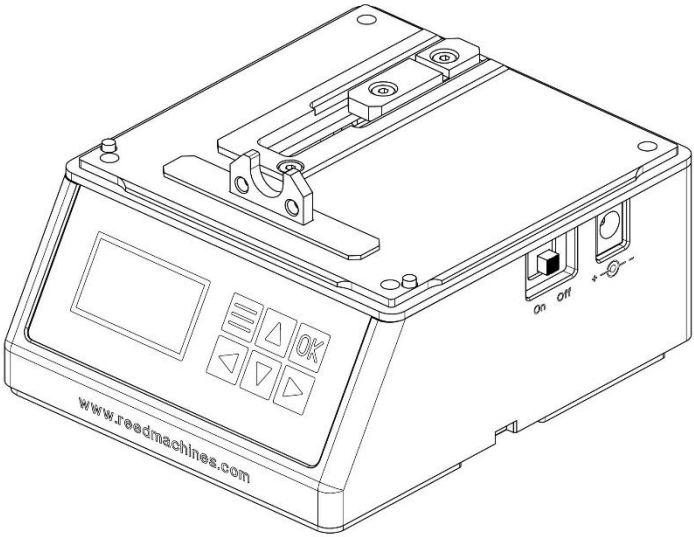
Drive set manual



Preface

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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 products

The described products are:
- The bassoon tip profiler drive set.
- The oboe profiler drive set.

If descriptions are general, the "profiler" will be used. If descriptions are specific, the text "bassoon tip profiler" or "oboe profiler" will be used.

The bassoon drive set and 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 chapter 1, paragraph 4.

1.7 Images

Images show the oboe drive set. Because the drive sets have the same concept, the images can also be used for the bassoon drive set and bagpipe drive set.

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 drive set delivery contains the following:

- 1 drive set.
- 1 external power cable.
- 1 Allen key 2mm.
- 1 Allen key 2,5mm.

Warning
Keep packing materials away from children.

Note
Contact your supplier in case of transport damage.

2.2 About the drive set

The drive set automatically drives the scrape and cross movement of the profiler. These 2 movements form the scrape process.

Features of the drive set:

- Unique compact design.
- Human-machine interface by keyboard and text screen.
- Works on internal Li-ion battery and external power.
- Programmable settings:
  - Speed of the scrape process.
  - Width of the scrape process.
  - Size of the big side step.
  - Size of the small side step.
  - Distance between the channels (only for the bassoon drive set).
  - Width of the channels (only for the bassoon drive set).
- Manual setting of the length of the stroke.
- When the profiler is taken from the drive set it can be used manually.
- Old version profilers can be upgraded so they can be connected to the drive set.

2.3 Specifications

Specifications of the oboe drive set:

- Maximum scrape speed: 4 strokes per second.
- Length: 120mm.
- Width: 100mm.
- Height: 62mm.
- Height with profiler: 144mm.
- Weight: 0,8kg.
- Weight with profiler: 2kg.

Specifications of the bassoon drive set:

- Maximum scrape speed: 4 strokes per second.
- Length: 146mm.
- Width: 126mm.
- Height: 62mm.
- Height with tip profiler: 162mm.
- Weight: 1kg.
- Weight with tip profiler: 2,8kg.

3 Safety information

3.1 Mechanical hazards

Incorrect use of the drive set or the combination of the drive set and 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.

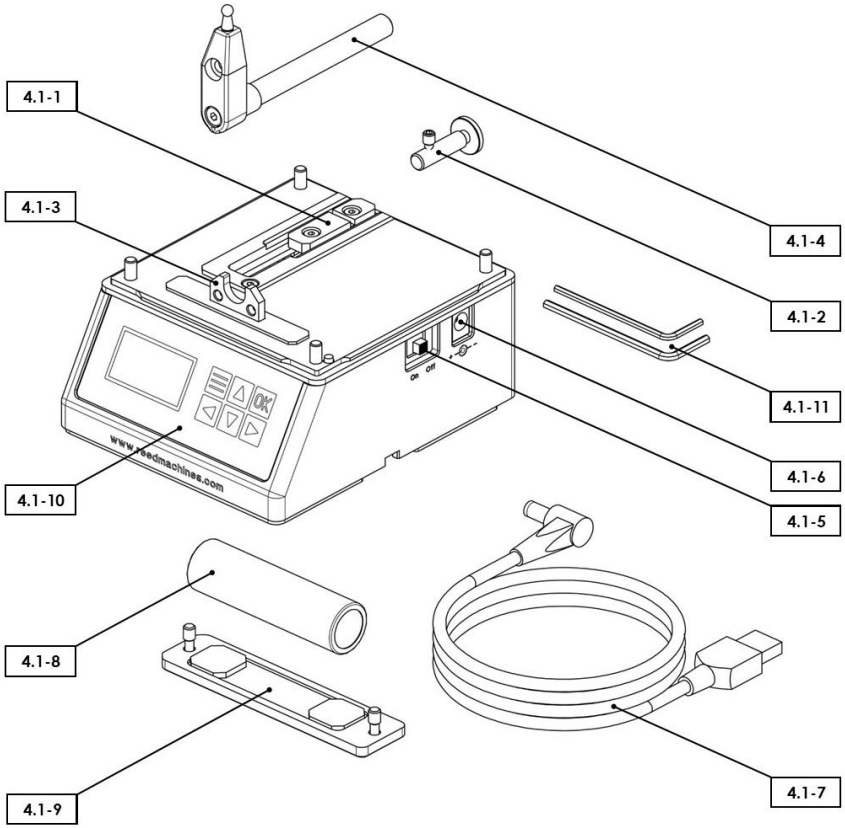
Caution
Use the drive set or combination of the drive set and profiler on a horizontal and even surface to prevent that it slides away or falls.

