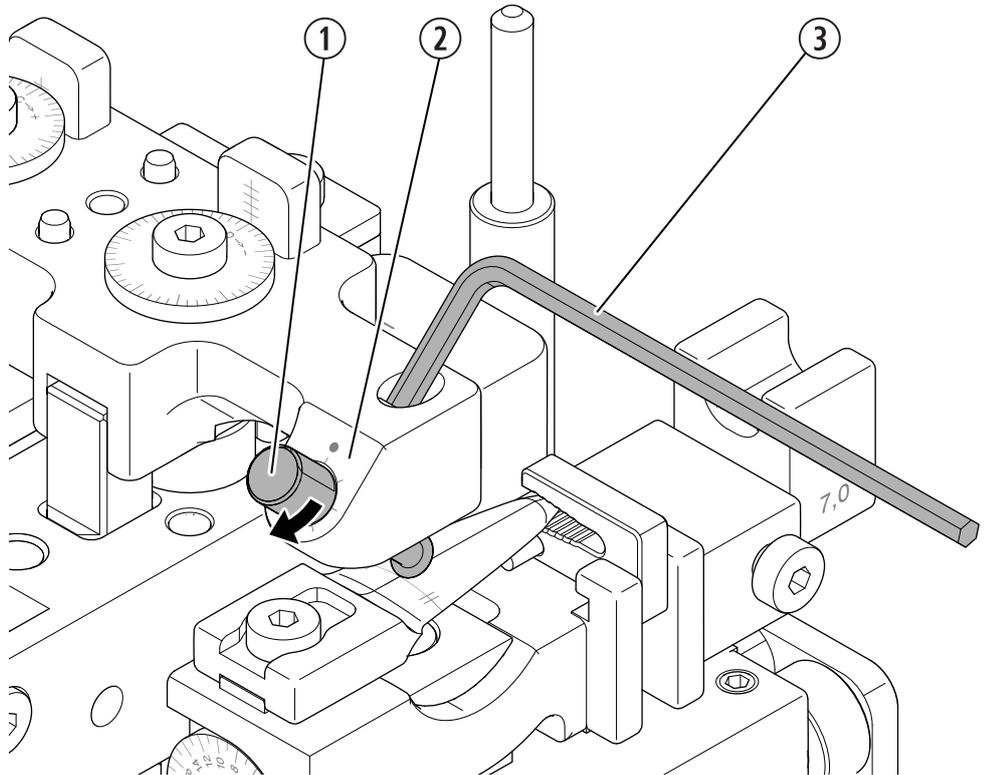
3. Now untighten the template clamp screw ③ for three revolutions counterclockwise.
4. Pull up the template clamp ② and slide the V-W part ⑤ from under the template clamp.
5. Turn the V-W part 180° and slide it back under the template clamp.
6. Fasten the template clamp screw ③.

5.4

Change to new knife position

When the knife gets blunt, it is possible to rotate the knife to a fresh part. This can be done eight times before a new knife has to be installed.

Change knife position



1. Untighten the knife clamp screw ③ for 0.5 revolution.
2. Rotate the position mark line of the knife ① to the next scale line on the carriage ②.
3. Fasten the knife clamp screw.



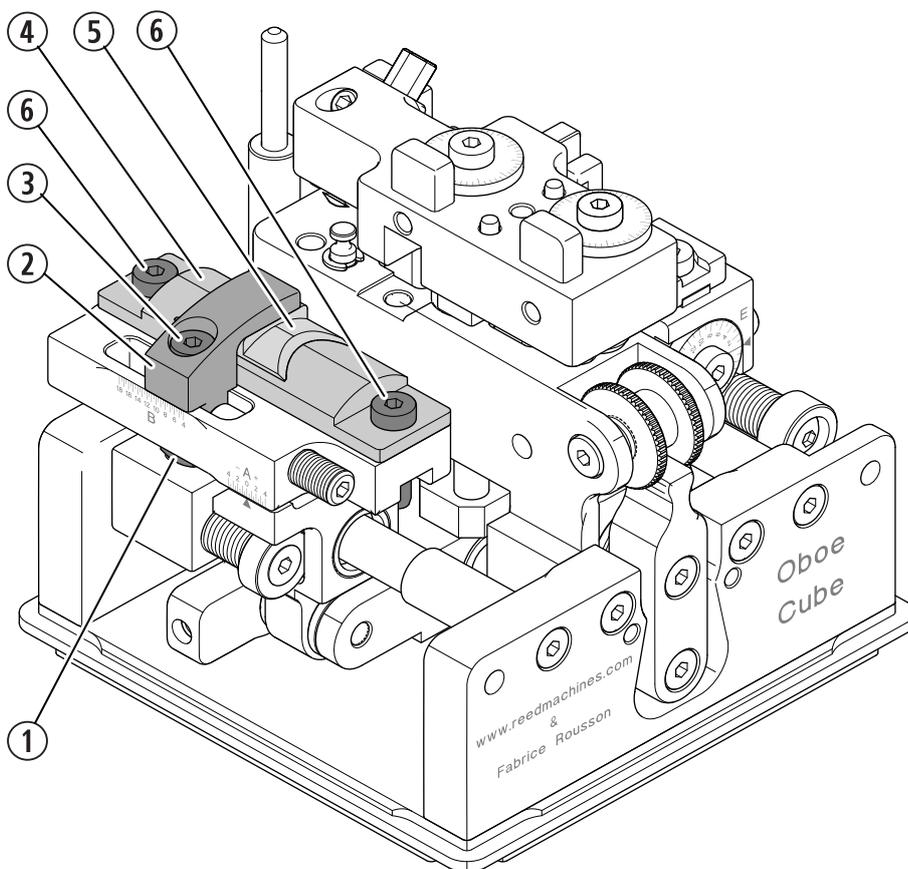
Note

Be sure to set the [force](#), see "Adjust force on the knife 'D'" (on page 31) on the knife to the minimum value before using a new position of the knife or a new knife.

5.5

Exchange template

Exchange template



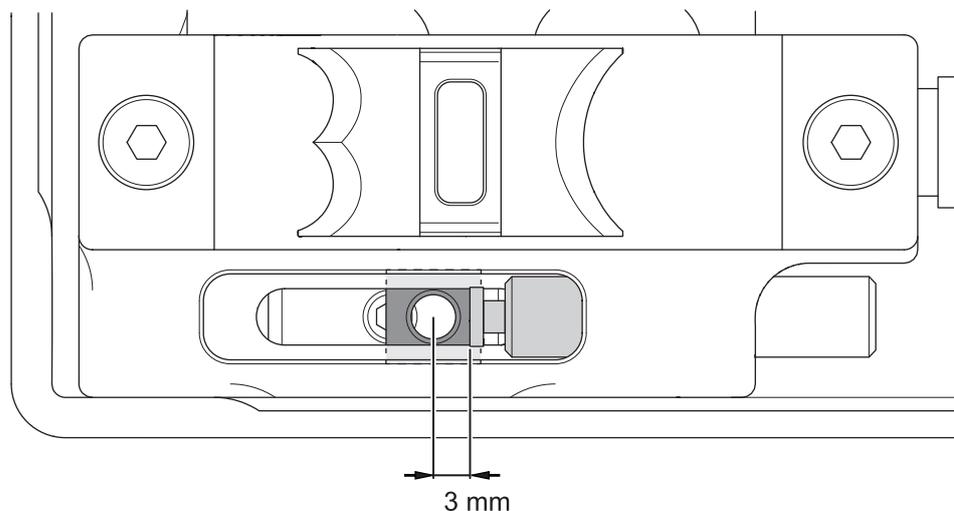
1. Position the carriage set in the parking position.
2. Position the template set in the middle position with the control wheel.
3. Untighten and remove the template clamp screw ③ completely.



