CETONI

CETONI rotaxys

Manual and Reference

ORIGINAL INSTRUCTIONS 1.03 – JANUARY 2020

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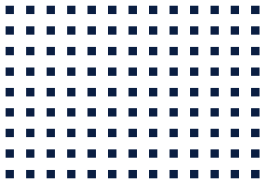

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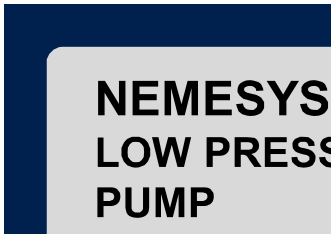
1.2 Revision History

REV	DATE	CHANGE	VALID FOR
1.01	12.10.2011	First version of rotaxys hardware manual	date of purchase after 12.10.2011
1.02	14.03.2016	New corporate design	date of purchase after 12.10.2011
1.03	09.01.2020	The scope of delivery has been corrected	from revision SAS-B007-01 D

IMPORTANT. In its current revision, this manual applies only to the product types listed in the last line. Should you require a manual from a previous revision, please do not hesitate to contact us. Please let us know your device type and email address and we will send you the appropriate manual as a pdf file.

The type of your product can be found on the label behind "Type:", according to the marked number in the following example:



2 Introduction

2.1 Foreword

Thank you for purchasing a product from CETONI. With this user manual we would like to support you as well as possible when handling the device. If you have any questions or suggestions, please do not hesitate to contact us.

2.2 Symbols and Key Words Used

The following symbols are used in this manual and are designed to aid your navigation through this document:

HINT. Describes practical tips and useful information to facilitate the handling of the software.

IMPORTANT. Signifies important hints and other useful information that may not result in potentially dangerous or harmful situations.

ATTENTION. Indicates a potentially harmful situation. If it is not avoided, the product or something in its environment may be damaged.

CAUTION. Indicates a potentially dangerous situation. If it is not avoided, slight or minor injuries and property damage may result.

2.3 Norms and directives

CETONI GmbH declares under its sole responsibility, that the CETONI rotaxys complies with the health and safety requirements of the relevant European directives.

2.4 Application Purpose

2.4.1 General Description of the Machine

The CETONI rotaxys is a positioning system. It allows positioning small and lightweight objects, such as tubes or cannulas over an area of 120mmx80mm. Additionally it can perform a vertical hoisting movement of 10mm.

2.4.2 Intended Use

The CETONI rotaxys positioning system is used for positioning small objects, such as tubes or cannulas over an area of 120mmx80mm. This predestines it to drag, drop an observe samples in titer plates.

Application usually takes place in laboratory-like rooms.

2.4.3 Reasonably Foreseeable Faulty Application

A use for applications distinct from the intended purpose can lead to dangerous situations and is to be omitted.

CAUTION. The unit must not be used as a medical device or for medical purposes.

2.4.4 Safety Advice

The safety of the user and a failure-free operation of the unit are assured only if original parts are used. Only original accessories may be used. Warranty claims will not be accepted for damage due to the use of alien accessories or expendables.

The unit has been developed and constructed in such a way as to largely rule out hazards due to its intended use. Nevertheless, you must observe the following security measures in order to exclude any remaining hazards.

- CETONI GmbH points out the responsibilities of the operator for the operation of the device. The laws and regulations of the place of installation must be observed while operating the unit!

To ensure a safe work routine, operators and users must assume responsibility for adhering to regulations.

- The unit must not be used as a medical device or for medical purposes.
- Before operating the unit, the user must at all times ensure the operational reliability and the adequate and orderly condition of the unit.
- The user must be familiar with the operation of the unit and the software.
- The unit and pipes must be checked for damage before operation. Damaged pipes and plug devices must be replaced immediately.
- Cables must be laid in a way that avoids any risk of stumbling.
- Any moving parts must not be touched whilst the unit is in operation. There is a risk of crushing!
- It is not allowed to use the device in an explosive atmosphere or with potentially explosive substances.
- Wear protective glasses if you are working with corrosive, hot or otherwise dangerous substances during assembly work on the device.

