Operating Manual

Veya

Title:	Operating Manual Veya (RUO)			Part number:	30244337.00
ID:	402664, en, V1.0			Translated from:	n.a.
Version:	Revision:	Issue:	Document History:		
1	0	2024-12-05	First edition		

Table of Contents

1 About This Manual

This Operating Manual describes the Veya and provides all the information required for operating it safely and for maintaining it in good working order. This manual must be read carefully before performing any work on the Veya and before using it.
This chapter outlines the purpose of this manual and specifies the product referred to. Furthermore, it explains the use of symbols and conventions as well as further general information.

This Operating Manual contains no software description. For more information on the software please consult the corresponding software manual. Refer to section "Reference Documents" [10].

1.1 Scope of This Manual

This manual applies to:

Veya 6 (30232807)

Tab. 1: Configuration overview for Veya 6

Configuration	Left Arm		Right Arm
	# of Channels	Pipetting System	
Veya 6 (RUO)	4	ARP	RGA (optional)
Veya 6 (RUO)	8	ARP	RGA (optional)

Veya 9 (30232810)

Tab. 2: Configuration overview for Veya 9

Configuration	Left Arm		Right Arm
	# of Channels	Pipetting System	
Veya 9 (RUO)	4	ARP	RGA (optional)
Veya 9 (RUO)	8	ARP	RGA (optional)

1.2 Manufacturer

Address of Manufacturer

Tecan Schweiz AG
Seestrasse 103
CH-8708 Männedorf
Switzerland

1.3 Intended Use

Veya is a fully automated laboratory liquid-handling platform for research and industrial applications. It is intended for routine laboratory tasks, such as pipetting, liquid handling, and robotic manipulation of labware in certain test procedures (e.g., cell-based assays, biochemical assays and compound management). This instrument is for research use only and not for use in diagnostic procedures.

1.4 Improper Use

The Veya must not be used with options or components which are not approved by Tecan.

The use of not approved options may impair the safety concept of the instrument. This means that the safety and compliance to national and international standards, as required for UL/CSA certification, by EC directives, etc. cannot be ensured any more.

The Veya is not explosion-proof and should not be installed in locations where there is a hazard of explosion.

1.5 Trademarks

The product names, whether registered or unregistered trademarks, mentioned in this manual are reproduced solely for identification purposes and remain the exclusive property of their respective owners. For simplicity reasons, the trademark symbols such as ® and ™ are not repeated in the manual.

1.6 Reference Documents

This section provides a list of the documents that are needed or may be useful when using the Veya.

The Doc IDs listed below are root numbers. Therefore, they do not contain information about the language, document version, or the medium (data storage medium, hard copy, downloadable file, etc.) of the document.

On the basis of your order configuration, the Operating Manuals for optional equipment apply as well.

Check the scope of the corresponding document to ensure that you are in possession of the correct version.

The Doc ID does not refer to ordering information. When placing orders, please refer to the number on the binder, CD casing, etc.

1.6.1 Documentation

- MAPlinx Setup Software Manual (DocID 400613)
- Loading ID Operating Manual (DocID 399901)
- Inheco Multi TEC Control and Single TEC Control (DocID 900067-003)
- Inheco Shaker with clamping (DocID 901325-000)
- Inheco CPAC Devices (DocID 900650-001)
- Inheco Single Plate Incubators (DocID 900434-001)
- Inheco ODTC (DocID 900584-005)

- HydroFlex Plus Washer (DocID 30199906)
- Infinite F50 Reader (DocID 30186912)

1.6.2 Declaration of Conformity

The Declaration of Conformity is part of the instrument documentation.
For further information or support, consult the “Costumer Support” [89].

2 Safety

This chapter describes the safety concept of Veya, provides general rules of correct behavior, and warnings concerning hazards associated with the use of the Veya.

2.1 Safety Message Conventions

2.1.1 Signal Words

Tab. 3: Signal Words

Signal Word	Meaning
⚠ DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a situation that is not hazard-related but, if not avoided, could result in damage to or malfunctioning of the equipment, or incorrect process results.

2.1.2 Safety Symbols

General warning

Biological hazard

Magnetic field

Laser beam

Hot surface

Note: Refer also to the safety symbols in the Reference Documents (refer to “Reference Documents” [▶ 10]).

2.2 Safety Information

General

⚠ WARNING

Veya is designed and built in accordance with the present state-of-the-art technology and the recognized technical safety regulations. Nevertheless, risks to users, property and the environment can arise if the Veya is used without due care and attention.

The safety of all users and personnel depends on the strict observation of these safety instructions and awareness of the safety-related warnings provided in this manual.

- Please pay great attention to the following general safety information.
- This manual must always be available to all persons performing the tasks described herein.
- Use the bundled power cord set with the instrument. Do not use the bundled power cord set with an other instrument.

- Legal regulations, such as local, state and federal laws concerning the use or application, as well as the handling, of dangerous materials in connection with the Veya must be strictly followed.
- The operating company is responsible for defining instructions in accordance with company procedures and local legal requirements. The instructions provided by the operating company must be strictly observed.
- Observe the correct environmental conditions for storage and operation.
- Structural changes to the safety devices are forbidden.
- Damaged safety devices must be replaced immediately as described in this manual.
- The Veya must not be modified in any way without prior consultation and written approval of Tecan. Authorized modifications to the system may only be performed by an FSE certified for the repair and upgrading of the Veya. Tecan will reject any claim resulting from unauthorized modifications.
- Fire hazard caused by the improper use of the Veya. The Veya should not be installed in locations where there is a hazard of explosion.
- Fire hazard caused by flammable liquids or system liquid.
- Avoid the formation and accumulation of flammable vapors.
- Chemical, biological, and radioactive hazards can be associated with the substances used or the samples and reagents processed with the Veya (e.g., during loading and unloading). The same applies to waste disposal.
  - Always be aware of possible hazards associated with these substances.
  - Use appropriate protective clothing, safety goggles, respirators, and gloves.
  - The handling of substances and the disposal of waste may be subject to local, state, or federal law, or to regulations with regard to health, environment, or safety. Strictly observe the corresponding provisions.
- Any contamination must be dealt with immediately as described in this manual.
- The user is responsible for ensuring that the Veya is always operated under proper conditions, and that maintenance, service, and repair tasks are performed with care, on schedule, and only by authorized personnel.
- Risk of incorrect measuring results. After system care or maintenance has been performed, operation must only be resumed after the correct system operating conditions have been verified.
- Risk of incorrect measuring results. The workflow must be validated by the operator before conducting IVD tests on the Veya.
- Always use recommended consumables within expiration date and original spare parts for maintenance and repair to assure good system performance and reliability.
- Affixed safety signs need to be visible. Do not cover any safety signs affixed on the modules.
- Risk of of burn injuries when touching hot surfaces.
- Only operate the Veya with intact enclosure. Do not use the Veya when covers are removed or damaged.
- The temperature inside the Veya can be higher than outside the Veya. The temperature difference must taken into account while selecting the assay and the appropriate room temperature. The assay must be validated and temperature ranges indicated by assay manufacturers respected.

- The deckcheck does not detect all loading errors. The Veya needs to be loaded carefully and by the operator or key operator.
- Only use compatible labware. Incompatible labware can lead to sample loss or damage to mechanical parts. All labware used in modules such as incubators, thermocycler, reader,washer, shaker and CPACs etc must be conform with the SBS Standard.
- Be aware of the risk of data loss due to a hard drive failure. Back up important data regularly.
- The volume of flammable liquids inside a closed system should be below the lower explosive limit (LEL). Refer to the calculated max. volumes for various flammable liquids and different instrument sizes of a closed system in “Environmental Conditions” [▶ 31].
- Be aware of the strong magnet. It can be harmful to pacemaker wearers and others with medical implants. Stay clear and keep tools and other metal objects away. Failure to follow this warning can result in serious injury.
- The instrument has to be operated in the lab with controlled temperature that lies within a specified operating temperature range. The temperature inside the instrument can be higher than the lab temperature. When the temperature limit for pipetting is exceeded, the system will display an error.
- The instrument must be transported by professional movers. If the instrument is lifted onto a bench or moved to another bench, the lifting/moving must be organized by Tecan personnel.
  There is a risk of serious injury if the weight limit of 23 kg per person is not respected. Carrying handles with a crossbar must be used.
- The instrument is sensitive to strong active RFID sources, these must be kept more than 20 cm away.
- External USB cables must not be longer than 3m.

Base Unit

- In case of an emergency situation the mains plug of the power supply unit must be disconnected immediately.
- Free access to the power plug of the power supply unit must be ensured.

Base Unit

- The operator is responsible to ensure that the necessary waste bin(s) are in place whenever the instrument is operating.
- Be aware of the total height of the instrument whenever the front safety panel is fully opened. It may be colliding with the ceiling causing some damage. Refer to Dimensions and Weights.
- Be careful when closing the front safety panel. Keep your fingers off the lower rail of the panel to prevent jammed fingers.
- Risk of contamination of the lab environment. Always place an empty waste blister for DiTis prior to starting a run.

FCA

- Do not lubricate the Z-rod.
- To ensure proper capacitive level detection performance, pretreat sample to eliminate foam and bubbles.
- Do not apply force on the channel arm. The arm is designed for automated operation and should not be operated manually or used as handle.
- To avoid mechanical cross-talk between FCA and RGA, RGA needs be parked in parking position when high accuracy is needed for pipetting with FCA.

RGA

- Ensure that no labware has been gripped before the initialization.
- Ensure using rigid labware only when transported by the gripper.

- Ensure using always compatible labware. In order to successfully transport labware, it shall be located on compatible carriers which allow access of the installed fingers to the gripping point on the labware.
- Do not apply force on the RGA. The arm is designed for automated operation and should not be operated manually or used as handle. There is a risk of injury when moving the arm manually.
- Before initialization ensure the arm can move freely and cannot collide with any obstacles.
- Check the Gripper Fingers periodically. Clean the fingers periodically.
- Use approved cleaning agents only. Refer to Cleaning Agents Specifications.
- Labware must be located on compatible carriers which allow the access of the installed Gripper Fingers at the gripping point on the labware providing a secure transport.
- To avoid mechanical cross-talk between FCA and RGA, RGA needs be parked in parking position when high accuracy is needed for pipetting with FCA.

CG

- Risk of a wrong sample treating (magnetic bead processing) due to influence of magnets present in the gripper body. The beads should be settled down by removing the gripper fingers
- Risk of gripper finger damage due to the use of inappropriate cleaning agent. Only use specified cleaning agents described in section "Cleaning Agents Specifications".
- Risk of collision with labware or nest during transport due to inappropriate labware or nest type. Only use the in the software provided labware.

ARP

- The user is responsible for ensuring that the correct DiTi size is picked up. Due to incorrect DiTi size a wrong volume may be pipetted.
- Risk of contamination of DiTi adapter during pipetting. Use filtered tips to minimize cross-contamination.
- Access restriction to the ARP pump must be ensured to mitigate the risk of burn, in case the pump heats up in error conditions.
- Appropriate heat enclosure for the ARP pump needs to be considered in the end-use product.
- The pipetting error detection function which is activated by default in liquid class should not be deactivated.
  When deactivated, pipetting errors, such as an overaspiration might go undetected and could impact the result of the assay.
  In case the function needs to be deactivated to avoid false positives (in special use cases, e.g. mixing), it is highly recommended to perform a channel self-check at the next possible assay break point.
- To ensure that the pipetting system is working as intended, a channel self-check in assay break points and at the end of the assay should be performed.
- To ensure a proper capacitive level detection performance, pretreat the sample to eliminate foam and bubbles.
- The HEFU option is not replacing a laminar flow cabin or fume hood in case of critical particle or processes.
- The air flow of the HEFU may influence the assay which can result in a wrong result.
- Infectious material used inside the system can bypass the HEFU due to inadequate tightness of the system. There is the possibility of biohazard.

- Due to the limitation of the filter class (H13) used in the HEFU the risk of a chemical contamination of the user cannot be completely excluded.
- The HEFU option will transfer air from the processing area into the lab. It is not suitable for handling toxic or biohazardous chemicals/samples.

UV Light

- When using UV Light decontamination efficiency depends on the deck layout und the usage. Decontamination efficiency needs to be validated for individual applications. Decontamination efficiency must be checked with only 60% of irradiation duration (for a new lamp) in order to emulate the end-of-life of the UV lamp.
- The lifetime of the UV lamp is 10,000 hours, whereby 60 % of the initial irradiation intensity is reached. Each switch-on and switch-off cycle reduces the service life by 30-60 minutes.
- Assays may be degraded by the use of the UV Light. Evaluate the impact of the UV Light on chemicals and labware intended to use.
- The UV-C lamp must not be touched or cleaned by the operator.

Teleshake AC

- There is the possibility of sample contamination when using the Teleshake AC: The adequate set of shaking speed, plate type and sample volume must be selected for the application.
- There is the possibility of burning when touching the shaker and heating plate even after the devices are shut down.
- The shaking devices must be compatible with the consumables to avoid not adequately clamped plates and sample loss.
- Always select suitable shaking parameters for the incubator shaker and the assay validation.
- Only use compatible labware with the Plate incubator (Maximal labware height for Incubator : 18mm). Incompatible labware can lead to damage on mechanical parts.

Plate washer

- Always respect the service intervals (FSE actions) for the plate washer (incl. tubing exchange) to prevent damage and wear on tubing.
- Only use compatible labware with the Plate Washer (Microplates not higher than 15.11 mm). Incompatible labware can lead to sample loss due to a jammed loading drawer.
- HydroFlex Washer must not be used together with UV light. Exposing the Washer to the UV light will damage the washer and might lead to wrong results.
- Fluidic elements of the HydroFlex Washer should regularly (weekly) be inspected for damage or leakage. In case of a leakage, the operator should check if the tubing connections are properly tightened.

Magnet Plate

- Some modules may contain strong magnets. This can be harmful to pacemaker wearers and others with medical implants or other wearable devices. Stay clear! Keep tools and other metal objects away. Failure to follow this warning may result in serious injury.
- Wrong sample composition due to evaporation. Always place a lid on plates that are inserted into the thermocycler.
- Only use compatible labware with the thermocycler (PCR plates with well capacity of 200ul). Incompatible labware can lead to damage on mechanical parts.

Plate Reader

- Only use compatible labware with the Plate Reader (Microplates without lid, not higher than 15.2 mm). Incompatible labware can lead to sample loss due to a jammed loading drawer.
- The F50 reader must not be used together with UV light. Exposing the reader to the UV light will damage the reader and might lead to wrong results.

Loading ID

- Risk of sample loss due to scanning error. Check the loading ID barcode reader lens for dust. Clean the loading ID barcode reader lens if necessary. For information on cleaning, refer to the section “Weekly Maintenance” [68].
- Risk of sample loss due to scanning error. Check the loading ID reflector for dust, damage and removal. Clean the loading ID reflector if necessary. For information on cleaning, refer to the section “Weekly Maintenance” [68].
- Risk of wrong results due to a weak barcode type. The recommended Code 128 is considered as strong (includes checksum). For Codabar, Code39 and ITF (2of5 interleaved) a checksum must be used or the length of the barcode must be defined.

Barcode Reader

- The handheld Barcode Reader may be damaged when dropped.
  Hold the scanner firmly with one hand and ensure that your hands are clean and dry. When not in use, always store the device in the proper position in its holder.

For California residents only

- This product can expose you to chemicals such as lead which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

Liquid Waste Handling

- When a full waste container is removed from the istrument, it must be closed to prevent waste liquid from escaping and contaminating the environment.

2.3 Operating Company

The operating company must ensure that the Veya and in particular the safety features, function properly and that all the personnel in contact with the instrument are adequately trained.

Responsi-bilities

- Method and process validation.
- Defining the processes in compliance with the Standard Operating Procedures.
- Ensuring that installation and operational qualifications (IQ OQs) have been completed.
- Ensuring that all personnel in contact with the Veya are adequately trained.
- Ensuring the availability of appropriate protective clothing and equipment.
- Ensuring the maintenance and safe operation of the Veya.
- Requiring adherence to laboratory safety regulations and directives.

2.4 User Qualification

The laboratory personnel must be fully qualified and trained to operate the Veya. The work described in this Operating Manual must only be performed by authorized personnel with the qualifications prescribed below.

Laboratory personnel must:

- have suitable technical training,
- be familiar with the laboratory safety regulations and directives,
- be familiar with the instructions for the safety elements of the instrument,

- use protective clothing and equipment,
- be familiar with and adhere to good laboratory practices,
- and have read and understood the instructions in the Operating Manual.

Tecan recommends that the operator attends an operator training course. Please ask the Tecan Customer Service about available courses. Refer to section Customer Support.

2.4.1 Operator

The operator (lab technician) works for the operating company.

Required Skills

- No specific application or system knowledge
- Command of local languages
- Command of English is preferable

The operator has application software access rights allowing him to run methods and perform system care and will receive necessary training from the Key Operator.

2.4.2 Key Operator

The key operator (application specialist) supports the operating company or works for the same company.

Required Skills

- Extensive application knowledge
- Limited system knowledge
- Command of local languages
- Command of English
- In-depth knowledge of the corresponding software manual

Responsi-bilities

- Instructing the operator
- Writing, running and validating methods
- Helping the operator to solve problems with the instrument

2.5 Safety Elements

⚠ CAUTION

Moving parts

The protection and safety elements installed on the Veya must not be removed, disabled or overridden during operation.

- If any devices are removed (e.g., for maintenance work), all protection and safety devices must be reinstalled, re-enabled and checked before resuming operations.

Safety panels and safety door locks are integral parts of the Veya.

2.5.1 Front Safety Panels

The front safety panel prevents direct access to the robotic arms and to the elements on the instrument deck during operation. This is for personal safety and improves method security.
In addition, the front safety panel protects the user against spilling samples or reagents.

The full front safety panel has the following features:

- No access to moving parts (moving parts, mechanical hazards)
- Protection of the samples against outside influence (method safety)
- Protection against spilling sample or reagent
- Protection against optical radiation (UVC)

With full front safety panels, only batch-wise loading is possible.

2.5.2 Safety Panels for Optional Devices

If an optional device is added to, or removed from, the side of the Veya, an appropriate side safety panel must be installed. Please consult the Customer Support.

2.5.3 Safety Panel Door Locks / Modulated Speed

⚠ CAUTION

Unauthorized modifications to door locks.

Unauthorized modifications to door locks can lead to damage on the instrument and injuries.

- Do not make modifications to the door locks.
- Contact the Customer support if you have question on the door lock and its functioning.

The Veya safety concept assumes that the front safety panel is always closed and locked via Safety Panel Door Locks while the instrument is running.
During teaching, the door locks are open to allow access to the worktable. A function called modulated speed reduces the speed to 30% of the maximum speed to protect the operator from injuries while working with the front door (teach) open?

The following devices might not be interrupted by an active stop: Incubator, Reader, Washer, Heating / Cooling Device and Shaker. Interruption of other devices will depend on the device driver.