Take care that the drive set or the combination of the drive set and 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 drive set

Image **4.1**



4.2 General information

General information:
- Use the drive set only for the intended use.
- Read this manual before you prepare, adjust, operate, or do maintenance on the drive set.

4.3 Working principle

Adaptor [**4.1**-1] makes the stroke movement and takes the stroke adjustment set [**4.1**-2] of the profiler with it. Hook [**4.1**-3] makes the cross movement and takes the central axis [**4.1**-4] of the profiler with it.

After every stroke movement the hook makes a side step. Every time a scrape cycle is started this sequence of movements is repeated until the programmed scrape width is done. When the programmed scrape width is done, the hook goes back to the start position so another scrape cycle can be started.

4.4 Main components of the drive set

4.4.1 On/Off switch [4.1-5]

The On/Off switch turns the drive set on or off. The switch doesn't extend from the drive set to prevent that the drive set is turned on or off by accident.

4.4.2 External power connector [4.1-6]

The external power connector has to be used in combination with power cable [**4.1**-7]. When the power cable is connected and supplied with power the drive set works on external power and, if needed, the Li-ion battery [**4.1**-8] is charged.

4.4.3 Li-ion battery [4.1-8]

The Li-ion battery is positioned inside the drive set. The battery type is 18650 and the capacity is 3.400mAh. It can be reached from the bottom side of the drive set by taking away battery cover [**4.1**-9].

The battery gives the drive set limited capacity. With a full battery an oboe profiler drive set can make about 40 reeds and a bassoon tip profiler drive set can make about 20 reeds.

The exact amount of reeds depends on many parameters like length of the stroke, size of the side step, amount of scrape cycles used for 1 reed, hardness of the cane, etc.

We advise, as soon as possible, to connect external power.

Note
In an airplane, the Li-ion battery must be held in hand luggage.

4.4.4 Human-machine interface [4.1-10]

The human-machine interface exchanges information between the user and the drive set. Information of the user to the drive set is given by a keyboard. Information of the drive set to the user is given by a text screen.

4.4.5 Stroke set

The stroke set it position inside the drive set and moves adaptor [**4.1**-1]. The length of the stroke can be manually adjusted and the stroke speed can be programmed.

4.4.6 Side step set

The side step set is positioned inside the drive set and moves hook [**4.1**-3]. There are 2 side step sizes, the big side step and the small side step. Both side step sizes can be programmed. A scrape cycle can be done with big side steps for coarse and quick pre-scraping or with small side steps for fine scraping.

4.4.7 Allen keys [4.1-11]

The drive set comes with an Allen key 2mm and 2,5mm. Allen key 2,5mm is to set the length of the stroke, to access the battery and to connect or disconnect the drive set and profiler. Allen key 2mm is only for special use.

5 Basic actions

The drive set comes with an Allen key 2mm and 2,5mm. Use Allen key 2,5mm when a screw has to be tightened or untightened or a setting has to be done. 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 drive set.

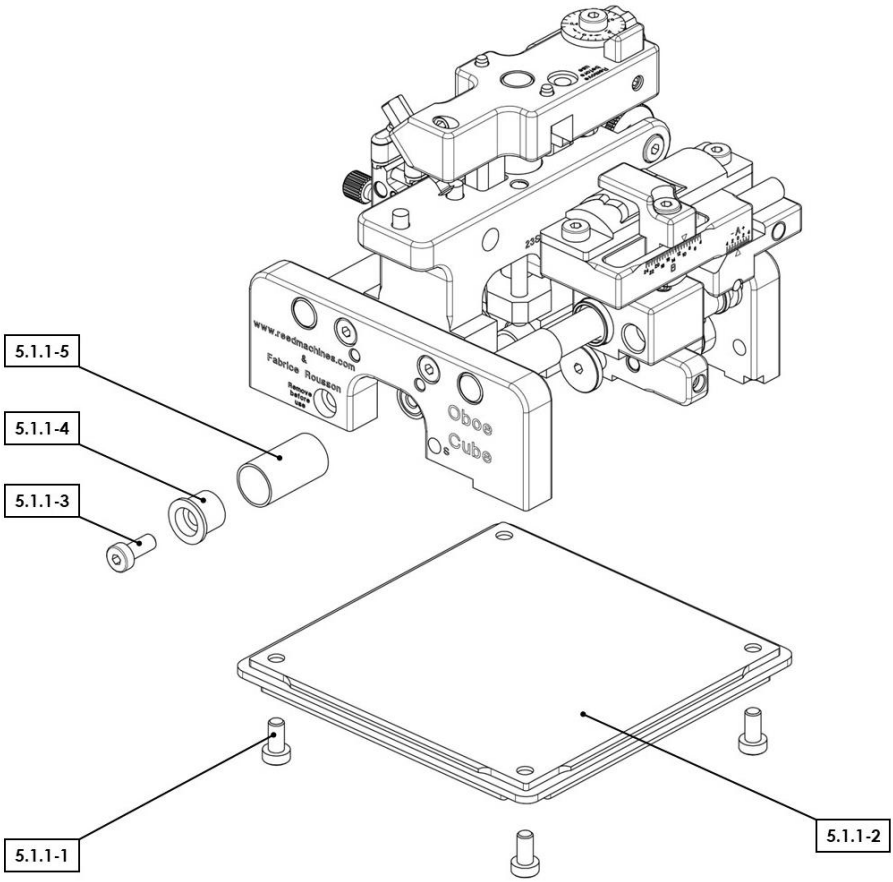
5.1 Make the profiler ready to connect it to the drive set

To connect an old version profiler to a drive set it needs an upgrade. When you buy a drive set you can ask us to check whether your profiler needs this upgrade.

This paragraph assumes that:
- The profiler is ready to use.
- The carriage set is in the parking position.
- The template set and reed set are in the middle position.

For detailed information on how to put the profiler in above mentioned positions see the related paragraphs of the profiler manual.