Note

Try not to move the oboe profiler to make sure the square nut ① stays on its position. If the square nut moves before proceeding to step 7, position it back with the center of the hole about 3 mm to the left of the head of the adjustment spindle. See figure 'Top view of square nut position' below.

Top view of square nut position



4. Take away the template clamp ② and the V-W part ⑤.
5. Untighten the template screws ⑥ and take away the template ④.
6. Position another template and fasten the template screws.
7. Position the template clamp over the adjustment spindle and fasten the template screw ③.



Note

Make sure the template clamp is positioned with its slot over the head of the adjustment spindle.

Note

Pick up the square nut ① by turning the template clamp screw while pushing it down.

Note

Be sure the template clamp screw is fastened before proceeding to step 8.

8. Untighten the template clamp screw for three revolutions.
9. Pull up the template clamp. Slide the V-W part under the template clamp. The ridge of the template clamp has to fall into the slot of the V-W part.
10. Fasten the template clamp screw.

5.6

Exchange knife

**Warning**

Be careful when handling the knife. Never touch the cutting edge of the knife to avoid injuries.

**Caution**

Be sure not to let the knife fall or hit the cutting edge of the knife because this can damage the knife.

**Note**

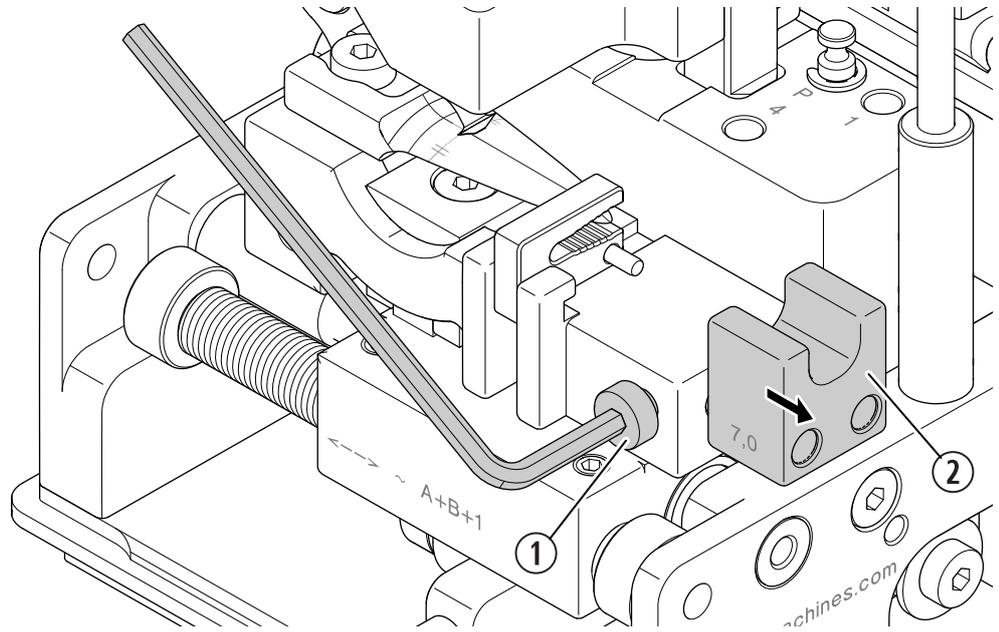
Be sure to set the force on the knife to the minimum value before changing to a new knife. See [Adjust force on the knife 'D'](#) (on page 31).

1. Untighten the knife clamp screw for two revolutions while holding the knife between the fingers at the part of the knife that is extending above the carriage.
2. Pull the knife out of the carriage set.
3. Position a new knife in the carriage set with the marking lines on the knife equal to the surface of the carriage set.
4. Fasten the knife clamp screw.

5.7

Exchange staple holder

Exchange the staple holder



The oboe profiler is delivered with 1 staple holder for oboe (marked with '7.0') and 1 staple holder for cor anglais (marked with '5.8').

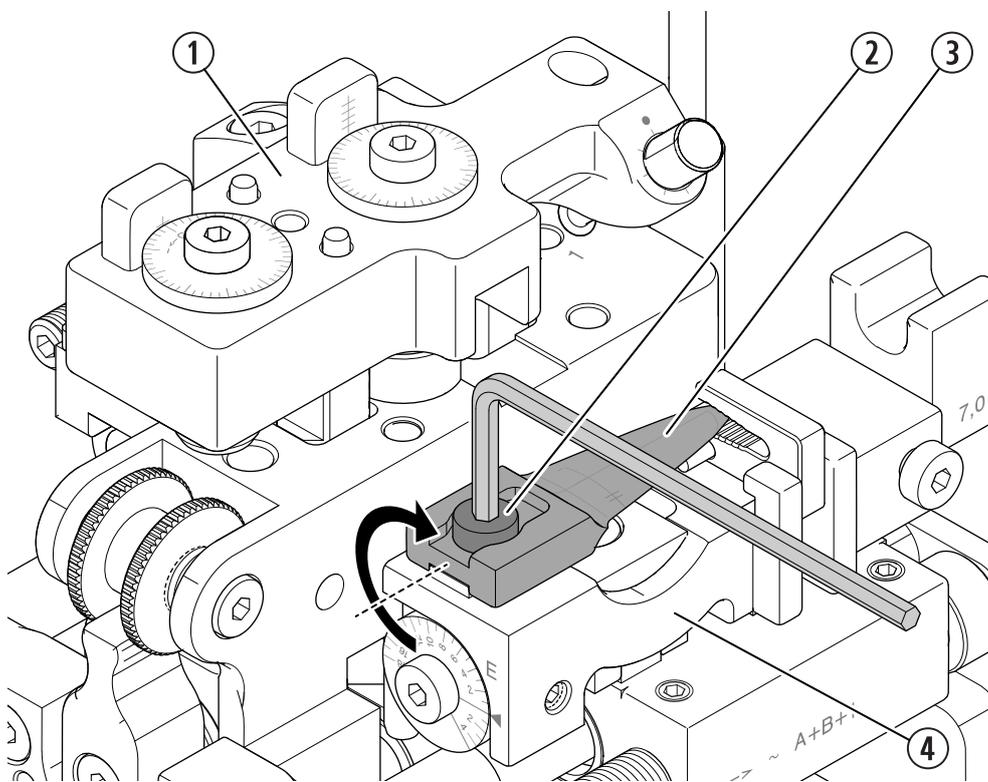
To change the staple holder:

1. Untighten the staple holder clamp screw ① for 0.5 revolution.
2. Remove the staple holder ②.
3. Position the new staple holder.
4. Fasten the staple holder clamp screw.

5.8

Exchange reed holder

Exchange reed holder



The reed holder has 2 similar sides. If one side is damaged the reed holder can be rotated 180° in order to use the other side.

To exchange the read holder:

1. Position the carriage set in the parking position ①.
2. Untighten the reed holder clamp screw ②.
3. Remove the reed holder ③.
4. Rotate the reed holder 180° or take a new reed holder.
5. Position the reed holder with its slot on the ridge of the reed holder base block ④.



Note

Be sure that the reed holder and the reed holder base block are clean and free of damages. Any dirt or damages can result in an incorrect position of the reed holder. An incorrect positioned reed holder will result in inaccurate scraped reeds.

