



## HTL PRODUCT CATALOGUE



[WWW.HTL.COM.PL](http://WWW.HTL.COM.PL)

Corning HTL SA is a modern and dynamically growing enterprise which is part of the Corning Incorporated. We have our own construction and technology department and an experienced, highly-qualified personnel. We use established production and management standards to deliver products of the highest quality to the global market. Throughout all manufacturing stages, we use well-tested quality control systems. Every product has a unique number to enable its full identification. Individual parameters for each pipette are provided on the certificate attached to the product. All devices made by Corning HTL are developed and manufactured in compliance with European Union standards and directives.

Corning HTL SA has a certified Quality Management System, compliant with ISO 9001:2015 that is visible in all significant processes within the company.

HTL products, through an excellently organized sales network, reach over 145 distributors in 80 countries worldwide. In Poland, our home market, we have a countrywide distributor network.

Corning HTL Calibration Laboratory on the 21<sup>st</sup> of December 2016 has attained accreditation to the ISO/IEC 17025:2018-02 Standard by the Polish Centre of Accreditation (PCA), which is a member of IAF (International Accreditation Forum, Inc.), ILAC (International Laboratory Accreditation Cooperation), and EA (European co-operation for Accreditation). The ISO accreditation is the most important standard demonstrating that the laboratory follows an internationally accepted quality-management system, along with procedures that ensure and improve the quality of its products and services. The Corning HTL Calibration Laboratory's official accreditation number: AP169.





Our company puts a major emphasis on issues related to environmental protection. The major tenet of the Corning HTL environmental policy is to make its operations environmentally friendly. We meet our commitment by complying with the applicable legal provisions in force and environmental protection standards as well as by meeting the rules of conduct set in the corporate policy. Regularly conducted environmental audits are aimed to identify potential threats and incompliances and to take corrective measures. On-going monitoring is provided to implement pro-environment measures in new areas and to improve Environmental Management System.




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A wide range of Liquid Handling products available in the Corning HTL portfolio addresses the changing expectations of Our Customers who highly value safety, working comfort and reliability offered by HTL products. Thanks to over 35 years of experience, cutting edge technologies used in the manufacturing process and to the whole team's commitment, we manufacture products of the highest quality.



# CONTENTS

DISCOVERY PRO variable volume pipette series

DISCOVERY COMFORT variable volume pipette series

LABMATE PRO variable volume pipette series

OPTIPETTE variable volume pipette series

CLINIPET+ fixed volume pipette series

Pipette tips - standard & filtered

Pipette stands & accessories

Service & Calibration

ISO 17025 Calibration

SWIFTPET PRO pipette controller

MINILAB 201 repetitive dispenser & syringes

HTL MINI MICROCENTRIFUGE compact laboratory centrifuge

Pipette Series Comparison

Good pipetting practice

Troubleshooting

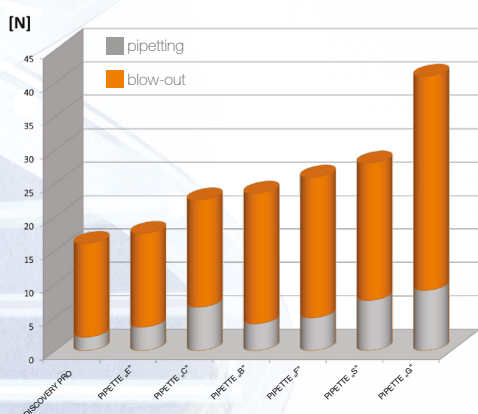
# DISCOVERY PRO pipette series

DISCOVERY PRO pipette series is uniquely dedicated to three key features: ergonomics, accuracy and precision. Lightweight construction, contoured shape of the handle and finger-hook guarantee correct grip reducing wrist strain and fatigue (RSI). The tip ejection force is reduced by more than 30%, in comparison with traditional pipette construction, thanks to the unique pushbutton-lever system.

## Modern design & innovative construction guarantee thermal insulation of internal parts

- Eliminates the risk of heat transfer to the inner mechanism of the pipette
- Improves accuracy

## Ultra low pipetting forces



## Quality according to GLP standards

- Volume setting lock
- Colour coding



- 4-digit counter remains visible during work
- Clear & easy to read numbers
- Very fast counter rewinding

The use of the highest quality grade materials guarantees the best chemical and mechanical resistance possible and enables sterilization under UV light and by autoclaving.

Due to universal shafts and long ejector stroke DISCOVERY PRO pipettes are compatible with virtually all brands of tips.

DISCOVERY PRO pipette series brings ergonomics to the highest level. Comfortable pipetting and ejector pushbuttons, well-shaped handle and finger rest guarantee correct grip and "soft" spring system reduces wrist strain and fatigue.



Accuracy and precision according to ISO 8655.  
Each pipette is individually calibrated and issued with a quality certificate.

## QUALITY CONTROL CERTIFICATE

PT HTL S.A. has established and maintains quality and environmental management systems in designing, production, sales & service of liquid handling equipment and accessories.

Each instrument passes stringent validation and Control Procedures in accordance with **EN ISO 8655**.