Image **5.1.1**


5.1.1-5
5.1.1-4
5.1.1-3
5.1.1-1
5.1.1-2
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&
Fabrice Rousson
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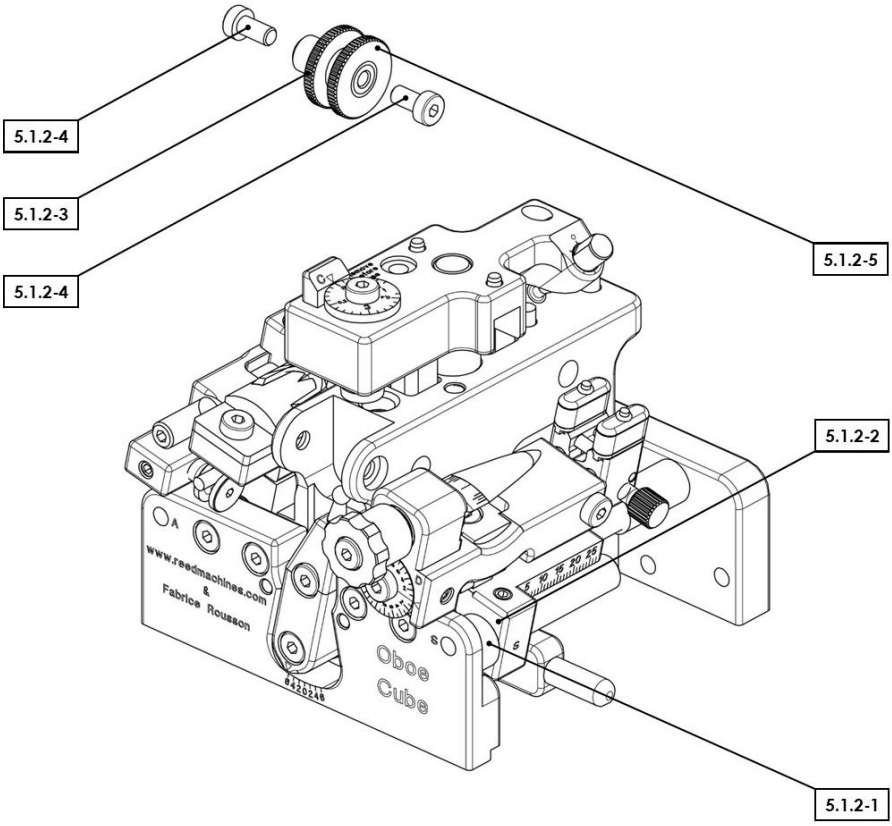
Image **5.1.2**



To make the profiler ready to connect it to the drive set:

1. Turn stroke stop [**5.1.2**-1] clock wise till it blocks against the reed set base block surface [**5.1.2**-2].
2. Untighten 4 screws [**5.1.1**-1] and take away base plate set [**5.1.1**-2].
3. Untighten screw [**5.1.1**-3] and take away spring stop [**5.1.1**-4] and spring [**5.1.1**-5].

Warning
Once screw [**5.1.1**-3] is out of its thread hole the force of spring [**5.1.1**-5] is released. Be aware of this when untightening the screw so the spring doesn't make an uncontrolled movement.

4. Put back the spring stop and tighten the screw.
5. Turn control wheel [**5.1.2**-3] completely to the right.
6. Untighten 2 screws [**5.1.2**-4] and take away control wheel set [**5.1.2**-5].

Note
Store 4 screws [**5.1.1**-1], base plate set [**5.1.1**-2], spring [**5.1.1**-5], 2 screws [**5.1.2**-4] and control wheel set [**5.1.2**-5].

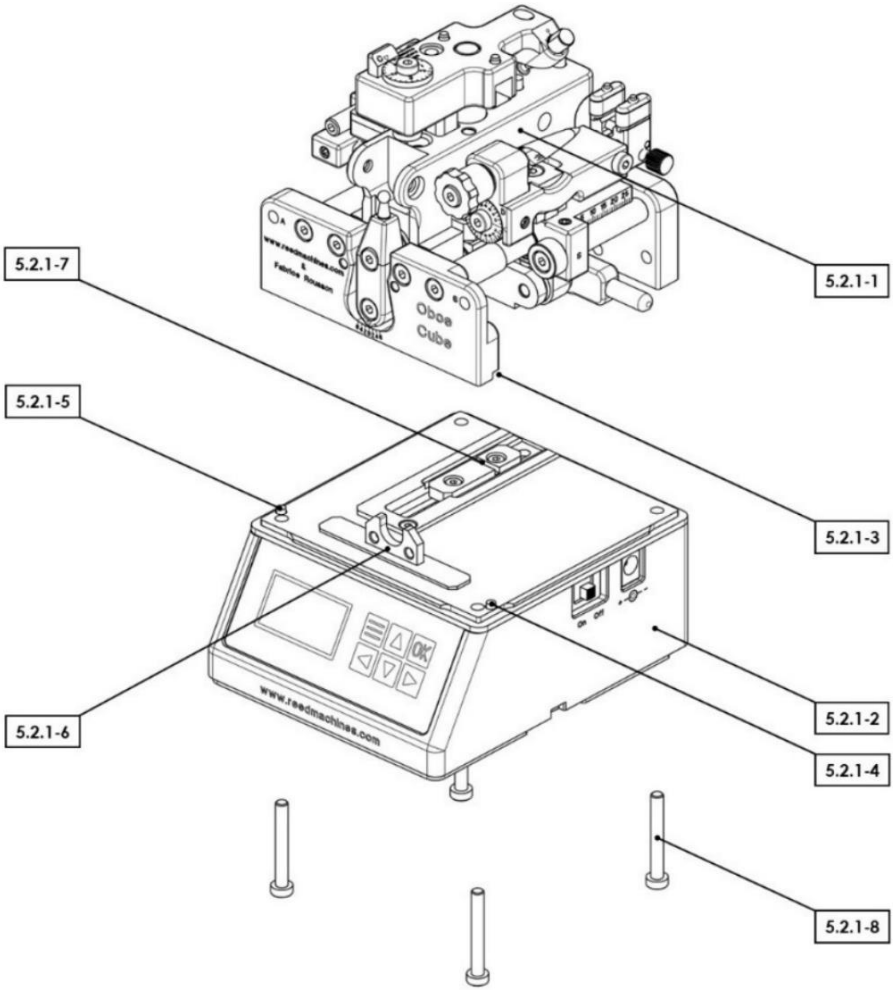
When you want to use the profiler manually you have to put these parts back.