6. Fasten the reed holder clamp screw.



6

Adjustments



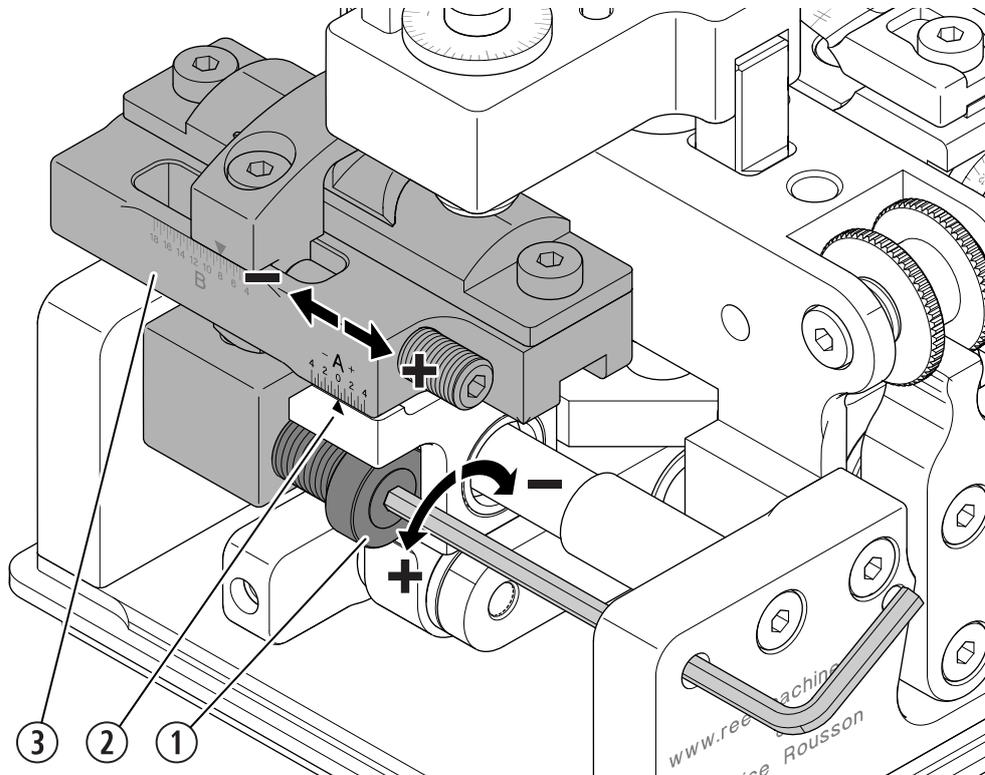
Note

The adjustment explanations in this section assume that the position of the point of the knife is equal to the bottom surface of the carriage.

6.1

Adjust length of the tip 'A'

Adjust length of the tip 'A'



- Turn the spindle ① clock wise to make the length of the tip shorter.
- Turn the spindle ① counter clock wise to make the length of the tip longer.



Note

Use scale 'A' ② on the template base block ③ to see the change in length of the tip.

Note

If adjustment 'A' and not the type of reed is changed it is mostly necessary to change adjustment 'B' with the same value. See [Adjust length of the scrape 'B'](#) (on page 29).

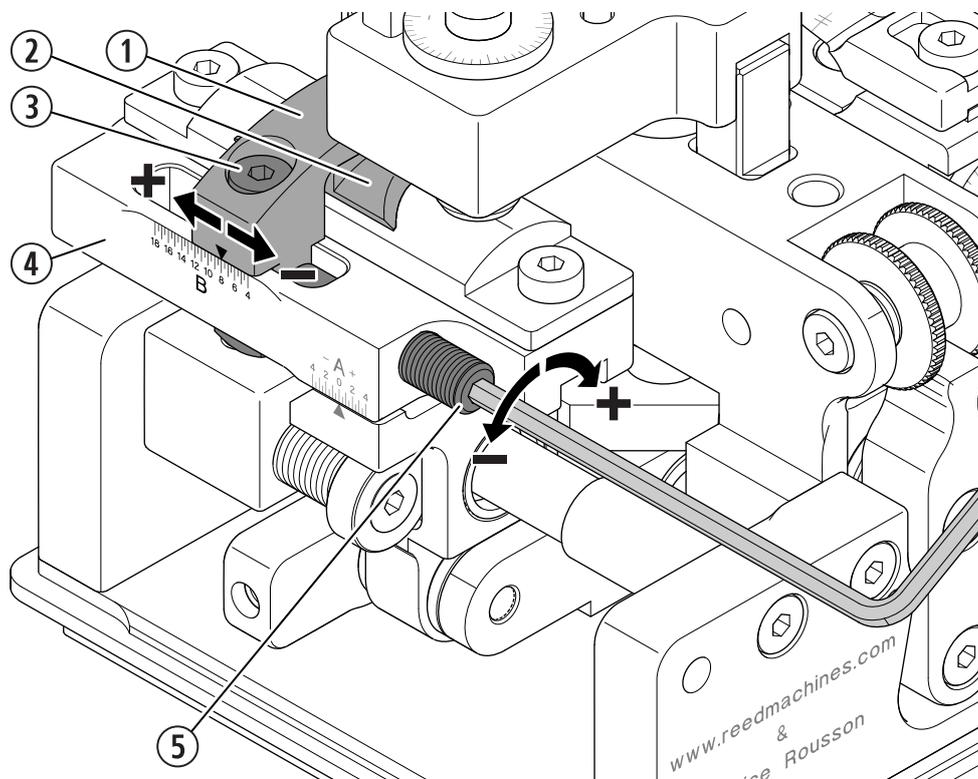
Note

If adjustment 'A' and/or adjustment 'B' are changed it is possible that the length of the stroke also needs to be changed. See [Adjust length of the stroke](#) (on page 35).

6.2

Adjust length of the scrape 'B'

Adjust length of the scrape 'B'



1. Untighten the template clamp screw ③ for 0.5 revolution.
2. Turn spindle ⑤ clock wise to move the V-W part from the tip and so make the scrape longer or counter clock wise to move the V-W part to the tip and so make the scrape shorter.
3. Fasten the template clamp screw.



Note

Use scale 'B' of the template base block ④ to see the change in collar position.

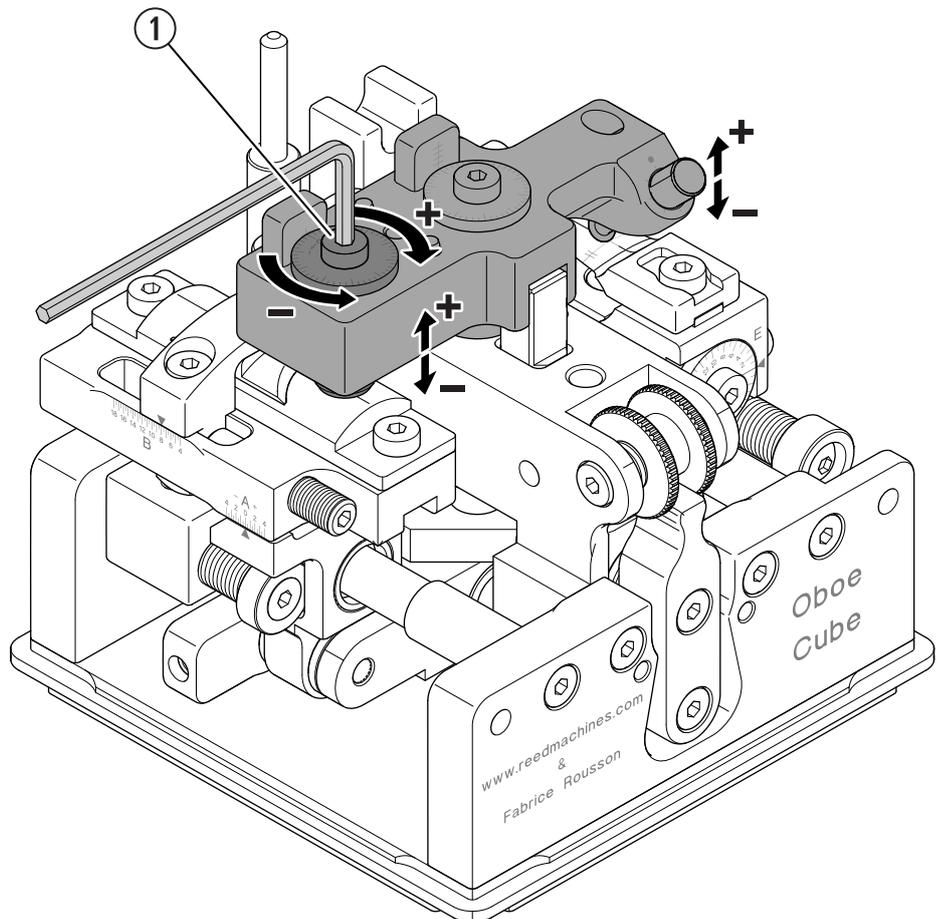
Note

If adjustment 'A' and/or adjustment 'B' are changed it is possible that the length of the stroke also needs to be changed. See [Adjust length of the stroke](#) (on page 35).

