AKKO flip

# Tuning Single Reed Plates and Reed Blocks as mounted **inside** the instrument

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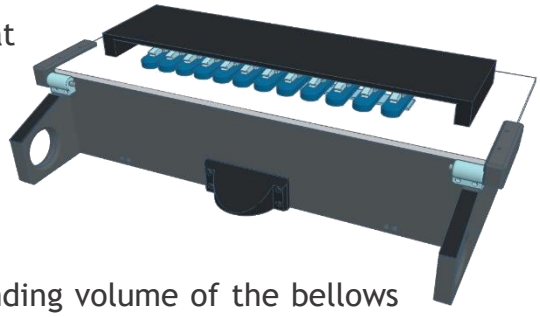
# The Principle

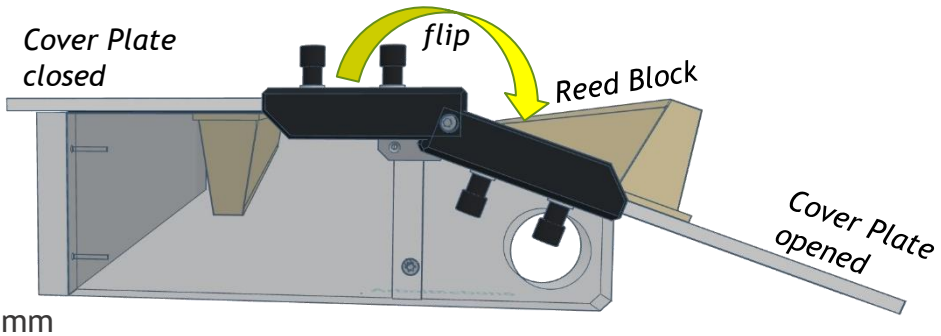


It can be observed that a transient reed, i.e. the part that produces a tone when air flows into the slot of the reedplate, has a slightly different tuning in the free field (i.e. in the uninstalled state) than in the installed state in the instrument.

This is due to the fact that in the instrument the surrounding volume of the bellows forms resonances, which, however, also change constantly depending on the expansion of the bellows. These resonances have a feedback effect on the vibrating reed, which changes the pitch slightly.

The sound of the reedplate on a reed block and in the installed state is also perceptibly different from that of a reedplate in the free field (i.e. in a holder for single reedplates or waxed on a reed block positioned directly over a blowhole in the working plate). This is how only the pre-tuning is performed.

Therefore, the final tuning of an instrument is done in such a way that the reed block is measured installed in the instrument body. However, subsequent retuning requires the repeated removal and installation of the reed block in order to manipulate the reeds.
See on YouTube: www.youtube.com/watch?v=mcCKr8QYBbw




**AKKOflip** can do the pre-tuning and the final tuning in a very comfortable way together.
The volume of the instrument's body and bellows is simulated by a 110 mm high frame with a sealed top plate, which has an audible effect on the measured pitch and sound. In addition, a cassotto can be activated, which simulates e.g. the space on the bass side between the filling and the finger plate, or the treble cassotto on an accordion.

As on an accordion or harmonica, the reed blocks are to be mounted inside the resonance chamber under the cover plate. To access the reed blocks/reedplates/reeds, this cover plate, which is guided in two hinges at the front, is simply flipped open from the back to the front. Hence the name **AKKOflip**.

After opening, the parts to be tuned are easily accessible directly in front of you, and you can perform the pre-tuning and even the final tuning.