All HTL manual pipettes are CE marked.

| Model:     | D1000      | Volume (µl) : 150      | Volume (µl) : 1000     |
|------------|------------|------------------------|------------------------|
| Serial:    | 64061943   |                        |                        |
| Date:      | 2017-02-13 | Accuracy (%) : -1.1947 | Accuracy (%) : -0.0076 |
| Tested by: | C51        | Precision (%) : 0.1758 | Precision (%) : 0.0613 |
| Status:    | Passed     | Passed                 | Passed                 |

Tested with distilled water:

Condition of measurement:  
Basis of adjustment: By Reference temperature: 20°C; Relative air humidity: 50%; Barometric pressure: 1013hPa  
PT HTL S.A. Santissima Trinità 4, 03-230 Narzewo, Poland.

| Model  | Cat. no. | Colour code | Volume (µL)                 | A (%)                    | P (%)                    | Standard tips, non-filtered |
|--------|----------|-------------|-----------------------------|--------------------------|--------------------------|-----------------------------|
| DP2*   | 6001     | ●           | 0.2<br>1.0<br>Max 2.0       | ± 12.0<br>± 2.7<br>± 1.5 | ± 6.0<br>± 1.3<br>± 0.7  | 10 µL                       |
| DP10   | 6002     | ●           | Min 0.5<br>5.0<br>Max 10.0  | ± 4.0<br>± 1.0<br>± 0.5  | ± 2.8<br>± 0.6<br>± 0.4  |                             |
| DP20   | 6003     | ●           | Min 2<br>10<br>Max 20       | ± 3.0<br>± 1.0<br>± 0.8  | ± 1.5<br>± 0.5<br>± 0.3  |                             |
| DP100  | 6004     | ●           | Min 10<br>50<br>Max 100     | ± 1.6<br>± 0.8<br>± 0.8  | ± 0.8<br>± 0.24<br>± 0.2 | 200 µL                      |
| DP200  | 6005     | ●           | Min 20<br>100<br>Max 200    | ± 1.2<br>± 0.8<br>± 0.6  | ± 0.6<br>± 0.25<br>± 0.2 |                             |
| DP1000 | 6006     | ●           | Min 100<br>500<br>Max 1,000 | ± 1.6<br>± 0.7<br>± 0.6  | ± 0.4<br>± 0.2<br>± 0.15 | 1,000 µL                    |


\*DP2 – minimum volume is 0.1 µL.

| Model               | Cat. no.     | Colour code | Volume (µL)              | A (%)                   | P (%)                   | Standard tips, non-filtered |
|---------------------|--------------|-------------|--------------------------|-------------------------|-------------------------|-----------------------------|
| DP8-10<br>DP12-10   | 4951<br>4955 | ●           | Min 0.5<br>5<br>Max 10   | ±10.0<br>± 4.0<br>± 2.0 | ± 8.0<br>± 2.0<br>± 1.2 | 10 µL                       |
| DP8-50<br>DP12-50   | 4952<br>4956 | ●           | Min 5<br>25<br>Max 50    | ± 4.0<br>± 3.0<br>± 1.6 | ± 2.5<br>± 1.2<br>± 0.6 | 200 µL                      |
| DP8-200<br>DP12-200 | 4953<br>4957 | ●           | Min 20<br>100<br>Max 200 | ± 3.0<br>± 1.5<br>± 1.0 | ± 1.5<br>± 0.8<br>± 0.6 |                             |
| DP8-300<br>DP12-300 | 4954<br>4958 | ●           | Min 50<br>150<br>Max 300 | ± 1.6<br>± 1.2<br>± 1.0 | ± 1.5<br>± 1.0<br>± 0.6 | 300 µL                      |

Note: The HTL maximum permissible errors can be obtained only when HTL pipette tips are used.

## Starter DISCOVERY PRO 4 pack

Economy set of 4 pipettes and accessories.

| Product   | Cat. no. | Model                           | Accessories  |
|---|----------|---------------------------------|--|
| DISCOVERY PRO STARTER 4 PACK<br> | 7903     | DP10<br>DP20<br>DP200<br>DP1000 | Plexi 4-position stand<br>Tips 10 µL, 96 pcs<br>Tips 200 µL, 96 pcs<br>Tips 1,000 µL, 96 pcs<br>Calibration tool x 4<br>Pipette hanger x 4<br>Instruction manual |

### Intuitive way of the user calibration



Lock the volume setting knob. Remove the colour cap using the calibration key. Set the calibration switch in its upper „CAL” position.



Insert the calibration key into the ejector orifice. Turn the key so as the volume indicated by the counter is equal to the average calculated volume. Refer to the user manual for details.



Remove the calibration key and set the calibration switch in its lower position. Place the cap on the ejector button.



5480

Plexi 4-position stand



5449

Multiple stand



5479

Plexi 1-position stand



SP19483

Pipette hanger

## MULTICHANNEL PIPETTES

Multichannel DISCOVERY PRO pipette version provides all the benefits of the single channel pipette and more. Light weight, contoured shape of the handle, excellent accuracy and precision combined with revolutionary multichannel manifold set the new standard of working with micro plates. The pipettes available in a wide range of volumes in 8- & 12-channel version, make the daily life in many laboratories easier.



- 4-digit counter
- Low pipetting forces eliminating fatigue and improving test results
- Highest accuracy & precision
- Robust design
- User friendly calibration system
- Curved ejector bar – sequential tip ejection with minimum effort
- 360° rotating manifold for optimal working comfort
- Tip loading mechanism for perfect tip sealing





# DISCOVERY COMFORT pipette series

DISCOVERY COMFORT pipettes combine the highest level of accuracy and precision with traditional design to make the pipetting experience comfortable and safe. The pipettes are available in single and multichannel version.

