



## Productive Pipetting From 1 To 384 Channels



# Have you ever had a sore wrist from repeatedly hammering on universal pipette tips, or had your experiment wrecked by loose or leaking tips?

UNIVERSAL TIPS CAN BE A REAL PAIN IN THE...



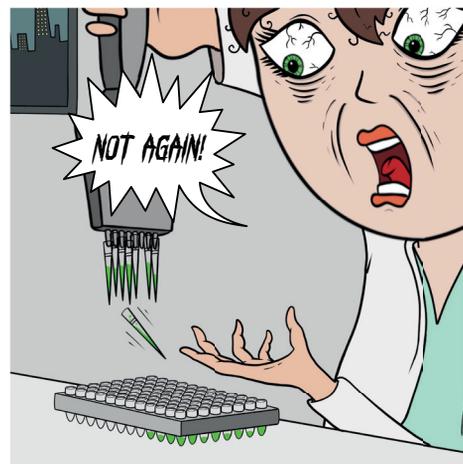
CONSTANT HAMMERING OF TIPS CAN LEAD TO RSI



...UNIVERSAL TIPS CAUSE TIP MISALIGNMENT WHICH LEADS TO...



...LOOSE AND LEAKING TIPS



NOT GOOD FOR SCIENCE

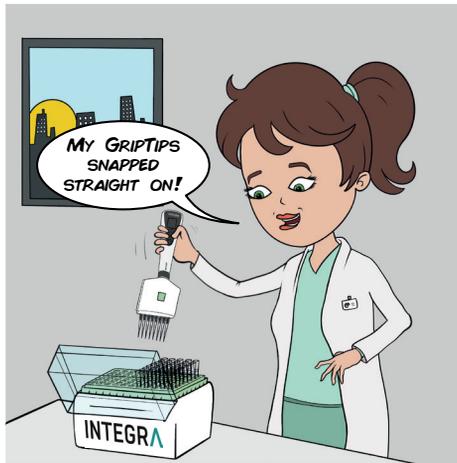


SCIENCE IS HARD ENOUGH WITHOUT PIPETTING PROBLEMS!



That's why we developed GRIPTIP pipette tips, so that scientists like Tina - the star of our comic strip - can get the results that they deserve!

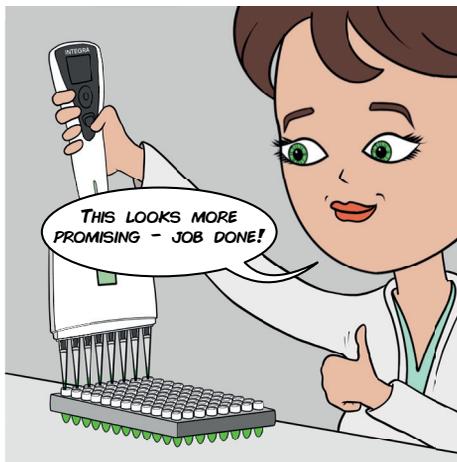
WHY NOT TRY SOMETHING NEW?



GRIPTIPS THAT PERFECTLY ALIGN, AND DON'T LEAK OR FALL OFF



SO YOU CAN FOCUS ON THE REAL SCIENCE



DON'T LET UNIVERSAL TIPS GET IN THE WAY OF YOUR SUCCESS!



The problems and misery that universal pipette tips have caused Tina are all too familiar to scientists working at the bench...

### One size doesn't fit all

Universal pipette tips are designed to fit pipettes from multiple manufacturers, and often require users to hammer on the tips, resulting in a suboptimal fit. Before you know it, your tips are loose, leaking or, worse still, falling off, ruining your results and your day.

### The perfect connection

INTEGRA GRIPTIPS are designed to offer a perfect fit on all of our pipettes, effortlessly snapping onto the tip fittings. The unique design prevents over tightening, and offers low attachment and ejection forces, ensuring that all tips are at the same height for perfect alignment and seal. So, you can stop worrying about loose, leaking or falling off tips and focus on your science!

## SET VOLUMES IN THE BLINK OF AN EYE INSTEAD OF A TWIST OF THE WRIST!



Three quick set dials to change volumes faster and easier than conventional manual pipettes

An ultra light and well-balanced design for unrivalled ergonomics



## EVOLVE

### Manual Pipettes

**Want a more efficient pipetting solution?  
We've got exactly what you need.**

Traditional pipettes use a single rotating plunger to set volumes, which can make frequent volume changes tedious. INTEGRA's revolutionary **EVOLVE** manual pipette is here to change that.

- Three adjustable quick set dials for rapid volume changes, and to prevent volume drift while pipetting
- GRIPTIPS securely attach and perfectly align to the EVOLVE, removing the risk of tips leaking or falling off

**Spend less time changing volumes and more time getting results!**

**1, 8, 12 and 16**  
channels available

**0.2 to 5000  $\mu$ l**  
volume ranges

**10x faster**  
volume adjusting



Check out the **EVOLVE** in action!

## THE PERFECT PIPETTING SYSTEM



## VIAFLO

Lightweight Electronic Pipettes

### Monotonous manual pipetting getting you down?

#### Problem solved.

Electronic pipettes can significantly improve your workflows and help you get amazing results, fast. And that's why we produced the **VIAFLO**.

- Simple-to-use, predefined pipetting protocols for the most common liquid handling applications
- Customizable multistep programs support specific tasks, including aspiration, repeat dispensing, mixing and more
- Lightweight design, perfect balance and unsurpassed operational comfort for both left- and right-handed users

### Intuitive and productive, what's not to like?

#### Get your hands on the VIAFLO.

**1, 8, 12 and 16**  
channels available

**0.5 to 5000  $\mu$ l**  
volume ranges

**Up to 40**  
user-defined programs



Check out  
the **VIAFLO**  
in action!

## ARE YOU PIPETTING SAMPLES BETWEEN DIFFERENT LABWARE FORMATS?



Single-handed operation leaves the other hand free to handle labware

Motorized adjustable tip spacing at the push of a button for simultaneous transfer of multiple samples

Combines the throughput of a multichannel pipette with the ability to transfer liquids between different labware types

### VOYAGER

Automatic Adjustable Tip Spacing Pipettes

#### Changing sample volumes or formats?

We've got you covered.

Individually transferring multiple samples from one labware format to another is a tedious and potentially error-prone task. But we've got just the thing for you – the **VOYAGER**.