2.4.5 Measures for Safe Operation

2.4.5.1 ELECTROMAGNETIC EMISSIONS

The CETONI rotaxys positioning is intended for use in any type of facility, including living quarters, and those that are connected to a public mains network that supplies buildings used for living purposes.

2.4.5.2 ELECTROSTATIC DISCHARGE

Floors should be made of wood, concrete, or ceramic tiles. If the flooring is made of a synthetic material; the relative humidity must be at least 30%.

2.4.5.3 ELECTRIC DISTURBANCES

The quality of the supply voltage should be to the standard of a typical business or hospital environment.

2.4.5.4 MAGNETIC DISTURBANCES

Do not place power connector cables, even of other appliances, in close proximity of the unit and its cables. Portable and mobile communication devices may not be used in closer proximity of the unit or its cables than the recommended safety distance!

2.4.6 Safety Devices on the Unit

The unit can be switched off at any time in an emergency using the mains switch on the Base or Starter Module (rocker switch on the side of the housing); this will cause no damage to the unit. If the device is used without the base module you can simply pull out the power supply connector.

2.4.7 Condition of the Unit

Irrespective of the faultless manufacture of the unit, damage can occur whilst the unit is in operation. With this in mind, always carry out a visual check of the components mentioned before use. Pay particular attention to crushed cables, damaged tubing, and deformed plugs. If you should notice any damage, please do not use the unit and inform CETONI GmbH without delay. CETONI will put your unit back to an operational condition at the earliest. Do not attempt to repair the unit yourself.

2.5 Warranty and Liability

The devices left our company in perfect condition. Only the manufacturer is permitted to open the devices. All warranty and liability entitlements, particularly damage entitlements due to personal injuries, are void if the devices are opened by an unauthorised person.

The duration of the warranty is 1 year of technical equipment (expect wear parts) from the day of delivery. It is not extended or renewed due to work carried out under warranty.

CETONI GmbH considers itself responsible for the devices with regard to safety, reliability and function only if assembly, new settings, changes, extensions and repairs are carried out by CETONI GmbH or an authorised centre, and if the devices have been used in accordance with the instruction manual.

The product conforms to the basic safety regulation standards. Industrial property rights are reserved on the circuits, methods, names, software programs, and units.

3 Scope of Delivery

The following items are supplied with your CETONI rotaxys positioning system:

CETONI ROTAXYS POSITIONING SYSTEM

with table and tubing connection as ordered.

INTERCONNECT CABLE

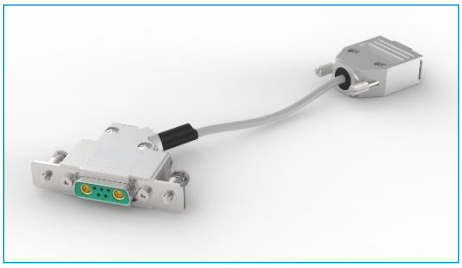
if the CETONI rotaxys is supposed to be used in combination with the neMESYS syringe pump system or Qmix.

USB-TO-CAN ADAPTER

if the CETONI rotaxys is supposed to be used stand alone.

CAN CABLE

if the CETONI rotaxys is supposed to be used stand alone.



POWER SUPPLY

if the CETONI rotaxys is supposed to be used stand alone.