- Low pipetting forces and ergonomic design prevent RSI
- Smooth volume setting with volume locking
- Colour coding
- Excellent precision in long pipetting series



- Robust design
- Perfect tip sealing with minimum effort
- UV resistant & fully autoclavable
- 5 & 10 mL shafts protected by filter



- Curved ejector bar – sequential tip ejection with minimum effort
- 360° rotating manifold for optimal working comfort
- Tip loading mechanism for perfect tip sealing



## Easy user calibration



Remove the pushbutton set.



Insert the calibration key and locate in the key slots. The calibration key is delivered with the pipette.



Turn the key to increase or decrease the display volume. Refer to the user manual for details.



Replace the pushbutton set. The procedure completed.



Easy disassembling & adjustment of the tip ejector



DV – grey shaft



D – colour shaft



DV8 – 8 channels



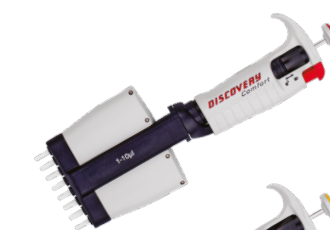
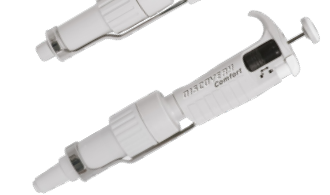
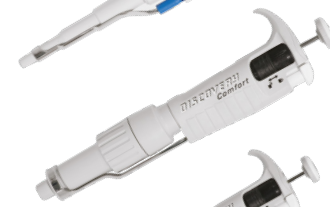
DV12 – 12 channels

| Model             | Cat. no.              | Colour code | Volume (µL)                      | A (%)                    | P (%)                    | Standard tips, non-filtered |
|-------------------|-----------------------|-------------|----------------------------------|--------------------------|--------------------------|-----------------------------|
| DV2*<br>D2        | 4041 - DV<br>4051 - D | ●           | Min 0.2<br>1.0<br>Max 2.0        | ± 12.0<br>± 2.7<br>± 1.5 | ± 6.0<br>± 1.3<br>± 0.7  | 10 µL                       |
| DV10<br>D10       | 4042 - DV<br>4052 - D | ●           | Min 0.5<br>5.0<br>Max 10.0       | ± 4.0<br>± 1.0<br>± 0.5  | ± 2.8<br>± 0.6<br>± 0.4  |                             |
| DV20<br>D20       | 4043 - DV<br>4053 - D | ●           | Min 2<br>10<br>Max 20            | ± 3.0<br>± 1.0<br>± 0.8  | ± 1.5<br>± 0.5<br>± 0.3  | 200 µL                      |
| DV50<br>D50       | 4047 - DV<br>4057 - D | ●           | Min 5<br>25<br>Max 50            | ± 2.5<br>± 1.0<br>± 0.8  | ± 2.0<br>± 0.6<br>± 0.4  |                             |
| DV100<br>D100     | 4044 - DV<br>4054 - D | ●           | Min 10<br>50<br>Max 100          | ± 1.6<br>± 0.8<br>± 0.8  | ± 0.8<br>± 0.24<br>± 0.2 |                             |
| DV200<br>D200     | 4045 - DV<br>4055 - D | ●           | Min 20<br>100<br>Max 200         | ± 1.2<br>± 0.8<br>± 0.6  | ± 0.6<br>± 0.25<br>± 0.2 |                             |
| DV250<br>D250     | 4040 - DV<br>4050 - D | ●           | Min 50<br>125<br>Max 250         | ± 1.0<br>± 0.8<br>± 0.6  | ± 0.4<br>± 0.3<br>± 0.3  | 300 µL                      |
| DV1000<br>D1000   | 4046 - DV<br>4056 - D | ●           | Min 100<br>500<br>Max 1,000      | ± 1.6<br>± 0.7<br>± 0.6  | ± 0.4<br>± 0.2<br>± 0.15 | 1,000 µL                    |
| DV5000<br>D5000   | 4048 - DV<br>4058 - D | ○           | Min 500<br>2,500<br>Max 5,000    | ± 1.2<br>± 0.6<br>± 0.5  | ± 0.5<br>± 0.2<br>± 0.15 | 5,000 µL                    |
| DV10000<br>D10000 | 4049 - DV<br>4059 - D | ○           | Min 1,000<br>5,000<br>Max 10,000 | ± 2.5<br>± 0.8<br>± 0.5  | ± 0.6<br>± 0.3<br>± 0.2  | 10,000 µL                   |

\* DV/D2 – minimum volume is 0.1 µL.

| Model               | Cat. no.     | Colour code | Volume (µL)              | A (%)                    | P (%)                   | Standard tips, non-filtered |
|---------------------|--------------|-------------|--------------------------|--------------------------|-------------------------|-----------------------------|
| DV8-10<br>DV12-10   | 5121<br>5125 | ●           | Min 0.5<br>5<br>Max 10   | ± 10.0<br>± 4.0<br>± 2.0 | ± 8.0<br>± 2.0<br>± 1.2 | 10 µL                       |
| DV8-50<br>DV12-50   | 5122<br>5126 | ●           | Min 5<br>25<br>Max 50    | ± 4.0<br>± 3.0<br>± 1.6  | ± 2.5<br>± 1.2<br>± 0.6 | 200 µL                      |
| DV8-200<br>DV12-200 | 5123<br>5127 | ●           | Min 20<br>100<br>Max 200 | ± 3.0<br>± 1.5<br>± 1.0  | ± 1.5<br>± 0.8<br>± 0.6 |                             |
| DV8-300<br>DV12-300 | 5124<br>5128 | ●           | Min 50<br>150<br>Max 300 | ± 1.6<br>± 1.2<br>± 1.0  | ± 1.5<br>± 1.0<br>± 0.6 | 300 µL                      |

Note: The HTL maximum permissible errors can be obtained only when HTL pipette tips are used.