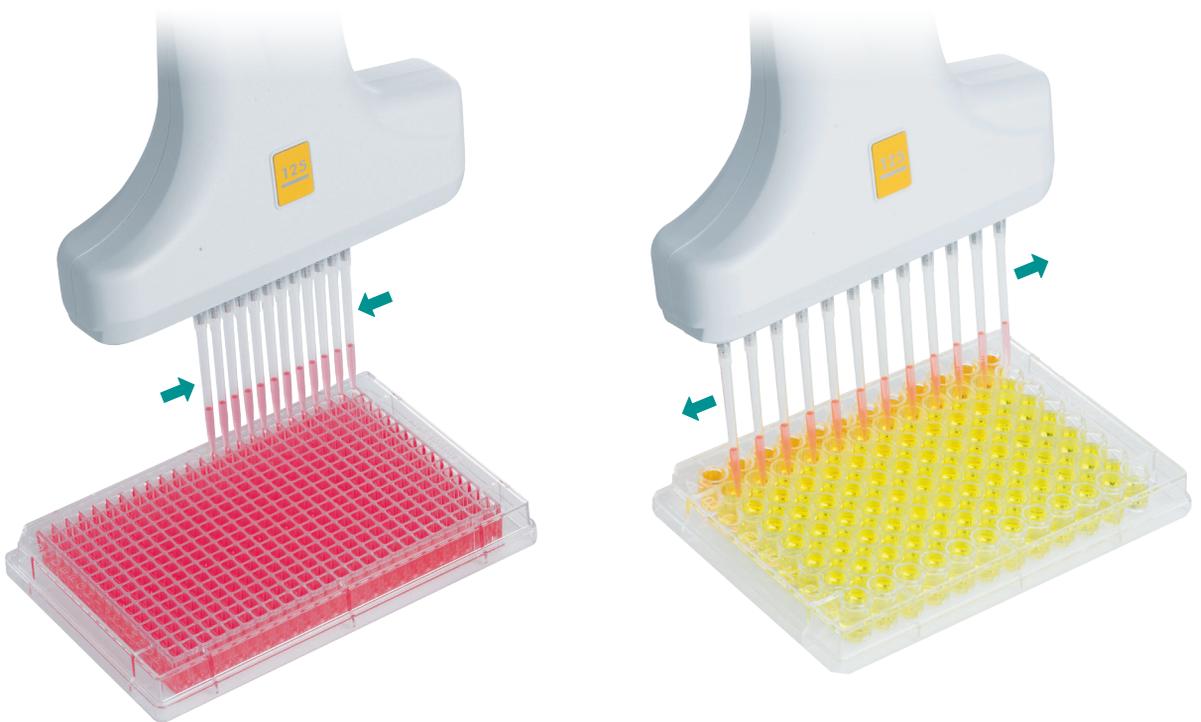
- Supports parallel pipetting between labware of different sizes and formats
- Transfers samples from 1.5 ml tubes to 96 well plates up to eight times faster than single channel pipettes
- Boosts pipetting productivity and reduces pipetting errors

Save yourself hours of pipetting with the **VOYAGER**.

“I am very pleased with the **VOYAGER**, we've had it for several years and it is very robust. It is something that everybody loves and it gets used a lot; it is so user friendly.”



**Professor Iris Lindberg**  
University of Maryland Medical School



Transfer samples between different plate formats with ease, minimizing the chance of error and increasing productivity.

## Let us solve your pipetting problems! The VOYAGER is your variable tip spacing solution.

### Flexibility at your fingertips.

Why go back and forth between different labware with a single channel pipette when you could be using the **VOYAGER**?

- Unique design supports gel loading, plate reformatting, pipetting to and from tube racks, and cell plating
- Reduces the number of sample transfers and prevents the risk of developing repetitive strain injuries and introducing pipetting errors
- The perfect companion for a wide variety of genomic, proteomic and cell culture applications

**Sounds too good to be true?  
Give it a try and see for yourself.**

**4, 6, 8 and 12**  
channels available

**0.5 to 1250  $\mu$ l**  
volume ranges

**4.5 to 33 mm**  
adjustable tip spacing



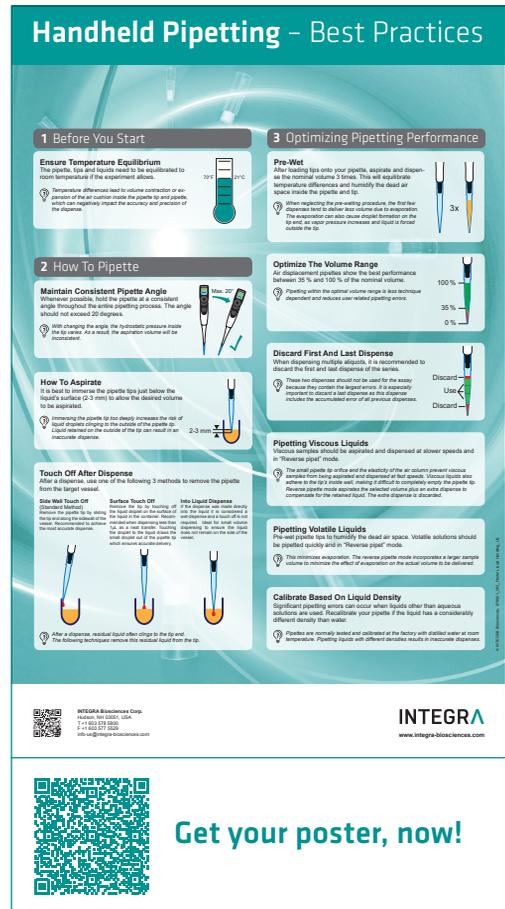
Check out the  
**VOYAGER** in  
action!

# HANDHELD PIPETTING

## Best Practices

Accurate pipetting is an important skill that is often overlooked by many labs, yet it is a vital part of your lab work and will help you to produce the best results. Make sure you and your lab are fully trained in pipetting best practices to maximize reliability and reduce the chance of pipetting errors.

**Don't let pipetting errors ruin your results! Follow pipetting best practices.**



**Handheld Pipetting – Best Practices**

**1 Before You Start**

- Ensure Temperature Equilibrium**  
The pipette tips and liquids need to be equilibrated to room temperature if the experiment allows.  
Temperature differences lead to volume contraction or expansion of the air column inside the pipette tip and pipette which can negatively impact the accuracy and precision of the dispense.

**2 How To Pipette**

- Maintain Consistent Pipette Angle**  
Whenever possible, hold the pipette at a consistent angle throughout the entire dispensing process. The angle should not exceed 20 degrees.  
With changing the angle, the hydrostatic pressure inside the tip will either increase or decrease, causing an inaccurate dispense.
- How To Aspirate**  
It is best to immerse the pipette tips just below the liquid's surface (< 2 mm) to allow the desired volume to be aspirated.  
Immersing the pipette tip too deeply increases the risk of liquid splashes clinging to the outside of the pipette tip and liquid retained in the bottom of the tip can result in an inaccurate dispense.
- Touch Off After Dispense**  
After a dispense, use one of the following 3 methods to remove the pipette from the target vessel.
  - Side Wipe Touch Off**  
Gently touch the pipette tip against the side of the vessel and draw the pipette tip back into the vessel. This method is most commonly used for aqueous solutions.
  - Surface Touch Off**  
Gently touch the pipette tip against the surface of the liquid. This method is most commonly used for aqueous solutions.
  - Into Liquid Dispense**  
Gently touch the pipette tip against the surface of the liquid. This method is most commonly used for aqueous solutions.