6.3

Adjust thickness of the tip 'C'

Adjust thickness of the tip 'C'



- Turn spindle ① clockwise to increase the length of the tip.
- Turn spindle ① counterclockwise to decrease the length of the tip.



Note

Use scale disc 'C' to see the change in tip thickness.

Note

The tip thickness in the middle should be about 0.08 mm to 0.1 mm. Use a measurement setup to measure the tip thickness.



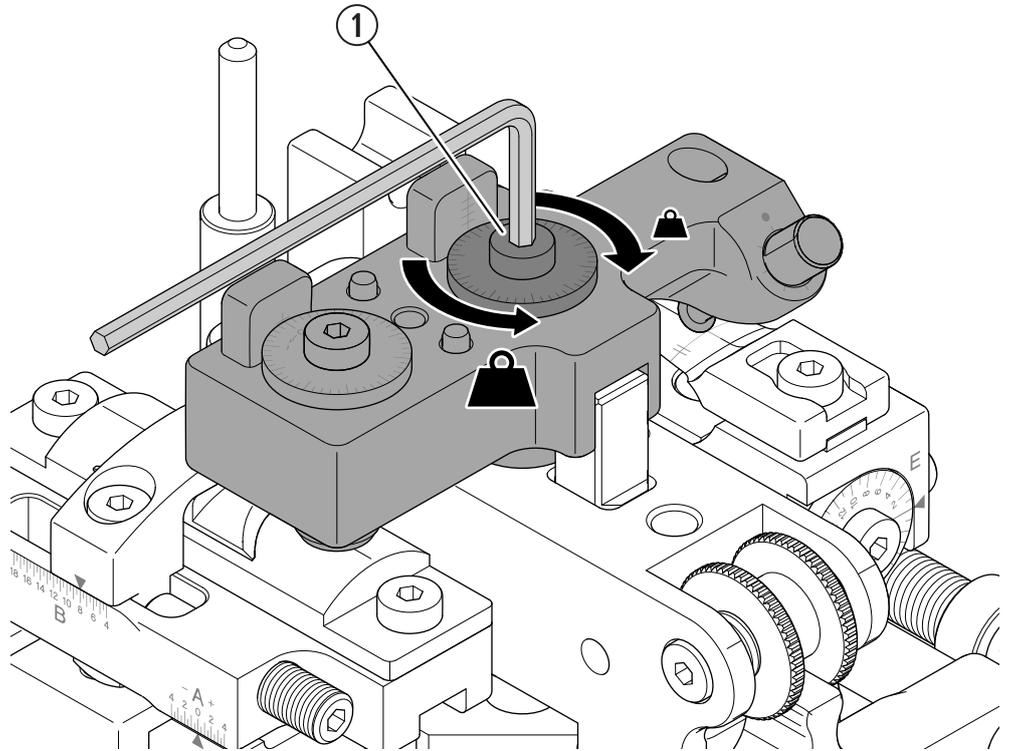
Caution

It is possible to adjust the knife so that it cuts into the reed holder. This can damage the reed holder and/or knife. Start with a tip that is too thick and slowly work down to the desired tip thickness. One digit of the scale disc is about 0.02 mm change of thickness.

6.4

Adjust force on the knife 'D'

Adjust force on the knife 'D'



When the knife wears it becomes less sharp, this results in bad cutting properties. In this case it can help to increase the force on the knife. If this does not improve the cutting properties, turn the knife to a new position or exchange the knife.



Note

Be sure to set the force on the knife to the minimum value before using a new position of the knife or a new knife.

- Turn the spindle ① clock wise to make the force on the knife lower.
- Turn the spindle ① counter clock wise to make the force on the knife higher.

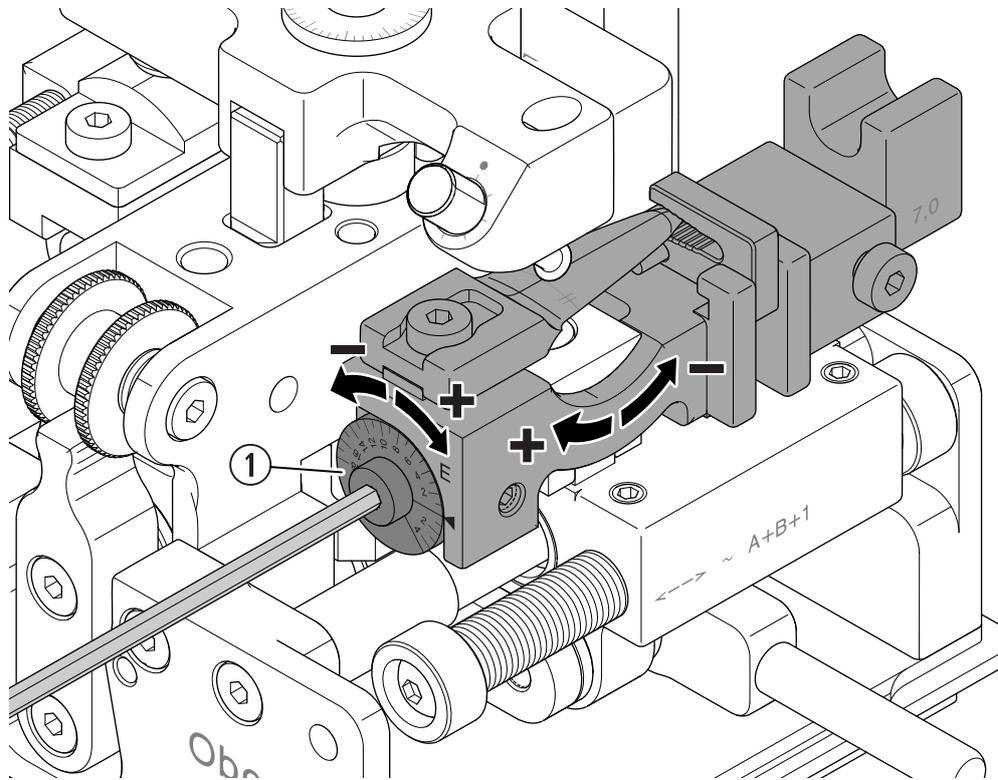
Note

Use the scale disc 'D' to see the change in force on the knife.