4 Technical Data

4.1 Environment

OPERATING TEMPERATURE	-10°C to 45°C
STORAGE TEMPERATURE	-40°C to 45°C
OPERATING HUMIDITY	20% to 80%, non-condensing
STORAGE HUMIDITY	20% to 80%, non-condensing
SOUND POWER LEVEL OF THE DEVICE	under 70 dB(A)

4.2 Mechanical Data

DIMENSIONS (L X W X H)	226 (180) x 110 x 175 mm
WEIGHT	≈1900 g without table
STROKE	60 mm

4.3 Electrical Data

SUPPLY VOLTAGE	24 VDC ± 10%
PEAK CURRENT	2 A

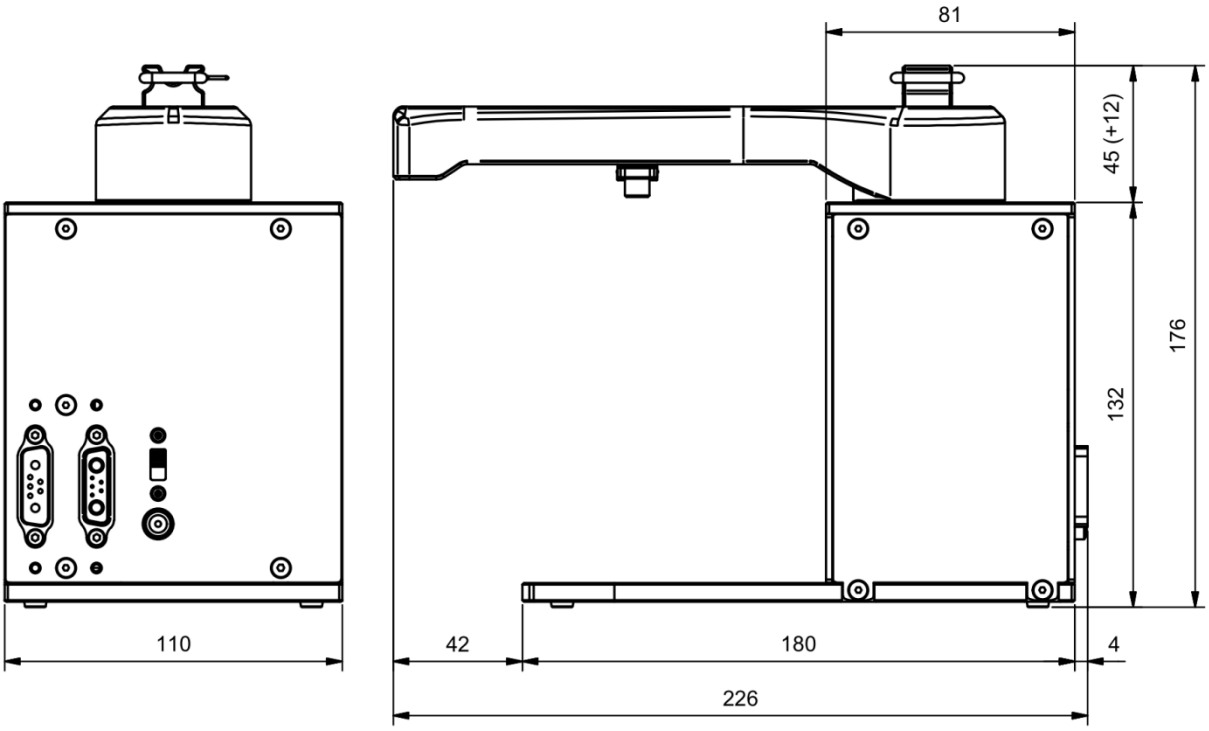
4.4 Interfaces

CAN	max. 1 Mbit/s

4.5 Configuration

Other tables and tools holders are available on demand.