2.5.4 Drawer Door Locks

The drawer for the disposable tip waste is locked to protect the user from indirect access to the movable instrument.
The door locks can only be opened during a system pause or when the system is not in operation.

2.5.5 Optical Radiation (UVC)

The Veya can be equipped with an optional HEFU hood which can include a UVC light option.

Exposure to UVC light radiation must be avoided as it can lead to injury. The UVC light switches off automatically when the front safety panel is opened. Special UVC-resistant safety panels are installed on the Veya in conjunction with UVC light.

UVC light can be used in decontamination procedures. The suitability and effectiveness of using UVC for individual processes must be validated by the user.

2.6 Decontamination Declaration

In addition to regular system care, and in accordance with standard laboratory regulations, the Veya and its parts and accessories must be thoroughly decontaminated in the following circumstances:

- Before any maintenance or service work is performed on the Veya and, in particular, before an FSE intervention on the Veya
- In the event of accidents (e.g., crash, spillage, etc.)
- Before returning the Veya or its parts or accessories, to Tecan (e.g., for repair)
- Prior to storage
- Prior to disposal
- In general, before moving the Veya or its parts from its location

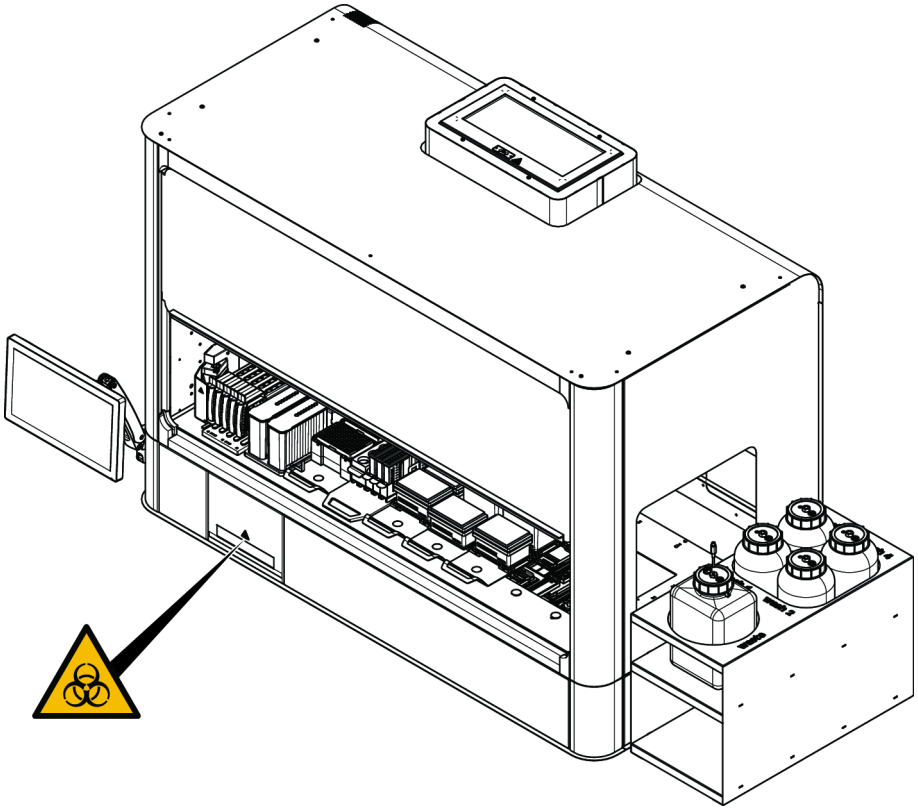
The owner of the instrument has full responsibility for the effective decontamination of all the equipment.

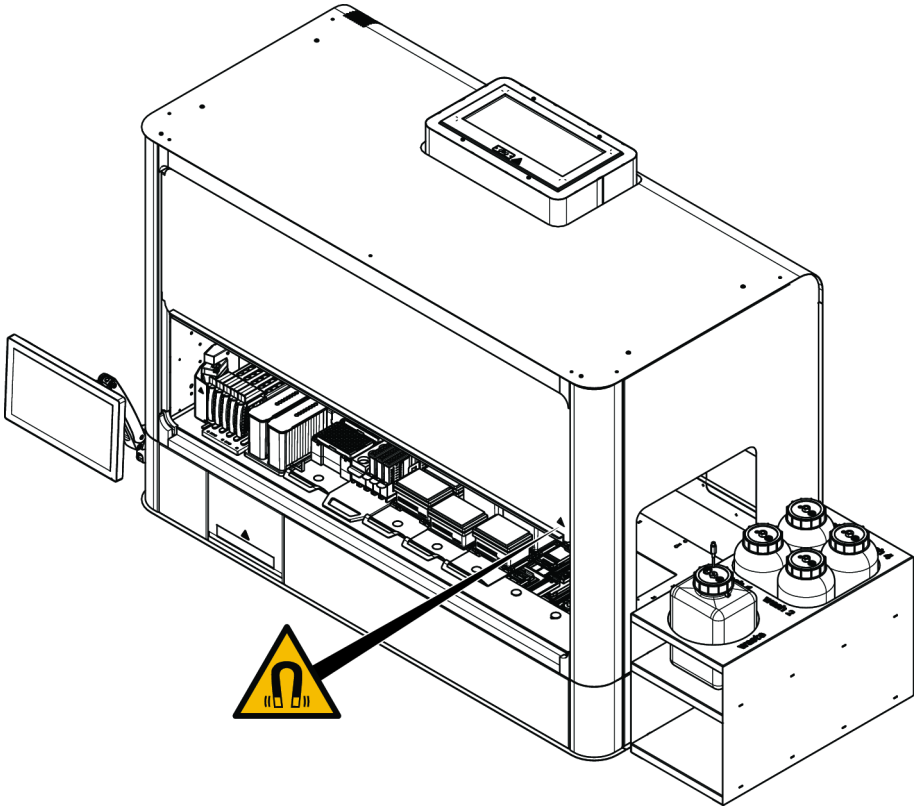
Before any intervention on the Veya by an FSE, and before returning the Veya or its parts or accessories to Tecan, the owner of the instrument must complete and sign the Decontamination Declaration form, confirming that the decontamination has been performed in accordance with good laboratory practice guidelines. Contact your local service organization to obtain this form and refer to section Decontamination.

Tecan reserves the right to refuse to deal with any Veya or its parts or accessories that is not accompanied by the Decontamination Declaration form.

2.7 Product Safety Signs

Safety signs are affixed to the Veya for safety purposes. Damaged, lost or illegible safety signs must be replaced immediately as illustrated. For the meaning of safety symbols refer to section “Safety Message Conventions” [▷ 12].





2.8 Laser Radiation Instrument

Veya can be equipped with laser barcode scanners. The laser radiation from these barcode scanners is a low-power, collimated beam in the visible spectrum. The laser classes of each barcode scanner, and of the entire Veya system, are indicated on the laser safety label affixed to the corresponding hardware.

All modules with lasers are marked with the appropriate laser safety labels.

The Veya instrument has been tested according to IEC 60825-1:2014.

⚠ CAUTION

The Veya is a class 1 laser product pursuant to IEC 60825-1:2014 that emits laser radiation.

Dazzle, flash-blindness and afterimages may be caused by the laser beam.

- Do not stare into the laser beam or into its reflections.

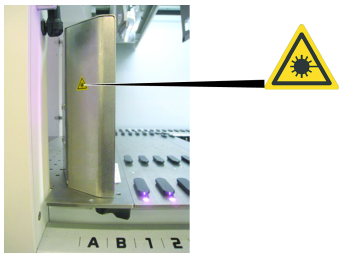
For further information on the type plate, please refer to the VeyaOperating Manual.

2.8.1 Laser Radiation Devices

A stand-alone barcode scanner can be mounted on a device.

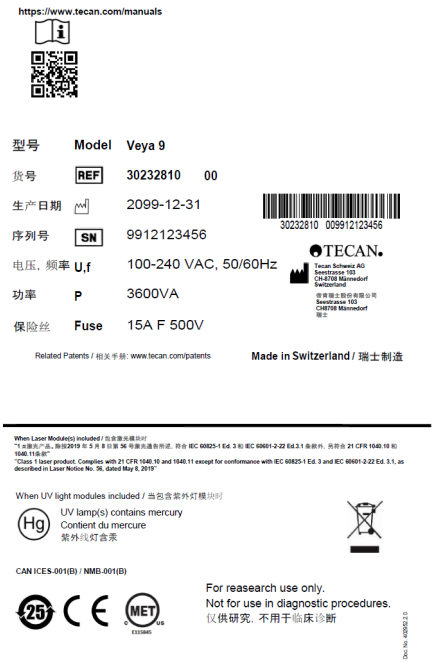
Please ensure that the safety label is correctly affixed to the barcode scanner at all times:

- Explanatory Laser Radiation Label (A): Identifies a CLASS 1 LASER PRODUCT according to IEC 60825-1 that contains an embedded visible low power laser barcode scanner. Instructs the user not to stare into laser beam or its reflection.

Label placement	Explanation
	Loading ID: label located on the rear side of the scanner housing.
	Loading ID: label located on the side of the scanner housing.

3 Technical Data

3.1 Type Plate



The type plate is on the rear side of the Veya and contains the following information:

Identification data	Model
	REF: Ordering information (material number and revision level)
	Date of manufacture (YYYYMMDD)
	SN: Serial number
Technical data	U, f: Supply voltage (Volts), frequency (Hertz)
	P: Power consumption (VA)
	Fuse: Fuse specification
Address data	Manufacturer’s name and address
Conformity data	Conformity marking

3.2 Dimensions and Weights

Instruments with Air Restriction Pipettor (ARP)

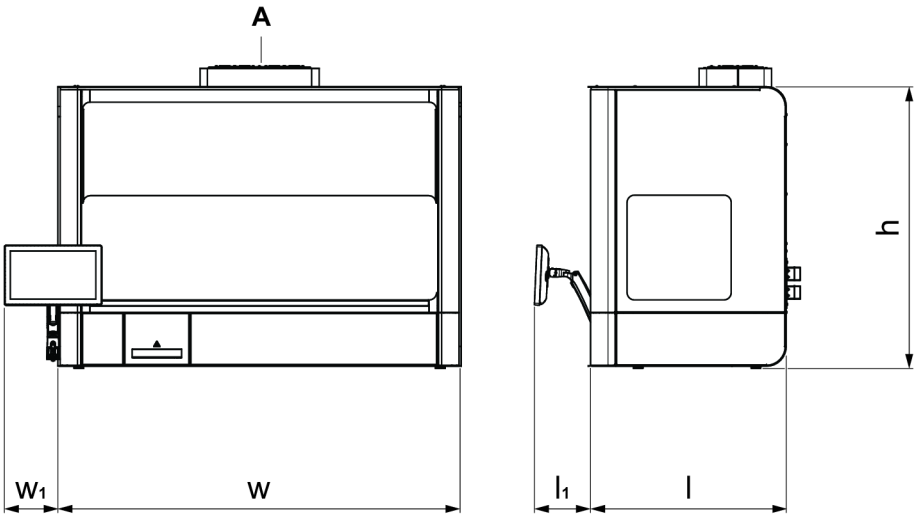


Fig. 1: Dimensions, e.g. Veya 6

Note: The width increases by 263.0 mm (10.4 in) with mounted carrying handles. The height increases by 80.0 mm (3.1 in) with the HEFU option (A).

Note: The total width increases by at least 215.0 mm (8.5 in) by the touch screen (w_1).
The total length increases by at least 218.0 mm (8.6 in) by the touch screen (l_1).

Component	Dimension Length (l) x Width (w) x Height (h)
Veya 6	803.0 x 1212.0 x 1150.0 mm (31.6 x 47.7 x 45.3 in)
Veya 9	803.0 x 1626.0 x 1150.0 mm (31.6 x 64.0 x 45.3 in)

Note: The weight below excludes the weight of the carrying handles; four handles weigh 2.1 kg (4.5 lb).

Note: The weight below excludes the weight of the touch screen; the touch screen weighs 5.4 kg (11.9 lb).

Note: The weight below excludes the weight of the internal computer; the computer weighs 2.9 kg (6.4 lb).

Note: The weight below excludes the weight of the OneView; the OneView weighs 12.0 kg (26.5 lb).

Note: The weight below excludes the weight of optional modules, e.g. HEFU, UV Light.

Note: The weight increases if the instrument is equipped with the CG option (refer to Channel Grippers below).

Note: The weight increases if the instrument is equipped with the RGA option (refer to the Gripper Arm below).

Component	Weight
Veya 6 4-channel	165.0 kg (363.8 lb)
Veya 6 8-channel	171.0 kg (377.0 lb)
Veya 9 4-channel	204.9 kg (451.7 lb)
Veya 9 8-channel	210.9 kg (465.0 lb)

RGA

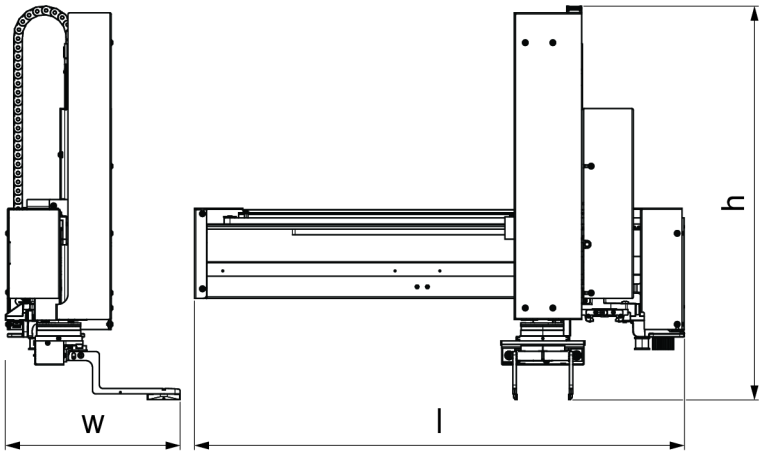


Fig. 2: RGA dimensions

Component	Dimension Length (l) x Width (w) x Height (h)
RGA *) with Eccentric Fingers mounted	711.0 x 156.0 / 254.0*) x 520.0 / 570.0*) mm (28.0 x 6.1 / 10.0*) x 20.5 / 22.4*) in)

Component	Weight
RGA without Gripper Fingers	10.1 kg (22.31 lb)
Centric Fingers	56.0 g (0.12 lb)

Component	Weight
Eccentric Fingers	164.0 g (0.36 lb)
Tube Fingers	37.0 g (0.08 lb)

Ventilation Requirements

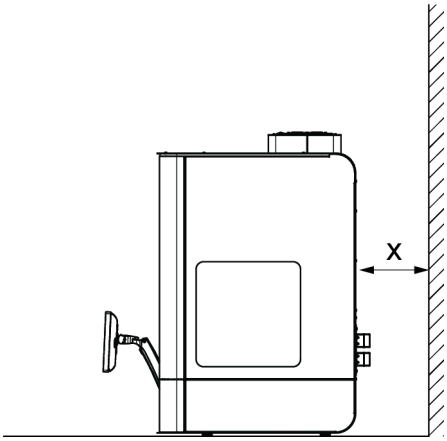


Fig. 3: Ventilation Requirements

Minimum clearance (x) between instrument back and wall: ≥100 mm.

Channel Gripper

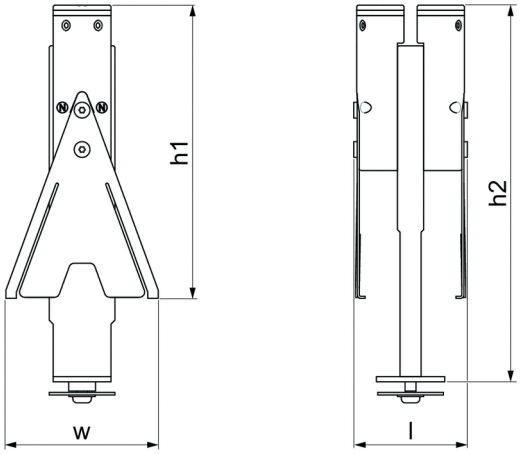


Fig. 4: Channel Gripper dimensions

Component	Dimension Length (l) x Width (w) x Height (h1)
Channel Gripper	43.0 x 58.0 x 112.0 mm (1.7 x 2.3 x 4.4 in)
	h2 correlates with the height above the worktable. 144.0 mm (5.6 in)

Component	Weight
Channel Gripper	312.0 g (0.69 lb)

DiTi Drop Station OnDeck

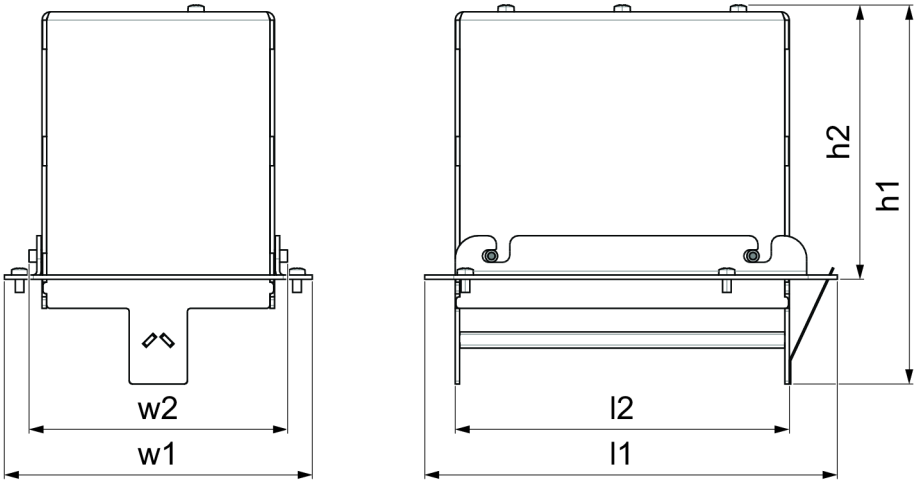


Fig. 5: DiTi Drop Station OnDeck dimensions

Component	Dimension Length (l1) x Width (w1) x Height (h1)
DiTi Drop Station OnDeck (incl. mounting frame)	142.0 x 106.0 x 130.0 mm (5.6 x 4.2 x 5.1 in)

Component	Dimension Length (l2) x Width (w2) x Height (h2)
DiTi Drop Station OnDeck	115.0 x 89.0 x 94.5 mm (4.5 x 3.5 x 3.7 in)

Component	Weight
DiTi Drop Station OnDeck	575.0 g (1.26 lb)
DiTi Drop Station OnDeck (incl. mounting frame)	670.0 g (1.47 lb)

3.3 Power Supply

Tab. 4: Power supply data

Parameter	Rating
Line voltage (single phase)	100–240 VAC (±10%)
Input power	3600 VA
Frequency	50/60 Hz

Parameter	Rating
Fuse	F15AH500V

3.4 Connectivity

- USB-C (USB cable must be rated 0.5 A or higher)
- RJ45 (Ethernet, must not be powered)

3.5 Environmental Conditions

Operating Conditions *)

Operating temperature	15–32°C (59–90°F)
Operating humidity	30–80% relative (non-condensing)
Operating altitude	0–2000 m above sea level
*) indoor only	

Transport Conditions

Transport temperature	-20 to 60°C (-4 to 140°F)
Transport humidity	20–80% relative (non-condensing)

Storage Conditions *)

Storage temperature	1–60°C (34–140°F)
Storage humidity	5–80% relative (non-condensing) at 30°C or below
*) indoor only	

Exception for liquid handling without positioning:
Environmental conditions for Liquid Handling performance is guaranteed for: 18-27°C, 30-60% relative humidity (non-condensing), Altitude: 500m +/- 100m above sea level.
Exception for cooling performance of integrated 3rd party devices CPAC and ODTC:
If these devices are part of the instrument configuration, the maximal cooling performance (as specified by manufacturer) is guaranteed until 27 °C ambient temperature.