6.5

Adjust thickness of the collar 'E'

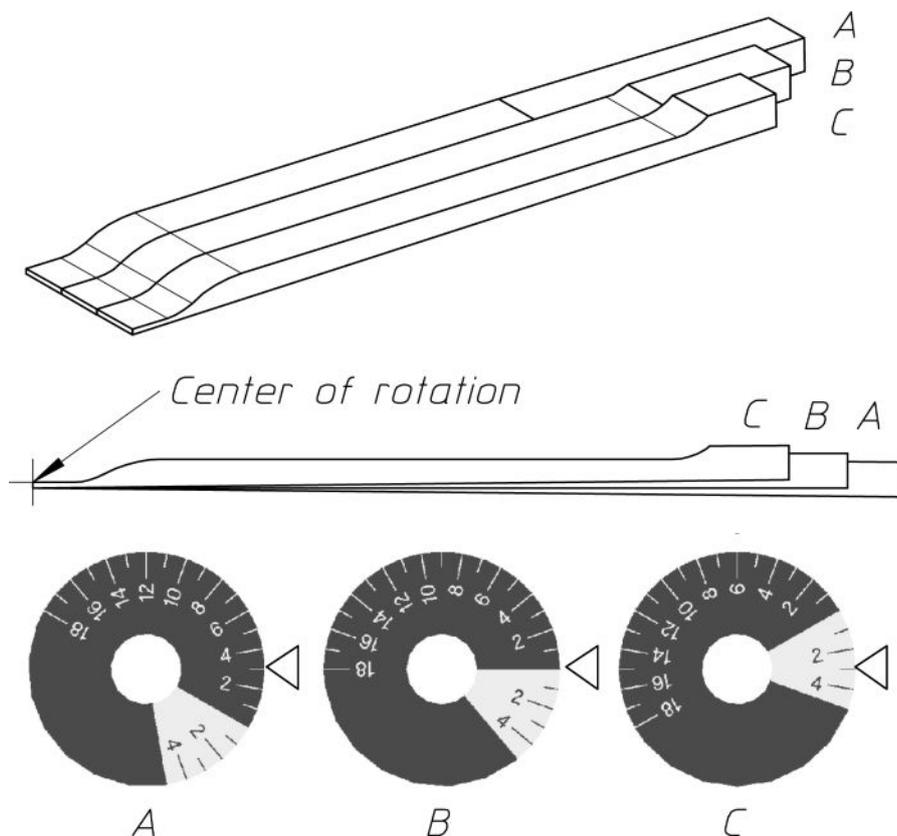
Adjust collar thickness 'E'



Based on only one template, the oboe profiler can produce reeds with many different types of vibration and octave ranges. This makes adjustment 'E' by far the most important and most used adjustment of the oboe profiler.

Adjustment 'E' rotates the profile around the tip of the reed which makes it possible to change the thickness of the collar while the thickness of the tip is not affected. It is even possible to adjust the rotation in such a way that it removes the collar completely, as illustrated as 'A' in the drawing below.

Effect of Adjustment 'E' on the tip of the reed



To adjust the thickness of the collar:

- Turn spindle (① in the figure Adjust collar thickness 'E') clock wise (A) to make the collar thicker.
- Turn spindle (① in the figure Adjust collar thickness 'E') counter clock wise (C) to make the collar thinner.



Note

Use the scale disc 'E' to see the change of the collar thickness. At value '0' the center line of the reed is parallel to the template.



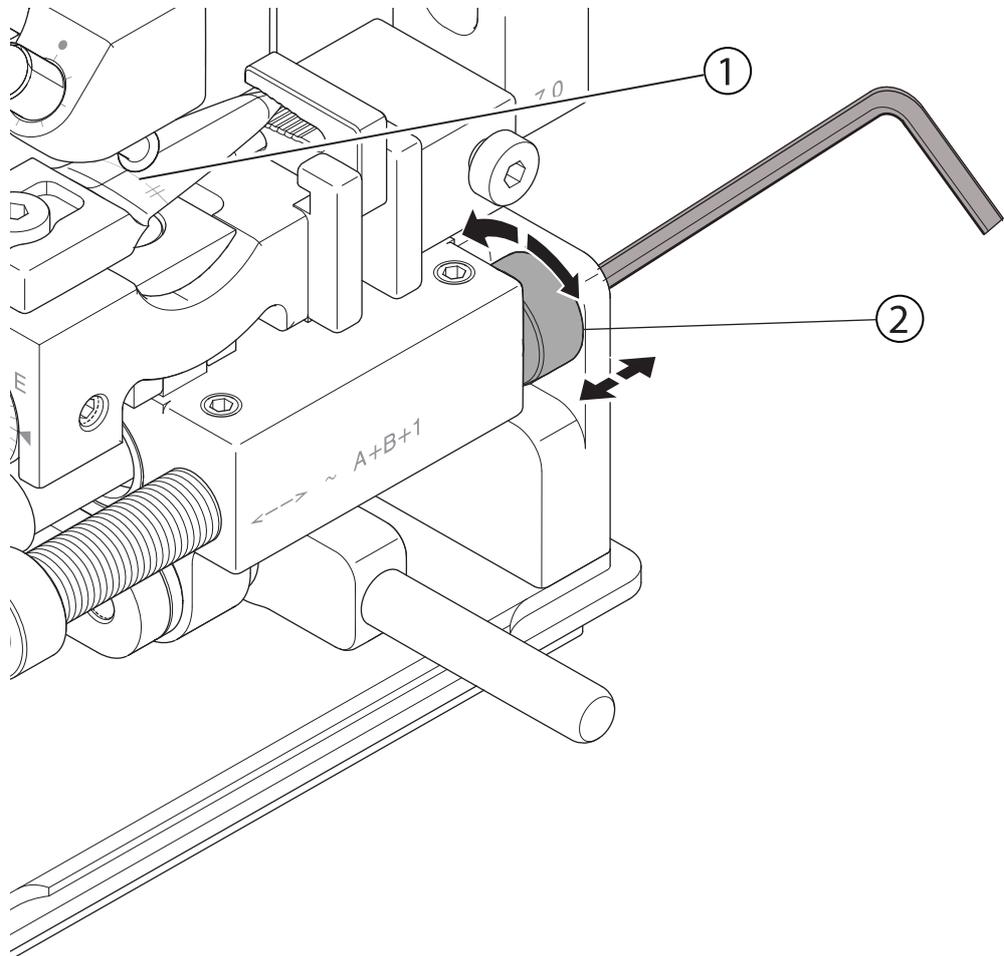
Warning

It is possible to adjust the knife into the reed holder with the risk to damage the reed holder and/or knife. Start with a collar that is too thick and slowly work down to the desired collar thickness.

6.6

Adjust reference line

Reference line adjustment



- ① Reference line
- ② Adjustment spindle

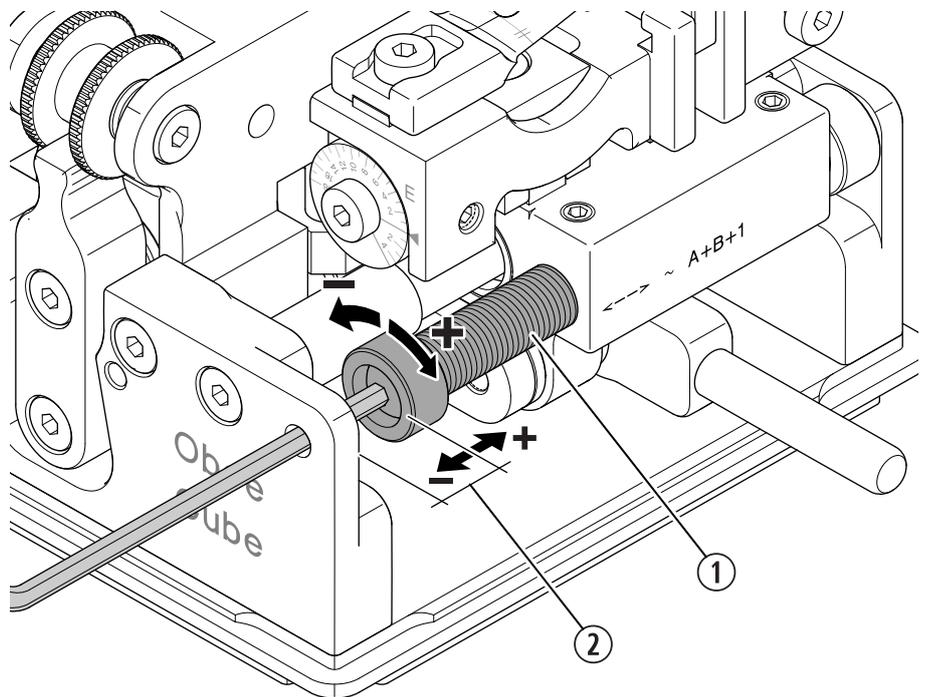
To adjust the reference line:

1. Push the template set and reed set completely backwards until it blocks.
The point of the knife should be exactly at the reference line ① of the reed holder.
2. Adjust the spindle ② to position the knife on the reference line.