4.6 Dimensions

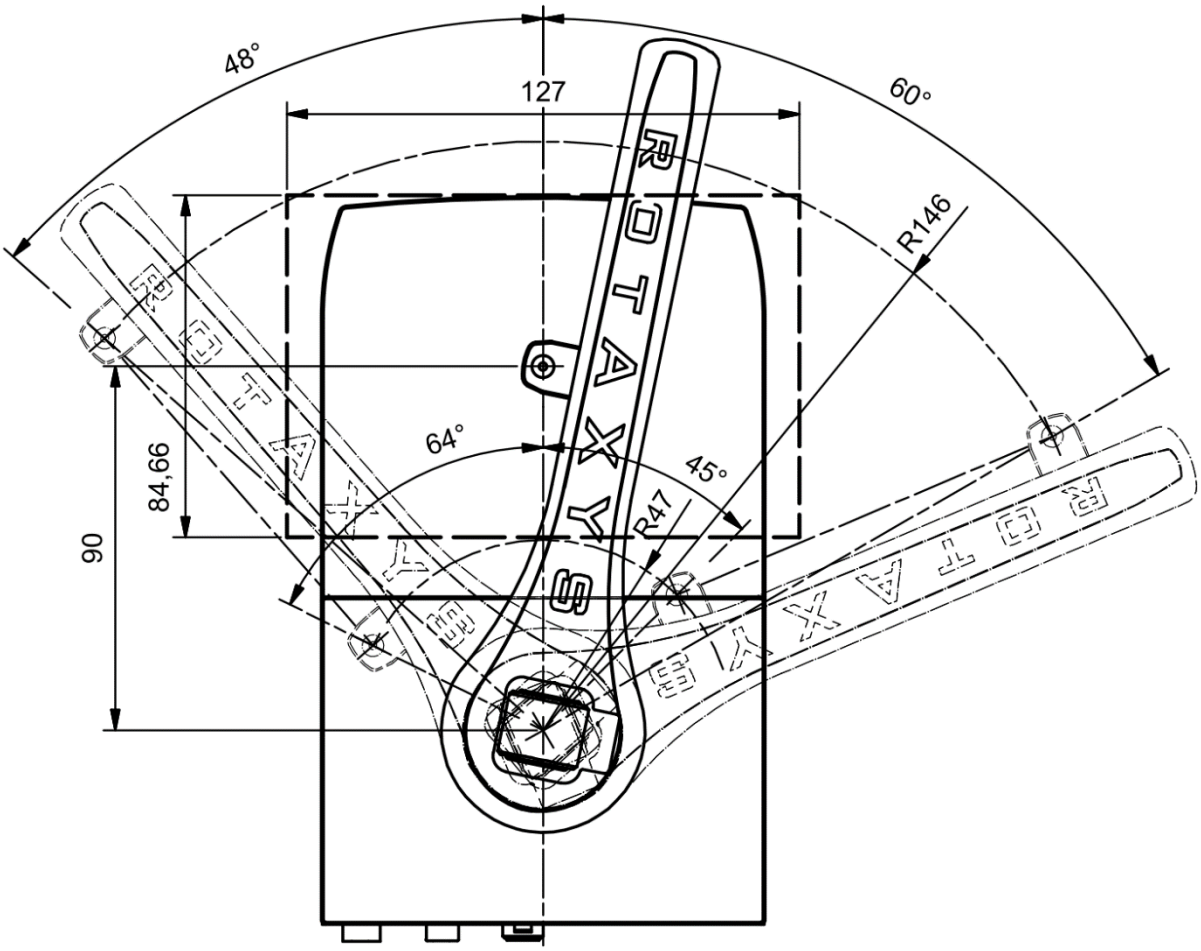


4.7 Working Area

The following drawing illustrates the working area of the CETONI rotaxys positioning system.

Using the standard tool holder, it is possible to reach every point within an area of 127x84,7mm which is surrounded by the dashed line. Those dimensions comply with the outer contour of a standard microtiter plate.

Accessible areas outside of this line can be used for instance to perform rinsing steps into an external waste.



5 Initial Start-up

IMPORTANT. Please read this manual as well as the related software manual carefully and completely before bringing your CETONI rotaxys positioning system into service.

5.1 Software Installation

Before connecting the device you need to install the supplied software. The procedure is clearly described and explained in the related software manual.

Furthermore a USB driver has to be installed in order to control the device via the USB port of your PC. The corresponding hardware is supplied as a separate USB-to-CAN adapter, or integrated in the base module of your neMESYS- respectively Qmix system.