# The Base Frame

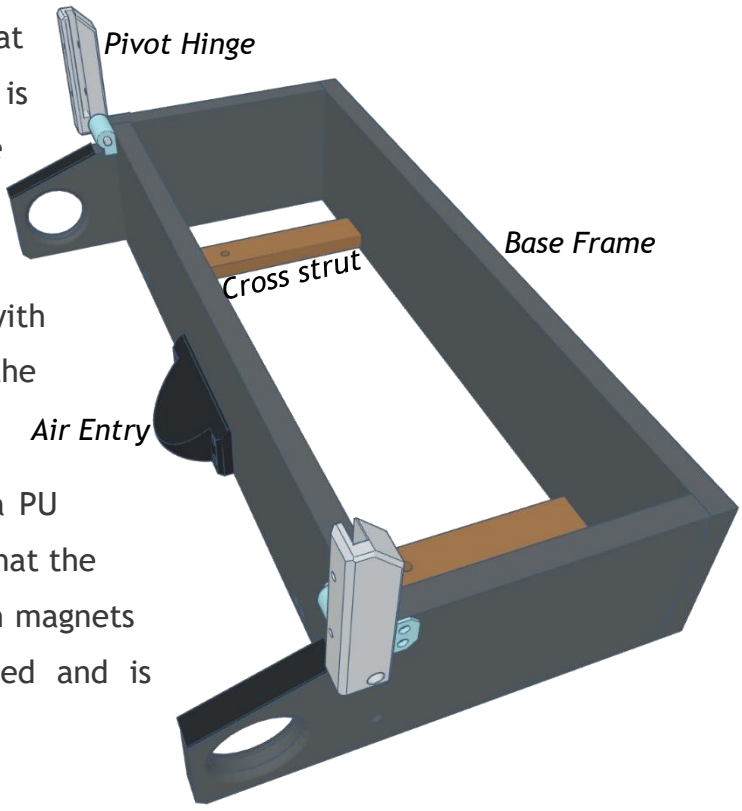
To create the "resonant volume", you need a closed space. This space should approximately represent the volume that is created in an instrument when the bellows is pulled open and compressed again. In the case of AKKOflip, the base frame creates a volume of approx. 9.9 liters (minus the reed blocks / reed plate holders / etc.) This is an average of the volumes when the bellows are raised and closed.

Ultimately, it is not a resonance that affects pitch and tone, but the feedback of space on the reeds.

When the base frame is placed on the worktop and fastened, it is closed at the bottom. Two cross struts on the base are used for fastening, with holes for the fastening screws that engage in the threads in the worktop with the blowhole. The blowhole should not be located directly under the reed plates, or should be shielded upwards so that the airflow is not directed directly onto the reed plates..

The version with the two cross struts is intended for use with AKKOtune compact or AKKOtune DESK. When used on a different worktop, the positions of blowhole and mounting holes are not standardized. Therefore, there is a base frame with closed bottom for this purpose, where the customer makes both blowhole and mounting holes himself.

The frame has a projection on both sides that serves to support the cover plate when it is opened. Above this are two pivot hinges on the right and left, each with a slot into which the lateral edges of the cover plate can be inserted. The cover plate is then secured with knurled screws and can be flipped around the pivot point of the hinges.




The top edge of the frame is provided with a PU foam seal and a total of 6 strong magnets, so that the folded cover plate (which is also provided with magnets at appropriate points) is held securely closed and is airtight.

# The Cover Plate

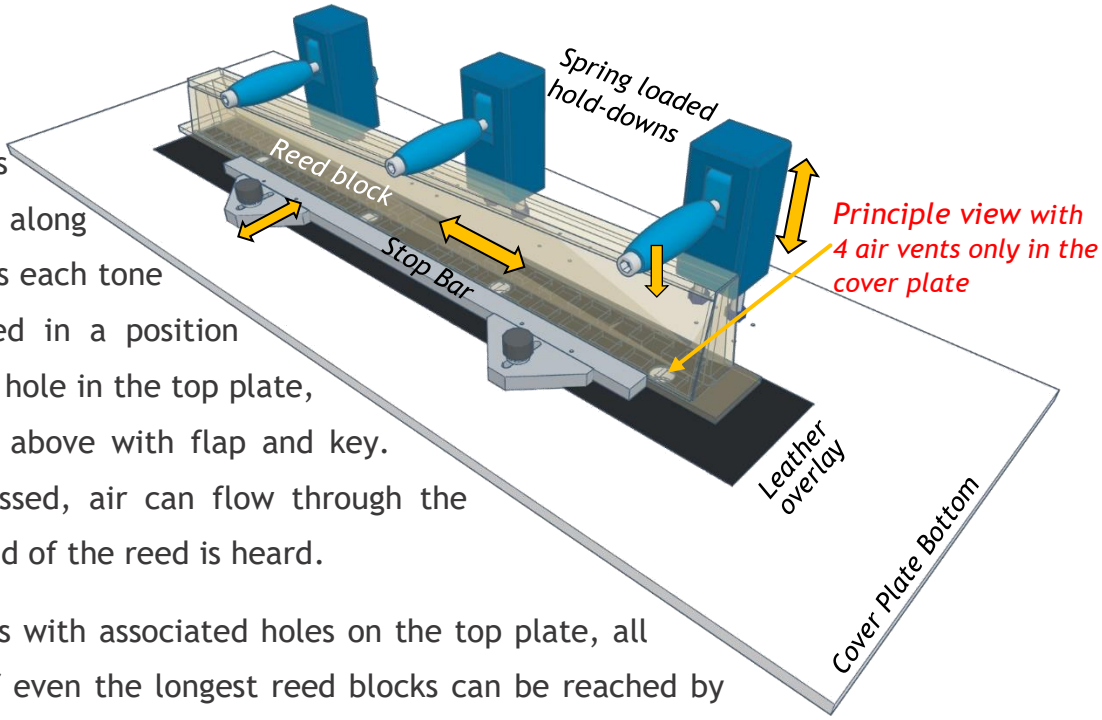
The cover plate is available in various designs. For the changing purposes it can be exchanged very quickly.