6.7

Adjust length of the stroke

Adjust length of the stroke



① Stroke length adjustment spindle

② Stroke length

The length of the stroke ② in mm must be equal to value 'A' plus value 'B' plus 1.

- Turn the spindle ① clock wise to make the stroke longer.
- Turn the spindle counter clock wise to make the stroke shorter.



Note

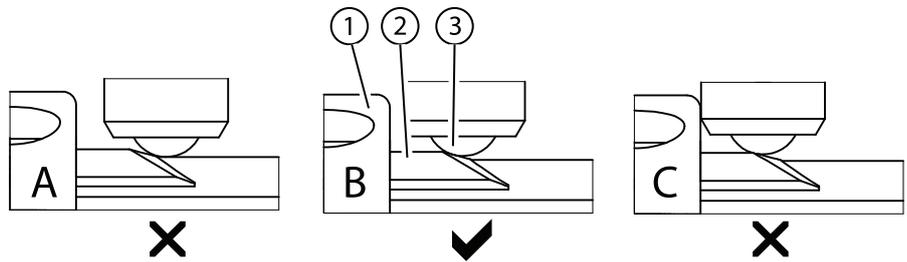
Value 'A' can be negative. Take care to make the stroke calculation in the correct way.

Examples:

- If $A = 1$ and $B = 10$ the stroke has to be $1 + 10 + 1 = 12$ mm.
- If $A = -1$ and $B = 10$ the stroke has to be $-1 + 10 + 1 = 10$ mm.

Visual stroke adjustment

Visual stroke adjustment



① Template clamp	A. Ball too far from template
② V-W part	B. Ball in correct position
③ Ball	C. Ball hits template clamp

It is also possible to adjust the length of the stroke visually:

1. Position the carriage set in the scraping position.
2. Position the template set and reed set in the middle position (cross direction) with the control wheel.
3. Use the stroke pin to position the ball ③ towards the template ② until it blocks. Determine the position of the ball and compare the result to the drawing above.



Note

To overcome the resistance of the spring, apply enough force to make sure the ball can 'climb' onto the V-W part.

4. Adjust the spindle, see ⑤ of [Adjust length of the scrape 'B'](#) (on page 29), to position the ball similar to the situation as indicates in figure B.



Note

If the stroke is too short it is not possible to scrape the complete length of the profile.



Warning

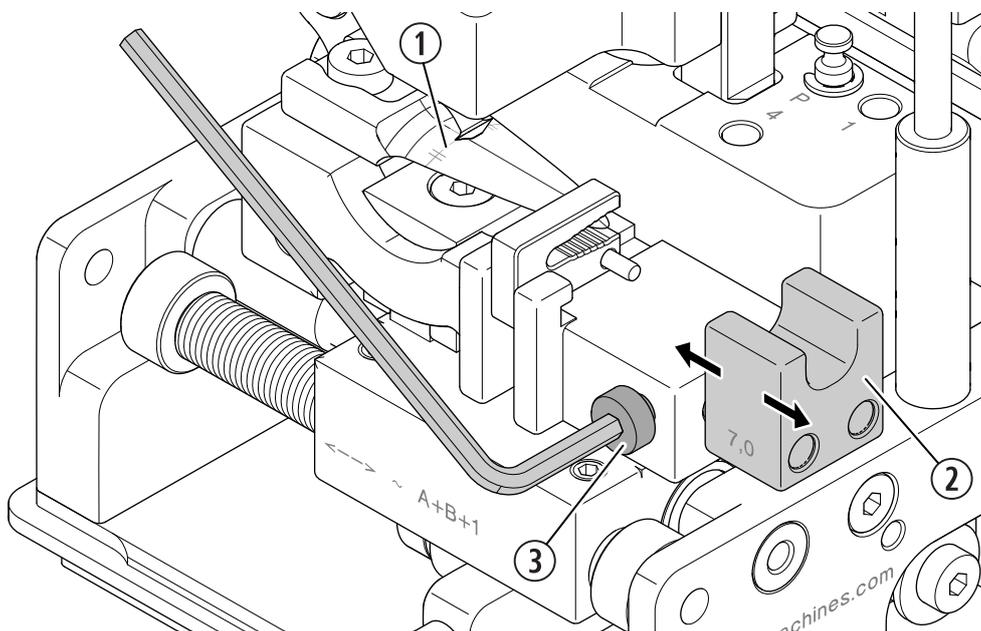
If the stroke is too long the following risks occur:

- The ball that copies the template can hit the template clamp (C).
- The knife can hit the reed clamp with the risk to damage the knife.

6.8

Adjust staple holder

Adjust staple holder



1. Untighten the staple holder clamp screw ③ for 0.5 revolution.
2. Adjust the staple holder ② by moving it into or out of the reed holder base block.
 - a. For oboe the middle of the staple has to be in the middle of the staple holder when the reed tip is positioned at the reference line ① of the reed holder.
 - b. For cor anglais the biggest diameter of the staple has to be at the side of the staple holder that is close to the reed holder base block when the reed tip is positioned at the reference line of the reed holder.



Note

For cor anglais reeds the staple holder can be too close to the reed holder base block. In this case the wire of the reed conflicts with the staple holder during positioning of the reed when the tip of the reed is at the point of the reed holder.

3. Fasten the staple holder clamp screw.



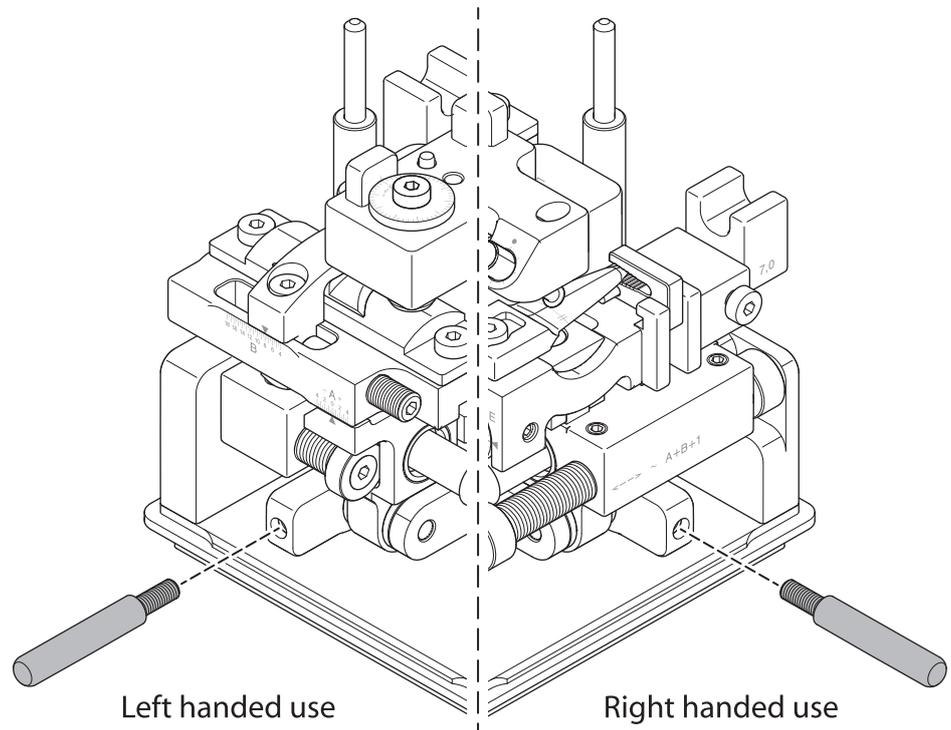
7

Operating instructions

7.1

Position stroke pin

Position stroke pin



- For right handed (RH) users: screw the stroke pin in the connection block at the reed set side of the profiler (see left drawing).
- For left handed (LH) users: screw the stroke pin in the connection block at the template set side of the profiler (see right drawing).