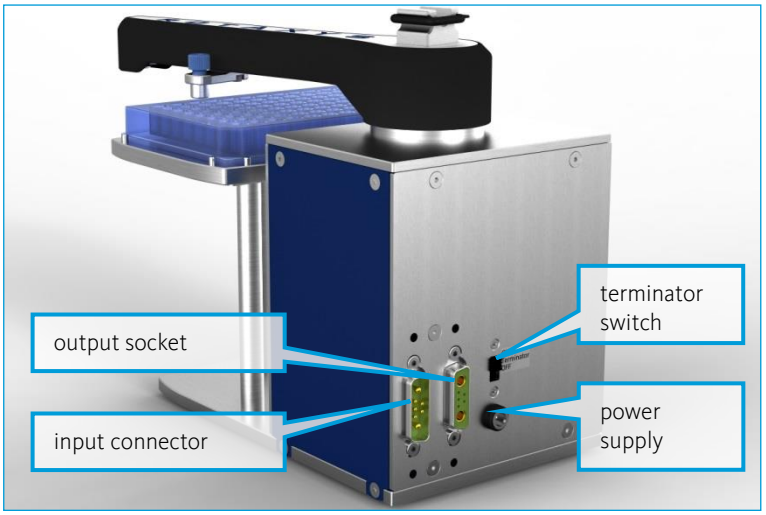
When you connect this adapter or base module to the USB port of your PC for the first time, or if a different USB port is used at a later date, the Windows hardware wizard will recognize a new USB device and then automatically install the necessary drivers.

The operation of the hardware wizard is also described in the software manual.

5.2 Setting Up and Connecting the Device

Set your CETONI rotaxys positioning system on a flat, horizontal surface, e.g. on tables, floor-standing cupboards or apparatus trolleys. Make sure that there is enough free space for the cantilever arm to reach any position.

The electrical connections are located on the back of the device. They are marked in the following picture:



The CETONI rotaxys positioning system can be operated as an independent unit or in combination with a neMESYS- or Qmix-System. These two connection variants will be explained in the following sections.

ATTENTION. Risk of injury from damaged cables and plug devices. Inspect the unit and lines for damage before starting the unit! Never operate the unit with damaged lines and plugging devices! Only use cables from the scope of supply.

ATTENTION. Danger of tripping over the power and connection cable. When laying cables, ensure that any risk of stumbling is avoided!

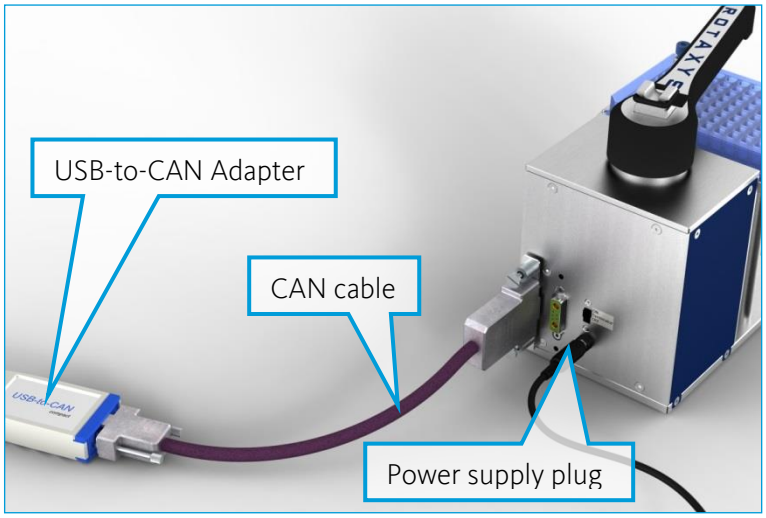
IMPORTANT. Install the software and device drivers before using the USB port to connect the unit to the PC.

5.2.1 Operating as Independent Unit

Plug the USB connector of the USB-to-CAN Adapter into a free USB port of your PC. The second connection of the USB-to-CAN Adapter is to be connected to the input connector on the backside of the CETONI rotaxys positioning system using the belonging Interconnect cable.