Carousel stand

Multiple stand

Plexi 4-position  
stand

Plexi 1-position  
stand

## DISCOVERY COMFORT starter sets

Economy set of 3 or 4 pipettes and accessories.

| Product  | Cat. no. | Model                           | Accessories   |
|--|----------|---------------------------------|---|
| DISCOVERY Comfort STARTER 4 PACK<br> | 7901     | DV10<br>DV20<br>DV200<br>DV1000 | Plexi 4-position stand<br>Tips 10 $\mu$ L, 96 pcs<br>Tips 200 $\mu$ L, 96 pcs<br>Tips 1,000 $\mu$ L, 96 pcs<br>Calibration tool x 4<br>Pipette hanger x 4<br>Instruction manual |
|  | 7904     | D10<br>D20<br>D200<br>D1000     |   |
| DISCOVERY STARTER KIT<br>            | 7924     | DV20<br>DV200<br>DV1000         | Tips 200 $\mu$ L, 96 pcs<br>Tips 1,000 $\mu$ L, 96 pcs<br>Calibration tool x 3<br>Pipette hanger x 3<br>Instruction manual  |
|  | 7926     | D20<br>D200<br>D1000            |   |
| DISCOVERY STARTER KIT BIO<br>        | 7923     | DV10<br>DV100<br>DV1000         | Tips 10 $\mu$ L, 96 pcs<br>Tips 200 $\mu$ L, 96 pcs<br>Tips 1,000 $\mu$ L, 96 pcs<br>Calibration tool x 3<br>Pipette hanger x 3<br>Instruction manual                           |
|  | 7925     | D10<br>D100<br>D1000            |   |

# LABMATE PRO pipette series

The LABMATE PRO pipette family offers a wide variety of volume models for different laboratory applications. Its durable, UV resistant and autoclavable body is coupled with high accuracy and precision performance to ensure many years of reliable service in laboratories all over the world.



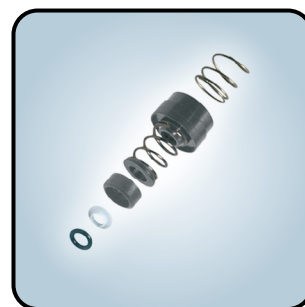
- Contoured shape of the handle and light weight
- Proven accuracy and precision
- UV resistant & fully autoclavable
- 5 & 10 mL shaft protected by filter
- Available in 8- & 12-channel version
- Colour coded shafts for easy volume identification



The adjustable ejector height system – to accommodate virtually all brands of tips



Dual volume setting using the pushbutton or the thumbwheel



Soft spring system for smooth, effortless pipetting

Multichannel LABMATE PRO pipette version feature a revolutionary suspension system which allows the shafts to retract slightly when pressed against a row of pipette tips. Each shaft moves independently, resulting in an even sealing force being applied to all 8 or 12 tips. The suspension system not only ensures secure tip sealing but also eliminates the common incident of tips being jammed. The 360° rotating manifold guarantees optimal working comfort.



5484

Carousel stand



5449

Multiple stand



5480

Plexi 4-position stand



5479

Plexi 1-position stand



| Model    | Cat. no. | Colour code | Volume (µL)                      | A (%)                    | P (%)                      | Standard tips, non-filtered |
|----------|----------|-------------|----------------------------------|--------------------------|----------------------------|-----------------------------|
| LMP2*    | 5661     | ●           | 0.2<br>1.0<br>Max 2.0            | ± 12.0<br>± 2.7<br>± 1.5 | ± 6.0<br>± 1.3<br>± 0.7    | 10 µL                       |
| LMP10    | 5662     | ●           | Min 0.5<br>5.0<br>Max 10.0       | ± 4.0<br>± 1.0<br>± 0.5  | ± 2.8<br>± 0.6<br>± 0.4    |                             |
| LMP20    | 5663     | ●           | Min 2<br>10<br>Max 20            | ± 3.0<br>± 1.0<br>± 0.8  | ± 1.5<br>± 0.5<br>± 0.3    |                             |
| LMP50    | 5667     | ●           | Min 5<br>25<br>Max 50            | ± 2.5<br>± 1.0<br>± 0.8  | ± 2.0<br>± 0.6<br>± 0.4    | 200 µL                      |
| LMP100   | 5664     | ●           | Min 10<br>50<br>Max 100          | ± 1.6<br>± 0.8<br>± 0.8  | ± 0.80<br>± 0.24<br>± 0.20 |                             |
| LMP200   | 5665     | ●           | Min 20<br>100<br>Max 200         | ± 1.2<br>± 0.8<br>± 0.6  | ± 0.60<br>± 0.25<br>± 0.20 |                             |
| LMP250   | 5660     | ●           | Min 50<br>125<br>Max 250         | ± 1.0<br>± 0.8<br>± 0.6  | ± 0.4<br>± 0.3<br>± 0.3    | 300 µL                      |
| LMP1000  | 5666     | ●           | Min 100<br>500<br>Max 1,000      | ± 1.6<br>± 0.7<br>± 0.6  | ± 0.40<br>± 0.20<br>± 0.15 | 1,000 µL                    |
| LMP5000  | 5668     | ○           | Min 500<br>2,500<br>Max 5000     | ± 1.2<br>± 0.6<br>± 0.5  | ± 0.5<br>± 0.20<br>± 0.15  | 5,000 µL                    |
| LMP10000 | 5669     | ○           | Min 1,000<br>5,000<br>Max 10,000 | ± 2.5<br>± 0.8<br>± 0.5  | ± 0.6<br>± 0.3<br>± 0.2    | 10,000 µL                   |