**3 Optimizing Pipetting Performance**

- Pre-Wet**  
After loading tips onto your pipette, aspirate and dispense at the nominal volume 3 times. This will equilibrate temperature differences and humidify the dead air space inside the pipette and tip.  
When replicating the pre-wetting procedure, the first few dispenses tend to be more less accurate due to evaporation. The aspirator can also cause slight foaming on the liquid as vapor pressure increases and liquid is forced outside the tip.
- Optimize The Volume Range**  
All displacement pipettes show the best performance between 35% and 100% of the nominal volume.  
Choosing either the optimal volume range or less accurate dispensed and increases user related pipetting errors.
- Discard First And Last Dispense**  
When dispensing multiple aliquots, it is recommended to discard the first and last dispenses of the series.  
These two dispenses should not be used for the assay because they contain higher errors. It is especially important to discard a last dispense as this dispense includes the accumulated error of all previous dispenses.
- Pipetting Viscous Liquids**  
Viscous samples should be aspirated and dispensed at slower speeds and in "Reverse pipet" mode.  
The small pipette tip offsets the viscosity of the air column present across the length of the pipette and compensates for the delay. Viscous liquids also adhere to the pipette walls, making it difficult to completely empty the pipette. Reverse pipette mode minimizes the volume lost as an extra dispense is commanded for the desired liquid. The extra dispense is discarded.
- Pipetting Volatile Liquids**  
Volatile pipette tips humidify the dead air space. Volatile solutions should be pipetted quickly and in "Reverse pipet" mode.  
This minimizes evaporation. The reverse pipette mode incorporates a larger sample volume to minimize the effect of evaporation on the actual volume to be delivered.
- Calibrate Based On Liquid Density**  
Significant pipetting errors can occur when liquids other than aqueous solutions are used. Recalibrate your pipette if the liquid has a considerably different density than water.  
Pipettes are normally tested and calibrated at the factory with distilled water at room temperature. Pipetting liquids with different densities result in inaccurate dispenses.

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www.integra-biosciences.com

**Get your poster, now!**

## Tips and tricks to improve pipetting accuracy and precision

Inconsistencies in liquid handling techniques can lead to poor data and reproducibility concerns, compromising the integrity of results. While quality assurance efforts in liquid handling typically place emphasis on pipette calibration, repair and maintenance, ensuring correct and consistent pipetting technique is just as critical for efficient workflows and successful projects.

**Learn tips and tricks for correct pipetting, with our 'How to' videos!**



**INTEGRA**  
BEST PIPETTING PRACTICES  
"Accuracy and precision"  
EPISODE 1

**Check out the videos here!**

## YOUR PERSONAL PIPETTING ASSISTANT



Easy menu navigation and volume adjustments with the intuitive touch wheel

Compatible with a range of reservoirs and assay plates

Simply click a VIAFLO into the ASSIST and the pipetting protocols are carried out automatically

## ASSIST

Automated Multichannel Pipetting Robots

### Want reproducible results? Meet your new lab partner.

Multichannel pipettes are invaluable for getting fantastically reproducible results and increased throughput in multiwell plates. We've made this even better. Here's the **ASSIST**.

- Significantly increase the reproducibility of all pipetting protocols, such as serial dilutions, plate filling and reagent additions
- Automatically carry out protocols for your desired application, reducing the risk of repetitive strain injuries
- Simply click in a VIAFLO electronic pipette for the perfect pipetting partnership

**The compact and consistent lab companion.**  
**Reliable results, every time.**

**8, 12 and 16**  
channels available

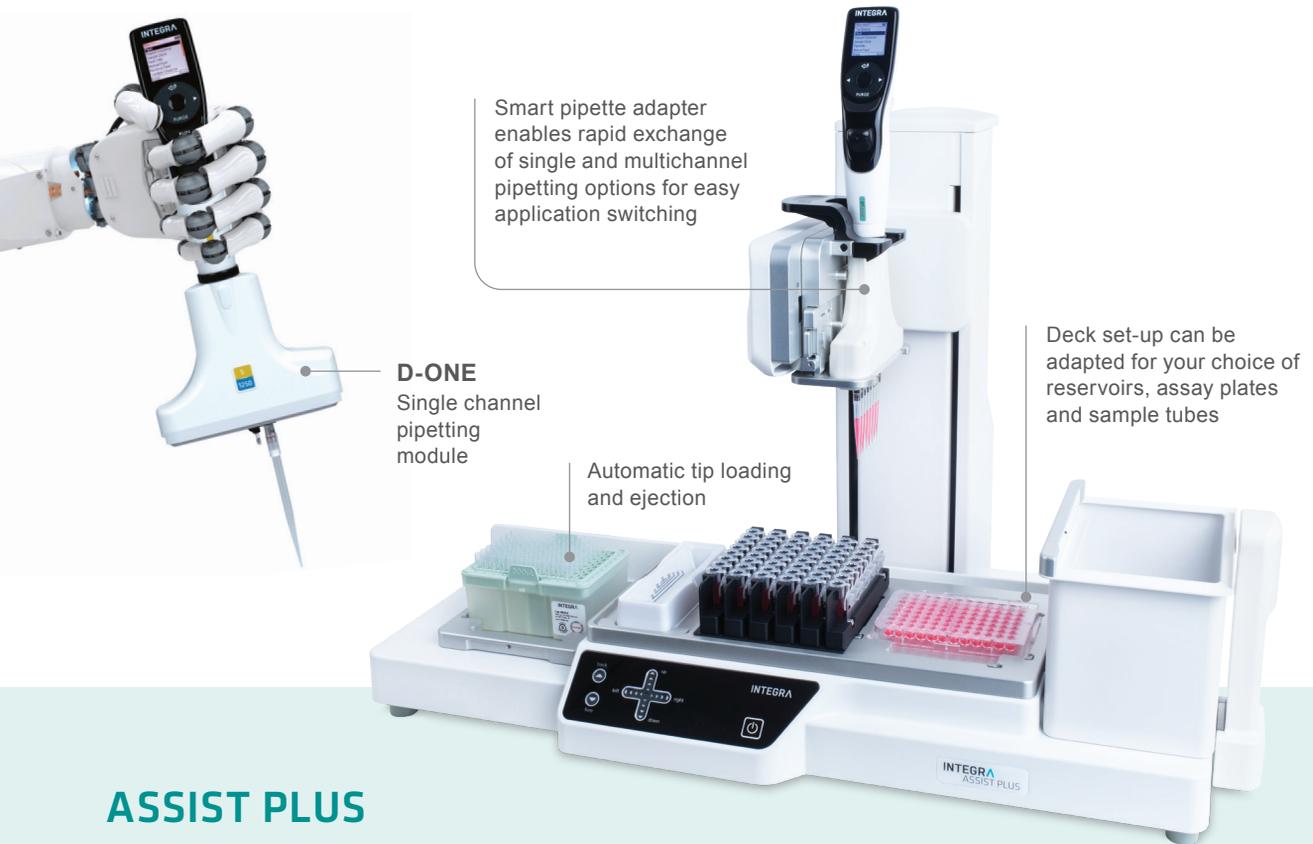
**0.5 to 1250  $\mu$ l**  
volume ranges

**6 to 384**  
well microplates



Check out  
the **ASSIST**  
in action!