5.2 Connect the profiler to the drive set

This paragraph assumes that:
- The profiler is ready to use (see the related paragraph of the profiler manual).
- The carriage set is in the parking position (see the related paragraph of the profiler manual).
- The drive set is in the storage position (see paragraph 6.4).

The drive set and profiler both have an adjustment that needs to be set for the length of the stroke. These 2 adjustments need to be aligned with each other.

Image **5.2.1**


5.2.1-7
5.2.1-1
5.2.1-5
5.2.1-3
5.2.1-6
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5.2.1-8
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Image **5.2.2**

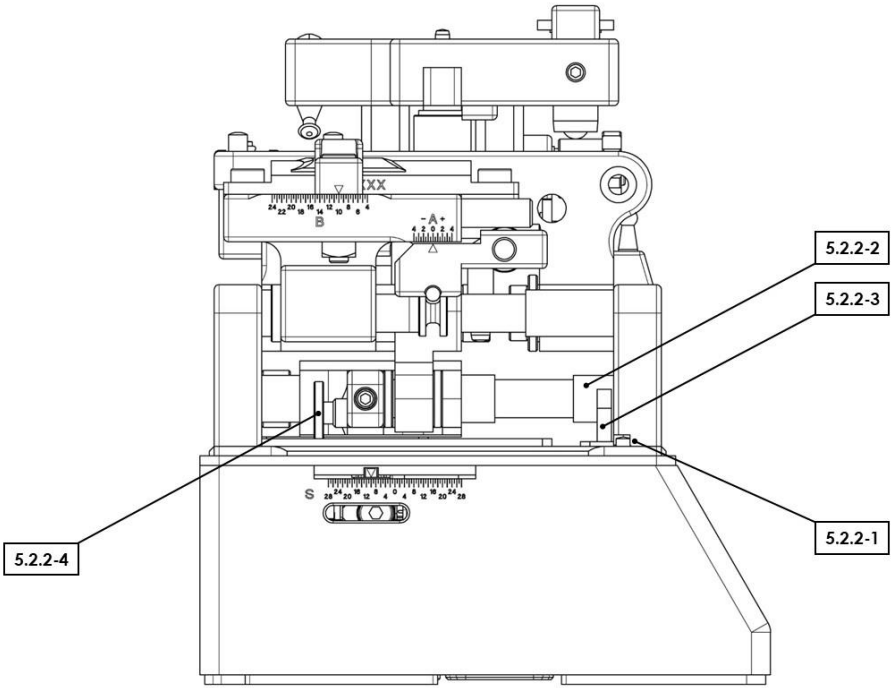
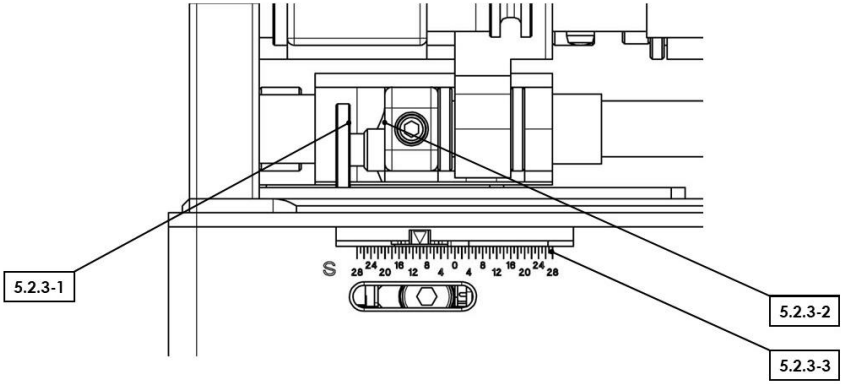


Image **5.2.3**



For the bassoon tip profiler

Caution
Follow below mentioned instructions to prevent that the drive set and profiler become blocked.

When a bassoon tip profiler is connected to a drive set the distance between the inside of the adjustment spindle [**5.2.3**-1] and the gold colored connection block [**5.2.3**-2] has to be about 1mm bigger than 50% of the length of the stroke. The length of the stroke can be read from scale [**5.2.3**-3].

For the oboe profiler

Caution
Follow below mentioned instructions to prevent that the drive set and profiler become blocked.

When an oboe profiler is connected to a drive set the length of the scrape (see paragraph 6.2 of the oboe profiler manual) has to be bigger than the length of the stroke. The length of the stroke can be read from scale [**5.2.3**-3]. If this is not the case the length of the scrape must be made bigger before the profiler is connected to the drive set.

Note
When the oboe profiler and drive set are connected the right scrape length can be set again.

The distance between the inside of the adjustment spindle [**5.2.3**-1]and the gold colored connection block [**5.2.3**-2] has to be about 1mm bigger than 50% of the length of the stroke. The length of the stroke can be read from scale [**5.2.3**-3].

To connect the profiler to the drive set:

1. Position profiler [**5.2.1**-1] on top of drive set [**5.2.1**-2] with:
   a. Releases [**5.2.1**-3] and [**5.2.2**-1] over position pins [**5.2.1**-4] and [**5.2.1**-5].
   b. Central axis bush [**5.2.2**-2] in hook [**5.2.1**-6] or [**5.2.2**-3].
   c. Adjustment spindle disk [**5.2.2**-4] in adaptor slot [**5.2.1**-7].
2. Tighten 4 screws [**5.2.1**-8].