7.2

Preparation

Before starting the profiling process:

1. Place the oboe profiler on a horizontal and flat surface.
2. Make sure that the reed holder is clean.



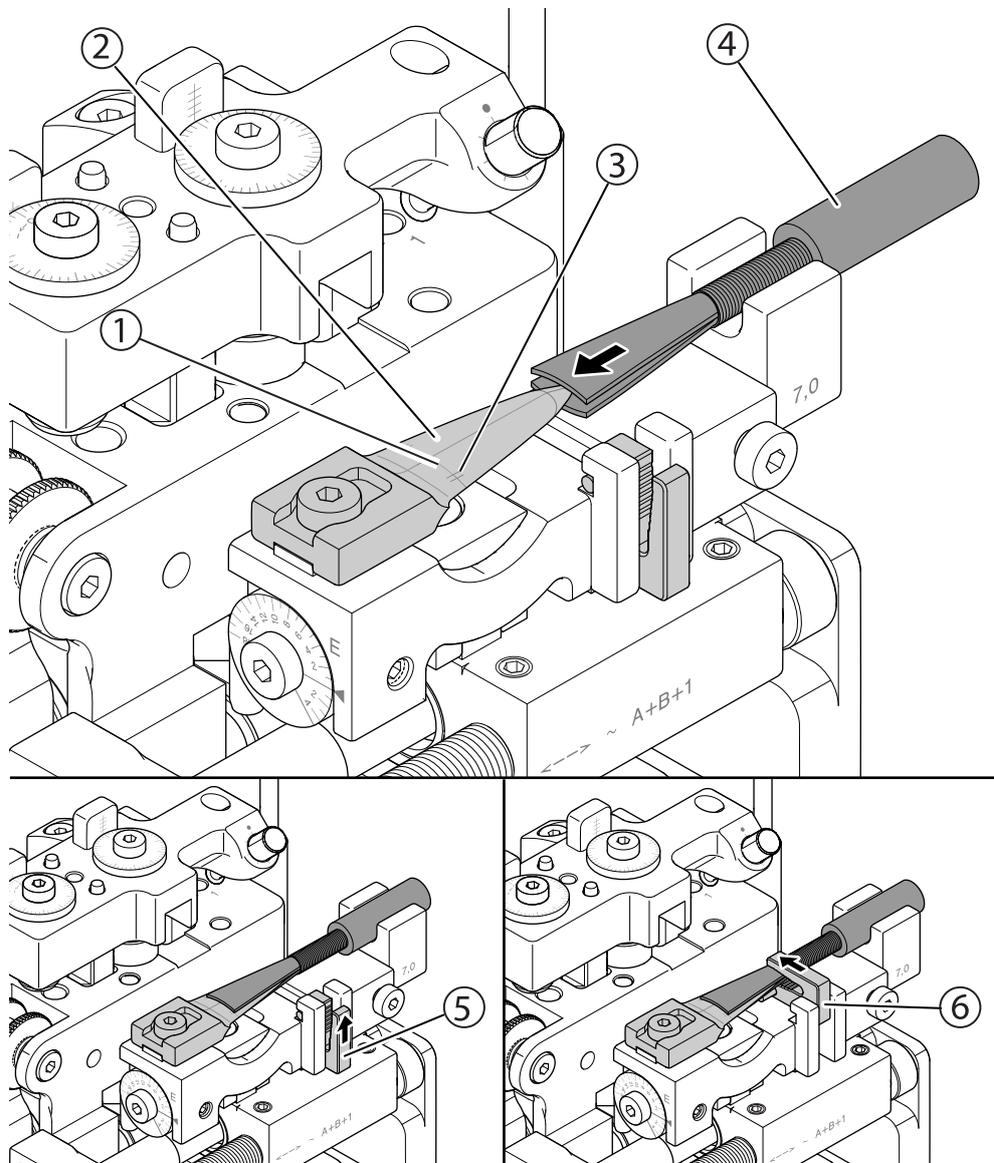
Note

A reed has to be wet during profiling. If the reed is (too) dry the reed can become damaged during the profiling process.

7.3

Position a reed

Position a reed



Note

Be sure the right staple holder is on the profiler. The oboe staple holder is marked with '7.0' and the cor anglais staple holder is marked with '5.8'. To change the staple holder, see [Exchange staple holder](#) (on page 24).

Note

Be sure the staple holder is positioned correctly. To see whether the staple holder is positioned correctly or whether the staple holder needs adjustment see [Adjust staple holder](#) (on page 37).

To position the reed:

1. Position the carriage set in the parking position.
2. Position the reed set in the middle position with the control wheel.

3. Take the staple of the reed between the fingers, push the reed tip over the reed holder ② and insert the staple into the staple holder ④.



Note

Be sure the reed tip is opened before the reed tip is pushed over the reed holder.

4. Push the reed over the reed holder until the reed tip is at the length reference line ① of the reed holder.
5. Move the reed tip inside the side reference lines ③ of the reed holder to ensure that the reed tip is centered correctly.
6. Push the reed clamp (⑤, ⑥) over the reed while holding the reed tip with 1 finger to avoid that the reed tip moves from the side reference lines of the reed holder.
7. Position the carriage set in the scraping position.

7.4

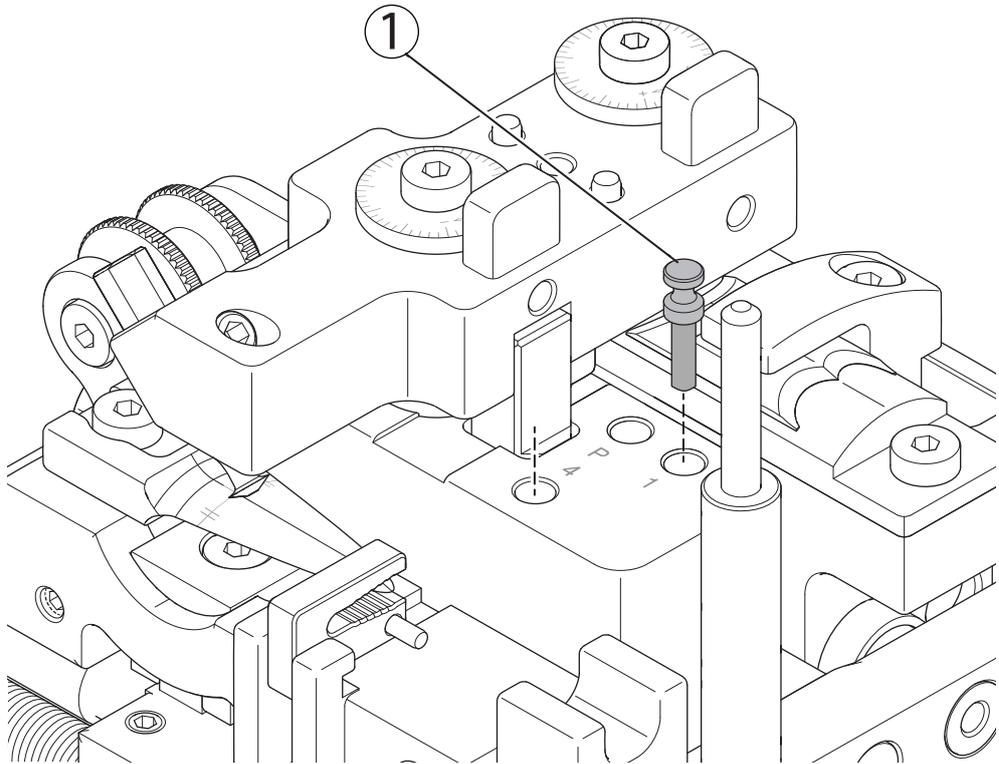
Profile a reed tip



Note

The reed has to be scraped when it is wet. The knife is corrosion resistant.