\* LMP2 – minimum volume is 0.1 µL.

| Model                 | Cat. no.     | Colour code | Volume (µL)              | A (%)                   | P (%)                   | Standard tips, non-filtered |
|-----------------------|--------------|-------------|--------------------------|-------------------------|-------------------------|-----------------------------|
| LMP8-10<br>LMP12-10   | 6281<br>6285 | ●           | Min 0.5<br>5<br>Max 10   | ± 10<br>± 4.0<br>± 2.0  | ± 8.0<br>± 2.0<br>± 1.2 | 10 µL                       |
| LMP8-50<br>LMP12-50   | 6282<br>6286 | ●           | Min 5<br>25<br>Max 50    | ± 4.0<br>± 3.0<br>± 1.6 | ± 2.5<br>± 1.2<br>± 0.6 | 200 µL                      |
| LMP8-200<br>LMP12-200 | 6283<br>6287 | ●           | Min 20<br>100<br>Max 200 | ± 3.0<br>± 1.5<br>± 1.0 | ± 1.5<br>± 0.8<br>± 0.6 |                             |
| LMP8-300<br>LMP12-300 | 6284<br>6288 | ●           | Min 50<br>150<br>Max 300 | ± 1.6<br>± 1.2<br>± 1.0 | ± 1.5<br>± 1.0<br>± 0.6 | 300 µL                      |

Note: The HTL maximum permissible errors can be obtained only when HTL pipette tips are used.

## Starter LABMATE PRO 4 pack

Economy set of 4 pipettes and accessories.

| Product                       | Cat. no. | Model                               | Accessories  |
|-------------------------------|----------|-------------------------------------|--|
| LABMATE PRO<br>STARTER 4 PACK | 7905     | LMP10<br>LMP20<br>LMP200<br>LMP1000 | Plexi 4-position stand<br>Tips 10 µL, 96 pcs<br>Tips 200 µL, 96 pcs<br>Tips 1,000 µL, 96 pcs<br>Calibration tool x 4<br>Pipette hanger x 4<br>Instruction manual |

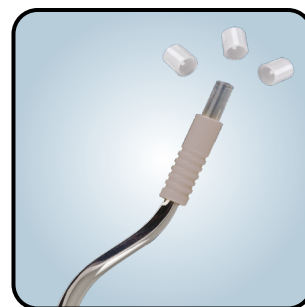
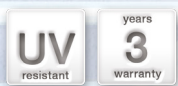


# OPTIPETTE pipette series

OPTIPETTE pipette series feature slim handle, high accuracy and precision rates combined with their tremendous robustness. Its design provides users with excellent ergonomics & safety.



- Ergonomic handle design
- Easy calibration
- Excellent accuracy & precision
- Soft spring system reducing pipetting forces
- Colour-coded rings for volume identification
- UV resistant body
- Autoclavable lower parts
- Available in 8- & 12-channel version



Additional spacers enable ejector height adjustment



Rotating pipetting pushbutton prevents accidental volume change



Calibration key provided with each pipette allows user-calibration



5484

Carousel  
stand



5449

Multiple  
stand



5480

Plexi  
4-position stand



5479

Plexi  
1-position stand





| Model   | Cat. no. | Colour code | Volume (µL)                      | A (%)                    | P (%)                      | Standard tips, non-filtered |
|---------|----------|-------------|----------------------------------|--------------------------|----------------------------|-----------------------------|
| OP2*    | 5601     | ●           | 0.2<br>1.0<br>Max 2.0            | ± 12.0<br>± 2.7<br>± 1.5 | ± 6.0<br>± 1.3<br>± 0.7    | 10 µL                       |
| OP10    | 5602     | ●           | Min 0.5<br>5.0<br>Max 10.0       | ± 4.0<br>± 1.0<br>± 0.5  | ± 2.8<br>± 0.6<br>± 0.4    |                             |
| OP20    | 5603     | ●           | Min 2<br>10<br>Max 20            | ± 3.0<br>± 1.0<br>± 0.8  | ± 1.5<br>± 0.5<br>± 0.3    | 200 µL                      |
| OP50    | 5607     | ●           | Min 5<br>25<br>Max 50            | ± 2.5<br>± 1.0<br>± 0.8  | ± 2.0<br>± 0.6<br>± 0.4    |                             |
| OP100   | 5604     | ●           | Min 10<br>50<br>Max 100          | ± 1.6<br>± 0.8<br>± 0.8  | ± 0.80<br>± 0.24<br>± 0.20 |                             |
| OP200   | 5605     | ●           | Min 20<br>100<br>Max 200         | ± 1.2<br>± 0.8<br>± 0.6  | ± 0.60<br>± 0.25<br>± 0.20 |                             |
| OP250   | 5600     | ●           | Min 50<br>125<br>Max 250         | ± 1.0<br>± 0.8<br>± 0.6  | ± 0.4<br>± 0.3<br>± 0.3    | 300 µL                      |
| OP1000  | 5606     | ●           | Min 100<br>500<br>Max 1,000      | ± 1.6<br>± 0.7<br>± 0.6  | ± 0.40<br>± 0.20<br>± 0.15 | 1,000 µL                    |
| OP5000  | 5608     | ○           | Min 500<br>2,500<br>Max 5,000    | ± 1.2<br>± 0.6<br>± 0.5  | ± 0.5<br>± 0.20<br>± 0.15  | 5,000 µL                    |
| OP10000 | 5609     | ○           | Min 1,000<br>5,000<br>Max 10,000 | ± 2.5<br>± 0.8<br>± 0.5  | ± 0.6<br>± 0.3<br>± 0.2    | 10,000 µL                   |