Caution
As long as there are no screws tightened you have to keep the profiler and drive set together by hand.

Take care that the profiler and drive set don't disconnect uncontrolled because this can cause the profiler and drive set to fall and become damaged.

Note
Put the profiler and drive set on a table surface with the 2 screw holes next to the positions pins over the table surface.

Put a screw on the long side of the Allen key and tighten the screw. Repeat this for the other screw.

Once the 2 screws next to the position pins are tightened you don't need to keep the profiler and drive set together by hand anymore.

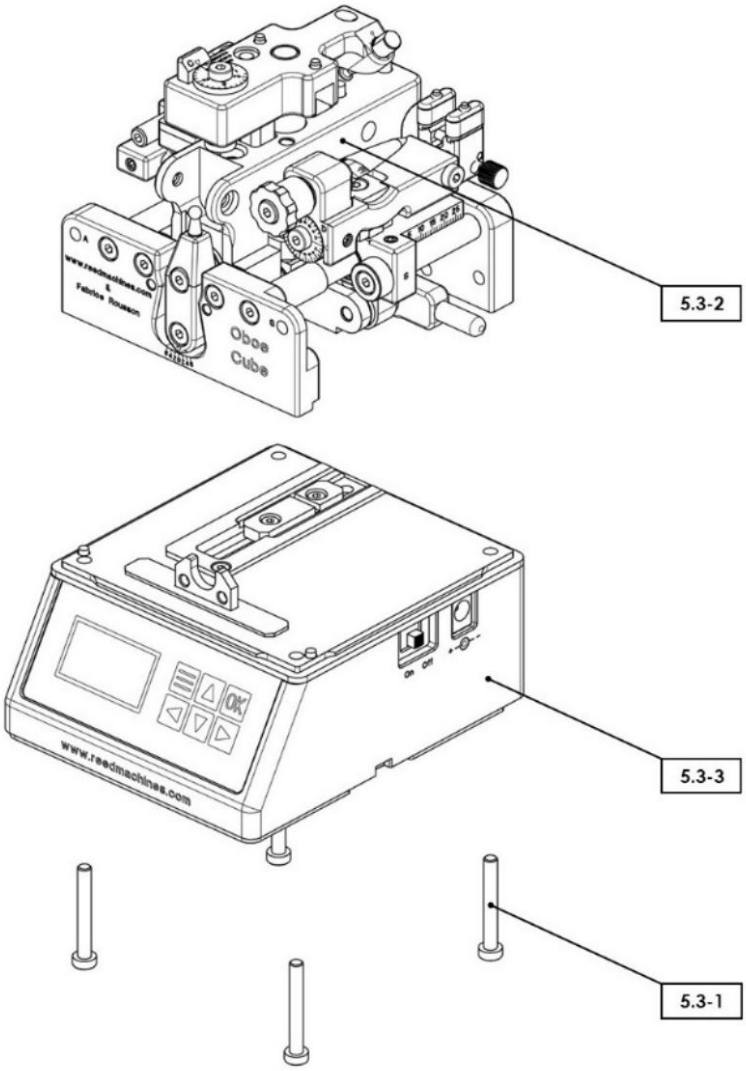
Be sure that releases [**5.2.1**-3] and [**5.2.2**-1] are positioned against positions pins [**5.2.1**-4] and [**5.2.1**-5] when you tighten the screws.

5.3 Disconnect the profiler from the drive set

This paragraph assumes that:
- The profiler is ready to use.
- The carriage set is in the parking position.
- The drive set is in the storage position (see paragraph x.x).

For information on how to put the profiler in above mentioned positions see the related paragraphs of the profiler manual.

Image **5.3**



To disconnect the profiler from the drive set:
1. Untighten screws [**5.3**-1].
2. Take profiler [**5.3**-2] from drive set [**5.3**-3].

Caution
Once 4 screws [**5.3**-1] are out of their thread hole profiler [**5.3**-2] is not connected to drive set [**5.3**-3] anymore.

Take care that the profiler and drive set don't disconnect uncontrolled because this can cause the profiler and drive set to fall and become damaged.

5.4 Make the profiler ready to use manually

This paragraph assumes that:
- The profiler is ready to use.
- The carriage set is in the parking position.
- The profiler is disconnected from the drive set (see paragraph 5.3).

For detailed information on how to put the profiler in above mentioned positions see the related paragraphs of the profiler manual.