Profiling a reed tip



When a reed is profiled it is possible to change the profile of only the first 1 mm or first 4 mm of the reed tip.

1. Push back the reed set completely
2. Position the stroke limitation pin ① in:
 - a. Position 1 of the base set (see drawing) to profile only the first 1 mm of the reed tip.
 - b. Position 4 of the base set (see drawing) to profile only the first 4 mm of the reed tip.
3. Follow the sequence described in [To profile a reed](#), see "Profile a reed" (on page 43) to profile the reed tip.

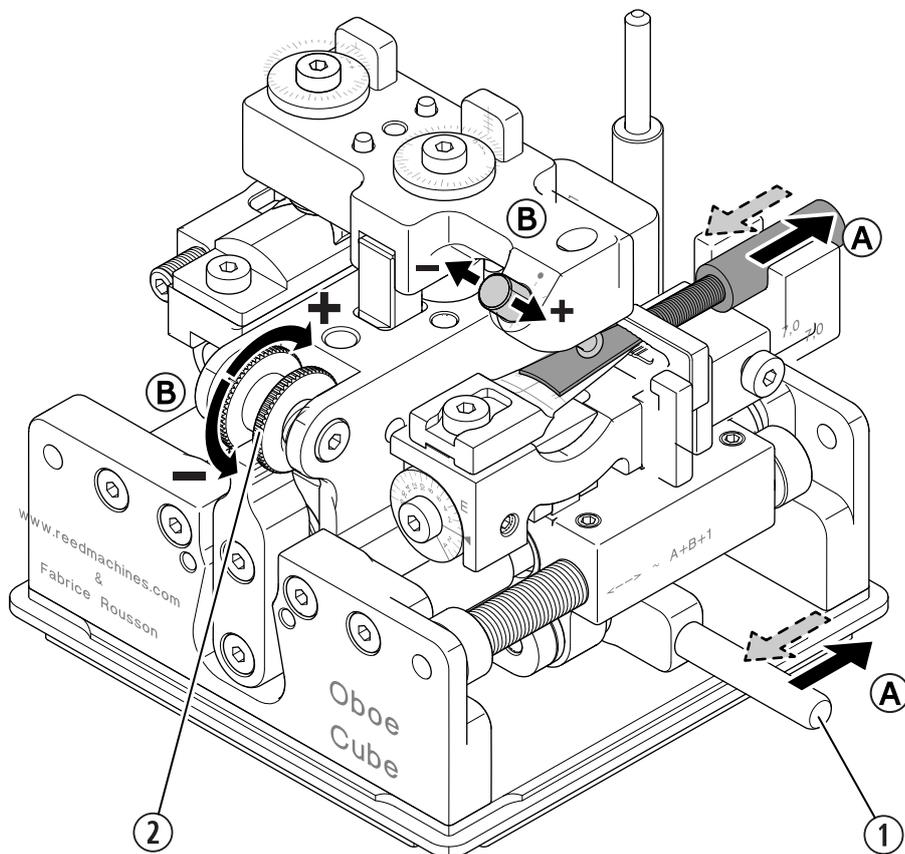
7.5

Profile a reed



Note

The reed has to be scraped when it is wet. The knife is corrosion resistant.



Profiling a reed consists of two well timed movements which need a certain rhythm. Mastering this technique can take some time. The profiler can be used right handed or left handed. See [Position stroke pin](#) (on page 39).

The two profiling movements are:

- The scrape (length) movement **A** which is controlled by the stroke pin ①.
- The cross movement **B** which is controlled by the control wheel ②.



Note

The first scrape movement has to be made when the reed set in the middle position (see illustration).

To profile a reed:

1. Hold the profiler with the index finger at the back side and the thumb at the stroke pin ①.

2. Make a stroke **A** by moving the thumb to the index finger until the movement is blocked.



Note

If the stroke is not completely finished the scrape is not made completely to the tip of the reed.

3. Move the thumb away from the fore finger until the reed set is blocked by the stroke length spindle.



Note

When a new reed side is profiled the first stroke takes away a lot of cane. This may require some extra force. It might be useful to pull up the carriage set a little to make work less heavy. Repeat this procedure without rotating the control wheel until the return spring is able to push back the reed set without the need of pulling up the carriage set.

4. Rotate the control wheel for about 1/8 revolution (about 45°) by moving the control wheel **downwards**.
5. Repeat step 2, 3 and 4 until the knife does not scrape cane anymore.
6. Rotate the control wheel for about 1/8 revolution (about 45°) by moving the control wheel **upwards**.
7. Repeat step 2, 3 and 6 until the knife does not scrape cane anymore.
8. Rotate the control wheel for about 1/8 revolution (about 45°) by moving the control wheel **downwards**.
9. Repeat step 2, 3 and 8 until the reed set is back in the middle position.

8 Maintenance

8.1 Cleaning

Remove chips frequently from the profiler during use. Use a brush or a soft cloth.

8.2 Storage

When the profiling process is finished:

- Remove chips from the profiler.
- Make the profiler dry.



9

Troubleshooting

9.1

Troubleshooting

1. Parts of the reed tip are cut away:
 - The thickness of the tip is too **small**, see "Adjust thickness of the tip 'C'" (on page 30).
 - The reed is (too) dry.
2. The reed set is not pushed back to the start position:
 - A new reed is **profiled**, see "Profile a reed" (on page 43).
 - Something is blocking the template set, connection set or reed set.
3. The cover cannot be **positioned**, see "Position the cover" (on page 18):
 - The template set and reed set are not in the middle position.
 - The carriage set is not in the scraping position.
 - The staple holder extends too much from the reed holder base block.
 - The locking spindle is not positioned at the front side of the profiler.
4. The ball element hits the template clamp:
 - The stroke is too **long**, see "Adjust length of the stroke" (on page 35).
5. It is not possible to scrape the collar of the reed:
 - The stroke is too **short**, see "Adjust length of the stroke" (on page 35).
6. It is not possible to scrape the tip of the reed:
 - The knife cannot reach the **reference line**, see "Adjust reference line" (on page 34).
 - The reed is **positioned beyond the reference line**, see "Position a reed" (on page 40).
7. The reed is moving with the knife during scraping:
 - The reed is not clamped to the reed holder enough by the **reed clamp**, see "Position a reed" (on page 40).
8. 8. The V or W shape of the scrape is not symmetrical on the reed:
 - The gouged blank is not symmetrical.
 - The shape of the cane is not round.



10

Optional accessories

10.1

Optional accessories

Optional accessories:

1. Dial indicator set (in development):
 - Measurement setup to be used on the profiler for measurement of the tip thickness and collar thickness
2. Reed holder set with 180° rotation function (in development):
 - Reed holder set which can rotate the reed holder and reed 180° without taking the reed from the profiler. With this option the profiles on both sides of the reed have exactly the same tip length and the profiles are perfectly aligned.
3. Electrical drive (in development)
 - Electrical drive powered by rechargeable battery which makes 1 profiling cycle (see To profile a reed) every time the start cycle button is pressed.

The availability of new accessories will be announced on our website:
<https://reedmachines.com>



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