Insert the mains plug of the power supply into a socket. Then plug the outlet power supply plug into the power supply socket on the back of the device.

Move the terminator switch into the “ON“ position to ensure an undisturbed data communication with the PC.

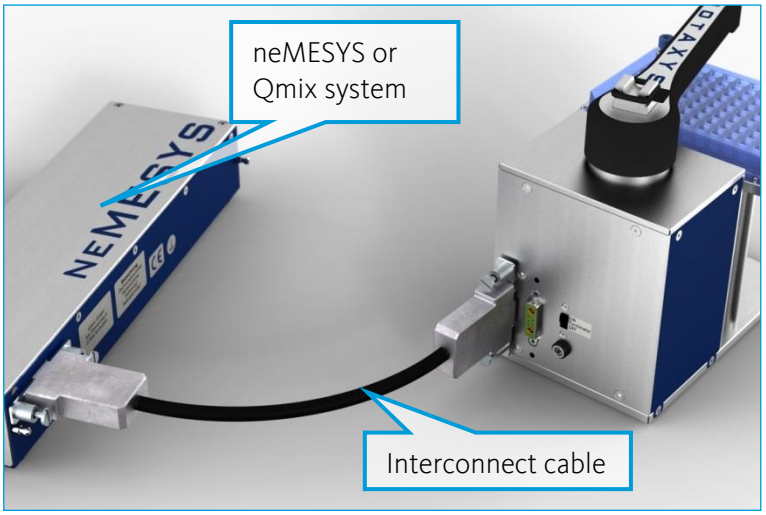


5.2.2 Operation with neMESYS or Qmix

Connect the outlet socket of the last module of your neMESYS or Qmix system to the input connector on the backside of the CETONI rotaxys positioning system using the belonging Interconnect cable.

Using another Interconnect cable, additional devices can be connected to the outlet socket of the CETONI rotaxys positioning system. In this case move the terminator switch into the “OFF“ position.

If no additional devices are added and the CETONI rotaxys positioning system is the last device in your system, move the terminator switch into the “ON“ position to ensure an undisturbed data communication with the PC.



ATTENTION. Any moving parts must not be touched whilst the unit is in operation. There is a risk of crushing!

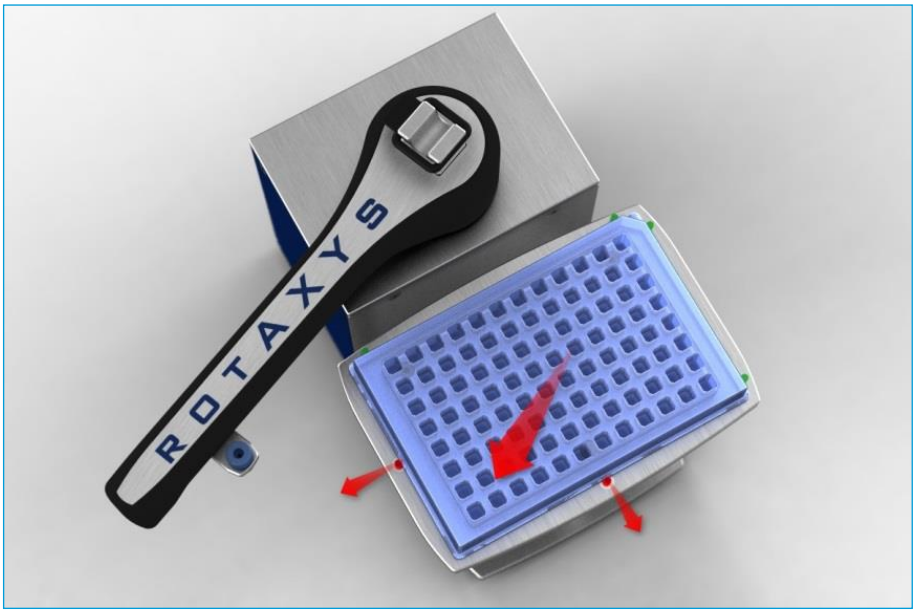
6 Operating the Hardware

In its standard configuration the CETONI rotaxys positioning system is equipped with a table to accept microtiter plates. The ¼”-28 UNF thread in the tool holder enables mounting a tube or cannula by using common HPLC fittings.