Image **5.4.1**

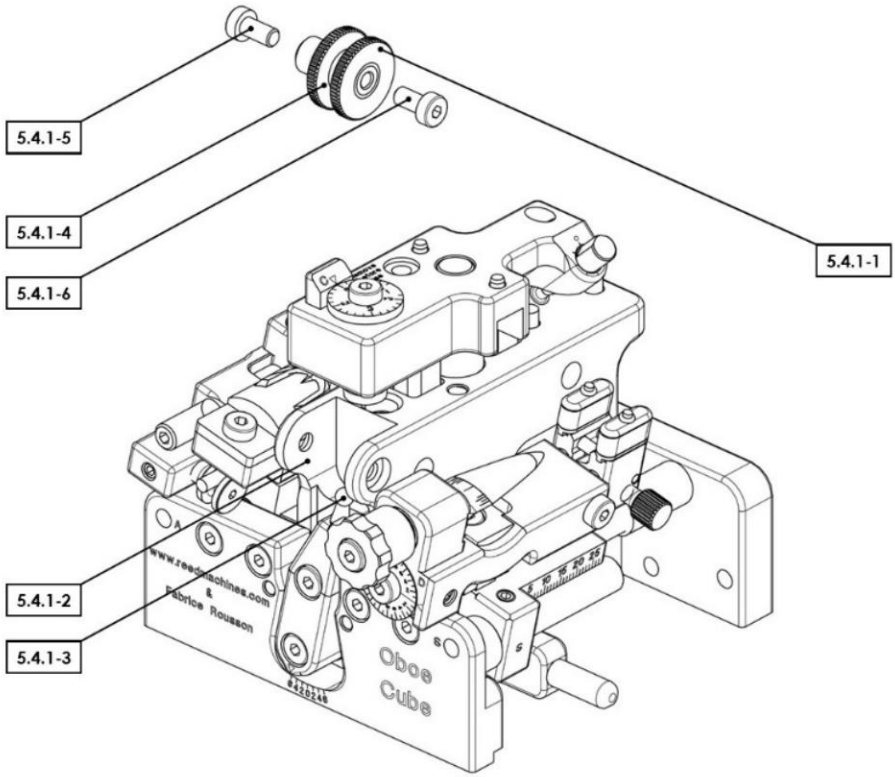
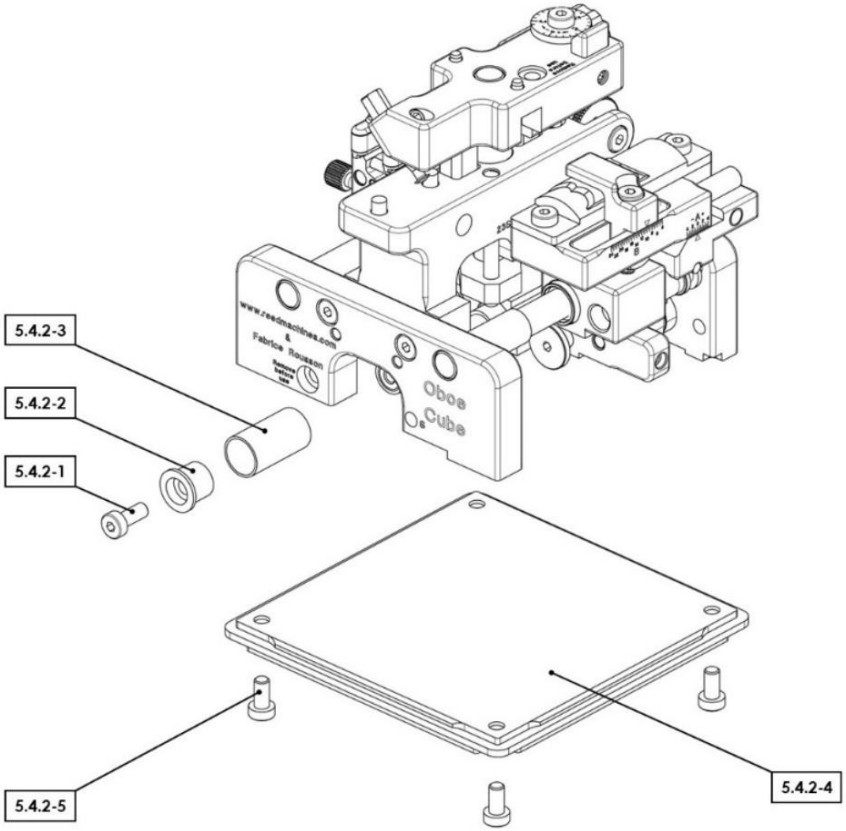


Image **5.4.2**



To make the profiler ready to use manually:

1. Position control wheel set [**5.4.1**-1] in pocket [**5.4.1**-2].

Note
Ball element [**5.4.1**-3] has to be in control wheel slot [**5.4.1**-4].

2. Tighten screw [**5.4.1**-5] and then screw [**5.4.1**-6].
3. Untighten screw [**5.4.2**-1] and take away spring stop [**5.4.2**-2].
4. Position spring [**5.4.2**-3], the spring stop and tighten the screw.

Warning
As long as screw [**5.4.2**-1] isn't in its thread hole the force of spring [**5.4.2**-3] has to be hold by hand. Be aware of this when tightening the screw so the spring doesn't make an uncontrolled movement.

5. Position base plate set [**5.4.2**-4] and tighten screws [**5.4.1**-5].

5.5 Make the profiler ready to store

To make the drive set ready to store:
1 Set the drive set in the storage position.
2 Make the profiler ready to store (see the related paragraph in the profiler manual.

6 Human-machine interface and screen structure

The human-machine interface exchanges information between the user and the drive set. Information from the drive set to the user is given by a text screen. Information from the user to the drive set is given by a keyboard.

6.1 Text screen

Image **6.1**

The text screen has the following sections:

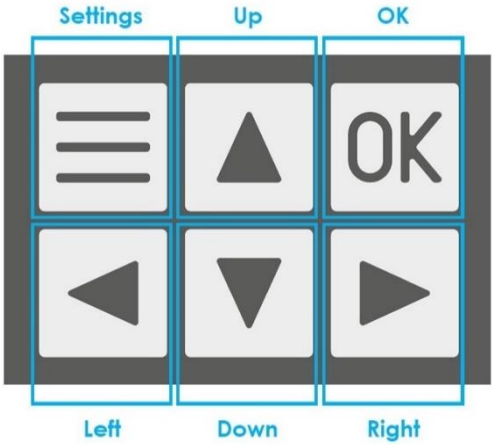
- **Name.** This section shows the name of the screen.
- **Power indicators.** This section shows the following information about the power status:
  - A connector when external power is connected. This can be an adaptor or a device like a laptop or power bank.
  - A battery with 4 stripes when battery capacity is between 100% and 75%.
  - A battery with 3 stripes when battery capacity is between 75% and 50%.
  - A battery with 2 stripes when battery capacity is between 50% and 25%.

- A battery with 1 stripe when battery capacity is between 25% and 0%.
- A battery with a cross when there is no battery installed or when the battery is defect.