Flammable liquids

To mitigate the risk of fire, the volumes of flammable liquids present at any time inside the instrument must not exceed the volumes specified in the following table. The specified volumes only apply if only one type of liquid is used. If several types of liquid are used, the volumes must be reduced proportionally.
Example: If 15 ml of Toluene is used in a 6-Grid instrument (= 51.4 % of the permitted volume), only 29.6 ml of Methanol can be used at the same time (= 48.6 % of remaining volume).

Max. allowed volumes of flammable liquids (when used alone) for different instrument sizes:

	Max. volume (ml)	
Liquid	**6 Grid**	**9 Grid**
Toluene	29.2	41.2
THF	31.3	44.1
DMSO	31.8	44.9
n-Hexane	31.9	45.1
Acetonitrile	38.4	54.1
Isopropanol	38.4	54.1
Ethanol	45.1	63.6
Acetone	46.2	65.1
Methanol	60.9	86.0
Dichlormethane	204.1	287.9

Other

Overvoltage category	II
Pollution degree	2

3.6 Emission and Immunity

Noise Emission

≤ 65 dBA (sound pressure), measured at a distance of 1 m from instrument.
The noise level may exceed 78 dB for short moments while the process is running.

EMC

The Veya complies with the emission and immunity requirements described in IEC 61326-1 and IEC 61326-2-6. However, the electromagnetic environment should be evaluated prior to the operation of the Veya.

This equipment is designed for use in a BASIC ELECTROMAGNETIC ENVIRONMENT (IEC 61326-1) and PROFESSIONAL HEALTHCARE FACILITY ENVIRONMENT (IEC 61326-2-6).
It is likely to perform incorrectly if used in an INDUSTRIAL ELECTROMAGNETIC ENVIRONMENT (IEC 61326-1) and a HOME HEALTHCARE ENVIRONMENT (IEC 61326-2-6).
If it is suspected that performance is affected by electromagnetic interference, correct operation may be restored by increasing the distance between the equipment and the source of the interference.

FCC15

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this

equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3.7 Software Requirements

The Veya is compatible with following SW packages:

- vControl
- MAPlinx Setup Software
- Other Tecan software packages supporting Veya

It is strongly recommended to use the latest software version. For further information please consult the "Customer Support" [89].

3.8 Specifications

Tab. 5: Communication

To other Tecan devices	CAN2 * 500 kb/s CAN1 * 100 kb/s
To host	USB
To 3rd party devices	USB, COM, Ethernet

* Tecan specific protocol

Tab. 6: Options

Module	Description
HEFU (HEPA filter unit)	Filter module with HEPA grade filter. Air flow can be adjusted to blow filtered air in the enclosure.
UV Light	UV Light emitting lamp for decontamination of the inside of the instrument housing and work deck.
Loading ID 5-grid	The Loading ID 5-grid is an optional module that can be incorporated to scan tube barcode labels as tube carriers are loaded onto the deck. Each Loading ID module includes up to five dedicated grid positions for loading and scanning the barcode labels of up to five carriers. The reflector is used to detect empty tube positions in a carrier.

Module	Description
Integrated computer	The integrated computer option enables connectivity of the Veya. Including an MS Windows Operating System, network port and USB ports, this option can be equipped with the application software to operate the instrument component.
Touch screen	The touch screen is a extension of the integrated computer and enables user interaction over the height adjustable touch screen display.
Inheco Teleshake AC 3mm	Compact shaking solution with automated clamping for robotic integration.
ODTC	The ODTC is designed for use as an integrated Thermal Cycler in automated liquid handling workstations, to heat and cool labware with biological or chemical samples.
Inheco Incubator Shaker	Space saving, fast, accurate and adaptable single plate shaking incubators for below deck integration. Multiple Shaking incubator can be stacked and used simultaneously. The shaking incubator allows freely programmable shaking curves (linear, circle, elliptic or eight).
Inheco CPAC Heater Cooler	Fast and precise heating and cooling with the Cold Plate Air Cooled with the-all in one heating and cooling block. The 2-TEC version comes even with two Peltier elements when alternating temperature changes are required in different incubation phases.

Tab. 7: Maximum Load Weight

CG DT	400 g (0.88 lb.)

Tab. 8: RGA

RGA maximum weight to be gripped	450 g (0.99 lb.)
Position accuracy X, Y, Z	±0.5 mm (±0.02 in.)
Maximum rotation	270 degrees
Accessible range Y-axis **Note:** Accessible range may change depending on used finger type	Centric and Tube Fingers: 423 mm (16.65 in.) Eccentric Fingers: 728 mm (28.66 in.)
Accessible range Z-axis **Note:** Accessible range may change depending on used finger type	Above worktable: 196 mm (7.71 in.) Below worktable, requires cut out: 350 mm (13.78 in.)
Travel range G-axis **Note:** Travel range describes the maximum travel range of an axis	61 mm (2.40 in.)

3.8.1 Pipetting performance and cross contamination performance

Pipetting precision and accuracy acceptance criteria

Tab. 9: ARP Pipetting Precision

Volume	Coefficient of Variation (CV)
1 µl	≤ 5%
5 µl	≤ 3%
200 µl	≤ 2%
1000 µl	≤ 2%

Tab. 10: Pipetting precision and accuracy acceptance criteria

Liq-uid	DI water, 96% Ethanol, 50% Glycerol**, PhsioGel** (cLLD, single free dispense)											
Tip Type	DiTi 10ul filter		DiTi 50ul filter		DiTi 200ul filter		DiTi 1000ul filter		1000ul filter widebore		DiTi 5000ul filter	
Vol-ume (µl)	CV (%)	Acc (%)	CV (%)	Acc (%)	CV (%)	Acc (%)	CV (%)	Acc (%)	CV (%)	Acc (%)	CV (%)	Acc (%)
1	≤15	±25	-	-	-	-	-	-	-	-	-	-
5	-	-	≤10	±15	-	-	-	-	-	-	-	-
10*	≤5	±10	-	-	≤5	±10	-	-	-	-	-	-
50*	-	-	≤2	±5	-	-	-	-	-	-	-	-
100	-	-	-	-	-	-	≤2	±5	≤5	±5	-	-
200	-	-	-	-	≤2	≤5	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-	≤2	±5
1000	-	-	-	-	-	-	≤2	±2	≤2	±2	-	-
4800	-	-	-	-	-	-	-	-	-	-	≤1	±2

*Due to the positive correction volume for certain liquids, increased trailing air gap for certain liquids and limitation of tip capacity, a smaller volume than the target volume will be used in some cases.
**Considering actual serum volumes used in applications, the volume of 1ul is replaced by 5ul for PhysioGel and 50% Glycerol.

Mean value

$$\overline{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

Standard deviation

$$s = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - \overline{x})^2}$$

Coefficient of variation

$$CV = \frac{s}{\overline{x}} * 100\%$$

Accuracy

$$\frac{(\bar{x} - V)}{V} * 100\%$$

$\bar{x}$	Mean value
n	Number of data points
Σ	Sum symbol
I	Index starting with 1
x_i	i- value of data set
s	Standard deviation
CV	Coefficient of Variation

Calculations for each volume-tip type-liquid:

- Overall CV is calculated using all the measurements from 3 instruments, 5 days and 5 repetitions per channel (400 measurements).
- Single site CV is calculated using all the measurements from 1 instrument, 5 days and 5 repetitions per channel (100-200 measurements depending on the number of channels of this instrument).
- Single day CV is calculated using measurements from 1 instrument on 1 specific day, 5 repetitions per channel (20-40 measurements depending on the number of channels of this instrument).
- Single site Accuracy is calculated using all the measurements from 1 instrument, 5 days and 5 repetitions per channel (100-200 measurements depending on the number of channels of this instrument).
- Single day Accuracy is calculated using measurements from 1 instrument on 1 specific day, 5 repetitions per channel (20-40 measurements depending on the number of channels of this instrument).

Cross contamination

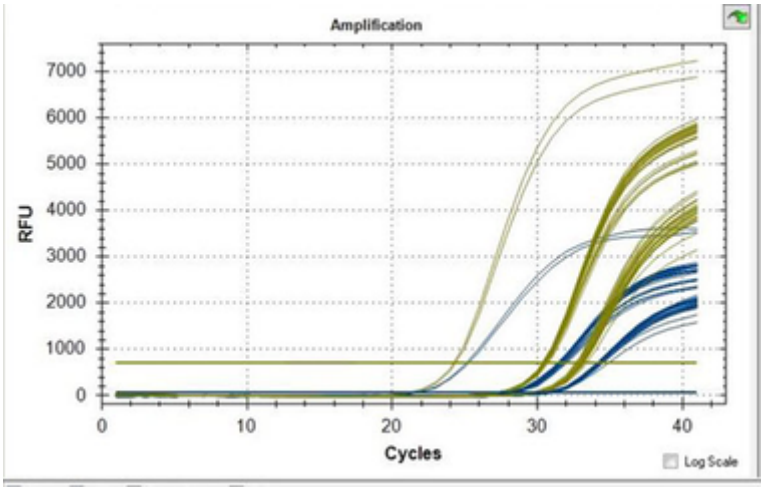
Checkerboard method for cross contamination test

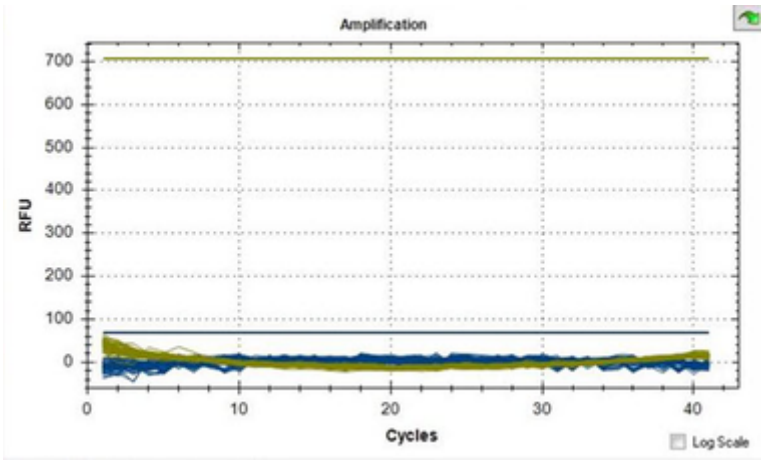
Acceptance criteria:

In all the runs, the Ct value of the DNA-binding dye FAM and the VIC for the NTCs (negative control) were N/A or >37 and the Ct values of FAM and VIC for the positive control wells were valid (≤37). The Ct value indicates the cycle number at which the reaction of a sample exceeds a fluorescence threshold indicating the detection of the target nucleic acid.

Results:

An example of the qPCR outcome is listed below (from the second run on the first instrument). The first graph shows the expected amplification of the positive control wells, Ct values <37. The second graph shows that no amplification was observed in the no-template control wells, Ct values were N/A .





3.8.2 Recommended Labware and Nests

Tab. 11: Labware and Nests

Component	Type
Microplate	SBS Format, 96 well MTP, e.g. Greiner Bio-One flat-bottom, 655101 Remark: Plate movement reliability validation

Component	Type
Deepwell plate	SBS Format, 96 well DWP, e.g. Greiner Bio-One, V-bottom, 2ml, 780270 Remark: Plate movement reliability validation
Nest	Nest MP/DiTi 7 mm, Part no. 30042780 Nest MP/DiTi 61 mm, Part no. 30042781

4 Description of Function

This chapter explains the basic principle of the Veya, shows how it is structured and gives a functional description of the assemblies.

4.1 Instrument

The Veya is used for pipetting tasks with robotic arms. The robotic arms can aspirate from and dispense to various containers to perform for example immunoassay processing to genomic tests – allowing to concentrate on applications instead of individual pipetting tasks.

The Veya is available in two different sizes:

- Veya 6
- Veya 9

4.1.1 Veya 9

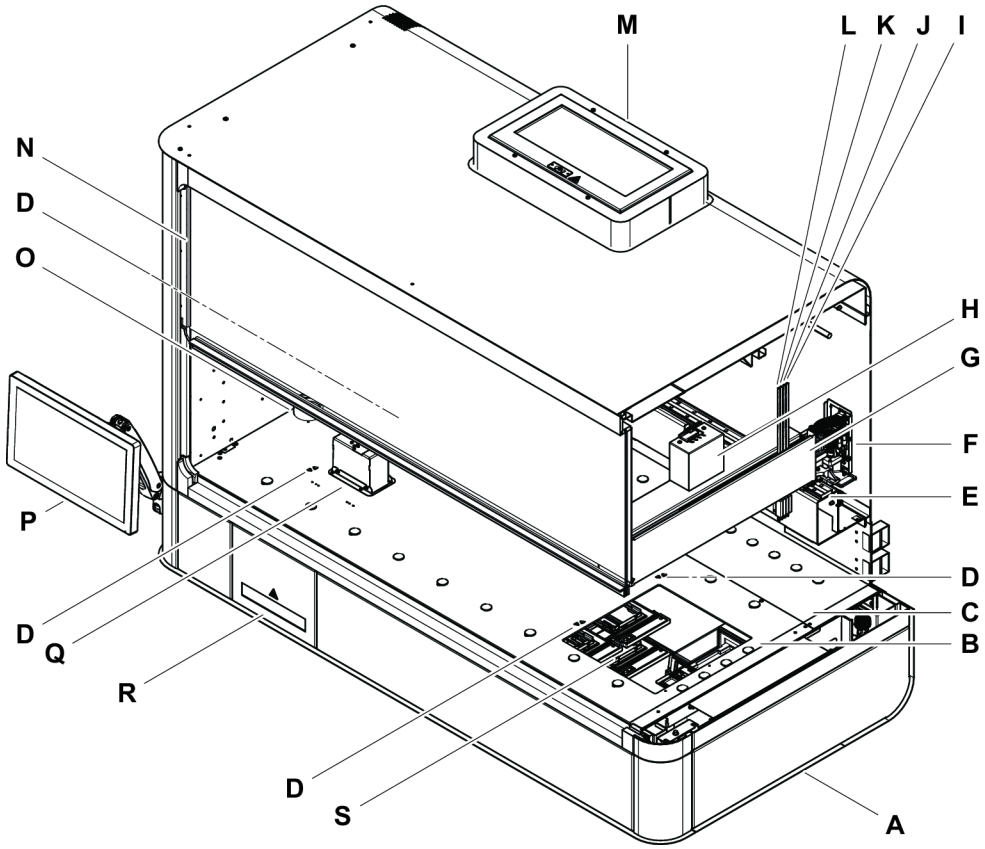


Fig. 6: Veya 9

A	Base Unit	B	Worktable	C	Split worktable
D	Reference point	E	X-rail	F	X-drive
G	Channel Arm (FCA)	H	Pipetting unit CH 1–4 (ARP)	I	Channel 1
J	Channel 2	K	Channel 3	L	Channel 4

M	HEPA Filter Unit (HEFU)	N	Front safety panel	O	Dehumidifier
P	Touch screen	Q	DiTi Drop station	R	Waste drawer
S	Sub worktable				

4.2 Base Unit

4.2.1 Carriers

Carriers are removable supports that can be placed on the worktable.

The following carrier is an example for carriers used with Veya.

Carrier 4 MTP

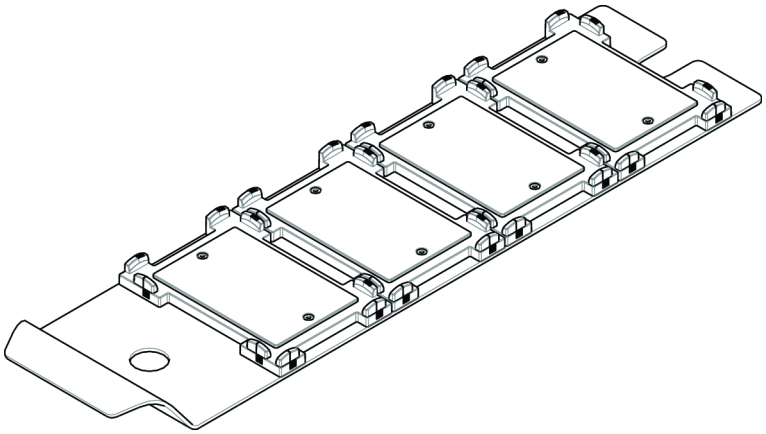


Fig. 7: Carrier 4 MTP

4.3 Channel Arm

The FCA is a component intended to position the pipetting channels for liquid handling and to move labware.

4.3.1 4-channel Arm

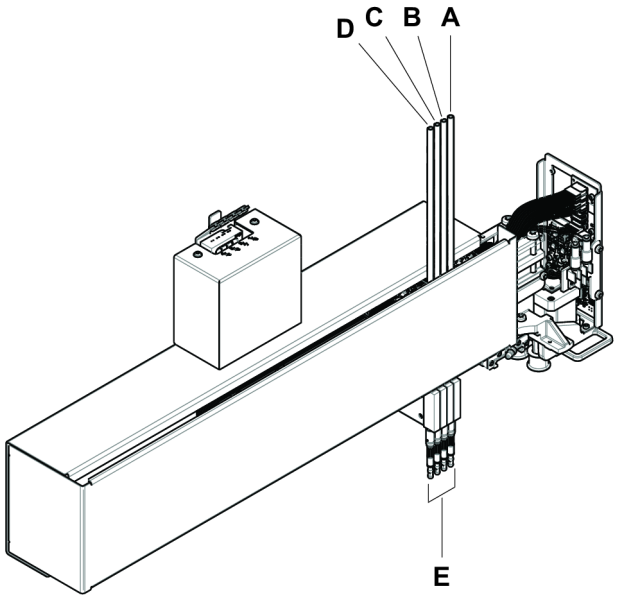


Fig. 8: 4-channel FCA ARP

A	Channel 1	**B**	Channel 2	**C**	Channel 3
D	Channel 4	**E**	Tip interfaces		

4.3.2 8-channel Arm

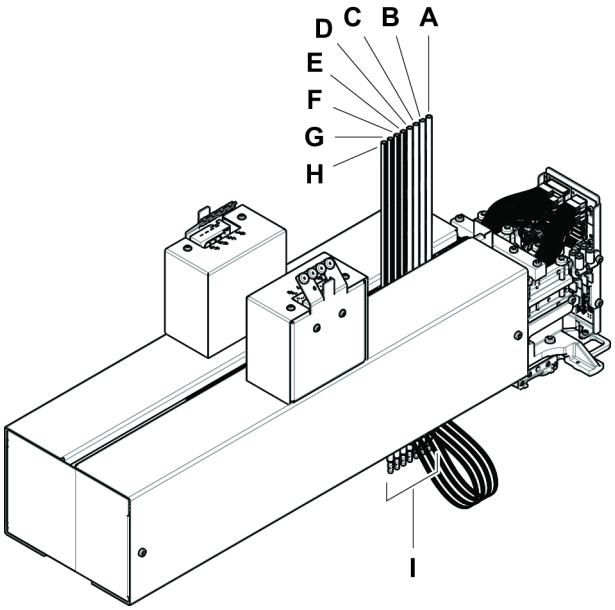


Fig. 9: 8-channel FCA ARP

A	Channel 1	**B**	Channel 2	**C**	Channel 3
D	Channel 4	**E**	Channel 5	**F**	Channel 6
G	Channel 7	**H**	Channel 8	**I**	Tip interfaces

4.4 Air Restriction Pipettor

Air Restriction Pipettor (ARP) is a pressure controlled pipetting system.