It has a thickness of 6 mm, is made of very rigid formica (Resopal) and measures 570 x 220 mm.

All cover plates are made to order and are not in stock!

## Basic Version

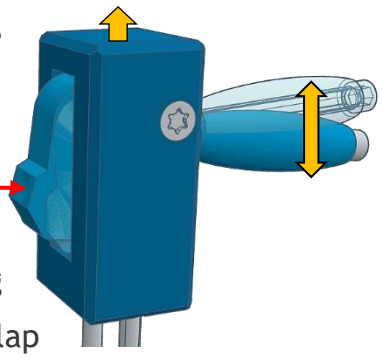
On the bottom side, which is on top after folding closed, there are quick holders for a reed block.




The hold-downs allow the reed blocks to be moved laterally along a stop bar. This allows each tone chamber to be placed in a position where it is opposite a hole in the top plate, which is closed from above with flap and key. When the key is pressed, air can flow through the chamber and the sound of the reed is heard.

Since there are 9 keys with associated holes on the top plate, all the tone chambers of even the longest reed blocks can be reached by moving them sideways; even if the tone chambers are spaced individually. Since the stop bar is provided with markings for the position of the holes, one can easily position the reed plates.

Two or three hold-downs are used to fix a reed block. They can be pushed onto the threaded bolts and pressed down. This presses the spring-loaded rollers onto the reed block and the hold-down remains locked in height. To release, press the button on the back and pull up the hold-down.