## YOU ARE NOT A ROBOT...SO DON'T ACT LIKE ONE FREE YOURSELF FROM ROUTINE PIPETTING



### ASSIST PLUS

Automating Handheld Pipettes

**So much to do, so little time.  
Time to automate your workflow.**

A pipetting robot is a considerable investment for many laboratories, but it doesn't have to be. We developed a solution – meet the **ASSIST PLUS**.

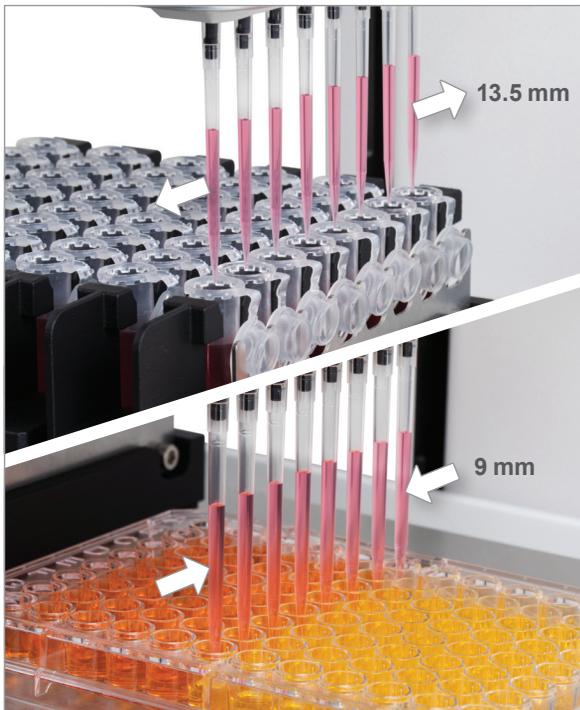
- Automation of electronic multichannel pipettes or D-ONE single channel pipetting modules streamlines routine pipetting tasks for superior reproducibility
- This compact system increases both hands-free time and throughput
- Intuitive VIALAB pipette automation software simplifies program set-up

**ASSIST PLUS is the smallest and most affordable pipetting robot to offer variable tip spacing!**

**“The level of automation provided by the ASSIST PLUS has been hugely beneficial to our entire group, and it can be used in many applications within our workflow.”**



**Yvette Hoade**  
The Cancer Institute,  
University College  
London



Automatic tube to plate reformatting with INTEGRA's VOYAGER adjustable tip spacing pipette on the ASSIST PLUS.



Choose any of INTEGRA's 25 electronic multichannel pipettes or D-ONE single channel pipetting modules and click it into the ASSIST PLUS for exceptional workflow flexibility.

## Equip the ASSIST PLUS with a VOYAGER pipette to enable tip spacing to be adjusted automatically!

With multiple pipetting options, you'll never look back.

- Exceptional flexibility at an affordable price
- Compatible with numerous labware types, including reservoirs, tubes and plates
- Provides access to new applications by using any of INTEGRA's 25 electronic multichannel pipettes or D-ONE single channel pipetting modules

Excellent results and unmatched ergonomics – what are you waiting for?

- Processes increased sample numbers quickly and efficiently, streamlining lab work
- Enhances process control and increases workflow consistency by removing inter-operator variability and human error
- Eliminates the physical strain of manual pipetting, reducing the chance of repetitive strain injuries

**1, 4, 6, 8, 12 and 16**  
channels available

**0.5 to 1250  $\mu$ l**  
volume ranges

**1 to 384**  
well microplates or tubes



Check out the  
**ASSIST PLUS**  
in action!

**Go on, treat yourself – get the pipetting solution you deserve!**

## AFFORDABLE AND LIGHTWEIGHT

Carry handles make it easy to move the lightweight instrument anywhere in the lab – including inside laminar flow cabinets



A large display and comfortable grip make the MINI 96 easy to operate – no training required at all

Full or partial 96 or 384 well plates can be filled quickly and easily

### MINI 96

96 Channel Portable Electronic Pipettes

**Tight on lab space?**

**Pick up the most affordable 96 channel pipette!**

Are you looking for the perfect solution to filling 96 or 384 well plates quickly and precisely, without breaking the bank? Then look no further than the **MINI 96**.

- Simultaneous pipetting for entire 96 well plates, as well as rapid dispensing for 384 well plates, improving throughput capabilities
- Compact, lightweight and portable – the MINI 96 can be moved around the lab as required – especially useful for working in the LAFC
- Extremely easy to use – simply turn it on and start pipetting!

**Access to more productivity for every lab, every work space, and every budget.**



**Not sure which pipetting system you need? Check out our handy comparison guide.**



Flexibility to fill full 96 or 384 well plates...



...or partial plates, as well as perform serial dilutions.

## Why struggle with repetitive liquid handling tasks? Get the MINI 96 to help.

### Significantly faster and incredibly accurate

- 96 channel pipetting minimizes pipetting errors and ensures that all channels are pipetted at the same height and speed, providing better accuracy and precision
- Ideal for reservoir to plate or plate to plate transfers, with reduced risk of RSIs
- Performing serial dilutions or filling partial plates is easy using the optional Two Position Stage

### Intuitive and easy to use

- As straightforward to operate as a single channel electronic pipette, with added productivity
- No special training required, with simple on-screen instructions available for new users
- Settings are easily modified using the touch wheel controlled graphical user interface