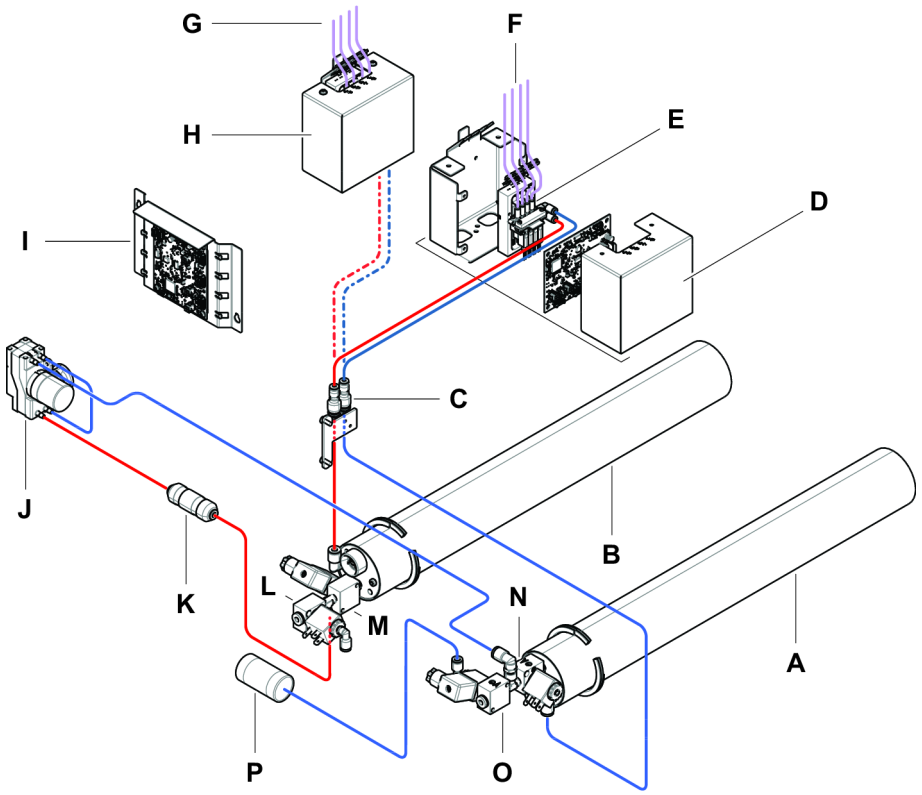


Fig. 10: Air Restriction Pipettor

A	Negative pressure tank	B	Positive pressure tank
C	Tube reduction	D	Pipetting unit (channel 1–4)
E	Valve block assembly	F	Pipetting tubing (channel 1–4)
G	Pipetting tubing (channel 5–8)	H	Pipetting unit (channel 5–8)
I	ARP main board	J	Pump
K	Particle filter	L	Positive vent. valve
M	Positive tank valve	N	Negative tank valve
O	Negative vent. valve	P	Dehumidifier

4.5 Gripper Arm

The RGA provides the moving of labware to peripheral devices and storage mounted on top, below or to the sides of the worktable. The RGA consists of the Tool Arm, the Gripper Head and various Gripper Fingers depending on the application.

4.5.1 Components

Arm Parts

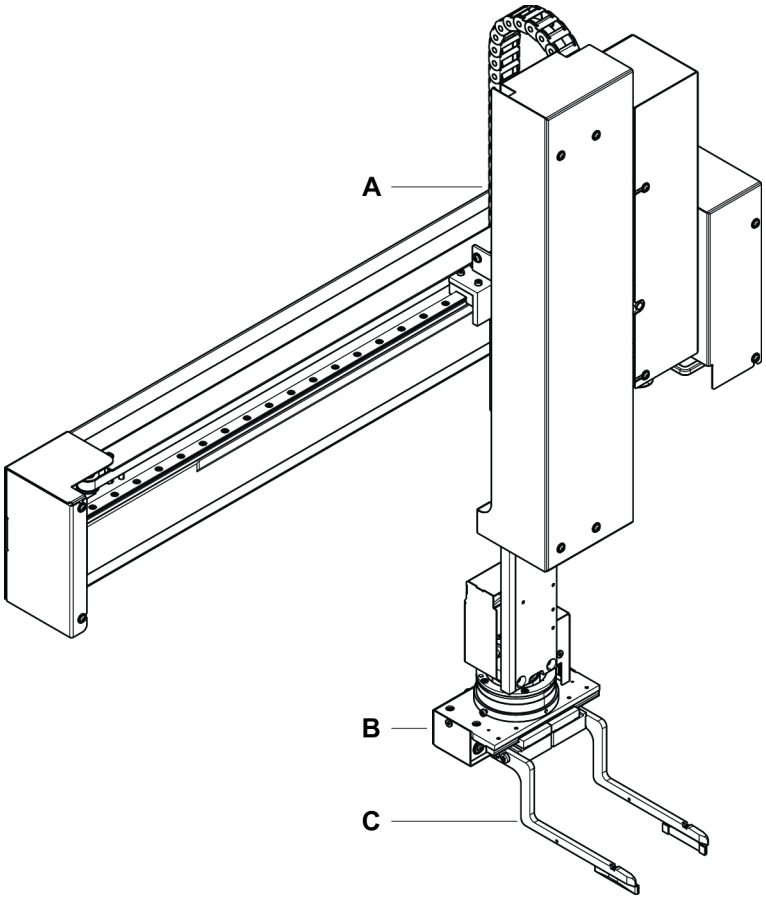


Fig. 11: Arm parts

A	Tool Arm	**B**	Gripper Head
C	Gripper Fingers		

Arm Axis

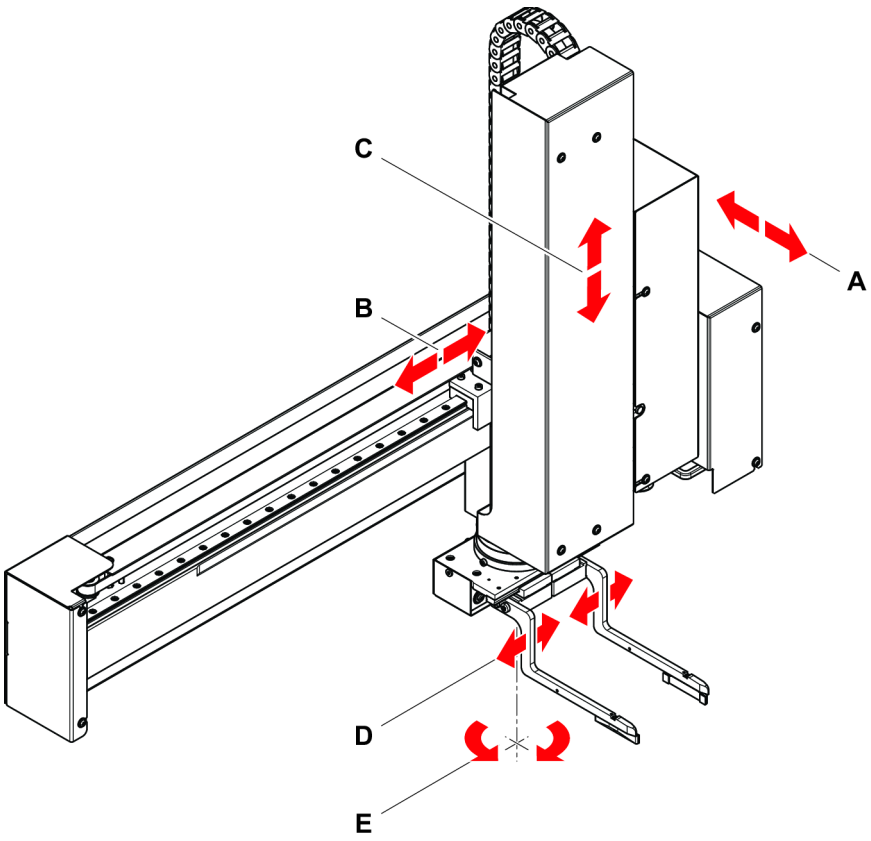


Fig. 12: Arm axis

A	X-axis	**B**	Y-axis
C	Z-axis	**D**	G-axis
E	R-axis		

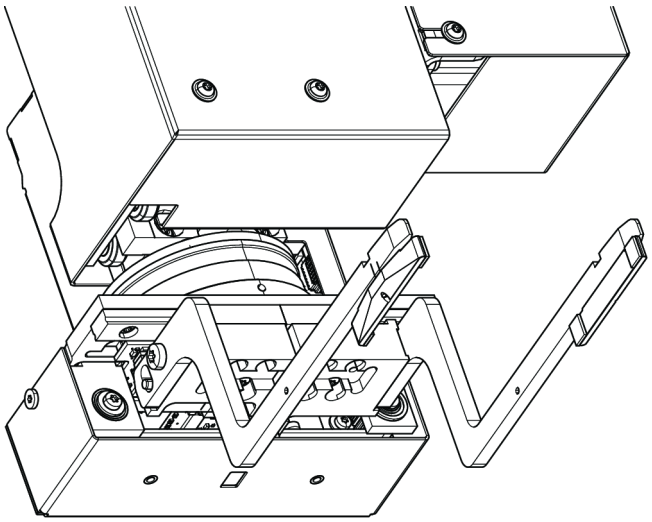
4.5.2 Gripper Fingers

The Gripper Head is equipped with Gripper Fingers.

Eccentric Fingers

Eccentric Fingers transport different objects (like SBS format microplates, deep well plates, plate lids, tip boxes) within and beyond the pipetting area to the sides and below the pipetting area. Gripper Heads with Eccentric Fingers are positioned to the side of the target site. The target labware is grasped from the side by the

fingers.



4.6 Channel Gripper

The CG is a module to transport labware on the worktable. The grippers are placed on the station and can be picked up when needed.

4.6.1 Channel Gripper

Channel Gripper

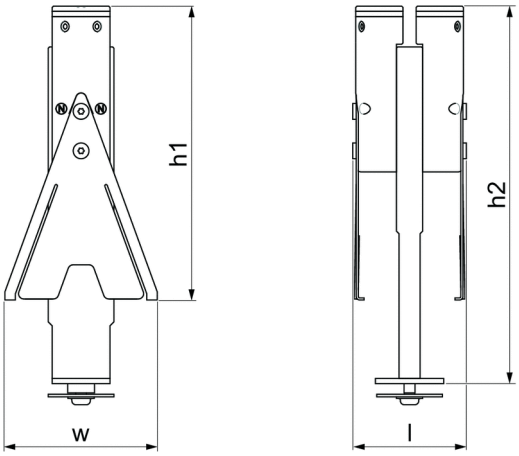


Fig. 13: Channel Gripper dimensions

Component	Dimension Length (l) x Width (w) x Height (h1)
Channel Gripper	43.0 x 58.0 x 112.0 mm (1.7 x 2.3 x 4.4 in)
	h2 correlates with the height above the worktable. 144.0 mm (5.6 in)

Component	Weight
Channel Gripper	312.0 g (0.69 lb)

4.7 DiTi Drop Station

A Veya equipped with an ARP option requires the installation of DiTi drop stations on the worktable. For each DiTi drop station a mounting frame is fixed on the worktable. The DiTi drop station itself can be removed for maintenance purpose by pushing it to the back and lifting it out of the frame. For each DiTi drop station a waste bin must be placed in the waste drawer at sub worktable level to collect the used DiTi.

Note: Do not unscrew the mounting frame of the DiTi drop station.

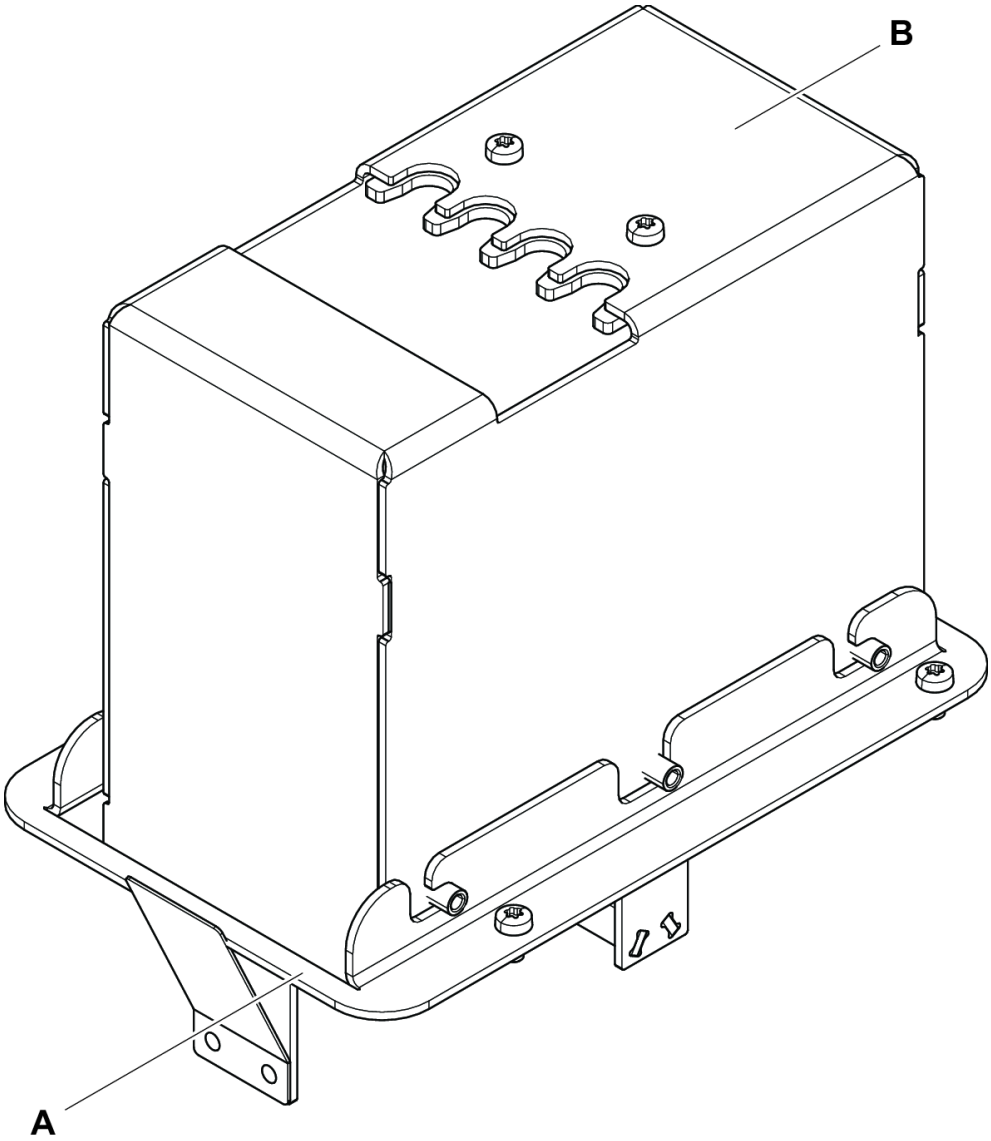


Fig. 14: DiTi Drop Station

A	Frame	B	Drop station

4.8 Loading ID

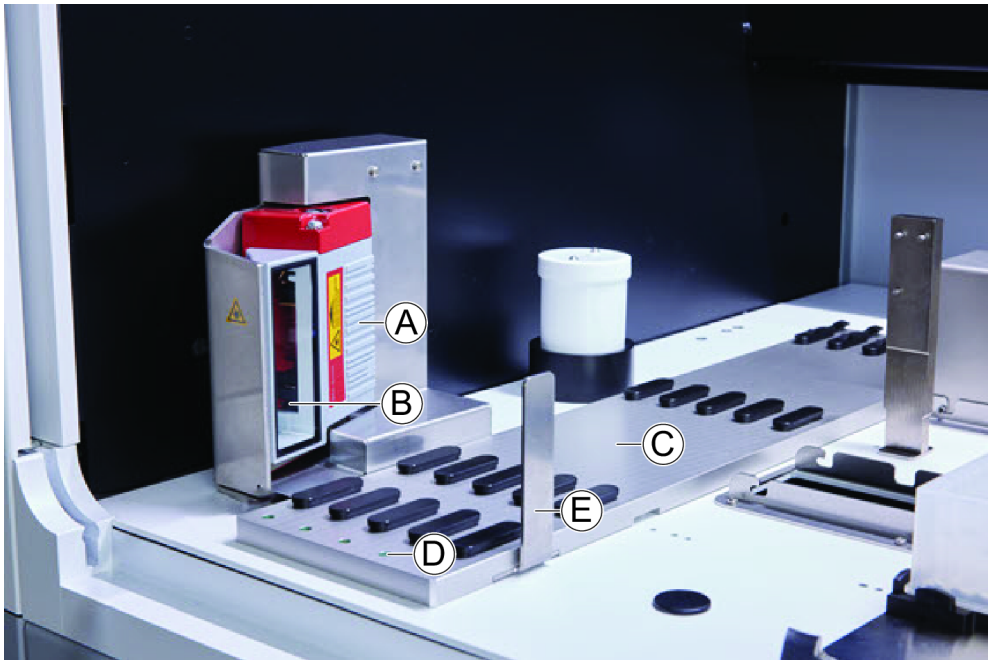


Fig. 15: Loading ID

A	Scanner housing	**B**	Laser barcode scanner
C	Loading area	**D**	LEDs
E	Reflector		

The Loading ID is an optional module that can be incorporated to scan tube barcode labels as tube runners are loaded onto the deck. Each Loading ID module includes 5 dedicated grid positions for loading and scanning the barcode labels of up to 5 runners. The reflector is used to detect empty tube positions in a runner. A graphic interface on the touchscreen monitor provides guidance for the Loading ID operation.