The following sections show you the use of the table and the tool holder. The exchange of these two components will be explained subsequently.

6.1 Inserting a Microtiter Plate

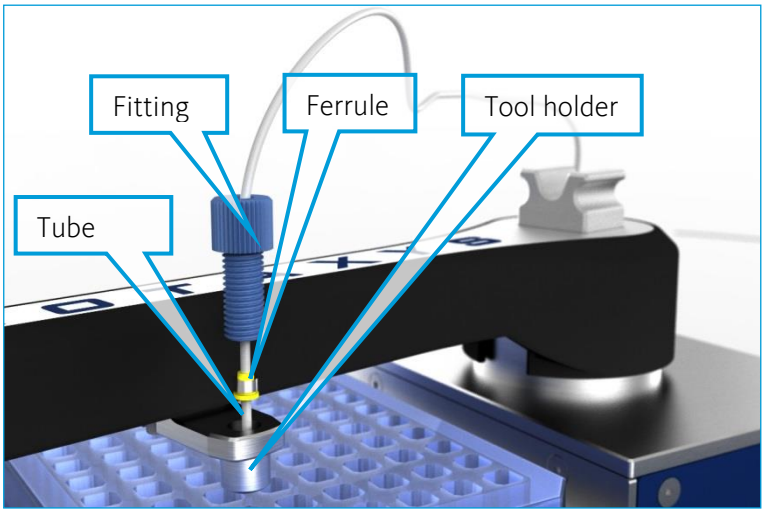
Use the software to bring the cantilever arm in a position in which the table is freely accessible. If the device is turned off, this can also be done manually. The two bolts marked with red arrows are sprung. Use the microtiter plate to push them aside far enough to place the microtiter plate between the remaining bolts (green).



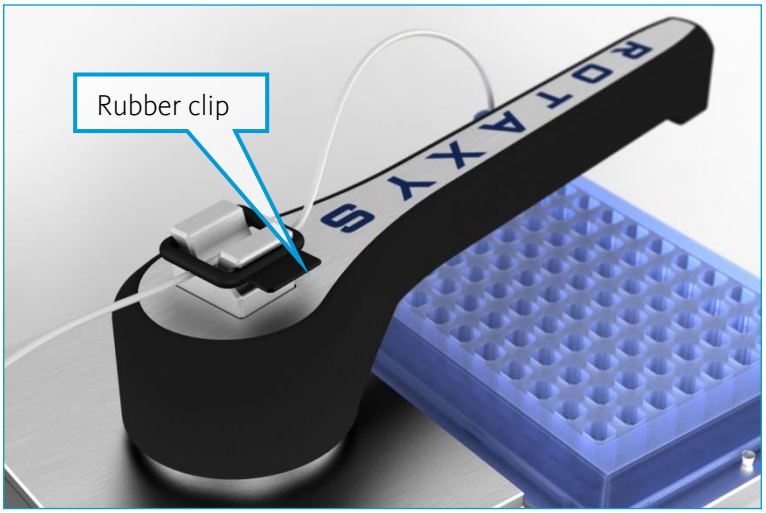
6.2 Connecting a Tube

Depending on the used fitting tubes and cannulas with different outer diameters can be mounted on the tool holder of the CETONI rotaxys positioning system.

Thread the fitting and the ferrule onto the tube and plug it through the bore of the tool holder. Adjust the length of the protruding tube tip to suit your application and fix it by tightening the fitting.