### Fill complete or partial plates

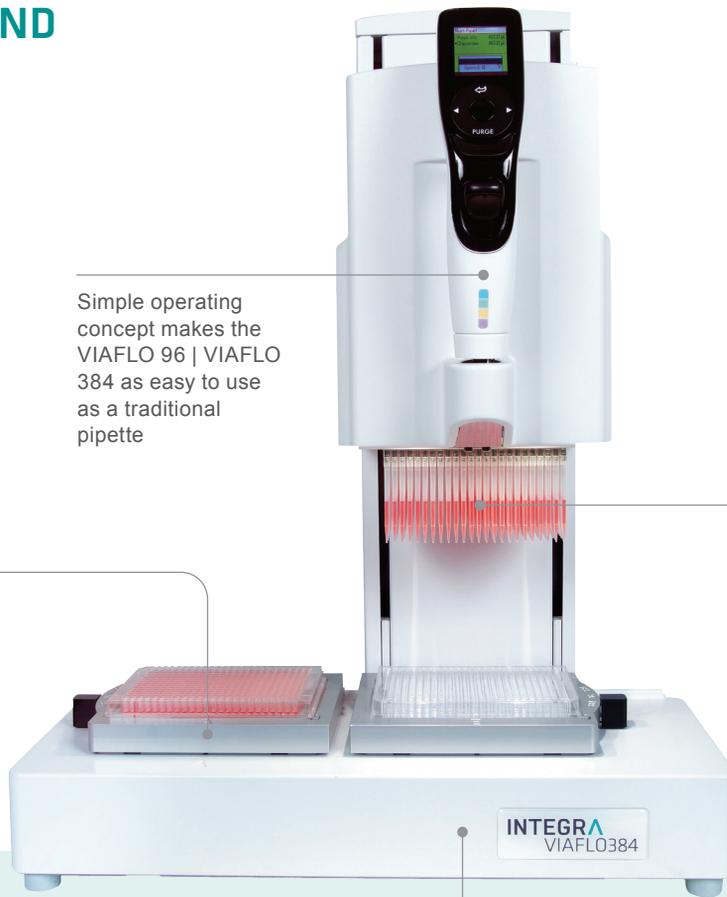
**0.5 to 1250  $\mu$ l**  
volume ranges

**96 or 384**  
well microplates



Check out the **MINI 96** in action!

## VERSATILE AND PRODUCTIVE



Simple operating concept makes the VIAFLO 96 | VIAFLO 384 as easy to use as a traditional pipette

Interchangeable pipetting heads to guarantee accuracy for a wide range of applications

Up to three stage positions accommodate 24, 96, 384 and 1536 well plates, as well as reagent reservoirs and other industry standard format labware

The compact design fits on any lab bench and in most laminar flow hoods, for use under sterile conditions

## VIAFLO 96 | VIAFLO 384

24, 96, And 384 Channel Handheld Electronic Pipettes

### Reached the limit of productivity with traditional pipettes? It's time for an upgrade.

Are you looking to scale up productivity to meet your current and future needs? The versatile **VIAFLO 96 | VIAFLO 384** is the answer.

- Significantly increased throughput, transferring up to 24, 96 or 384 samples in a single step
- Superior reproducibility in filling entire or partial microplates
- Small size and a fraction of the cost of a robot

**Up to three deck positions and a convenient hands-free mode for simple and efficient workflows.**

**“The VIAFLO 96 | VIAFLO 384 has significantly improved the accuracy and reproducibility of our pipetting; there is no human hand that can manually pipette into a 384 well plate with the same accuracy.”**



**Dr. Wissam Mansour**  
Anima Biotech,  
Israel



## Minimal set-up time for standard pipetting tasks such as reservoir to plate and plate to plate transfers.

### Accelerate your multiwell pipetting!

- Ideal for quick sample transfers from plate to plate, reservoir to plate or within plates
- Minimizes pipetting errors, providing better accuracy and precision
- Perform serial dilutions by loading only 8 channels, or fill/mix entire plates with ease

**Upgrade your workflow today!**  
**Add a VIAFLO 96 or VIAFLO 384 to your team.**

### Handheld microplate processing with intuitive operation.

- As simple to use as traditional handheld pipettes, with added productivity
- A compact design allows the VIAFLO 96 and VIAFLO 384 to be easily moved between workspaces
- Hands-free automatic mode for maximum reproducibility, especially in tight spaces

**24, 96 and 384**  
 channels available

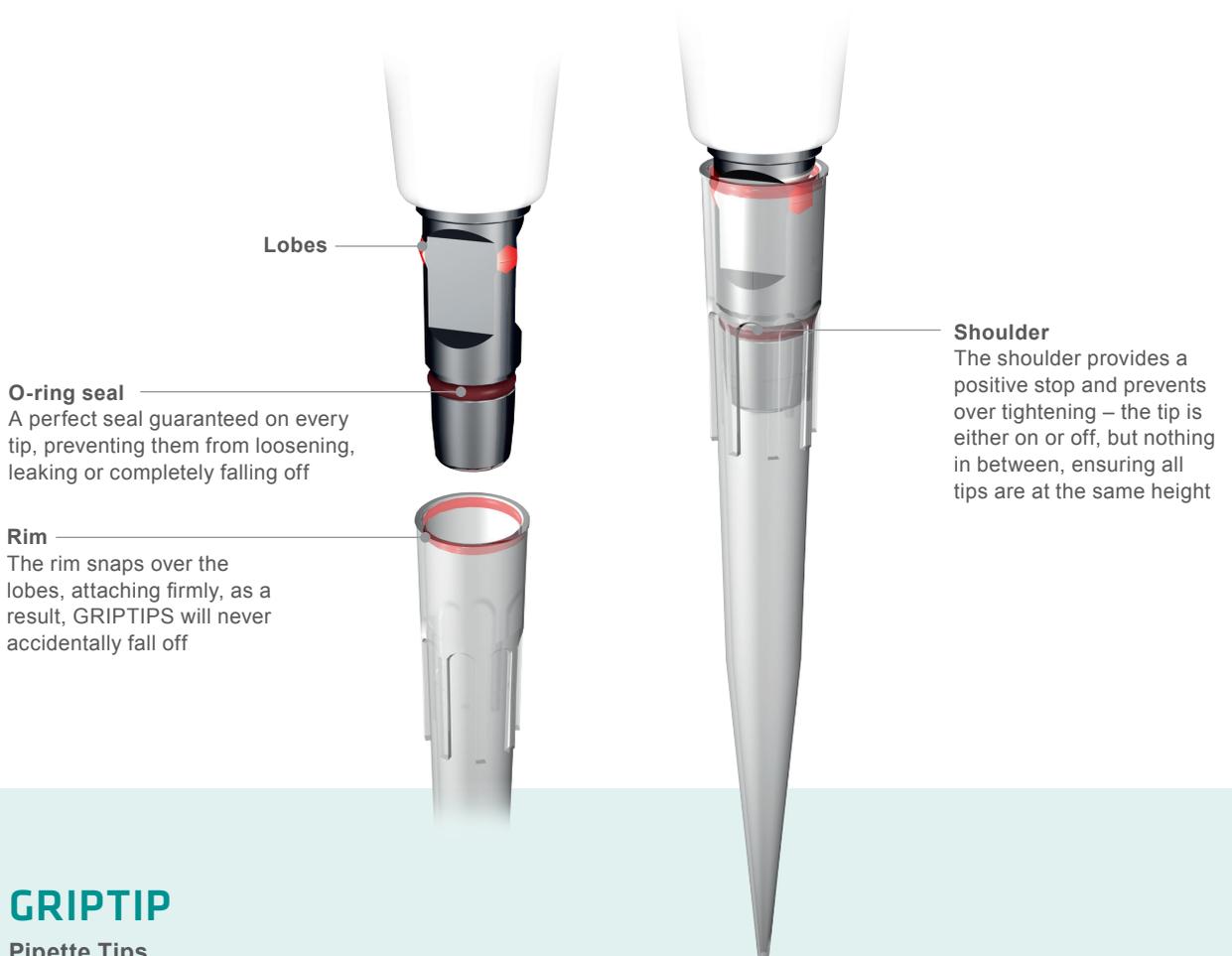
**Handheld or hands-free**  
 operating modes

**24 to 1536**  
 well microplates



Check out the  
**VIAFLO 96 | VIAFLO 384**  
 in action!