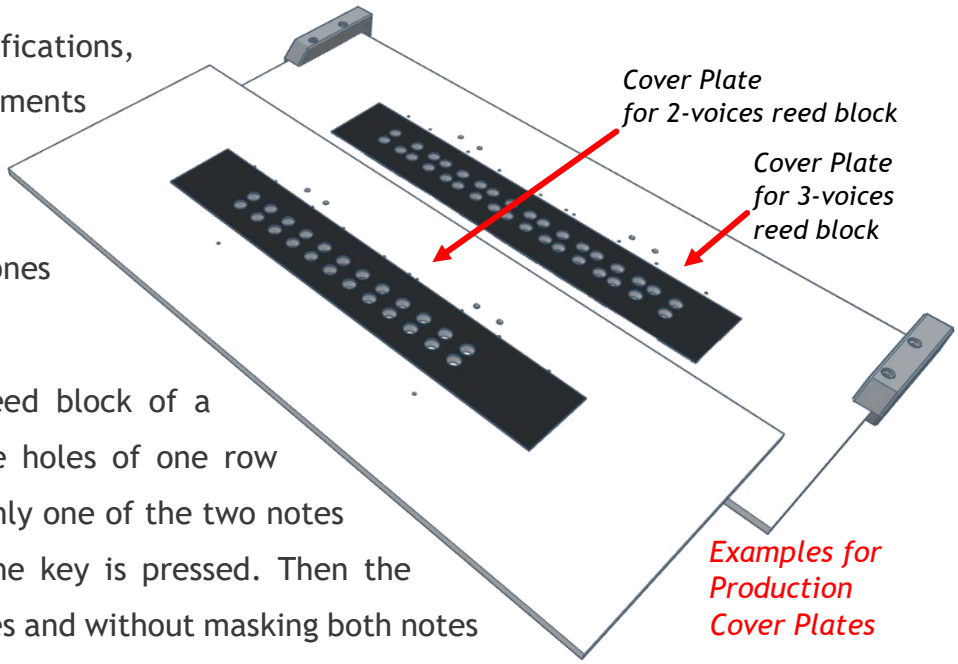


There are 9 keys on the top of the top plate; below them are the air vents. The keys can be locked in the open position by simply pressing a small lever. Pressing the button again releases the lock and the flap closes again.

## Production Version

Cover plates for tuning reed blocks of a uniform production can be provided with a hole pattern corresponding to that of an always identical reed block.

Depending on customer specifications, the same hole and key arrangements as in the instrument can be realized. This means that the keys also correspond to the tones of the instrument.



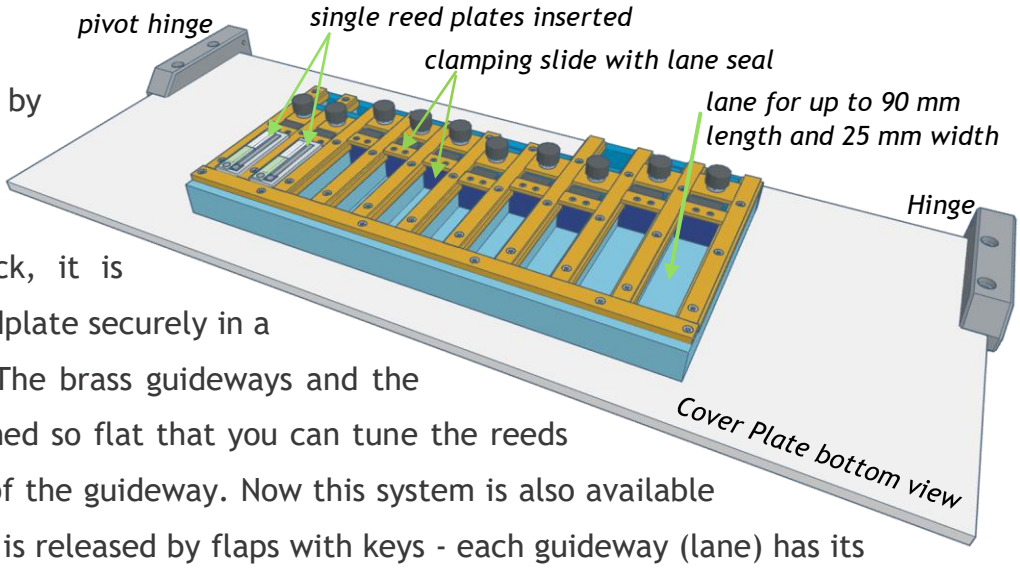

*Examples for Production Cover Plates*

If, for example, a 2-voices reed block of a harmonica is to be tuned, the holes of one row must first be masked so that only one of the two notes under the key sounds when the key is pressed. Then the other row of tone chamber holes and without masking both notes under the key can be played together.

Due to the simple and quick exchange of the cover plate, it is possible to change from one hole pattern to another. The cover plate always includes all keys and optionally a cassotto. Parts of the reed block holder can be used on the next one when changing the cover plate. The length of the reed blocks can vary between 15 cm and 42 cm.

## Cover Plate with Single reed plate holder

Reedplates for accordions usually have a width between 15 and 25 mm and are between 20 and 95 mm long.




With the holder developed by AKKOfixx for single reedplates that are not mounted on a reed block, it is possible to clamp the reedplate securely in a guide track and blow it. The brass guideways and the clamping slides are designed so flat that you can tune the reeds without taking them out of the guideway. Now this system is also available for AKKOflip. Here the air is released by flaps with keys - each guideway (lane) has its own key. There are 10 lanes for widths from 15 to 25 mm and up to a length of 90 mm for bass reed plates.