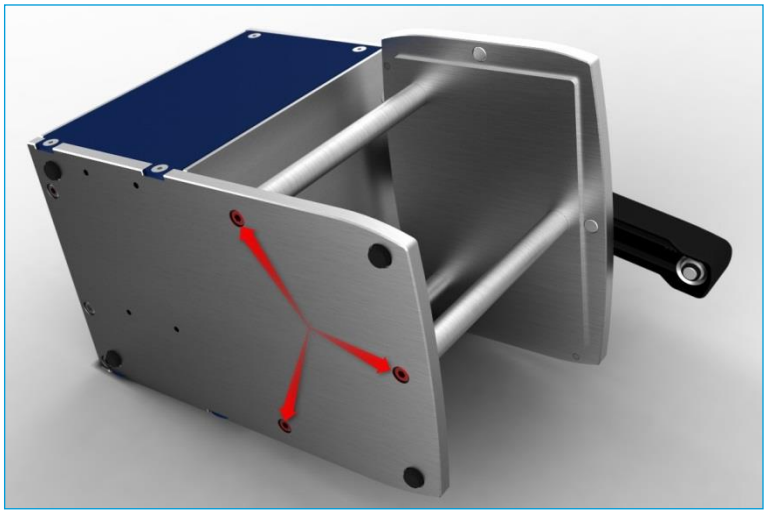
Use the rubber clip to attach the tube to the mount on top of the cantilever arm. Make sure that there is enough free tube to enable movement across the entire working area.



ATTENTION. There is a risk of injury when using sharp or pointed tools!

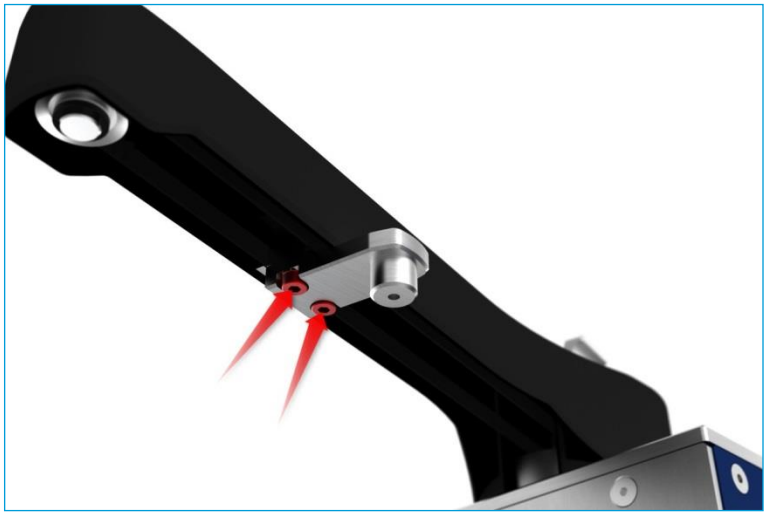
6.3 Exchange of the Table

Remove the three red marked screws on the bottom of the bottom of the device with a 2,5mm Allen key. You can remove the table now and replace it by another one. Screw on the new table with the three screws again.



6.4 Exchange of the Tool Holder

Remove the two red marked screws with a 2,5mm Allen key. After that you can simply remove and replace the toolholder. Screw on the new tool holder with the two screws again.



7 Transportation and Storage

7.1 Transportation

Use only the original packaging for transportation or shipping.

7.2 Storage

Please pay attention to the information given in the technical data sheets (Section 4) for the operation and storage of the individual modules.

8 Maintenance and Care

If used in accordance with intended purpose, the device is maintenance-free. Should there be a failure despite this, which you cannot eliminate yourself, or which requires opening the device, please contact CETONI GmbH to coordinate further actions. The device may only be opened by CETONI GmbH or thereby authorized service staff. Otherwise the warranty claims are void.

Software-related troubles are dealt with in the Software Manual.

For cleaning it please rub the surface gently with a soft, damp cloth. The cloth must not be wet, so that no fluency can trickle into the device. In case of a heavier soiling you can also use a little bit of detergent or alcohol.

9 Disposal

Please send your old devices back to CETONI GmbH. We will take care of proper disposal.

If necessary, please decontaminate the device before sending it back and attach a completed decontamination declaration with your shipment.