## THE PERFECT FIT



## GRIPTIP

### Pipette Tips

### Get the best for your pipette!

Our **GRIPTIPS** have been designed in tandem with INTEGRA pipettes, creating a unique, integrated system that offers the securest pipette tip connection on the market. This completely removes the chance of your tips leaking or falling off during experiments, resolving the common issues associated with universal tips. Who wouldn't want that?

### Tips for every application

We're continually expanding our GRIPTIP range to ensure we meet the needs of every customer, for every application.

**Don't risk your results. Use GRIPTIPS!**

**0.5 to 5000  $\mu$ l**

volume range

**Non-sterile,  
sterile and filter**

options available

**Specialty GRIPTIPS**

available



Check out  
**GRIPTIPS**  
in action!

**SHORT GRIPTIPS**

12.5 µl      300 µl      1250 µl

- 12.5 µl tips support the targeting of small wells
- 300 µl and 1250 µl tips offer improved ergonomics by allowing the user to pipette closer to the bench

**LONG GRIPTIPS**

12.5 µl      300 µl      1250 µl

- 12.5 µl tips allow access to the bottom of 1.5 ml microcentrifuge tubes
- 300 µl and 1250 µl tips allow access to 100 mm tubes without the risk of contamination.

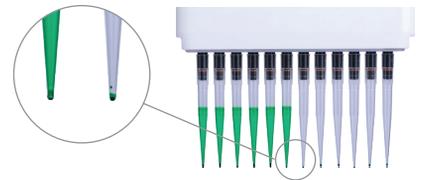
**Wide Bore GRIPTIPS**

300 µl      1250 µl

- Prevents shearing of cellular material while pipetting
- Supports pipetting of viscous liquids

**Low Retention GRIPTIPS**

- Created from a unique polypropylene blend with heightened hydrophobic properties to allow maximum liquid recovery
- Ideal for non-aqueous and low surface tension samples, such as viscous liquids and surfactants
- Increases pipetting accuracy and consistency, and prevents the loss of precious reagents

**Rack and refill options****ECO racks**

- Thermoform racks reduce plastic waste by more than 60 %
- An optional PopTop base allows the lid to be opened easily with a single finger

**GREEN CHOICE refills**

- An environmentally-friendly refill system
- Allows reuse of the current tip racks, significantly reducing plastic waste

**XYZ tip racks**

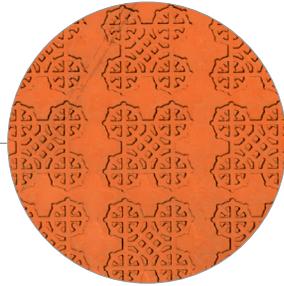
- Extra sturdy to withstand the loading forces from automated multichannel pipettes
- Carbon-filled base to prevent static build-up, so that tips stay perfectly aligned for easy tip loading



**Not sure which tips fit your INTEGRA pipette?  
Try our GRIPTIP Selector Guide!**

## MINIMIZE REAGENT DEAD VOLUME

Clear graduations on the reusable base offer more accurate measurements and less reagent waste



### SureFlo™ anti-sealing array

Unique SureFlo anti-sealing array and hydrophilic surface treatment spreads reagents evenly across the base of the reservoir, allowing tips to sit on the bottom without aspirating air and reducing dead volumes

## CLEAR ADVANTAGE™ REAGENT RESERVOIRS

with SureFlo anti-sealing array



Polystyrene



Polypropylene

**Don't waste precious reagents! Take advantage of INTEGRA's range of reagent reservoirs.**

Unlike traditional reagent reservoirs that have hard to see graduations, all of our reservoirs fit into a reusable base with bold, crisp, clearly visible markings. This unique design leads to more accurate measurements, no over pouring and less waste – amazing!

**INTEGRA's fantastic range of reagent reservoirs covers a wide range of volumes from 10 ml to 300 ml.**

- INTEGRA's reservoirs are made of crystal clear 100 % virgin polystyrene or polypropylene for improved chemical compatibility
- Disposable inserts fit into reusable bases to reduce plastic waste
- Convenient pour back spouts allow easy return of excess fluid to a source container, minimizing reagent waste
- Inserts are designed to nest inside each other, saving 75 % of space and reducing inventory footprint requirements and shipping costs

### Multichannel Reagent Reservoirs

Available with or without SureFlo anti-sealing array

Can accommodate an inverted second reservoir insert as a lid, preventing evaporation or contamination



10 ml



25 ml



100 ml

An extra deep trough design accumulates liquid, reducing dead volume and ensuring maximum reagent recovery



Check out **MULTICHANNEL REAGENT RESERVOIRS** in action!

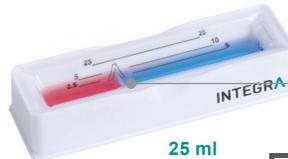
### 12 Well Reagent Reservoir



25 ml

Transfer up to 12 samples to a 96 well plate, or optimize serial dilutions with single channel pipettes.

### Divided Reagent Reservoir



25 ml

5 and 10 ml compartments for working with smaller reagent volumes



Check out the **DIVIDED REAGENT RESERVOIR** in action!

### Automation Friendly Reagent Reservoirs

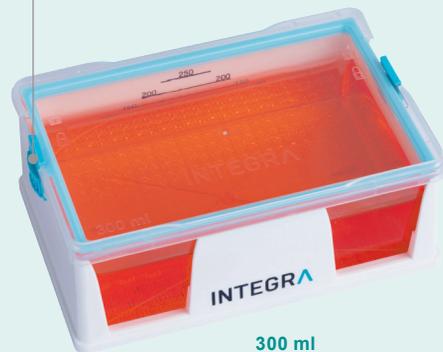
Perfectly suited for 24, 96 and 384 channel pipetting devices

Fits all industry standard microplate holders

Latching lid with gasket prevents spillage during transport, and evaporation during short-term storage



150 ml



300 ml

Dual viewing windows allow tips to be safely positioned



Check out **AUTOMATION FRIENDLY REAGENT RESERVOIRS** in action!