- **Information.** This section shows information about the actual screen.
- **Functional keys.** This section shows the keys that have a function in the actual screen.
- **Number.** When there is more than 1 screen, this section shows the actual screen number and the total amount of screens.

6.2 Keyboard

Image **6.2**



The keyboard has the following keys:

- **Settings**. This key opens the settings screen. In some cases this key has another function. In these cases the function is explained in the functional keys section of the text screen.
- **Up**. This key gives the up command. This can be moving up to another screen, moving up in a list, make the value of a setting higher, etc.

- **OK**. This key gives the OK command. This can be to start an scrape cycle, confirm an action, save a setting, etc.
- **Left**. This key gives the left command. This can be to move left to another screen, go out of a list, move left to another digit of a value setting, etc.
- **Down**. This key gives the down command. This can be moving down to another screen, moving down in a list, make the value of a setting lower, etc.
- **Right**. This key gives the right command. This can be to move right to another screen, go into a list, move right to another digit of a value setting, etc.

6.3 Start-up screens

Image **6.3**

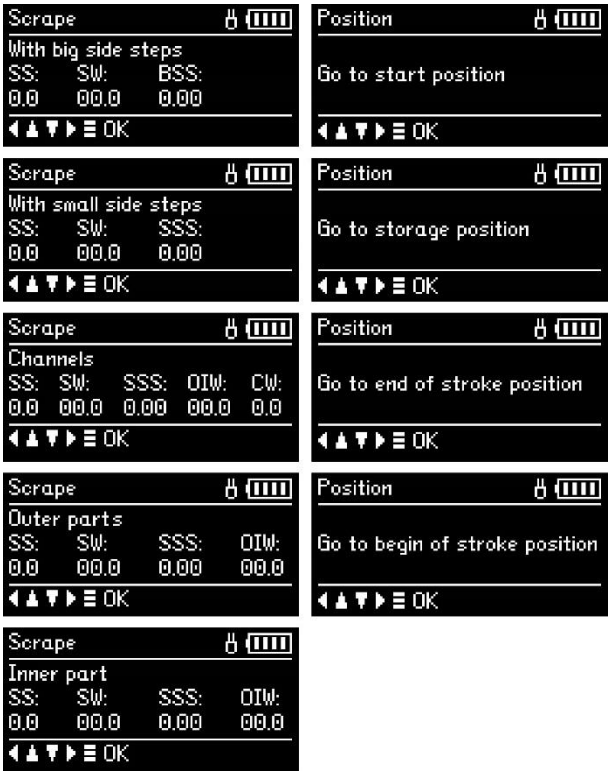
The first screen is shown when the software is starting-up and shows the software version and the instrument group (bassoon, oboe or bagpipe) which is active in the software.

The second screen is shown when the software is started-up. It has the options to activate the settings screen or to find the home position.

Note
As long as the drive set is not homed, it cannot make any scrape cycle or go to any position.

6.4 Scrape and position screens

Image **6.4**

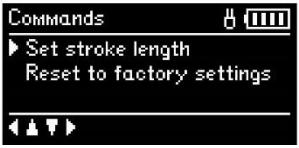


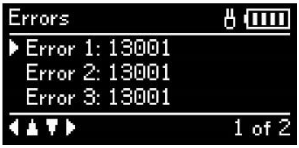
The scrape and position screens are used to select and start an action. The up, down, left and right keys can be used to navigate between the screens.

Note
The scrape channels, scrape outer parts and scrape inner parts screens are not available for instrument group oboe.

6.5 Settings screens

Image **6.5**





The settings screen has the following options:

- **Values.** For changing programmable parameters.
- **Commands.** For taking certain actions.
- **Errors.** For an overview of recent errors.

The up, down, left and right keys can be used to navigate between the screens.

7 Settings

The drive set comes with an Allen key 2mm and 2,5mm. Use Allen key 2,5mm when a screw has to be tightened or untightened or a settings has to be done. Allen key 2mm is only used for special screws and settings. Be careful to use Allen key 2mm because it can lead to malfunction of the drive set.

7.1 Programmable parameters

The programmable parameters can be found in the Values option of the settings screen (see paragraph 6.5).

The programmable parameters are:

- **SS**. This means **S**troke **S**peed The unit is in strokes per second.

Note
The stroke speed is not the same as the scrape speed. During a scrape cycle, side steps and 2 big side movements are made beside strokes.

- **SW**. This means **S**crape **W**idth. The unit is in millimeters. SW has to be set to a value bigger than the width of the reed to be sure that the reed is scraped completely.
- **BSS**. This means **B**ig **S**ide **S**tep. The unit is in millimeters. Scraping with BSS makes the scraping process quicker, it can be used to pre-scrape the reed.
- **SSS**. This means **S**mall **S**ide **S**tep. The unit is in millimeters. Scraping with SSS gives a smooth scraped surface, it can be used for the final scrape cycle of the reed.
- **IOW** (not available for instrument group oboe), This means **I**nner **O**uter **W**idth. The unit is in millimeters. The position of IOW is symmetrical around the center line of the reed so 50% is on one side of the center line and 50% is on the other side of the center line.

