

# BIOTIX



LIQUID HANDLING

## Ergonomix Pipetting System

# Ergonomics

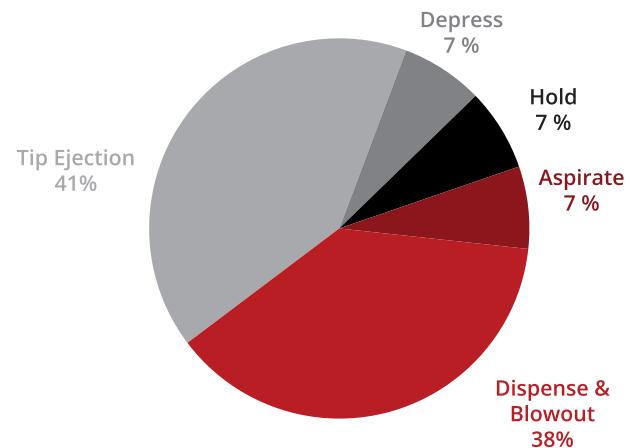
Better ergonomics can help lead to more reproducible data.

Ergonomics is the science of refining tools to optimize them for human use. Advanced ergonomics can lead to decreased muscle fatigue, increased productivity, and a reduction in the number and severity of work-related musculoskeletal disorders. It is the study of optimizing safety and productivity using:

- Tools created with superior design
- A comfortable work environment
- Safe practices

In a laboratory environment there are many contributing factors that can be associated with musculoskeletal disorders. These include bending, reaching overhead, working in awkward body postures and performing the same or similar tasks repetitively. The Biotix Ergonomix Pipetting System focuses on reducing the forces associated with the pipetting cycle which can help lower fatigue and help your lab save money, save time, and yield more reproducible data.

The graph to the right shows the average manual pipetting force for the different steps of the pipetting cycle. There are many scientific studies that have found a direct link between fatigue induced by poor ergonomics and poor pipetting performance due to user error. The Biotix Ergonomix System focuses on minimizing ejection force, the highest force in this cycle. It is recommended by ergonomists to only use 30% of maximum force for thumb activities. Forces greater than 30% with repetitive activities like pipetting can lead to increased fatigue and a higher risk of RSI/RSD. The chart below shows the average and recommended force for both men and women during thumb activities.



| Thumb Activities | % of Max Strength | Force |        |
|------------------|-------------------|-------|--------|
|                  |                   | Men   | Women  |
| Max Strength     |                   | 10 kg | 7 kg   |
| Dynamic Force    | 30%               | 3 kg  | 2.1 kg |

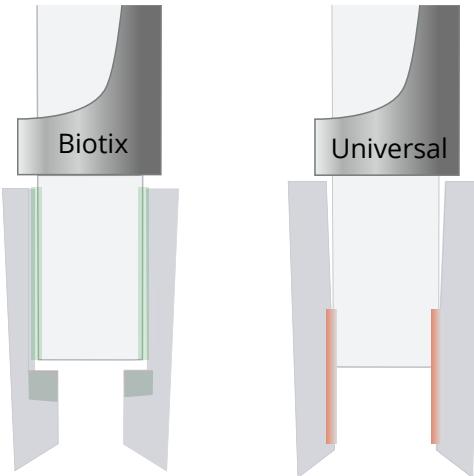
Using this chart and additional scientific research on the subject of ergonomics, the Biotix system is designed to keep your ejection force well-below the dynamic forces recommended by professionals regardless of your technique for inserting the tip.

# Biotix Ergonomix System

The Biotix Ergonomix System uses positive stop technology to keep your ejection forces consistently low

## Biotix Ergonomix System

- FlexFit seal technology creates a secure seal on contact with the pipette
- The thin, flexible walls of the seal area creates a very low force fit
- StarStop™, the positive stop inside the tip creates uniform tip loading and prevents jamming
- Dramatic reduction in tip ejection force

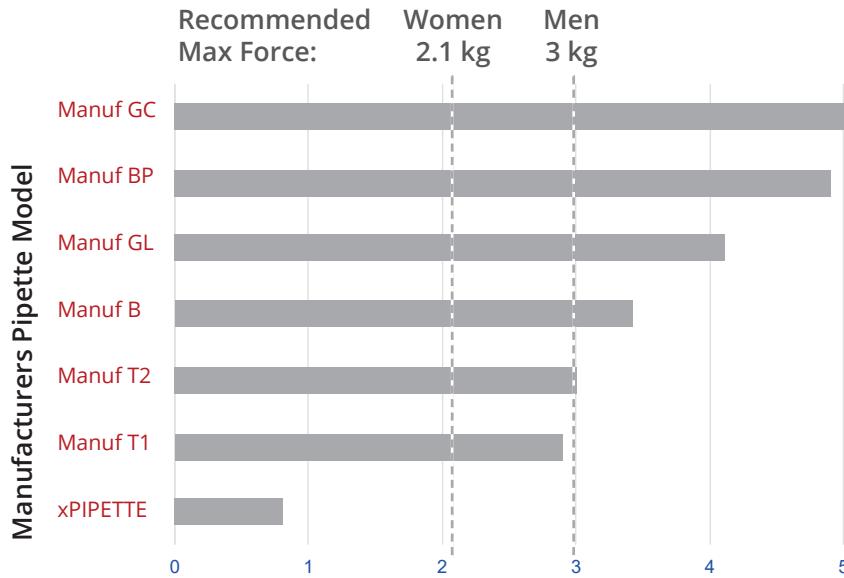


## Universal Pipette

- Thick walls with a large variable sealing area
- High force, friction fit
- No perceivable feedback to confirm when tip sealing has occurred, often resulting in jamming of tips to secure a seal
- Allows the pipette to wedge deep in the tip creating high ejection forces