**Maximize reagent savings with the lowest dead volume reservoirs in the world!**

# REVOLUTIONARY, COMPACT AND AFFORDABLE REAGENT DISPENSER

Ultracompact design saves valuable bench space and fits also inside a laminar flow cabinet



EasySnap cassettes allow straightforward installation and removal without worrying about making mistakes, breaking components or performing time-consuming (re-)calibrations

Intuitive user interface and large, high resolution touchscreen allow quick and efficient set-up of dispensing protocols, without the need for user training

## WELLJET

Reagent Dispenser

**Want fast and flexible dispensing with low running costs? You need a WELLJET!**

Do you need rapid and precise reagent dispensing to allow faster set-up of your assays and analyses? Then look no further than the innovative **WELLJET** dispenser and dispenser stacker combined with the EasySnap™ cassettes.

- Affordable and precise hands-free dispensing into plates from six to 1536 wells
- The unique, low cost EasySnap dispensing cassette, featuring molded silicone tubings provides accurate dispensing
- These cassettes are available in three sterile models – small bore 8 and 16 channel, and large bore 8 channel
- WELLJET dispenser stacker offers hands-free processing of up to 25/50 plates for increased throughput and longer walk-away times

**Your choice to save money, space and time. Get a WELLJET dispenser today!**

**6 to 1536**  
well plate compatibility

**0.5 µl to 10 ml**  
volume range

**25 or 50 plates**  
stacker capacity



Check out the **WELLJET** in action!



WELLJET dispenser stacker



EasySnap™ dispensing cassette

# PIPETTE ROUTINE CHECK

## Best Practices

Pipettes need to be calibrated annually to maintain their performance – ask your local sales person about our extended warranty and maintenance options. In the interim, it is recommended that you perform routine checks to make sure your pipettes are working at their best, and to give you confidence in your pipetting results. It's quick and easy – and we can show you how to do it!

**Look after your pipettes, and be confident in your results. Give your pipettes a health check.**

### Pipette Routine Check – Best Practices

**Why a Routine Check?**  
Pipettes should be calibrated annually to maintain their performance. In the interim, it is recommended to perform a routine check to test the functionality of your pipettes in order to be confident with your pipetting results. Follow the guidelines below to properly perform such a routine check.  
ⓘ On INTEGRA's electronic pipettes you can save a calibration reminder when it's due or open.

#### 1 Environment And Materials

**Environment:**  
Use the pipette in a temperature between 15 °C and 30 °C (59 °F and 86 °F).  
During the measurement:  
• Do not use the pipette in a draft or near a heat source.

**Materials:**  
Equip your work with clean and appropriate glassware. Pipettes should be used with clean water or water.

**Number of required digits is determined by the nominal volume of your pipette.**

Nominal Volume	Number of Digits
100 µL	3
10 µL	2
1 µL	1

**Wetting Consideration:**  
Probably use a small container to minimize liquid or plastic changes. Rinse the container before use.

**Test Liquid:**  
Distilled water.

**Pipette Tip:**  
Use the pipette manufacturer's recommended size for best results.

#### 4 Gravimetric Measurement

The weighing container should not be too dry. Anomalous droplets occur.

**Number of Measurements:**  
Perform at least 10 measurements equal to 10% to 20% of the nominal volume. Start at 10%.

Validate the first one and a visible change on subsequent pipettes.

**Procedure:**

1. Tare the balance with the weighing container.
2. Load a new tip.
3. Pipette the test liquid volume.
4. Dispense the test liquid into the weighing container. Close the dispenser using the rear control and use the tip to transfer the liquid into the weighing container.
5. Record the weight in a table.
6. Using the tare key, reset the scale to 0.0 g.
7. Repeat steps 1-5 for the next test liquid volume.

#### 2 Before You Start

Place pipette, tip and test liquid in the test zone 2 hours before starting measurements to reach equilibrium with room conditions.

Note date, ambient temperature and air pressure. If the environment is unstable, work in a room with atmospheric pressure in a local weather station.

The goal of proper pipetting techniques is to create clean and undisturbed practices by reading the **Advanced Pipetting – Best Practices** guide available on the INTEGRA website.

#### 5 Data Analysis

**Convert balance readings (mg) to volume (µL) using the 2 factor conversion table and the conversion table on the INTEGRA website.**

$$V_p \times M \times 2$$

**Calculate the mean volume per test volume and per channel:**

$$\bar{V} = \frac{\sum V_i}{n}$$

**Calculate the accuracy (systematic error) in %:**

$$\%A = \frac{\bar{V} - V_n}{V_n} \times 100$$

**Calculate the relative standard deviation (RSD) in %:**

$$RSD = \frac{\sqrt{\frac{\sum (V_i - \bar{V})^2}{n-1}}}{\bar{V}} \times 100$$

**Check the accuracy and precision with the manufacturer's specifications. The calculated values are not within specifications, the results needs to be corrected. If the pipette has passed the routine check, the results are correct.**

ⓘ INTEGRA's electronic pipettes can be easily calibrated. Simply enter target volume and actual volume per test measurement on their LCD screens.

#### 3 Leak Test

Before performing any gravimetric measurements, test the pipette for leakage.

1. Fill the test liquid in the test zone 2 hours before starting measurements to reach equilibrium with room conditions.
2. Use the pipette to dispense the test liquid into a clean container.
3. With the test liquid 2 mm in liquid, hold the pipette vertically for 30 seconds.
4. If liquid level did not drop, continue with calibration. A decreasing liquid level indicates a leak. Contact the manufacturer to check further steps.

**INTEGRA** www.integra.com

Get your poster, now!

# THE WORLD'S MOST POPULAR PIPETTE CONTROLLERS



The PIPETBOY acu 2's Turbo Mode provides a 20 % increase in pipetting speed, making it the fastest pipette controller on the market

Speed is easily regulated with your fingertips, providing sensitive control of liquid level

The PIPETBOY pro is the only pipetting aid in the world with integrated LEDs, optimizing illumination for accurate pipetting and preventing eyestrain



## PIPETBOY

Pipette Controllers

### Pipetting problems? Get the best on the market.

Serological pipetting can be a repetitive and laborious task, which is why we brought you the innovative **PIPETBOY** range.

- Unmatched speed and pipetting control for productive serological pipetting with the PIPETBOY pro and PIPETBOY acu 2
- Unique valve and dosing system for simple switching between dropwise addition and fast liquid displacement
- Ergonomic shape allows the pipette controller to sit comfortably in the hand, and your fingers to keep a natural position, reducing the risk of repetitive strain injuries

**Brighten up your lab. And up your pipetting game.**

**1 to 100 ml**

volume range with all serological pipettes

**Up to 13.5 ml/s**

preset speed range

**2 versions**

multiple colors to choose from



Check out the **PIPETBOY** in action!