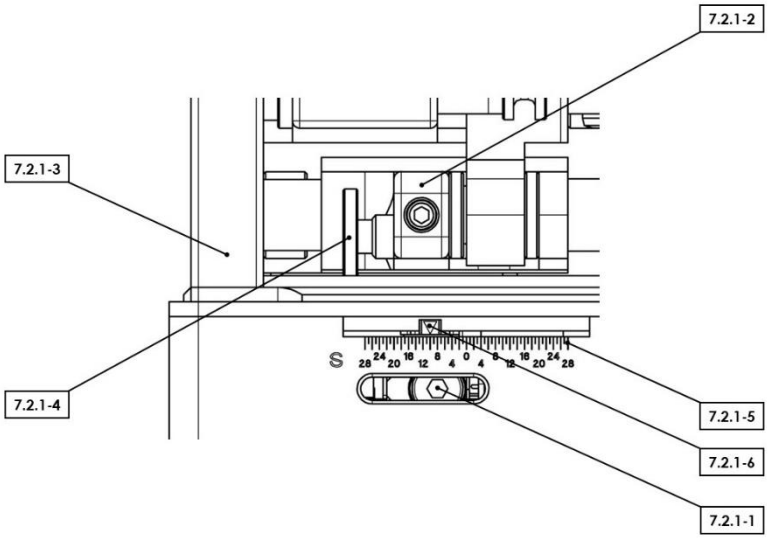
- **CW** (not available for instrument group oboe). This means **C**hannel **W**idth. The unit is in millimeters. The position of CW in from the IOW size to the sides of the reed.
- Screen saver. This parameter can be set to off (0) or on (1). If it is set to on the screen will go to less brightness after a certain time without key signal. It can be used to save battery capacity.

7.2 Adjust the length of the stroke

This paragraph assumes that the profiler is correctly connected to the drive set (see paragraph 5.2) and that the drive set can make strokes without becoming blocked.

For the bassoon tip profiler

Image **7.2.1**



To adjust the length of the stroke:

1. Start the "Set stroke length" command (see paragraph 6.5).
2. Press the OK key to let the drive set go to the stroke adjustment position.
3. Untighten cam follower screw [**7.2.1**-1] for 1 revolution.
4. Press connection block [**7.2.1**-2] in the direction of back plate [**7.2.1**-3] till the moving parts block.
5. Set the length of the stroke with adjustment spindle [**7.2.1**-4] while keeping the connection block pressed in the direction of the back plate.

Note
In the head of the adjustment spindle there is hexagon socket 2,5mm. This hexagon can be reached through a hole in the back plate.

The length of the stroke can be read from scale [**7.2.1**-5] with pointer [**7.2.1**-6].

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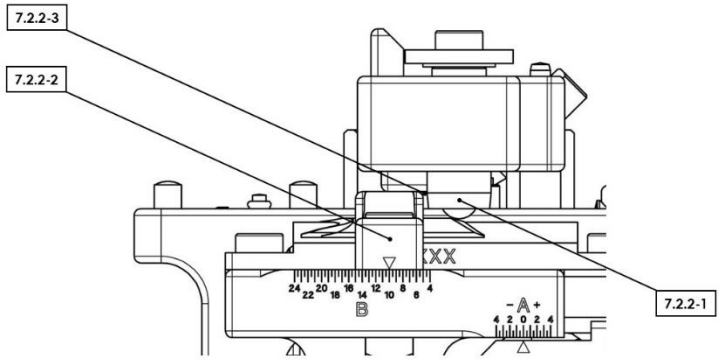
6. Tighten the cam follower screw.
7. Press the OK key to finish the "Set stroke length" command.

For the oboe profiler

Image **7.2.2**



Caution
Ball element [**7.2.2**-1] always has to stay free from clamp [**7.2.2**-2] otherwise the drive set will become blocked.

This means, at the begin of the stroke, there has to be some space [**7.2.2**-3] between the ball element and the clamp.

To adjust the length of the stroke for a **longer** length of the scrape:
1. Adjust the length of the scrape (see paragraph 6.2 of the oboe profiler manual).
2. Check how much space there is between the ball element and the clamp.
3. Adjust the length of the stroke as described for the bassoon tip profiler.

Note
Be sure not to adjust the length of the stroke too much to prevent the drive set from becoming blocked.

4. Check how much space there is between the ball element and the clamp.
5. If the space is correct the length of the stroke adjustment is ready. If the space is too big, repeat steps 3 to 5.

To adjust the length of the stroke for a **shorter** length of the scrape:
1. Adjust the length of the stroke to a length that is too short for the wanted scrape length.
2. Adjust the length of the scrape (see paragraph 6.2 of the oboe profiler manual).
3. Check how much space there is between the ball element and the clamp.
4. Adjust the length of the stroke as described for the bassoon tip profiler.

Note
Be sure not to adjust the length of the stroke too much to prevent the drive set from becoming blocked.

5. Check how much space there is between the ball element and the clamp.
6. If the space is correct the length of the stroke adjustment is ready. If the space is too big, repeat steps 4 to 6.

8 Operating instructions

The descriptions in this chapter assume that:

- The drive set is on a horizontal and even surface.
- The drive set has enough battery power to work or is connected to external power.

8.1 Start-up the drive set

Image **8.1**

To start-up the drive set:

1. Move the On/Off switch to On (see paragraph 4.1 for the location of the On/Off switch).
2. When the second screen of image 8.1 is shown, press the OK key. This will make the drive set find its home position and go the start position.

8.2 Run a scrape cycle

A scrape cycle can be started by pressing the OK key in one of the possible scrape screens (see paragraph 6.4).

The drive set stops automatically when a scrape cycle is finished.

A scrape cycle can be paused, restarted or canceled with the keys as shown in the functional keys section of the screen.

A graphical indicator shows the progress of the scraping cycle.

Note
A scrape cycle can only start if the drive set is in the start position. If the drive set is not in the start position a message will be shown on the text screen.

If the drive set is not in the start position it can be put in the start position by pressing the OK key in the "Go to start position" position screen (see paragraph 6.4).

9 Maintenance

In this chapter we mean with “drive set” a drive set without as well as with profiler connected.

9.1 Clean the drive set

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

Because reeds are profiled wet some parts of the drive set can become wet. Make these parts dry with a soft cloth.

9.2 Store the drive set

To store the drive set:
1. Clean the drive set (see paragraph 9.1).
2. Make the drive set ready to store (see paragraph 5.5).
3. Store the drive set in a dry and safe place.

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

9.3 Lubrication of the drive set

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