## Tremolo Tuning

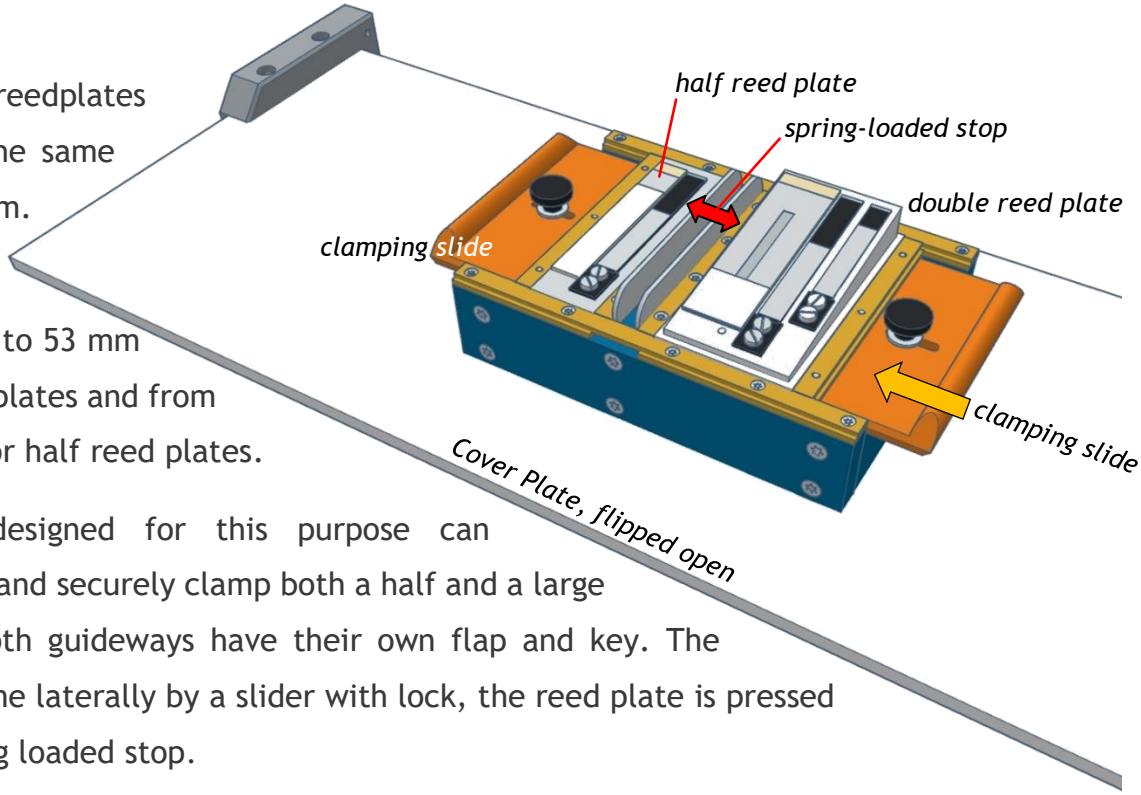
Another variant is the cover plate with single reed plate holders for three reed plates of the same width. There are three lanes each for 15-17 mm and 17-19 mm wide reed plates, all of which can accommodate reed plates up to 65 mm long.

This allows the measuring and tuning of 2- and 3-voice tremolo to be carried out.

## Helicone Bass

Helicone bass reedplates always have the same length of 98 mm.

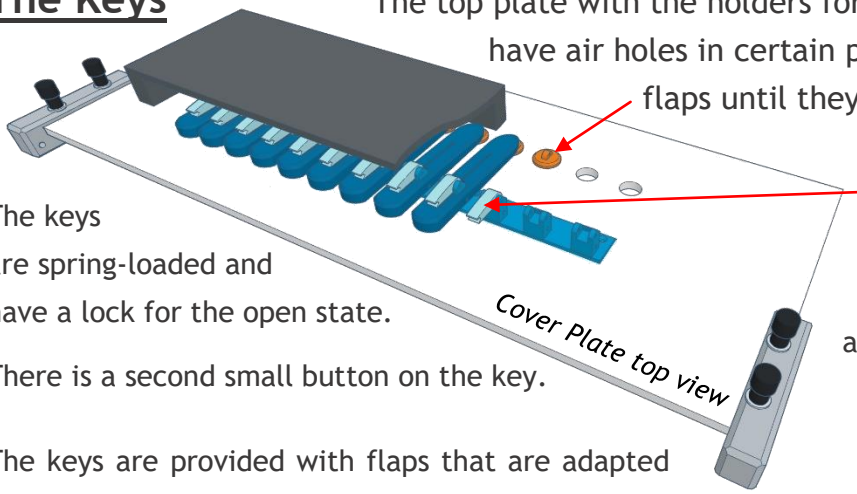
The width varies from 46 to 53 mm for large reed plates and from 27 to 33 mm for half reed plates.