## GO WITH THE FLOW!

An intuitive and multilingual user interface, coupled with simple on-screen instructions, makes it extremely simple to operate



The DOSE IT pump head accommodates different tubing sizes so that a wide range of volumes – from milliliters to liters – can be dispensed with speed and precision

## DOSE IT

### Peristaltic Pumps

Flow rate can be doubled by using a second pump head, a modification that can also be used to minimize flow pulsation



### Searching for an easy-to-use peristaltic pump? Look no further.

Peristaltic pumps are incredibly helpful when dispensing culture media, buffers, or other solutions, but most are difficult to program, oversized and bulky. Never fear, **DOSE IT** is here.

- Up to 20 protocols can be stored and recalled at the push of a button, for dispensing media or buffer, or filling Petri dishes
- A large display and intuitive user interface offer easy handling and straightforward setting of parameters
- The lightweight and compact design means that the system fits anywhere in the lab and can be easily moved, without wasting valuable bench space

**Don't let repetitive dispensing waste valuable lab time.  
Try DOSE IT!**

**0.6 ml/min  
to 5 l/min**  
flow rate

**0.1 to 9999 ml**  
dose volume

**1 to 8 mm**  
inner diameter tubing sizes



Check out  
the **DOSE IT**  
in action!

# THE ASPIRATION SYSTEM FOR SAFE DISPOSAL OF LIQUIDS

The VACUSAFE offers various safety features, including self-closing quick couplings and liquid level detection

The VACUBOY hand operator can be used with different adapters for removal of liquids from virtually any laboratory vessel

Adjustable vacuum level depending on needs, from gentle removal of supernatants to quick emptying of culture flasks



## VACUSAFE

### Aspiration Systems

#### Safety first. Get the best protection for yourself and the lab.

A routine task like the aspiration, collection and disposal of liquids requires user-friendly equipment that is easy to install and can safely remove waste – the **VACUSAFE** is here to help.

- A compact, all-in-one laboratory vacuum pump that simplifies the removal of media, supernatants and wash solutions
- Straightforward operation – switch on, set the desired vacuum and start working, allowing you to fully concentrate on more complex tasks
- Vacuum source protection to avoid lab contamination, and a shatterproof bottle for maximum safety

**Collect and contain liquid waste in the safest way.  
Get the VACUSAFE.**

**-300 to -600 mbar**  
adjustable vacuum range

**17 ml/s**  
aspiration rate

**3 different models**  
depending on requirements



Check out the **VACUSAFE** in action!

## SIMPLE WASTE REMOVAL WHEREVER YOU NEED IT!



Simple regulation of the liquid flow by applying varying finger pressure

Different adapters available to match a multitude of laboratory containers

All parts that come into contact with liquids can be autoclaved for easy decontamination

## VACUSIP

Benchtop Aspiration Systems

### Limited space?

### Get the most compact benchtop aspiration system.

Aspiration systems are popular pieces of lab equipment, and often need to be moved around for different tasks and experiments. That's why we made the portable **VACUSIP**.

- A convenient, compact and ready-to-use system for benchtop liquid waste disposal, with no installation or additional equipment required
- Completely independent from external vacuum sources for total portability
- A rechargeable battery means that no power cable is needed, making working in a safety cabinet easier and more comfortable

**Don't put it off any longer. Give the VACUSIP a go!**

**2.3 ml/s**

pump flow rate (with  
40 mm stainless steel tip)

**-250 mbar**

vacuum range ( $\pm 20\%$ )

**Up to 10 ml**

aspiration volume



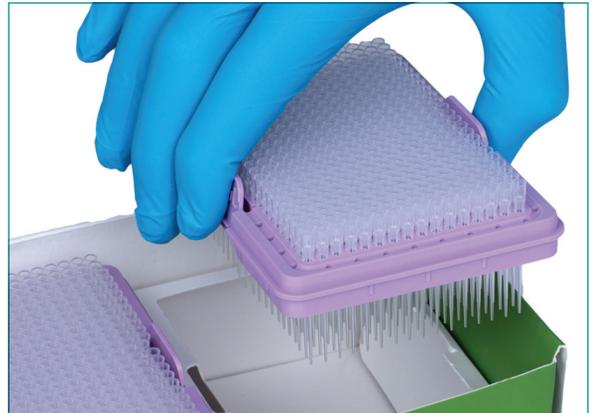
Check out  
the **VACUSIP**  
in action!

# SUSTAINABILITY

## INTEGRA sets high standards, for a low environmental impact.

### Sustainable design

Our products are designed and manufactured to minimize their impact on the environment, and we continuously review our processes and materials to ensure that we meet the highest possible standards of sustainability. That means that all of our devices are designed for an extraordinarily long life; it's not uncommon to find 15-year-old instruments that are still working as reliably as on the day they were installed! Our products are made from materials that are safe for both you and the environment, and we avoid hazardous chemicals wherever substitutes are available when designing our products and sourcing materials.



Find out more on our website.



### Recyclable plastic waste

Our single-use lab consumables and packaging represent large amounts of material that could be safely recycled into new products, or used to produce energy. We aim to eliminate lab plastics going to landfills or being disposed of at sea.



### Energy efficiency matters

We are proud that our Swiss headquarters is run entirely on renewable energies. Our US headquarters is also equipped with a solar energy system, which allows us to produce more than half of our consumables with energy from renewable sources. All the modules and components used in our products – external power supplies, motors and displays, etc. – are carefully selected to meet or exceed the highest regulatory standards for energy efficiency, and our pipettes are designed to use very little energy during operation.

# APPLICATIONS

## What you can do with INTEGRA products

Our pipettes and instruments are used across a broad spectrum of life sciences applications.

Our pipetting solutions are ideal for cell culture on almost any scale, from traditional cell growth and biomolecule production to 3D culture techniques. The range can also help to simplify your PCR workflows, increasing throughput and reproducibility while saving precious and costly reagents. Commonly used extraction and purification methods, such as solid phase extraction (SPE) or magnetic bead-based techniques, can be easily streamlined with our pipetting options, and our pipettes and instruments also enable reproducible handling of low sample volumes for accurate and precise screening assays.



**But that's not all!**  
**To browse our products**  
**by application, visit our**  
**website.**

## How INTEGRA's electronic micropipettes improve your lab life

The significance of user experience on pipetting precision is often overlooked, and can have a serious impact on the reproducibility and validity of results. The negative effects of many hours of repetitive pipetting on both the researcher and the results should also not be underestimated. That's why so many researchers have switched to our electronic pipettes to improve their busy workflows. But are you fully aware of their capabilities?

**See what our pipettes can do, with our 'How to' videos!**

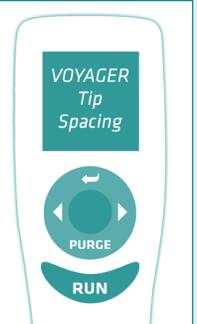
They show you how easy it is to get started with our pipettes, and introduce you to our different pipetting modes.

### INTEGRA

*Automatic adjustable  
tip spacing for fast  
error-free reforma*



VOYAGER  
ELECTRONIC PIPETTES



**Check out the videos here!**



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