\*OP2 – minimum volume is 0.1 µL.

| Model               | Cat. no.     | Colour code | Volume (µL)              | A (%)                    | P (%)                   | Standard tips, non-filtered |
|---------------------|--------------|-------------|--------------------------|--------------------------|-------------------------|-----------------------------|
| OP8-10<br>OP12-10   | 5141<br>5145 | ●           | Min 0.5<br>5<br>Max 10   | ± 10.0<br>± 4.0<br>± 2.0 | ± 8.0<br>± 2.0<br>± 1.2 | 10 µL                       |
| OP8-50<br>OP12-50   | 5142<br>5146 | ●           | Min 5<br>25<br>Max 50    | ± 4.0<br>± 3.0<br>± 1.6  | ± 2.5<br>± 1.2<br>± 0.6 | 200 µL                      |
| OP8-200<br>OP12-200 | 5143<br>5147 | ●           | Min 20<br>100<br>Max 200 | ± 3.0<br>± 1.5<br>± 1.0  | ± 1.5<br>± 0.8<br>± 0.6 |                             |
| OP8-300<br>OP12-300 | 5144<br>5148 | ●           | Min 50<br>150<br>Max 300 | ± 1.6<br>± 1.2<br>± 1.0  | ± 1.5<br>± 1.0<br>± 0.6 | 300 µL                      |

Note: The HTL maximum permissible errors can be obtained only when HTL pipette tips are used.

| Product  | Cat. no. | Model                           | Accessories  |
|--|----------|---------------------------------|--|
|  OPTIPETTE STARTER 4 PACK       | 7902     | OP10<br>OP20<br>OP200<br>OP1000 | Plexi 4-position stand<br>Tips 10 µL, 96 pcs<br>Tips 200 µL, 96 pcs<br>Tips 1,000 µL, 96 pcs<br>Calibration tool x 4<br>Instruction manual |
|  OPTIPETTE COLOR STARTER 4 PACK | 7912     | OP10<br>OP20<br>OP200<br>OP1000 | Plexi 4-position stand<br>Tips 10 µL, 96 pcs<br>Tips 200 µL, 96 pcs<br>Tips 1,000 µL, 96 pcs<br>Calibration tool x 4<br>Instruction manual |

# CLINIPET<sup>+</sup> pipette series

CLINIPET<sup>+</sup> fixed volume pipettes are available in 33 models from 2 µL up to 1,000 µL. The handle and mechanism have been especially designed for fixed volume pipettes. The pipette features reduced pipetting forces and excellent accuracy and precision combined with highly durable, UV resistant and fully autoclavable body.

- Recalibration system allows for quick and accurate pipettes calibration



- Low pipetting forces prevent RSI
- Highly durable, made from PVDF shafts guarantee highest mechanical and chemical resistance



- Unique tip sealing system







Sliding tip ejector button – perfect for right & left handed people. Its unique construction reduces tip ejection forces