The laser radiation from the barcode scanner is a low-power, collimated beam in the visible spectrum with the following properties:

- Wavelength: 655 nm
- Pulse duration: 150 µs
- Maximum power of energy output: 1.0 mW

Tecan recommends the code 128, as this code contains a checksum. For information on risks and safety, refer to "Safety Information" [▷ 18].

4.8.1 Loading ID Compatible Tube Runners

The Loading tube runners are each designed for one type of tube:

- Runner with 32 positions for 10 mm diameter tubes
- Runner with 32 positions for 13 mm diameter tubes
- Runner with 26 positions for 16 mm diameter tubes

- Runner with 32 positions for 2ml Eppendorf Safe-Lock tubes

Optional plugs can be used to block two positions of a 26-position runner in order to use it as a 24-position runner, allowing parallel pipetting out of tubes in multiples of eight.

5 Control Elements

5.1 Error Signals and Instrument Status

The status LED indicate the instrument status by means of different color, steady or flashing lights.

Tab. 12: Light signals from status lamps

Signal	Color	Mode	Instrument status
	–	off	The instrument is switched off (disconnected from the power supply).
	white	“heartbeat”	The instrument is switched on (control software connected, modules not initialized yet).
	white (power lamp only)	continuous	Instrument “power on” state (control software is not connected).
	color scheme of user interface	“heartbeat”	**Idle mode** All modules are initialized; the instrument is ready to run a method. After about one hour in Idle mode, the instrument will switch to standby mode.
	yellow	continuous	**Teach mode** The instrument “learns” positions. In this mode the user can move the robotic arms manually.
	green	continuous	A method (script or process) is running. This is the regular **“production” mode**.
	red	flashing	**Error state** The control computer screen or the touchscreen displays an error message.
	color is user configurable	flashing	**User prompt** System waiting for a user interaction.
	green	flashing	**Active stop** This is an intentional pause triggered by the runtime controller or by opening a safety panel. The instrument pauses to allow user interaction with the deck. The operator can resume the method.

5.2 Loading ID Status LEDs

Fig. 16: Loading ID LEDs

The Loading ID LEDs signal the following states:

Tab. 13: Loading ID LEDs

Signal	Color	Mode	Instrument status
	–	off	Loading ID is idle.
	white	continuous	Loading ID power on (but not yet initialized).
	blue or custom color	flashing	Ready for runner loading or unloading.
	green	continuous	Barcodes successfully scanned. Runner supervised. Do not unload as this will interrupt the run.
	red	flashing	Error state Error message and required action are displayed on the touchscreen.

6 Operation

Tecan recommends that the operator attends an operator training course. Please ask the Tecan Customer Service about available courses. Refer to section "Customer Support" [89].

6.1 Operating and Display Elements

6.1.1 Mains Power Input

The mains power input of the Veya is protected by two 15 A fuses. Always use a power cord which is rated 15 A or higher.

The internal fuses of the electronics of the Veya are not user serviceable. A blown fuse requires the equipment to be checked for the reason of this condition. In case of a blown fuse contact your local service organization.

The Veya must be connected to a grounded power source using an approved power cord with grounding conductor.

6.1.2 Power Button

Location

The power button (A) of the Veya is located on the left-hand side of the instrument.

Note: In case of emergency the disconnection of the power must be done by unplugging the power cord. Ensure that the power cord is reachable at any time!

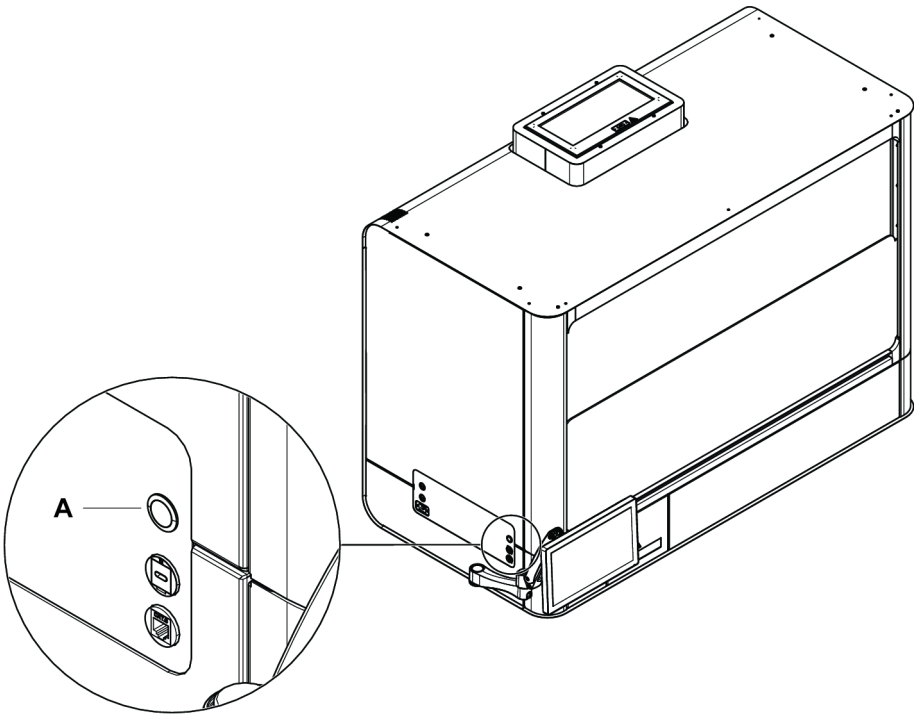


Fig. 17: Power button location

6.2 Operating the Base Unit

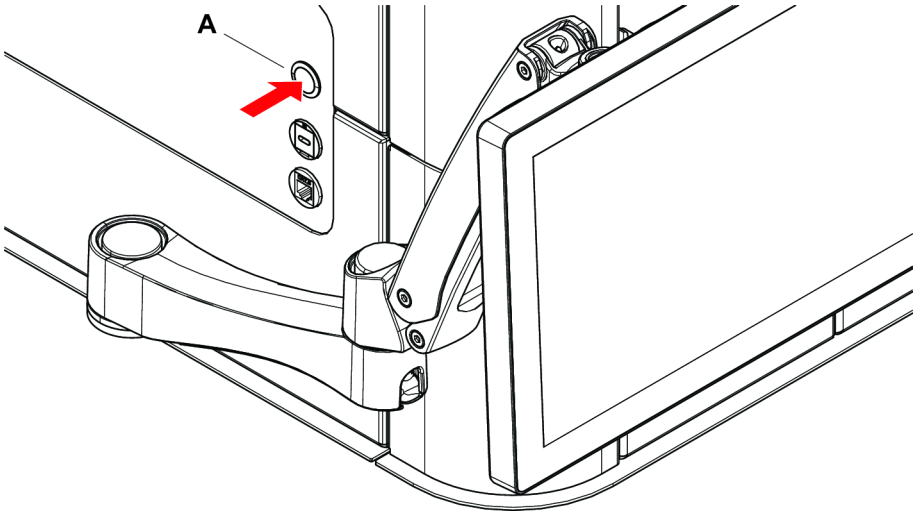
6.2.1 Switching On and Off

The instrument does not have a stand-by mode.

Switching on

To switch on the Veya, proceed as follows:

1. Switch on the power by pressing the power button (A).



Switching off

The Veya is switched off by exiting application/ shutting down windows.

For a forced shut down, press the buttom for 5 seconds to shut down the instrument and optional computer.

6.2.2 Adjusting the Touch Screen

For your comfort the touch screen can be swivelled in any direction.

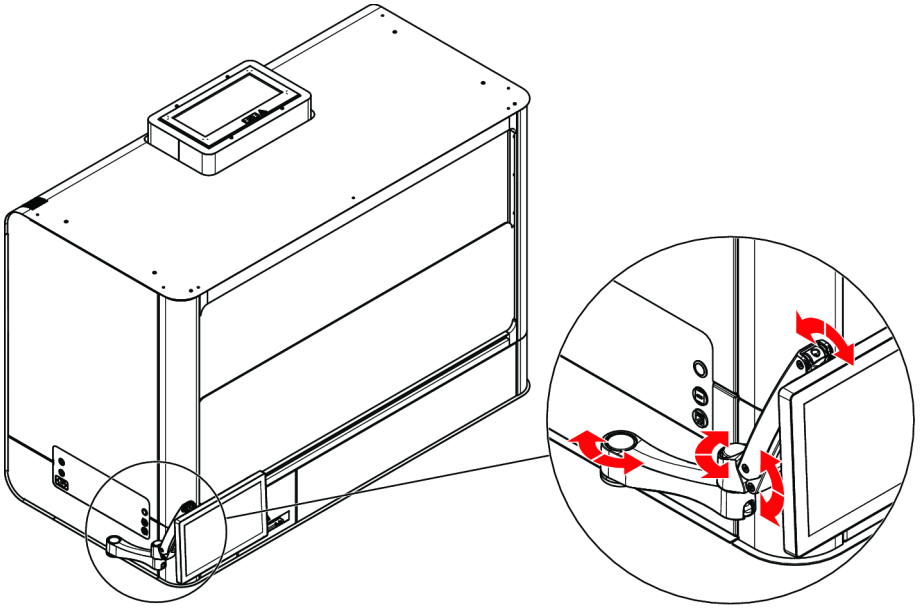


Fig. 18: Adjusting the touch screen

6.2.3 Status LED

Above the housing opening there is an LED bar (A) showing the current status of instrument and the application software.

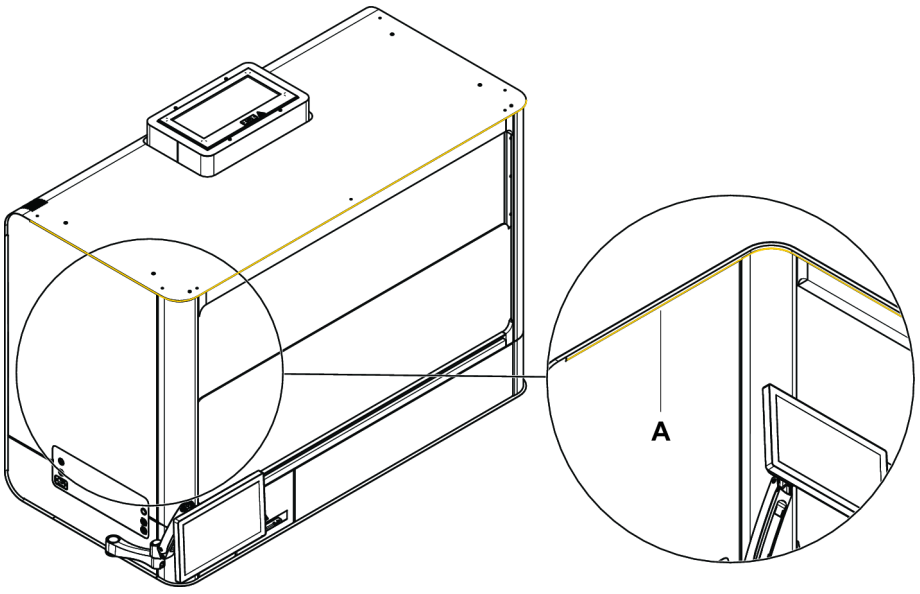


Fig. 19: Status LED

Note: Refer to the section “Error Signals and Instrument Status” [▷ 52] for the LED status.

6.2.4 Opening the Front Safety Panel

To open the front safety panel the door lock is disengaged either by the application (e.g. at the end of a run) or after the instrument has been switched off. Then the front safety panel can be elevated holding the rail at its bottom end. Mind your fingers when lowering the front safety panel. Keep them off the lower rail to prevent jammed fingers.

The front safety panel is monitored by a door sensor.

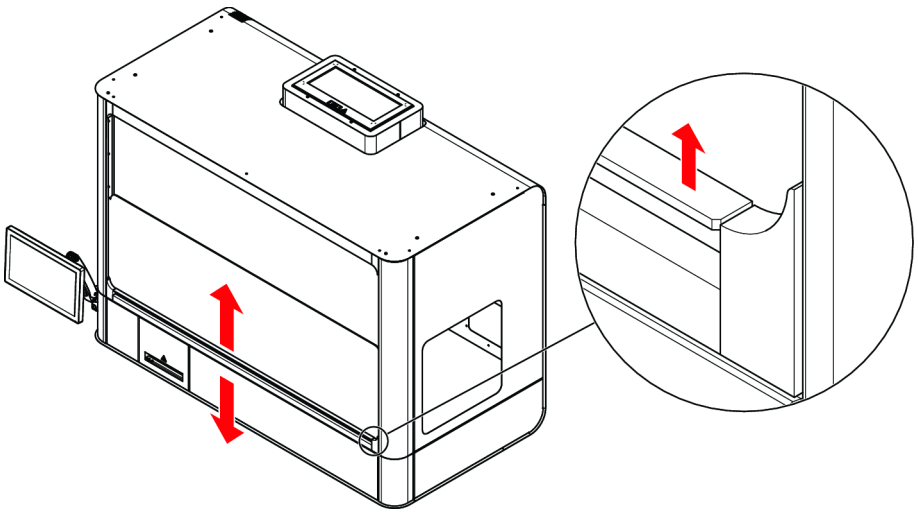


Fig. 20: Opening the front safety panel

6.2.5 Operating the Waste Drawer

The waste drawer can host up to two waste bins in order to collect used DiTis. The waste bin is for one way usage and can be disposed together with the DiTis. For the disposal refer to the local regulation. Autoclaving before disposal reduces the risk of biohazard.

The waste bin must be exchanged according to the instruction of the application software.

NOTICE

Do not operate the instrument without waste bins inserted!

Used DiTis might contaminate the waste drawer.

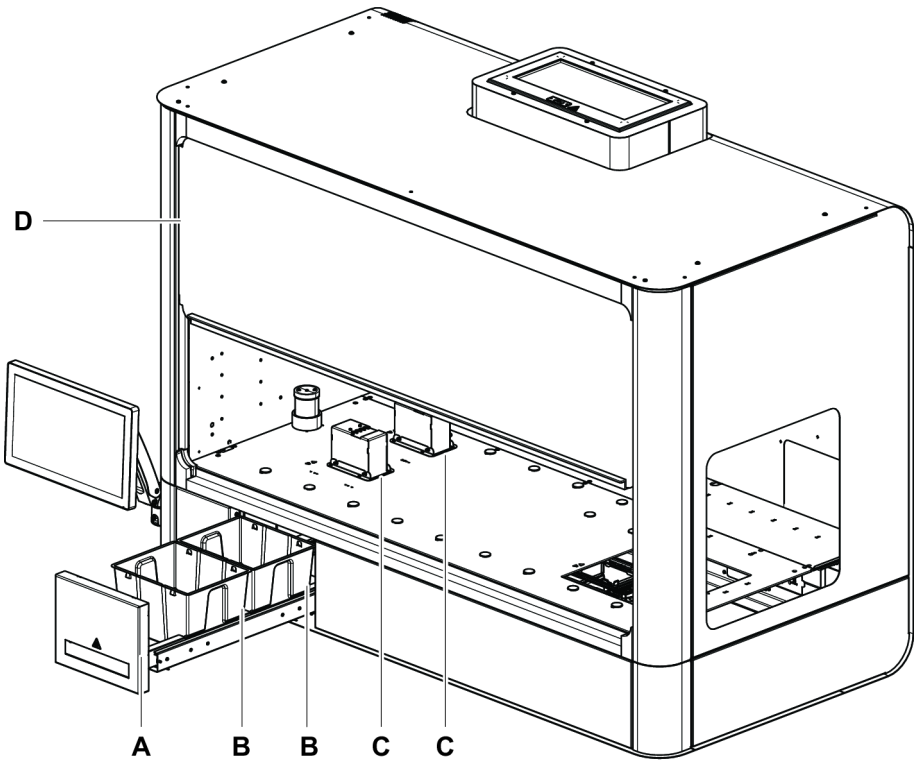


Fig. 21: Waste drawer

A	Waste drawer	B	Waste bin
C	DiTi drop station	D	Front safety panel

Exchanging the Waste Bin

Ensure the application has released the door lock or the instrument is switched off.

1. Elevate the front safety panel.
2. Pull out the waste drawer.
3. Remove the waste bin(s).
4. Insert new waste bin(s).
5. Push the waste drawer back.
   Note: Ensure the waste drawer is fully pushed back.
6. Lower the front safety panel.

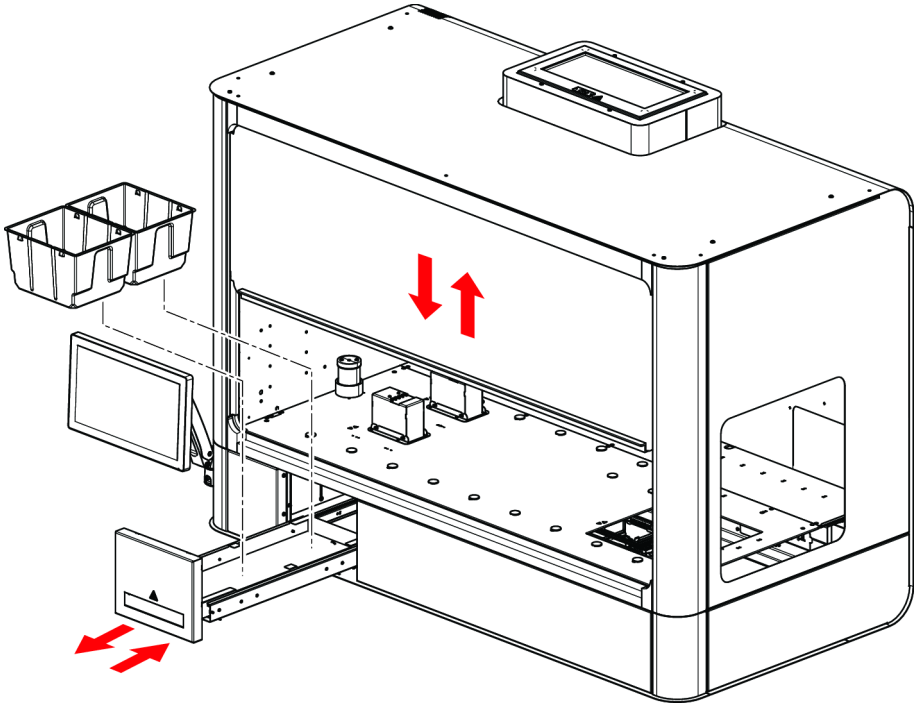


Fig. 22: Exchanging the waste bin(s)

6.2.6 DiTi Drop Station

Removal

1. Push the DiTi drop station (A) slightly towards the right side of the instrument.
2. Lift the DiTi drop station and remove it.