The holder designed for this purpose can accommodate and securely clamp both a half and a large reed plate. Both guideways have their own flap and key. The clamping is done laterally by a slider with lock, the reed plate is pressed against a spring loaded stop.

## The Keys

The top plate with the holders for reed blocks or single reed plates have air holes in certain places, which are closed by flaps until they are opened by a key.




By pressing this small key the open state is locked. The lock is released by pressing the main key again and the flap can close again

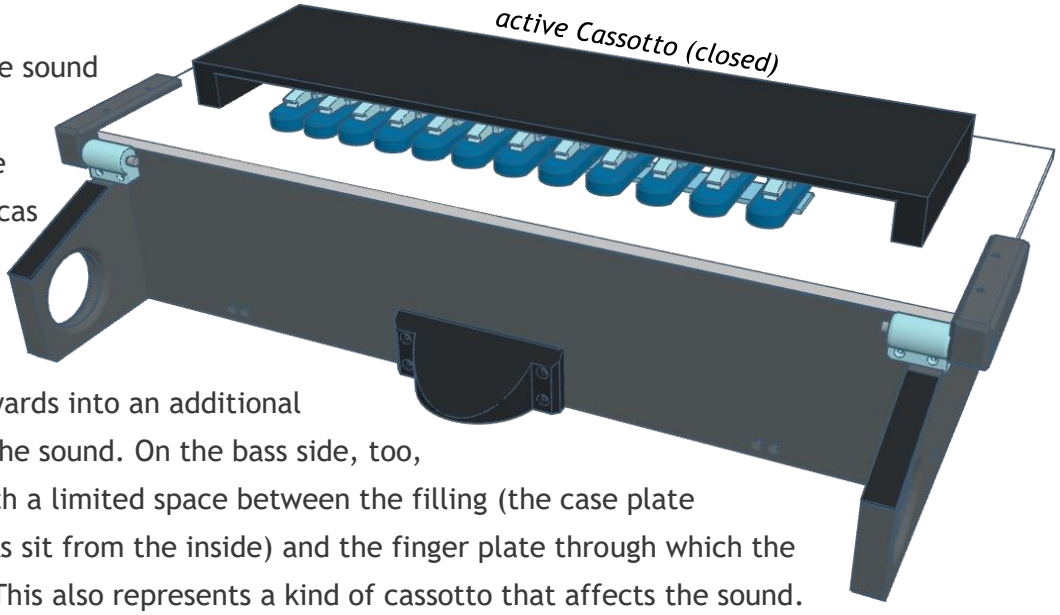
The keys are spring-loaded and have a lock for the open state.

There is a second small button on the key.

The keys are provided with flaps that are adapted to the hole pattern of the reed blocks.

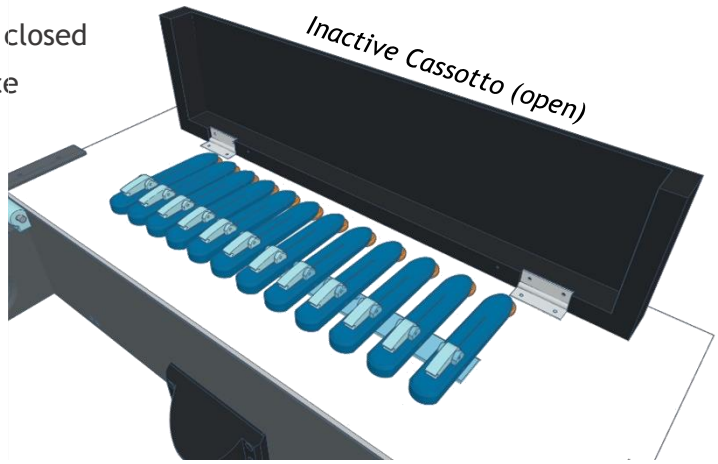
Round, oblong or triangular keys are possible. Custom key shapes are also possible. For single reed plates and reed blocks the air vents have a diameter between 10 and 14 mm, for helicone basses 30 mm.