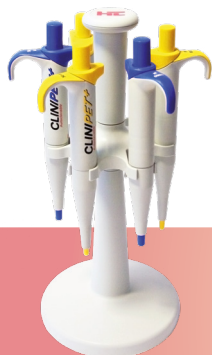


Easy removable tip ejector allows working with narrow tubes



| Model   | Cat. no. | Colour code   | Volume (µL) | A (%) | P (%) | Standard tips, non-filtered   |
|---------|----------|---|-------------|-------|-------|---|
| CP2*    | 2202-CP  |    | 2           | ± 3.0 | ± 1.5 | <br>200 µL     |
| CP5     | 2204-CP  |   | 5           | ± 2.0 | ± 1.0 |   |
| CP7*    | 2206-CP  |   | 7           | ± 1.5 | ± 0.7 |   |
| CP10    | 2208-CP  |   | 10          | ± 1.2 | ± 0.5 |   |
| CP15*   | 2210-CP  |   | 15          | ± 1.0 | ± 0.5 |   |
| CP20    | 2212-CP  |   | 20          | ± 0.9 | ± 0.4 |   |
| CP25    | 2214-CP  |   | 25          | ± 0.9 | ± 0.4 |   |
| CP30*   | 2216-CP  |   | 30          | ± 0.9 | ± 0.3 |   |
| CP40*   | 2218-CP  |   | 40          | ± 0.9 | ± 0.3 |   |
| CP44.7* | 2220-CP  |   | 44.7        | ± 0.9 | ± 0.3 |   |
| CP50    | 2222-CP  |   | 50          | ± 0.9 | ± 0.3 |   |
| CP60*   | 2224-CP  |   | 60          | ± 0.9 | ± 0.3 |   |
| CP70*   | 2226-CP  |   | 70          | ± 0.9 | ± 0.3 |   |
| CP75*   | 2228-CP  |   | 75          | ± 0.9 | ± 0.3 |   |
| CP80*   | 2230-CP  |   | 80          | ± 0.9 | ± 0.3 |   |
| CP90*   | 2232-CP  |   | 90          | ± 0.8 | ± 0.3 |   |
| CP100   | 2234-CP  |   | 100         | ± 0.8 | ± 0.3 |   |
| CP120*  | 2236-CP  |   | 120         | ± 0.8 | ± 0.3 |   |
| CP150*  | 2238-CP  |   | 150         | ± 0.7 | ± 0.3 |   |
| CP200   | 2240-CP  |   | 200         | ± 0.6 | ± 0.2 |   |
| CP200A* | 2242-CP  |  | 200         | ± 0.6 | ± 0.2 | <br>1,000 µL |
| CP220*  | 2244-CP  |   | 220         | ± 0.6 | ± 0.2 |   |
| CP250   | 2246-CP  |   | 250         | ± 0.6 | ± 0.2 |   |
| CP300   | 2248-CP  |   | 300         | ± 0.6 | ± 0.2 |   |
| CP400*  | 2250-CP  |   | 400         | ± 0.6 | ± 0.2 |   |
| CP450*  | 2252-CP  |   | 450         | ± 0.6 | ± 0.2 |   |
| CP500   | 2254-CP  |   | 500         | ± 0.6 | ± 0.2 |   |
| CP600*  | 2256-CP  |   | 600         | ± 0.6 | ± 0.2 |   |
| CP700*  | 2258-CP  |   | 700         | ± 0.6 | ± 0.2 |   |
| CP750*  | 2260-CP  |   | 750         | ± 0.6 | ± 0.2 |   |
| CP800*  | 2262-CP  |   | 800         | ± 0.6 | ± 0.2 |   |
| CP900*  | 2264-CP  |   | 900         | ± 0.6 | ± 0.2 |   |
| CP1000  | 2266-CP  |   | 1,000       | ± 0.6 | ± 0.2 |   |

\* Special version upon request. Note: The HTL maximum permissible errors can be obtained only when HTL pipette tips are used.



5484

Carousel stand



5449

Multiple stand



5480

Plexi 4-position stand



SP19451

Pipette hanger

# Pipette tips - standard & filtered

Pipette tips are integral components of the pipetting system. Their shape, material properties and purity have influence on pipetting results. HTL pipette tips are manufactured from the virgin polypropylene in clean room conditions and are certified to be free from bio-contaminants. Corning HTL offer includes standard, sterile and filtered version in all popular packaging formats:

## Types of packing:

### Bulks

Pipette tips available in bulks – resealable plastic bags – keeping them safe from contamination. One bulk contains 200, 250 or 1,000 pieces of tips depending on the tip volume.



### Racks

Tips racked in durable polypropylene box providing good stability on the lab bench. One rack contains 96 or 100 pieces of tips depending on the tip volume.



### Stack racks

Stack racks secure the tips and save valuable space. One stack rack contains 5 trays with 96 tips. Available only for 10  $\mu$ L and 200  $\mu$ L tips. Can be used to refill standard racks.



### Refill system

One refill contains 10 trays with 96 tips each plus an empty rack box. Available only for 10  $\mu$ L and 200  $\mu$ L tips with graduation marks.



- Perfect fitting and sealing with HTL pipettes secures the best possible accuracy and precision
- Compatible with most other pipettes on the market
- Strict quality standards, ISO 9001, followed from R&D to production and delivery
- The highest quality virgin polypropylene used as raw material
- Sterilisation can be performed using autoclave (121°C, 15 minutes, w/o dry cycle)



| Volume of the tip (µL)                        | Pipette volume range                     | Cat. no.   | Sterile | Packaging                      |
|---|--|------------|---------|--------------------------------|
| 0.1 - 10 short                                | 0.1 - 2<br>0.5 - 10                      | 301-03-052 | no      | 1,000 tips / bag               |
|   |  | 301-03-102 | no      | 96 tips / box x 10 boxes       |
|   |  | 301-03-152 | yes     | 96 tips / box x 10 boxes       |
|   |  | 301-03-351 | no      | 5 trays of 96 tips in a stack  |
|   |  | 301-79-102 | no      | 10 removable trays of 96 tips* |
| 0.1 - 10 extended                             | 0.1 - 2<br>0.5 - 10                      | 301-22-052 | no      | 1,000 tips / bag               |
|   |  | 301-22-102 | no      | 96 tips / box x 10             |
|   |  | 301-22-152 | yes     | 96 tips / box x 10             |
| 1 - 200 without graduation marks              | 2 - 20<br>5 - 50<br>10 - 100<br>20 - 200 | 301-02-052 | no      | 1,000 tips / bag               |
|   |  | 301-02-152 | no      | 96 tips / box x 10             |
|   |  | 301-02-202 | yes     | 96 tips / box x 10             |
| 1 - 200 graduation marks at 10, 50 and 100 µL | 2 - 20<br>5 - 50<br>10 - 100<br>20 - 200 | 301-06-052 | no      | 1,000 tips / bag               |
|   |  | 301-06-352 | yes     | 96 tips / box x 10             |
|   |  | 301-06-252 | no      | 5 trays of 96 tips in a stack  |
|   |  | 301-79-052 | no      | 10 removable trays of 96 tips* |
| 1 - 300 fine-point                            | 50 - 250<br>50 - 300                     | 301-16-052 | no      | 1,000 tips / bag               |
|   |  | 301-16-102 | no      | 96 tips / box x 10             |
| 100 - 1000 bevelled                           | 100 - 1000                               | 301-01-202 | no      | 1,000 tips / bag               |
|   |  | 301-01-302 | no      | 100 tips / box x 10            |
|   |  | 301-01-352 | yes     | 100 tips / box x 10            |
| 500 - 5,000 macrovolume                       | 500 - 5,000                              | 301-71-052 | no      | 250 tips / bag                 |
| 1,000 - 10,000 macrovolume                    | 1,000 - 10,000                           | 301-75-052 | no      | 200 tips / bag                 |