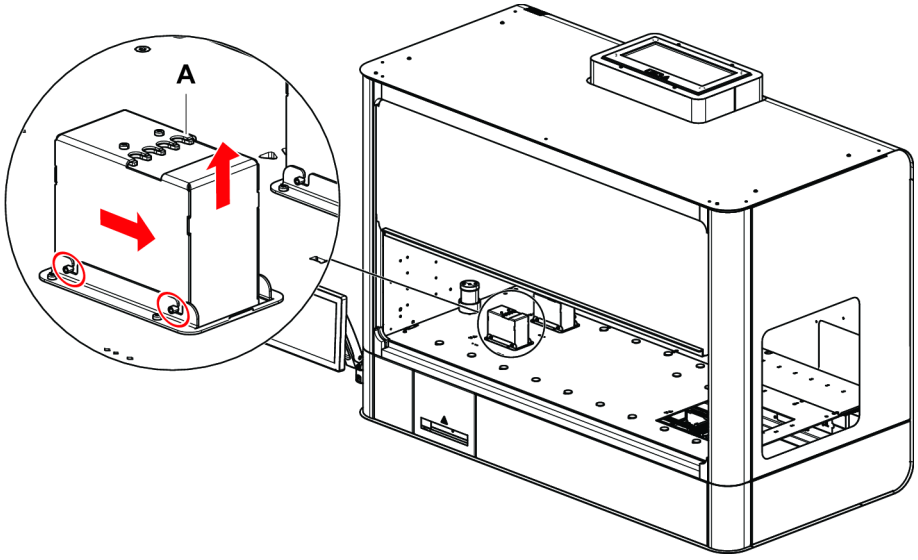


Fig. 23: Removing the DiTi drop station

Installation

1. Lower the DiTi drop station into its base frame. Ensure that the four pins are fully inserted in the corresponding recesses.

2. Pull the DiTi drop station towards the left side of the instrument until the pins are fully engaged.

6.3 Operating the Gripper Arm

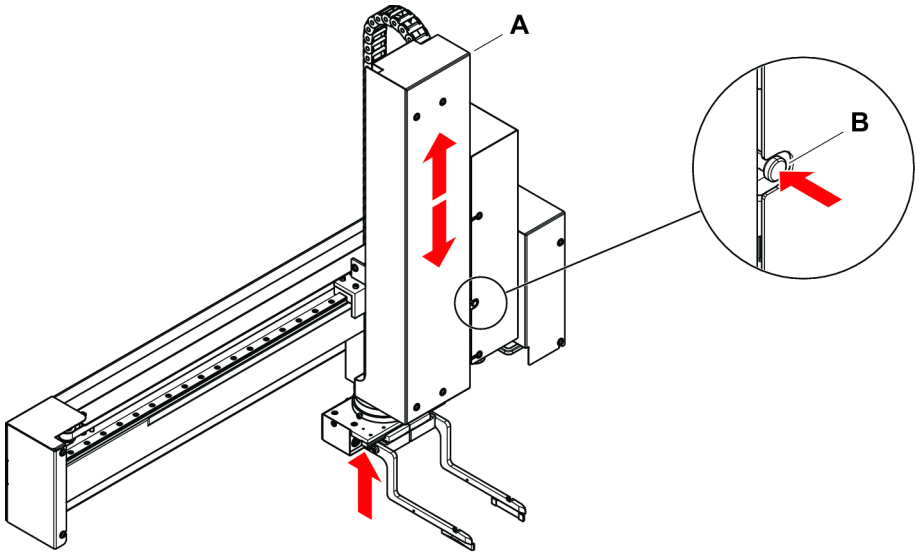
The RGA is software-controlled.

6.3.1 Operating Elements

In case the RGA needs to be moved manually, the RGA integrates a button for the Z-brake and a slider for the G-brake that allows a free movement of the RGA along the Z-axis or G-axis.

Z-Brake

1. Power off the RGA.
2. Support the Z-axis assembly (A) by holding the Gripper Head from underneath.
3. Press the Z-brake button (B) and keep it pressed.
   Note: The Z-axis assembly weights about 5 kg.
4. Lower or lift the Z-axis assembly.
   Note: Z-axis assembly can also be lifted without pressing the Z-brake button, but not lowered.

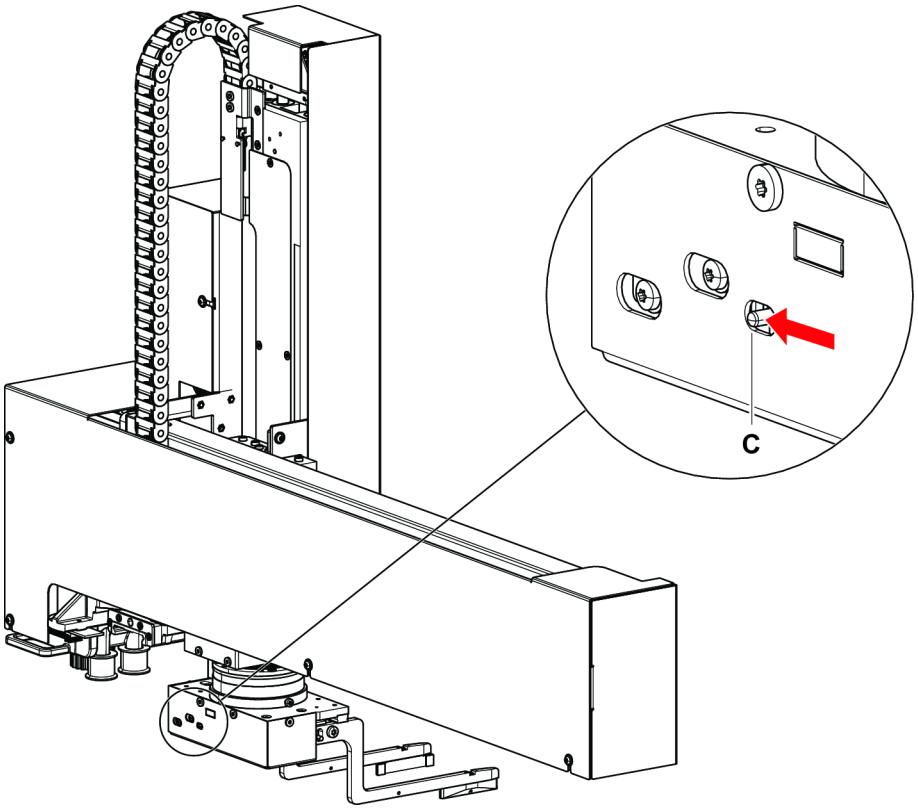


5. Once the required position is reached release the Z-brake button. Reduce your support by carefully lowering your hand until the brake engages.

G-Brake

1. Power off the RGA.

2. Slide the G-brake button (C) to the left and keep it in position.
   Note: Be aware that any gripped labware will fall down once the brake release is activated.



6.4 Loading and Unloading ID Runners

⚠ CAUTION

The Veya is a class 1 laser product pursuant to IEC 60825-1:2014 that emits laser radiation.

Dazzle, flash-blindness and afterimages may be caused by the laser beam.

- Do not stare into the laser beam or into its reflections.

6.4.1 Loading ID Runners

NOTICE

Damage due to improper loading or unloading

Damage to runners and pins.

- Align the runner horizontally with the deck.
- Support the front end of the runner with one hand.
- During unloading, ensure that the runner clears all pins before lifting the runner.

✓ Veya is equipped with a Loading ID.

✓ Tubes are loaded in the runners with barcode label facing left.

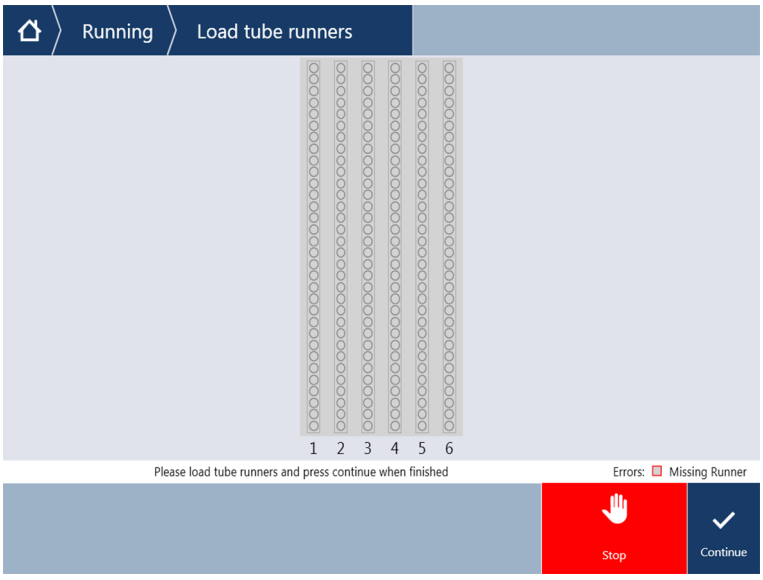
✓ All the tubes in a runner have the same size and shape. For tube runner types refer to section “Loading ID Compatible Tube Runners” [▶ 50].

1. Select and start the method using the touchscreen.

   *The LEDs start flashing and the message **Please load tubes** is displayed on the touchscreen.*

   When using different tube types, ensure that the correct type of runner is used for each specific grid.
2. Support the front end of the runner with one hand.
3. Hold the runner horizontally at the level of the deck.
4. Push the runner to the stop position.

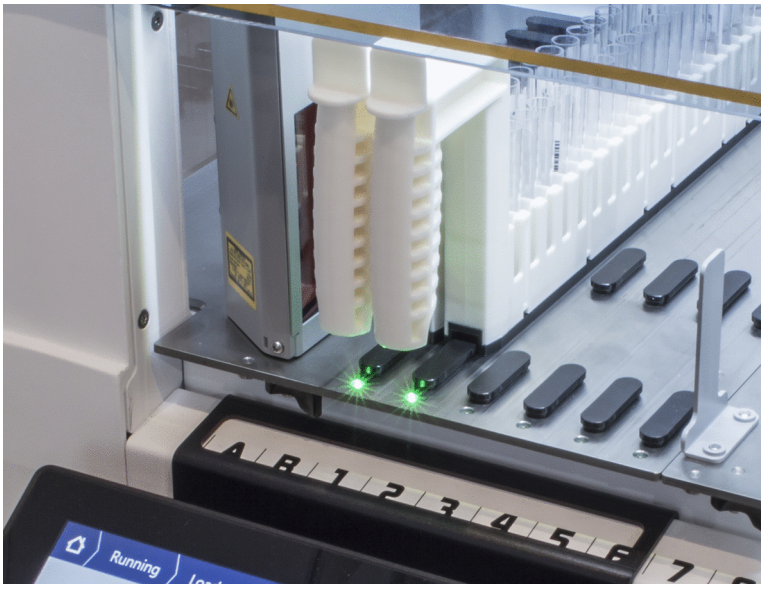
5. Slide the tube runners, one after another, onto the dedicated grids in the ID loading area.



6. Check that all barcodes were successfully scanned.

   The LEDs turn green when the tube runners are in the loaded position and all barcode labels have been scanned successfully.

   For Loading ID LED status description refer to section "Loading ID Status LEDs" [▸ 53].



7. In the event of a barcode scanning error, unload the runner, correct the problem and load the runner again.
8. Pull the runner horizontally along the deck until it is fully removed.

The Loading ID reads every code multiple times as it passes the scanner. For small and narrow tubes (i.e., diameter ≤ 10 mm) reduce the speed of manual loading to enable all reads and reduce error reports.

Fig. 24: Barcode reading confirmation displayed on the touchscreen

Tab. 14: GUI meaning (runner)

Square (runner)	Meaning
Green	All tube barcodes in runner read successfully.
White with red outline	Wrong type of runner for this grid position.
Grey with red outline	Missing runner. A runner should be loaded in this grid position.

Tab. 15: GUI meaning (tube position)

Circle (tube position)	Meaning
Green	Barcodes successfully read.
Red	Unreadable barcode
Orange	Duplicate barcode
White with red outline	Missing tube. A tube should be loaded in this position.

When the 2 ml Safe-Lock tube runner is used, it is not possible to differentiate missing tubes from unreadable barcodes. Missing tubes are reported as unreadable barcodes.

6.4.2 Unloading ID Runners

✓ The run has finished or a run is in progress and the LEDs are flashing with the message **Please unload tubes** displayed on the touchscreen.

1. Pull the runner horizontally along the deck until it is fully removed.

6.5 Teaching

For further information on teaching, please refer to the Veya Application Software Manual Manual.

The screws on the plugable reference pin must be tightened with Torx 6 to ensure a proper teaching.

7 System Care and Repair

7.1 Decontamination

⚠ WARNING

Injuries due to biohazardous material!

Depending on the applications, parts of Veya and used consumables may have been in contact with biohazardous material that can cause injuries.

- The instrument must be thoroughly disinfected before any service is performed on it.
- The disinfection procedure and the disinfectants should be conform to the relevant national laws and regulations.

⚠ WARNING

Risk of fire or explosion!

Disinfecting the instrument that is still connected to the main power supply can cause severe injuries and burns.

- Disconnect the instrument from the main power supply prior to the disinfection procedure.

Decontamination, according to standard laboratory regulations, is required under the circumstances listed in section “Decontamination Declaration” [▷ 21].

The decontamination method must be defined by the key operator based on the type of contaminant and degree of contamination. Guidance on the selection of decontamination agents and application modes is provided in this chapter.

7.2 Cleaning Agents Specifications

Special cleaning agents are required for system care. All the recommended cleaning agents have been carefully selected and tested.

NOTICE

Reduced effectiveness and chemical compatibility!

There is no guarantee for the effectiveness of cleaning agents and chemical compatibility if other cleaning agents than those recommended by Tecan are used.

- Only use cleaning agents recommended by Tecan.
- Cleaning agents are defined for each specific use in the system care tables. Do not use cleaning agents if not specified for use for a specific task.

The following table specifies the cleaning agents referred to in this manual:

Tab. 16: Cleaning agents

Agent	Specification
DI water	Distilled or deionized water

Agent	Specification
Alcohol	70% ethanol or 100% isopropanol (2-propanol)
Weak detergent	Liqui-Nox
Disinfectant	Bacillol plus, Bomix, Lysetol FF
Base	0.025–0.25 mol/l NaOH
Bleach	6% sodium hypochlorite

7.3 Maintenance Schedule

To ensure optimum performance and reliability, perform the maintenance and cleaning tasks as recommended.

7.3.1 Daily Maintenance

The following preventive maintenance tasks must be performed at the end of each day:

Component	Task	Reference
DiTi Drop Station Slide	Empty and decontaminate trash bin with 70% ethanol or replace the waste bag with a new one	Refer to section “Cleaning the DiTi Drop Station” [▶ 76]

7.3.2 Weekly Maintenance

The following preventive maintenance tasks must be performed at the end of each week:

Tab. 17: Weekly maintenance

Component	Task	Reference
Base Unit	Clean the waste drawer	Refer to section “Cleaning Agents Specifications” [▶ 66].
	Rinse the DiTi drop station with 70% ethanol	Refer to section “Cleaning the DiTi Drop Station” [▶ 76]
	Clean the touch screen with <70% ethanol	Refer to section “Cleaning Agents Specifications” [▶ 66].

Component	Task	Reference
RGA gripper fingers	Clean the RGA gripper fingers with 70% ethanol	Refer to section “Cleaning the Gripper Arm” [▶ 73]

Component	Task	Reference
RGA eccentric gripper fingers	Visually check that the eccentric fingers are straight and level	Refer to section "Checking the Gripper Fingers" [▷ 74]

Tab. 18: Weekly maintenance

Component	Task	Reference
Loading ID	Check the Loading ID for dust, damage and removal.	If the Loading ID is dusty/ dirty, clean it with a weak detergent. Refer to section "Cleaning Agents Specifications" [▷ 66] If the Loading ID is damaged or removed, please consult the "Customer Support" [▷ 89].

Tab. 19: Weekly maintenance

Component	Task	Reference
Pipetting System	Pipetting System Check	Refer to section "Pipetting System Check" [▷ 76].

7.3.3 Monthly Maintenance

The following preventive maintenance tasks must be performed at the end of each month:

Tab. 20: Monthly maintenance

Component	Task	Reference
Base Unit	Clean all surfaces **except** the **X-rail** and the **HEPA filter** (if present).	Refer to section "Cleaning Agents Specifications" [▶ 66]. Cleaning agents for work-table: DI water, alcohol, weak detergent, disinfectant, base or bleach Cleaning agents for remaining surfaces: DI water, alcohol, weak detergent or disinfectant
	Clean the front safety panel with 70% ethanol using a lint-free, non abrasive tissue.	

Component	Task	Reference
FCA	Clean the arm housing with 70% ethanol	Refer to section "Cleaning the Channel Arm" [▶ 70]

Component	Task	Reference
ARP	Clean the pipetting unit housing with 70% ethanol	Refer to section "Cleaning the Air Restriction Pipettor" [▶ 70]
DiTi adapter	Check that the adapter is firmly screwed into the cLLD isolation block.	Refer to "DiTi Cone" [▶ 70]

Component	Task	Reference
CG	Clean with 70% ethanol	Refer to section "Cleaning the Channel Gripper" [▶ 75]

7.3.4 Bimonthly Maintenance (every two month)

Component	Task	Reference
Computer	Windows and Cyber Security Updates	Refer to section "Windows and Cyber Security Updates" [▶ 76].

7.3.5 Yearly Maintenance

The following preventive maintenance tasks must be performed every year or whenever a prompt for the corresponding software appears:

Tecan recommends to conduct a "Performance Check", which is carried out as part of the regular maintenance visit by the Tecan Service professional. Please contact the local Tecan service organization to schedule the regular maintenance visit.

This task will be carried out by a Tecan Service Professional on a yearly base if a Service Contract is in place.

Component	Task	Reference
Dehumidifier	Exchange	Refer to section "Exchanging the Dehumidifier" [▶ 72]

7.3.6 Quadrennial Maintenance (every four years)

This task will be carried out by a Tecan Service Professional on a quadrennial base if a Service Contract is in place.

Component	Task	Reference
CG DT	Exchange the gripper	Refer to section "Replacing the Channel Gripper" [▶ 76]

7.4 Maintenance Task

7.4.1 Cleaning the Channel Arm

Gently wipe the FCA with a lint-free tissue impregnated with the appropriate cleaning agent.