## The Cassotto



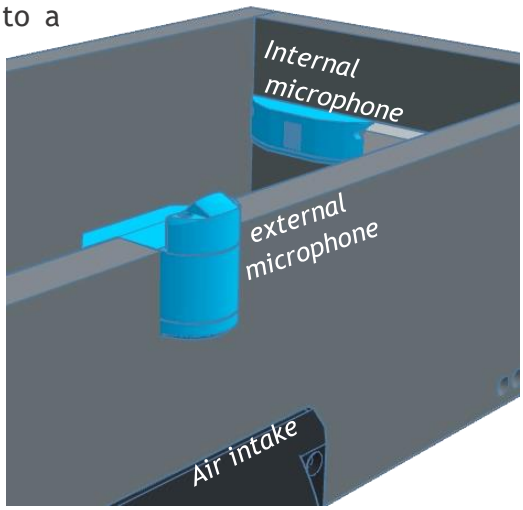

A cassotto influences the sound produced by a reed considerably. With some accordions and harmonicas a cassotto is provided by design on the treble side. The reeds radiate their tones outwards into an additional volume, which softens the sound. On the bass side, too, all instruments have such a limited space between the filling (the case plate on which the reed blocks sit from the inside) and the finger plate through which the bass buttons protrude. This also represents a kind of cassotto that affects the sound.

**AKKOflip** is equipped with a cassotto as standard. This consists of a hood that is attached to the rear part of the top plate with two hinges and can be folded forward. When closed, the hood is held closed magnetically and forms the additional resonance volume of a cassotto. By folding it open and closed, a comparison of the sound without and with the cassotto is possible.




## The Microphones (optional)

In order to measure the generated sounds and to feed them to a connected analysis software, two microphones are installed. One is located inside the base frame, the other at the front edge of the closed top plate.




Both microphones pass their signals to a small box (Mics1+2) that combines both microphones and outputs the signal to a computer via a USB port. The MicSelection box lets you select whether to send the internal, the external, or both microphone signals to the USB port. A USB cable is included.

MicSelection Box


Mics1+2 Box


## The Fixation

Since AKKOflip is intended to be used to work on the reed plates when the top plate is opened forward, the entire unit needs a secure attachment to the work surface.

When the cover plate is open, its weight rests on the forward-protruding side parts of the base frame and protrudes beyond them. The base frame therefore needs a fixation on the worktop.

When AKKOflip is used with AKKOtune, two cross struts at the bottom of the frame provide this. There are two holes in the cross struts; these fit exactly on the M6 threaded inserts that are otherwise provided for fixing the guide rail to the AKKOtune worktop. The mounting is done by two star grip screws (included). When mounted correctly, the AKKOtune blowhole is located exactly under the air inlet of the frame.

If AKKOflip is used without AKKOtune, the position of the blow hole and the necessary thread inserts depend on the customer's worktop design. Therefore, the base frame is delivered with a solid bottom. An air inlet (at least Ø 30 mm) and the holes for the star grip screws must be made by the customer, or the dimensions are specified when ordering and AKKOfixx makes the appropriate holes. In this case, a shield is also mounted above the air inlet, so that the air flow from below cannot directly hit the reeds above. The shield is also included in the scope of delivery.

All devices are made to order and are not available from stock!

# The Prices

***Prices are net, excl. VAT and ex works***

| | | |
|---|---|---|
| The Base Frame | 335 € | system price |
| The Cover Plates | | |
| Basic Version | 360 € | 695 € |
| Production Version | 450 – 580 € | 785 – 915 € |
| Single Reed Plates | 595 € | 930 € |
| Tremolo | 445 € | 780 € |
| Helicon | 445 € | 780 € |
| The Microphones with USB | | |
| With MicSelection Box | 200 € | |
| With plain USB port | 160 € | |

***You always need a base frame PLUS a cover plate for a complete system!***

***Subject to technical changes without notice.***

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