*"The tips work very well for day to day use. They do not require a lot of force to apply to the pipet nor to eject."*

-Reviewer on SelectScience



The graph on the left shows a comparison between traditional universal pipetting systems and the Biotix Ergonomix System. For this test we used a continuous insertion force of 5 kg averaged across three tip sizes. The positive stop built into the Ergonomix System keeps the ejection force below the recommended levels by ergonomists for both men and women. All competitors are above either the men or women recommended levels which can lead to increased fatigue and risk of RSI/RSD.

The Biotix xPIPETTE is designed to improve ergonomics using positive stop technology to drastically lower your ejection forces. Available in a wide range of volumes and styles.

## xPIPETTE Single Channel Adjustable Volume Pipettes



Patented ejection technology reduces fatigue and makes the xPIPETTE a top choice to improve your lab's ergonomics. Designed with durable and lightweight components to produce a precise and accurate liquid transfer while maintaining hand comfort.

- Calibrated to ISO 8655 standards with Biotix xTIP4 tips, also fully compatible with Rainin™ LTS™
- Light spring forces produce a smooth and controlled aspiration with perfect balance
- Padded ejector button reduces the dynamic forces and vibrations your hand is exposed to during tip ejection
- Simple volume adjustment by turning the plunger

| Catalog No. | Description                         |
|-------------|-------------------------------------|
| 63300160    | 0.2-2.0µL Single Channel, xPIPETTE  |
| 63300161    | 0.5-10µL Single Channel, xPIPETTE   |
| 63300162    | 2.0-20µL Single Channel, xPIPETTE   |
| 63300163    | 10-100µL Single Channel, xPIPETTE   |
| 63300164    | 20-200µL Single Channel, xPIPETTE   |
| 63300327    | 20-300µL Single Channel, xPIPETTE   |
| 63300165    | 100-1000µL Single Channel, xPIPETTE |

## xPIPETTE Multichannel Adjustable Volume Pipettes

The Biotix xPIPETTE multichannel achieves the highest standards for accuracy and precision while providing perfect balance and low operating forces. The positive stop technology keeps ejection forces low even on multichannel models. Engineered with light force springs and low drag seals to provide you a seamless draw and dispense.

- Calibrated to ISO 8655 standards with Biotix xTIP4 tips & compatible with Rainin™ LTS™
- Available in 8- and 12-channel models
- Made with lightweight, durable materials for comfortable everyday use
- Accurate and precise measurements with low channel-channel variation
- Symmetrical design allows for easy left or right hand use without any adjustments



| Catalog No. | Description                   |
|-------------|-------------------------------|
| 63305170    | 0.5-10µL 8-Channel, xPIPETTE  |
| 63305171    | 2.0-20µL 8-Channel, xPIPETTE  |
| 63305172    | 20-200µL 8-Channel, xPIPETTE  |
| 63305173    | 20-300µL 8-Channel, xPIPETTE  |
| 63305174    | 0.5-10µL 12-Channel, xPIPETTE |
| 63305175    | 2.0-20µL 12-Channel, xPIPETTE |
| 63305176    | 20-200µL 12-Channel, xPIPETTE |
| 63305177    | 20-300µL 12-Channel, xPIPETTE |

# Biotix Tip Technology

Pipettes are only half of the equation. The Biotix Ergonomix System is compatible with xTIP4 pipette tips which feature innovative technology to improve data quality.

## Ergonomic Fit



**FlexFit™** sealing technology makes an instant seal on the xPIPETTE. This patented feature consists of thick and thin ribs in the tip's seal area creating maximum flexibility. This flexibility allows it to easily conform to the shape of the pipette barrel and produce a secure seal.

**StarStop™** is the rib network on the inside of the tip that acts as the positive stop when the pipette enters the tip. This feature is engineered at the perfect depth to ensure a secure seal while keeping ejection forces as low as possible. This feature also aligns all of the tips on multichannel pipettes making pipetting 96-well plates simple.

## Clean Delivery

Biotix tips are molded with our proprietary low retention **X-Resin™** resulting in a uniform composition throughout the tip for ultra low retention. This low binding polymer ensures maximum sample recovery of proteins, DNA, and nanoparticles while ensuring accurate and precise measurements.

xTIP tips feature fine point precision with our **Blade™** distal end. By minimizing the surface area at the end of the tip , we have decreased the chance of burdensome hanging droplets sticking at the end of your dispense. Blade technology produces precise results while saving time by reducing the need for tip touch off.