7.4.2 Cleaning the Air Restriction Pipettor

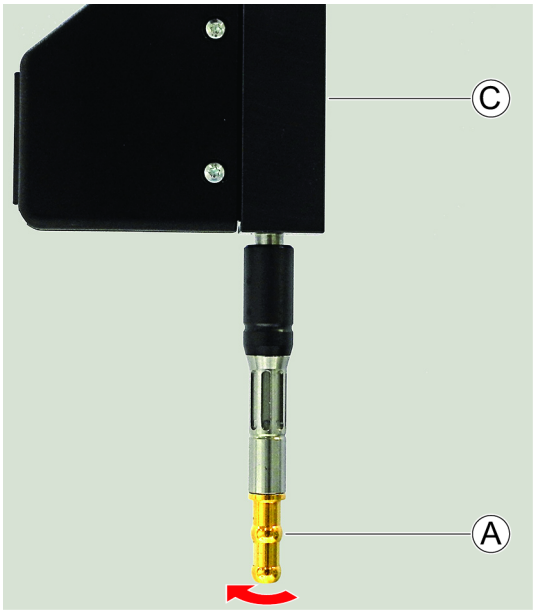
Gently wipe the pipetting unit housing of the ARP with a lint-free tissue impregnated with the appropriate cleaning agent.

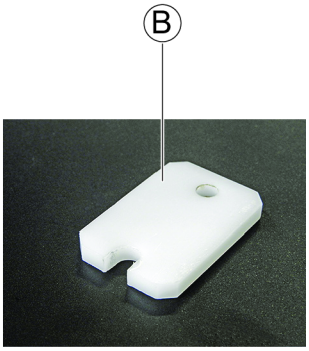
7.4.3 DiTi Cone

Note: The DiTi cone has to be handled with great care. Avoid any contact between cones and metal parts.

Removing

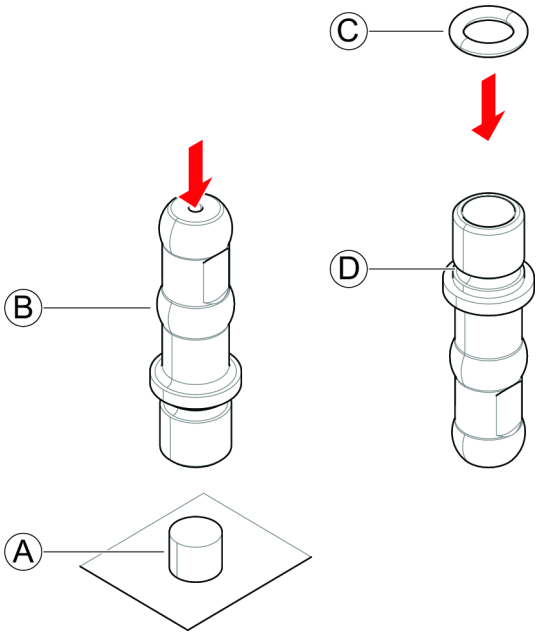
1. Loosen the DiTi cone (A) with the wrench (B) while holding the cLLD insulation block (C).





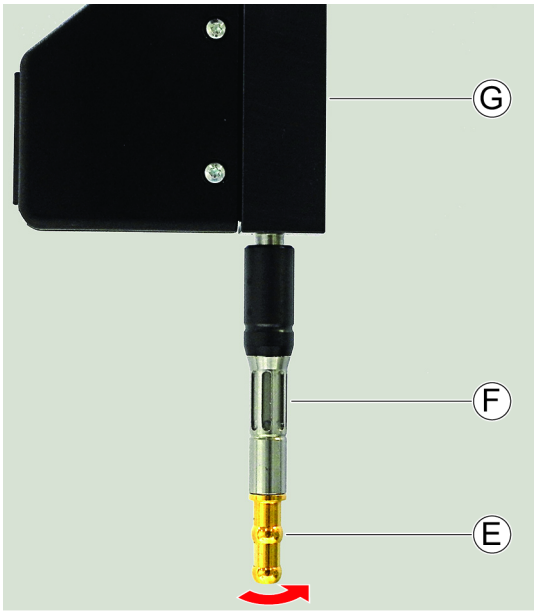
Installing

1. Place the inline filter (A) on a clean and even surface.
2. Press the DiTi cone (B) onto the inline filter.
   Note: The inline filter must not stick out from the DiTi cone.
3. Push the O-ring (C) onto the DiTi cone.
   Note: Ensure the O-ring is properly positioned in the groove (D).



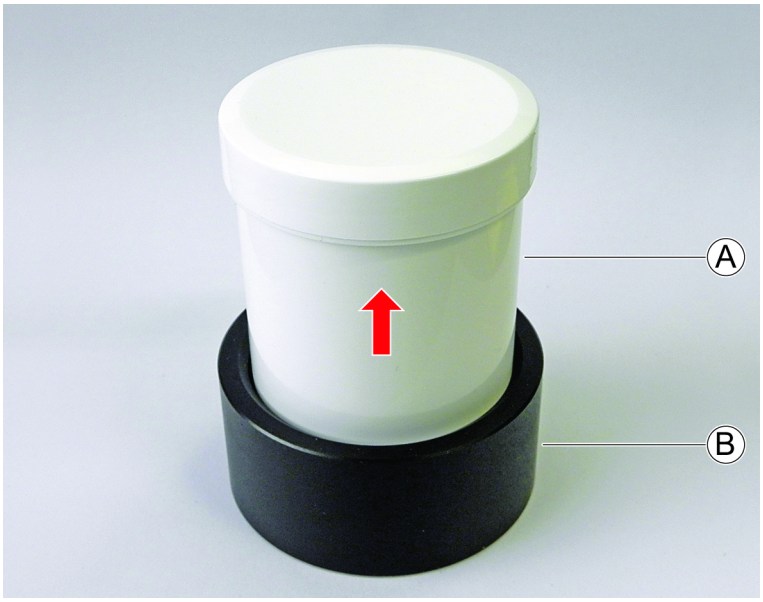
4. Screw the DiTi cone (E) on the adapter (F) while holding the cLLD insulation block (G).

5. Tighten the DiTi cone with the wrench.
   Note: There must be no visible gap between the cone and the adapter.



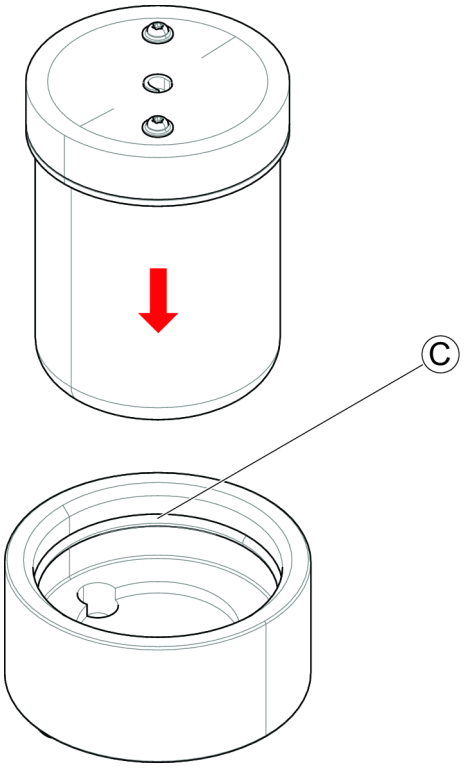
7.4.4 Exchanging the Dehumidifier

1. Pull the dehumidifier (A) straight out of its support (B).

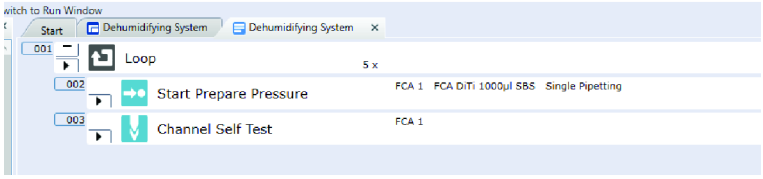


2. Remove any dirt present in the support and ensure that the cap of the new dehumidifier cartridge is closed tightly.

3. Ensure that the O-ring (C) is correctly placed in the support groove, then insert the new dehumidifier into its support.



If the humidity stays above 90% after exchanging the Dehumidifier, please run the following script which must be written by the user:

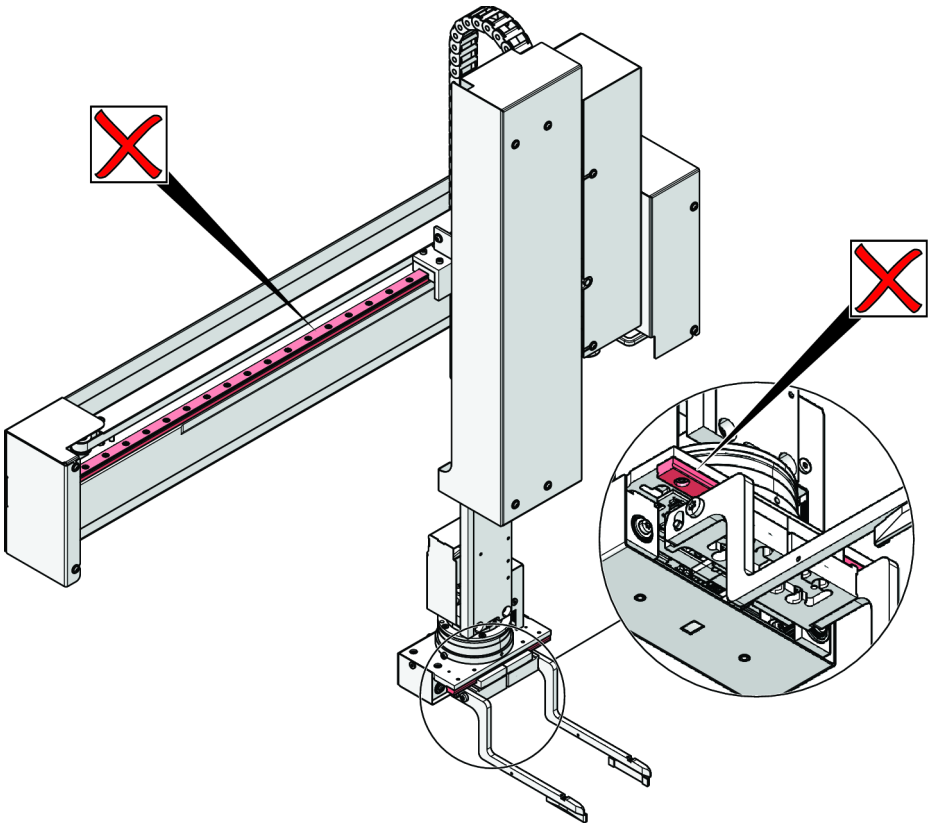


7.4.5 Cleaning the Gripper Arm

Gently wipe the RGA with a lint-free tissue impregnated with the appropriate cleaning agent.

Note: Never clean the linear rails and carriages (Y- and G-axis) or any inside of the cover, e.g. inside of the Y-axis where cables are running! Avoid direct application of the cleaning agent on the arm or submerging parts to be cleaned into the

cleaning agent.



Tab. 21: Cleaning parts

Part	Agent
Covers (outside)	DI water, alcohol, weak detergent, disinfectant, base, bleach
Gripper Fingers	Alcohol
Other surface	DI water, alcohol, weak detergent, disinfectant

7.4.6 Checking the Gripper Fingers

Visually check the Gripper Fingers whether they are still straight and level. The Eccentric Fingers may need to be adjusted after a crash.

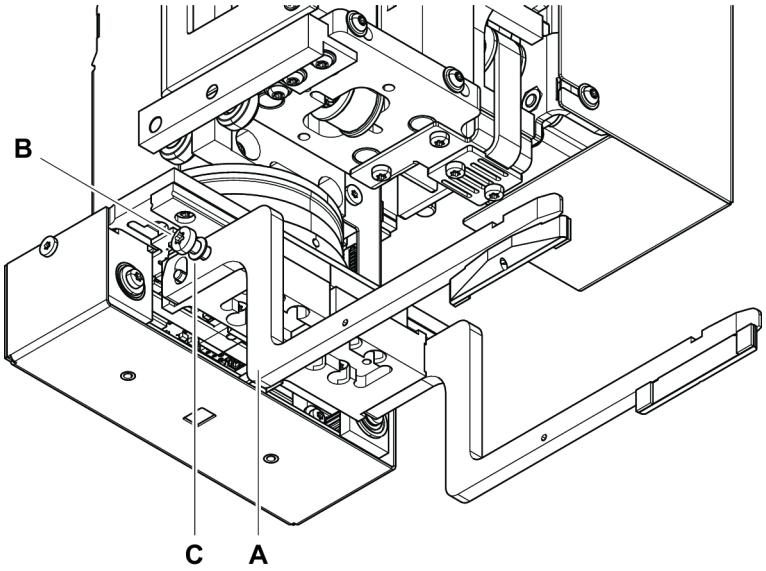
If the Gripper Fingers are out of alignment or bent adjust or replace them (Refer to "Adjusting the Gripper Fingers" [▷ 74]).

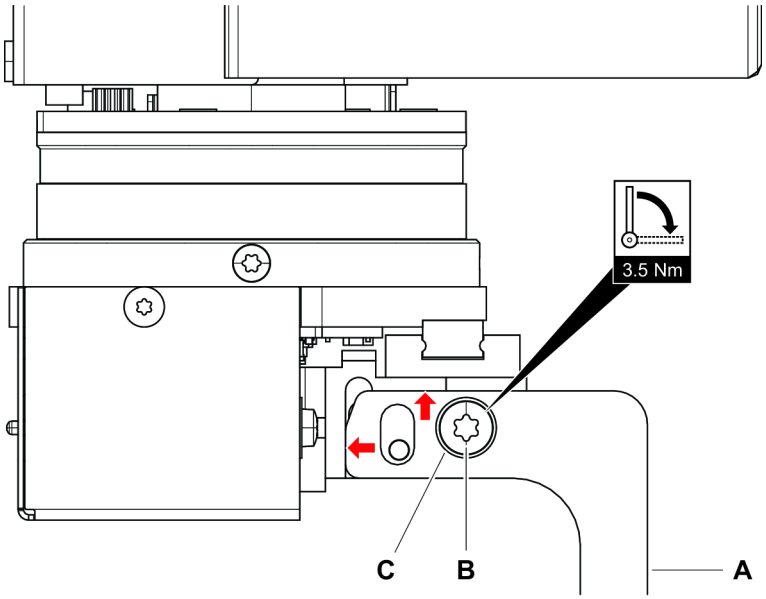
7.4.7 Adjusting the Gripper Fingers

Note: Replace the Gripper Fingers if they are bent.

1. Loosen the screws (B).

2. Press the Gripper Finger (A) towards the upper and the rear end stop of the Gripper Head.
3. Tighten the screw and the washer (C) with a torque of 3.5 Nm.
   Note: If no torque screwdriver is available, tighten screw until the washer is pressed flat and the resistance increases. Then tighten 1/12 rotation further. This corresponds to approx. 3.5 Nm.





7.4.8 Cleaning the Channel Gripper

Gently wipe the XCG with a lint-free tissue impregnated with the appropriate cleaning agent.

Note: Do not soak!

7.4.9 Replacing the Channel Gripper

1. Remove the grippers from the CG station.
2. Dock the grippers on the CG station.

7.4.10 Cleaning the DiTi Drop Station

- Pull out the waste drawer and remove the waste bin(s) with the used DiTis. Contaminate bin(s) and DiTis and – if required – autoclave them before disposal.
- Remove the drop station(s) and clean the surface with suitable cleaning solution (e.g. 70% ethanol).
- If necessary autoclave the drop station(s).
- Clean the drop comb(s) with a lint free tissue impregnated with rubbing alcohol or 70% ethanol.
- Clean the golden DiTi cones with a lint free tissue impregnated by rubbing alcohol.
- Fully reinsert the drop station(s).
- Place empty waste bin(s) in the waste drawer.
- Push the waste drawer back.
  Note: Ensure the waste drawer is fully pushed back.

7.4.11 Pipetting System Check

The Pipetting System Check is a test procedure for checking the functionality of the pipetting system.

Tecan recommends to run the method on a weekly base to ensure proper performance.

1. Place a Tightness Test Block labware on the worktable.
   Note: The position of the Tightness Test Block labware must be reachable for the pipetting arm.
2. Make sure that no disposable tips or channel gripper are mounted.
3. Run the Pipetting System Check.
   Note: The Pipetting System Check does not have any parameters. The check is always executed on all channels of the arm.
   Note: If the pipetting system check fails, the run will finish with errors.

7.4.12 Windows and Cyber Security Updates

It is in the responsibility of the user to search at least every 2 months for updates for windows and security updates, download the executable and run it.

The executable always contains all updates released in the last years.

1. Search for updates for windows and security updates.

2. Download the executable file.
3. Run the executable file.

8 Troubleshooting

Consult this chapter for help on resuming operation after a problem has occurred with your instrument or module. For further information or, in the event of problems not covered in this manual, or in insufficient detail, please consult section “Customer Support” [▶ 89].

8.1 Troubleshooting Tables

8.1.1 Base Unit Troubleshooting

Tab. 22: Base Unit Troubleshooting Table

Symptom	Possible Cause	Corrective Measures
No reaction on the Veya	Communication error	Switch off the Veya for 30 seconds, then switch it back on.

8.1.2 Channel Arm Troubleshooting

Tab. 23: FCA Troubleshooting Table

Symptom	Possible Cause	Corrective Measures
Communication error	Power is not ON. Power or communication is interrupted.	Switch off the instrument. Switch off the PC (external PC only). Check cable and plugs. Switch on the instrument and the PC.
X-, Y- or Z-drive is blocked	Obstacle	Move the FCA manually out of the crash position and remove obstacle.
Initialization error (arm cannot be initialized)	Obstacle	Check for obstacles. Ensure that the arm can move freely.

8.1.3 Gripper Arm Troubleshooting

Tab. 24: RGA Troubleshooting

Symptom	Possible Cause	Corrective Measures
Communication error	Power is not ON Power or communication is interrupted	Switch off the instrument. Switch off the PC (external PC only). Check cable and plugs. Switch on the instrument and the PC .
X-, Y-, Z-, G- or R-drive is blocked	Unexpected obstacle in the move path of RGA (Crash)	Move the RGA manually out of the crash position and remove obstacle. Re-initialization may be required .
Initialization error (arm cannot be initialized)	RGA initialization attempred in a confined space	Check for obstacles. Ensure that the arm can move freely. Ensure no labware is gripped.
Labware or nest handling fails	Misplaced labware or nest	Check position of the labware or nest to be transported.
	Wrong labware or nest	Check labware or nest type.
	Gripper Finger screws are loose	Tighten the screws (Refer to “Adjusting the Gripper Fingers” [▶ 74]).
	Eccentric Fingers are misaligned	Align the Gripper Fingers by tightening screws (Refer to “Adjusting the Gripper Fingers” [▶ 74]).
	Dirty or wet Gripper Fingers	Clean the Gripper Fingers (Refer to “Cleaning the Gripper Arm” [▶ 73]).
	Labware is too heavy	Check the weight of the deepwell plate (Refer to “Specifications” [▶ 33])

8.1.4 Air Restriction Pipettor Troubleshooting

Tab. 25: ARP Troubleshooting

Symptom	Possible Cause	Corrective Measures
Disposable tip not fetched	Insufficiently tightened DiTi cone	Tighten the DiTi cone (Refer to “DiTi Cone” [▶ 70]).