# Biotix xTIP Pipette Tips

Ergonomix

Engineered with unique features to maximize sample recovery, increase accuracy and improve ergonomics

## Filtered xTIP Pipette Tips

xTIP filter tips contain sintered polyethylene filters that deliver a secure barrier to block aerosol contaminants with a 99.99% bacterial filter efficiency.



| Catalog No. | Description                                  | Packaging     |
|-------------|--|---------------|
| 63300931    | 0.2-20µL Filtered, Racked, Sterilized        | 10 racks/pack |
| 63300001    | 20-200µL Filtered, Racked, Sterilized, Low   | 10 racks/pack |
| 63300002    | 20-300µL Filtered, Racked, Sterilized, Low   | 10 racks/pack |
| 63300003    | 100-1000µL Filtered, Racked, Sterilized, Low | 8 racks/pack  |
| 63300004    | 100-1200µL Filtered, Racked, Sterilized, Low | 8 racks/pack  |

## Non-Filtered xTIP Pipette Tips

Biotix xTIP non-filtered tips come in two styles: one that is sterilized after packaging for an extra level of protection and a non-sterile version. Each lot is put through our rigorous QC testing and certified free of DNase, RNase, endotoxins, pyrogens, ATP and PCR inhibitors. Additional features include:

- Sustainable rack design using 30% less plastic than leading competitors
- Engineered with FlexFit, StarStop, X-Resin and Blade features
- Color coded snapcards match the compatible pipette's plunger cap
- Autoclaveable at 121 °C, no dry cycle



| Catalog No. | Description                                | Packaging     |
|-------------|--|---------------|
| 63300005    | 0.2-20µL Racked, Sterilized                | 10 racks/pack |
| 63300006    | 20-200µL Racked, Sterilized, Low Retention | 10 racks/pack |
| 63300007    | 20-300µL Racked, Sterilized, Low Retention | 10 racks/pack |
| 63300008    | 100-1000µL Racked, Sterilized, Low Reten-  | 8 racks/pack  |
| 63300009    | 100-1200µL Racked, Sterilized, Low Reten-  | 8 racks/pack  |
| 63300020    | 0.2-20µL Racked                            | 10 racks/pack |
| 63300021    | 20-200µL Racked, Low Retention             | 10 racks/pack |
| 63300022    | 20-300µL Racked, Low Retention             | 10 racks/pack |
| 63300023    | 100-1000µL Racked, Low Retention           | 8 racks/pack  |
| 63300024    | 100-1200µL Racked, Low Retention           | 8 racks/pack  |

# Reload Solutions

The Ergonomix System has two reload styles to reduce plastic waste in your lab. Simply reuse your empty racks.

## xTIP Tip Eject™ Reload

Tip Eject is a self aligning reload solution. Simply press on the top of the stack and the empty rack will be refilled at the bottom.



- Reduces waste by 30% when compared to racked product
- Sterilized after packaging for added protection
- Rack boxes are autoclaveable after loading at 121° C
- Certified free of DNase, RNase, endotoxins, pyrogens, ATP, and PCR inhibitors

| Catalog No. | Description  | Packaging       |
|-------------|--|-----------------|
| 63300015    | 0.2-20µL Tip Eject Reload, Sterilized                  | 10 refills/pack |
| 63300016    | 20-200µL Tip Eject Reload, Sterilized, Low Retention   | 10 refills/pack |
| 63300018    | 100-1000µL Tip Eject Reload, Sterilized, Low Retention | 8 refills/pack  |
| 63300019    | 100-1200µL Tip Eject Reload, Sterilized, Low Retention | 8 refills/pack  |

| Empty Racks for CleanPak and Tip Eject Reloads | Packaging  |
|--|--|
| 63300151                                       | Empty Racks for Tip Eject and CleanPak Reloads, 20-300µL tips    |
| 63300152                                       | Empty Racks for Tip Eject and CleanPak Reloads ,1000-1200µL tips |

## xTIP CleanPak™ Reload

CleanPak reloads arrive hermetically sealed in a ziploc bag for superior tip purity. Available in both sterilized and non-sterile formats.

- Reduces waste by 50% when compared to racked product
- Color coded snapcards match the compatible pipette's plunger cap
- To refill an empty rack just reach into the bag and manually transfer a snapcard
- Rack boxes are autoclaveable after loading at 121° C
- Certified free of DNase, RNase, endotoxins, pyrogens, ATP, and PCR inhibitors



| Catalog No. | Description                               | Packaging       |
|-------------|---|-----------------|
| 63300025    | 0.2-20µL CleanPak Reload                  | 10 refills/pack |
| 63300026    | 20-200µL CleanPak Reload, Low Retention   | 10 refills/pack |
| 63300027    | 20-300µL CleanPak Reload, Low Retention   | 10 refills/pack |
| 63300028    | 100-1000µL CleanPak Reload, Low Retention | 8 refills/pack  |
| 63300029    | 100-1200µL CleanPak Reload, Low Retention | 8 refills/pack  |



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