Symptom	Possible Cause	Corrective Measures
Disposable tip not discarded	Insufficiently tightened DiTi cone	Tighten the DiTi cone (Refer to “DiTi Cone” [▶ 70]).
Disposable tip drips	Dirty DiTi cone causes leakage	Clean the DiTi cone Exchange DiTi cone (Refer to “DiTi Cone” [▶ 70]).
High humidity in the dehumidifier (SW Error message)	Humidity level in the dehumidifier is too high	Exchange dehumidifier (Refer to “Exchanging the Dehumidifier” [▶ 72]).
Inline filter blockage (SW Error message)	Liquid in the inline filter causes blockage	Exchange the inline filter (refer to “DiTi Cone” [▶ 70]). If still failling, please consult the “Customer Support” [▶ 89].

8.1.5 Channel Gripper Troubleshooting

Tab. 26: CG Troubleshooting Table

Symptom	Possible Cause	Corrective Measures
Labware or nest handling fails	Misplaced labware or nest	Check position of the labware or nest to be transported.
	Wrong labware or nest	Check labware or nest type (Refer to “Recommended Labware and Nests” [▶ 38]).
	Gripper sits loose on the fixed-tip adapter or DiTi adapter (not fully inserted)	Check the tightness between gripper and adapter. Replace gripper if no remedy can be achieved.
Deepwell plate handling fails	Deepwell plate is too heavy	Check the weight of the deepwell plate (Refer to the approriate specifications in the chapter “Technical Data” [▶ 25]). Replace the gripper (Refer to Replacing the Channel Gripper).
Gripper(s) cannot be picked up	Retention force is too low	Replace the gripper (Refer to Replacing the Channel Gripper).
Gripper(s) cannot be docked	Retention force is too high Gripper finger is misaligned with the gripper body	Replace the gripper (Refer to Replacing the Channel Gripper).

9 Shutdown, Transport, Storage, and Disposal

Refer to chapter "Technical Data" [25] for information on environmental conditions.

NOTICE

Prevent damage by unqualified and unauthorized personnel!

Packing, unpacking, transport and storage may only be performed by Tecan personnel or personnel authorized by Tecan!

- Please consult the "Customer Support" [89].

9.1 Packaging Labels

Correct and complete marking of packaging helps to prevent incorrect handling, accidents, incorrect delivery, loss of weight and damage during storage.

Tab. 27: Packaging symbols

Symbol	Meaning	Description
	Recycle	The packaging material can be recycled. Do not dispose of as domestic waste. Information on the material used for this packaging is provided beneath the symbol.
	This side up	Ensure that the package is transported and stored with the top side, indicated by the arrows, uppermost. Do not topple over.
	Keep dry	Ensure that the package does not get wet during transport and storage.
	Fragile	Handle the package with care. There are fragile goods inside.
	Keep away from sunlight	Ensure that the package will not be exposed to heat during transport and storage. Protect against strong sunlight.
	Do not stack	Do not stack packages. The package is not designed to carry extra weight.

9.2 Disposal

This section includes regulatory information about recycling that must be followed.

NOTICE

Recycling in accordance with applicable legal regulations!

Observe the laws applicable in your country for recycling.

⚠ WARNING

Biohazardous material!

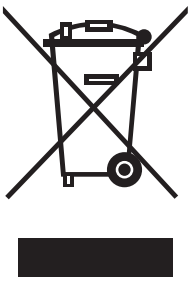
Depending on the applications, parts of Veya and used consumables may have been in contact with biohazardous material.

- Make sure to treat this material according to the applicable safety standards and regulations.

9.2.1 Local Requirements European Union

The European Commission has released the Directive on Waste Electrical and Electronic Equipment (WEEE; 2012/19/EU).

Since August 2005, producers have been responsible for taking back and recycling electrical and electronic equipment.

Marking	Explanation
	Negative environmental impacts associated with the treatment of waste. • Do not treat electrical and electronic equipment as unsorted municipal waste. • Collect waste electrical and electronic equipment separately.

9.2.2 Local Requirements People's Republic of China

Marking for the Restriction of the Use of Hazardous Substances in Electronic and Electrical Products

The People's Republic of China Electronic Industry Standard SJ/T11364-2014 **Marking for the Restriction of the Use of Hazardous Substances in Electronic and Electrical Products** requires the marking for the restriction of the use of hazardous substances in electronic and electrical products.

In accordance with the requirements specified in SJ/T11364-2014, all electronic and electrical Tecan products sold in the People's Republic of China are labeled with a marking for the restriction of the use of hazardous substances.

Marking	Explanation
	This marking indicates that this electronic product contains certain hazardous substances and can be safely used during the environment-friendly use period, but it shall enter the recycling system after the environment-friendly use period.

9.2.3 Other Requirements

Marking	Explanation
	This lamp contains mercury. • Recycle or dispose of as required by applicable local laws.

10 Spare Parts and Accessories

This chapter lists spare parts and accessories that are needed for maintenance and repair of your instrument or module including their corresponding ordering information.

How to Order Spare Parts

- Look up the ordering information in the tables.
- Order the parts from Tecan. Refer to “Customer Support” [89].

Always state the designation and the part number when ordering spare parts.

This chapter only contains spare parts that can be replaced by the operator. To order spare parts other than listed here please consult the “Customer Support” [89].

10.1 Instrument

Plain-Text Designation	Part No.	Label Designation
Dehumidification cartridge	30164606	DEHUMIDIFICATION UNIT ASSY ARP SP
Waste bin	30185747	WASTE BIN 36 PCE
Eccentric fingers	30042920	FINGER ECCENTRIC STD RGA
CORD POWER CH	30188550	CORD POWER CH BLACK 2M 16A
CORD POWER EU	30188551	CORD POWER EU BLACK 2M 16A
CORD POWER US	30188552	CORD POWER US BLACK 2M 15A
CORD POWER CN	30188549	CORD POWER CN BLACK 2M 16A
CORD POWER UK	30188554	CORD POWER UK BLACK 2M 16A

10.2 Modules

Loading ID

Plain-Text Designation	Part No.	Label Designation
Loading ID Magni Flex 5 Grid	30220497	MODULE MAGNI FLEX ID 1D LEFT 5 GRID
Carrier Loading ID 16 mm 1*22	30220547	CARRIER TUBE 16MM 1*22 LOADING ID
Carrier Loading ID 13 mm 1*27	30220548	CARRIER TUBE 13MM 1*27 LOADING ID
Carrier Loading ID 10 mm 1*27	30220549	CARRIER TUBE 10MM 1*27 LOADING ID
Carrier Loading ID Eppendorf 1*27	30220550	CARRIER TUBE EPPENDORF 1*27 LOADING ID

Inheco CPAC HT

Plain-Text Designation	Part No.	Label Designation
Inheco CPAC HT 2-TEC	30190574	POSITION CPAC 2-TEC MICROPLATE
Module Inheco Black Slot	30189718	MODULE BLACK SLOT
Inheco CPAC HT	30234672	POSITION HEATING/COOLING CPAC MICROPLATE
Module Inheco Blue Slot	30234841	BLUE SLOT MODULE
Cooling fan option	30238363	COOLING FAN OPTION
Adapter C 96 PCR Static Unit	30053222	BLOCK ADAPTER 96PCR PLATE INHECO
Adapter C Eppendorf Tubes, CPAC	30117360	BLOCK ADAPTER PLATE INHECO 1.5ML TUBES
Controller Multi TEC Compact	30188025	CONTROLLER MULTI TEC COMP CH

Teleshake AC 3mm

Plain-Text Designation	Part No.	Label Designation
Teleshake AC 3mm	30232811	SHAKER TELESHAKE 95 AC 3mm
Module Inheco Yellow Slot	30189717	MODULE YELLOW SLOT
Adapter S Eppendorf Tubes, Shaker	30053227	BLOCK ADAPTER TUBE INHECO 24POS 1.5ML
Adapter Abgene 2.2ml V DWP	30188026	BLOCK ADAPTER PLATE INHECO A 2.2ML V DWP
Adapter S 96 PCR Shaker	30053224	BLOCK ADAPTER PLATE INHECO MICRO 96PCR
Adapter Plate Thermoshake AC	30198570	ADAPTER PLATE THERMOSHAKE AC
Controller Multi TEC Compact	30188025	CONTROLLER MULTI TEC COMP CH

Inheco On Deck Thermal Cycler

Plain-Text Designation	Part No.	Label Designation
Inheco ODTC 96 Back	30245512	ODTC 96 INHECO VENT BACK MOD EJECT BARS
Positioner Carrier 2 MTP	30231810	POSITIONER CARRIER 2 MP 7MM ODTC ASSY

Plain-Text Designation	Part No.	Label Designation
Set cable ODTC	30249699	SET CABLE ODTC
Power cable	30231392	CABLE 3*14AWG 2.5M C20-C19
Ethernet cabel	30108995	CABLE FSN ETHERNET 3000MM 2*RJ45

HYDROFLEX (Plus) Washer

Plain-Text Designation	Part No.	Label Designation
HYDROFLEX™ (Plus)	CM 30025471	HYDROFLEX™ (Plus)

INFINITE F50 Robotics Reader

Plain-Text Designation	Part No.	Label Designation
INFINITE™ F50 Robotics	CM 30051599	INFINITE™ F50 Robotics

Inheco Incubator

Plain-Text Designation	Part No.	Label Designation
Plate Adapter Inheco Incubator	30249164	PLATE ADAPTER INHECO INCUBATOR
Incubator Single Plate MP Inheco	30232812	INCUBATOR SINGLE PLATE MP INHECO
Incubator Shaker Single Plate MP Inheco	30232813	INCUBATOR SHAKER SINGLE PLATE MP INHECO

10.3 Accessories

Plain-Text Designation	Part No.	Label Designation
Carrier 3 MTP	30159434	POSITIONER CARRIER 3 MP 7MM ASSY XWT
Carrier 4 MTP	30159436	POSITIONER CARRIER 4 MP 7MM ASSY XWT
Carrier 5 MTP	30159434	POSITIONER CARRIER 5 MP 7MM ASSY XWT
Carrier 3 MTP Elevated	30162891	POSITIONER CARRIER 3 MP 61MM ASSY XWT

Plain-Text Designation	Part No.	Label Designation
Carrier 4 MTP Elevated	30162892	POSITIONER CARRIER 4 MP 61 MM ASSY XWT
Carrier 5 MTP Elevated	30162893	POSITIONER CARRIER 5 MP 61MM ASSY XWT
Carrier XCG 3 MTP	30162890	POSITIONER CARRIER XCG 3 MP 7MM ASSY XWT
Carrier 3 MTP 3C	30231831	POSITIONER CARRIER 3MP 7MM C3
Adapter Plate Carrier 5 Positions	30164561	ADAPTER PLATE CARRIER 5 POS ASSY
Adapter Plate Twin Carrier 11 Positions	30164562	ADAPTER PLATE TWIN CARRIER 11 POS ASSY
Nest 7mm	30042780	NEST MP/DITI 7MM
Nest 61mm	30042781	NEST MP/DITI 61MM
Tube rack	30173647	TUBERACK ASSY 24X13MM
Plate Stacking DiTi box	30230834	PLATE STACKING DITI BOX

10.4 Tools

Plain-Text Designation	Part No.	Label Designation
Teaching plate	30250421	TEACHING PLATE
Plugable reference pin	30250424	REFERENCE PIN

10.5 Tips

The auto adjustment of the Air Restriction Pipetting System is only working reliable with Tecan tips. The calculation of all correction values necessary at different temperatures and altitudes for volume and Liquid Class settings are optimized for Tecan Tips.
The usage of other tip types may lead to lower accuracy and CV values of the system.

Plain-Text Designation	Part No.	Label Designation
Tecan Pure filtered 10µl	30104974	DITI LIHA 10µL COND.FIL. 2304 PCE. SBS
Tecan Pure filtered 50µl	30057813	DITI LIHA 50µL CONDU.FIL. 2304 PCE. SBS
Tecan Pure filtered 200µl	30057815	DITI LIHA 200µL CONDU.FIL. 2304 PCE. SBS
Tecan Pure filtered 1000µl	30057817	DITI LIHA 1000µL CONDU.FIL. 2304PCE. SBS
Tecan Pure filtered 5000µl	30065423	DITI LIHA 5000µL CONDU.FIL. 240 PCE.

Plain-Text Designation	Part No.	Label Designation
Small box for 10µl, 50µl and 200µl	30058506	LIHA DITI SBS BOX REFILL SMALL 10PCE.
Large box for 1000µl	30058507	LIHA DITI SBS BOX REFILL LARGE 10PCE.
100ml disposable reagent trough Polypropylene, natural 108 troughs Tecan Sterile	30157676	TROUGH DISPOSABLE 100ML PP TRA. 108 PCE.
100ml disposable reagent trough Polypropylene, gray 108 troughs Tecan Standard	10613049	TROUGH DISPOSABLE 100ML PP GREY 108 PCE.
25ml disposable trough for maximum reagent recovery Polypropylene, gray 120 troughs Tecan Pure	30055743	TROUGH DISPOSABLE 25ML PP 120PCE.

10.6 Wear and Tear

Plain-Text Designation	Part No.	Label Designation
Set of 4 DiTi cones	30172595	SET DITI CONE ARP 4PCS SP
Dehumidification cartridge	30164606	DEHUMIDIFICATION UNIT ASSY ARP SP

11 Customer Support

This paragraph explains which files and information Tecan requires to perform a first assessment of an issue.

If you have any comments on this Operating Manual or suggestions for improvement, please send them by e-mail to docfeedback@tecan.com. In your e-mail, please specify the manual name, the document ID and the manual version. This information is shown at the bottom of each printed page and on the first page of the help file (context-sensitive help of software products).

11.1 Contacts

Please contact your local distributor or importer or one of the addresses below.

Also see our homepage on the web: www.tecan.com

Tab. 28: Customer Support contacts

Country/Region	Address	Telephone/Telefax/E-mail	
Asia	Tecan Asia Pte Ltd. 18 Boon Lay Way, #10-106 TradeHub 21 Singapore 609966 Singapore	Phone Fax E-mail	+65 6444 1886 +65 6444 1836 tecan@tecan.com.sg
Australia New Zealand Pacific Islands	Tecan Australia Pty Ltd Unit 2, 475 Blackburn Road Mount Waverly VIC 3149 Australia	Phone Phone Fax E-mail	Toll Free: 1300 808 403 +61 3 9647 4100 +61 3 9647 4199 helpdesk-aus@tecan.com
Austria	Tecan Sales Austria GmbH Untersbergstrasse 1a 5082 Grödig Austria	Phone Fax E-mail	+43 6246 8933 256 +43 6246 72770 helpdesk-at@tecan.com
Belgium	Tecan Benelux B.V.B.A. Mechelen Campus Schaliënhoevedreef 20A 2800 Mechelen Belgium	Phone Fax E-mail	+32 15 42 13 19 +32 15 42 16 12 tecan-be@tecan.com
China	Tecan (Shanghai) Laboratory Equipment Co., Ltd. 1F, T 15-4, #999, Ningqiao Road, Pilot Free Trade Zone, Shanghai, PRC, 201206	Phone E-mail	+86 40 0821 38 88 helpdesk-cn@tecan.com

Country/Region	Address	Telephone/Telefax/E-mail	
Denmark	Tecan Denmark, Filial af Tecan Nordic AB, Sverige Lejrvej 29 3500 Værløse Denmark	Phone E-mail	+46 8 7503940 info-dk@tecan.com
France	Tecan France S.A.S.U Tour Swiss Life 1 bd Marius Vivier Merle F- 69 003 Lyon France	Phone Fax E-mail	+33 4 72 76 04 80 +33 4 72 76 04 99 helpdesk-fr@tecan.com
Germany	Tecan Deutschland GmbH Werner-von-Siemens-Straße 23 74564 Crailsheim Germany	Phone Fax E-mail	+49 1805 8322 633 or +49 1805 TECAN DE +49 7951 9417 92 helpdesk-de@tecan.com
Italy	Tecan Italia, S.r.l. Via Brescia, 39 20063 Cernusco Sul Naviglio (MI) Italy	Phone Fax E-mail	+39 800 11 22 91 +39 (02) 92 72 90 47 helpdesk-it@tecan.com
Japan	Tecan Japan Co., Ltd. Kawasaki Tech Center 580-16, Horikawa-cho, Saiwai-ku Kawasaki, Kanagawa 212-0013 Japan	Phone Fax Phone E-mail	+81 44 556 7311 (Kawasaki) +81 44 556 7312 (Kawasaki) +81(0) 6305 8511 (Osaka) helpdesk-jp@tecan.com
Netherlands	Tecan Benelux B.V.B.A. Industrieweg 30 NL-4283 GZ Giessen Netherlands	Phone Fax E-mail	+31 20 708 4773 +31 183 44 80 67 helpdesk.benelux @tecan.com
Scandinavia	Tecan Nordic AB Sveavägen 159, 1tr SE-113 46 Stockholm Sweden	Phone Fax E-mail	+46 8 750 39 40 +46 8 750 39 56 info@tecan.se
South Korea	Tecan Korea Ltd. 149 Gasan digital 1-ro Geumcheon-gu Seoul South Korea	Phone E-mail	+82-2-818-3301 helpdesk-kr@tecan.com

Country/Region	Address	Telephone/Telefax/E-mail	
Spain Portugal	Tecan Ibérica Instrumentación S.L. C/ Lepanto 151 Bajos E-08013 Barcelona Spain	Phone E-mail	+34 93 595 25 31 helpdesk-sp@tecan.com
Switzerland	Tecan Schweiz AG Seestrasse 103 8708 Männedorf Switzerland	Phone Fax E-mail	+41 44 922 82 82 +41 44 922 89 23 helpdesk-ch@tecan.com
United Kingdom	Tecan UK Ltd. Theale Court 11-13 High Street Theale, Reading, RG7 5AH United Kingdom	Phone Fax E-mail	+44 118 930 0300 +44 118 930 5671 helpdesk-uk@tecan.com
USA (First point of contact)	Tecan US, Inc. 9401 Globe Center Drive, Suite 140, Morrisville, NC 27560 USA	Phone Fax Phone E-mail	+1 919 361 5200 +1 919 361 5201 Toll Free in the US: +1 800 TECAN US or +1 800 832 2687 helpdesk-us@tecan.com
USA (Tecan Systems)	Tecan Systems, Inc. 2450 Zanker Road San Jose, CA 95131 USA	Phone Fax E-mail	+1 408 953 3100 Toll Free: +1 800 231 0711 +1 408 953 3101 helpdesk-sy@tecan.com

Abbreviations

ARP
Air Restriction Pipettor

cLLD
Capacitive Liquid Level Detection

DiTi
Disposable Tip

EMC
Electromagnetic Compatibility

FCA
Flexible Channel Arm

GH
Gripper Head

HEFU
HEPA Filter Unit

PSU
Power Supply Unit

RF
Radio Frequency

RGA
Robotic Gripper Arm

TA
Tool Arm

USB
Universal Serial Bus