\* Refill contains 10 trays with tips plus 2 racks

## Filtered tips

| Volume of the tip (µL)    | Pipette volume range | Cat. no.   | Sterile | Packaging           |
|---------------------------|----------------------|------------|---------|---------------------|
| 0.1 - 10 short            | 0.1 - 2<br>0.5 - 10  | 302-05-102 | yes     | 96 tips / box x 10  |
| 0.1 - 10 extended         | 0.1 - 2<br>0.5 - 10  | 302-26-152 | yes     | 96 tips / box x 10  |
| 0.1 - 10 graduation marks | 2 - 20               | 302-03-102 | yes     | 96 tips / box x 10  |
| 1 - 100 graduation marks  | 10 - 100             | 302-08-102 | yes     | 96 tips / box x 10  |
| 1 - 200 graduation marks  | 20 - 200             | 302-04-102 | yes     | 96 tips / box x 10  |
| 1 - 300 fine-point        | 50 - 250<br>50 - 300 | 302-12-102 | yes     | 96 tips / box x 10  |
| 100 - 1,000 bevelled      | 100 - 1,000          | 302-01-102 | yes     | 100 tips / box x 10 |

# Pipette stands & accessories

Corning HTL offers a wide range of high quality accessories for pipette storage, protection and identification.

| Product   | Cat. no.  | For pipettes   |
|---|---|--|
| Carousel stand  | 5484  | Single channel pipettes:<br>D/DV2-D/DV1000, LMP2-LMP1000<br>OP2-OP1000, CP |
| Multiple stand  | 5449  | Single and multichannel pipettes:<br>DP, D/DV, LMP, OP, CP                 |
| Plexi 1-position stand                                | 5479  | Single and multichannel pipettes:<br>DP, D/DV, LMP, OP, CP                 |
| Plexi 4-position stand                                | 5480 - transparent<br>5461 - red transparent<br>5462 - yellow transparent<br>5463 - blue transparent<br>5464 - white<br>5465 - green<br>5466 - pink | Single and multichannel pipettes:<br>DP, D/DV, LMP, OP, CP                 |
| Pipette hanger  | SP19483   | Single and multichannel pipettes:<br>DP, LMP, OP                           |
| Pipette hanger  | SP19451   | Single and multichannel pipettes:<br>D/DV, CP                              |
| Colour-coded rings<br>(only for pipettes 2 – 1000 µL) | SP19630   | Single channel pipettes:<br>D/DV, LMP, OP                                  |
| Protective filter for pipettes<br>5 and 10 mL         | SP19476 - set of 10 pcs<br>SP19477 - set of 50 pcs  | Single channel pipettes:<br>D/DV, LMP, OP                                  |





# Service & Calibration

Corning HTL is committed to providing our customers with innovative, high-quality products, factory-authorized repair and calibration services. All HTL products are designed and operate under ISO 8655 standard. Each pipette is calibrated and delivered with a unique individual certificate of accuracy and precision to guarantee the standard.

## Calibration and pipette service

HTL Liquid Handling products are very precise measurement devices and they may be subject to various unnoticed improper interactions, even under ideal laboratory conditions. It is strongly recommended for the laboratory equipment to be inspected and maintained at least once a year by authorized service. This will ensure its correct and precise work during the life of the product. Corning HTL offers services including maintenance, calibration and repairs. All available to a wide range of HTL products manufactured at present and in the past.

| Procedure \ Service*                  | Basic calibration | Advanced calibration | Repair | Additional description of the procedure  |
|---------------------------------------|-------------------|----------------------|--------|--|
| Preliminary assessment of the product | +                 | +                    | +      | Mechanical work, leaks   |
| Cleaning / Decontamination            | +                 | +                    | +      | The customer is obliged to provide a Decontamination Form with the product           |
| Disassembling and checking            | +                 | +                    | +      | Evaluation of the parts wear   |
| Sealing parts replacement             | *                 | +                    | +      | Replacement of parts which are the subject of wear                                   |
| Parts lubrication                     | +                 | +                    | +      | Cleansing and moisturizing the piston surface  |
| Replacement of the damaged parts      |                   |                      | +      | Based on evaluation  |
| As found test                         |                   |                      | +      | Examination of pipette at reception  |
| Pipettes modernization                | *                 | *                    | *      | Installation of the most up-to-date parts  |
| 2-point calibration                   | +                 |                      | +      | Gravimetric test based to ISO 8655   |
| 3-point calibration                   |                   | +                    | *      | Gravimetric test according to ISO 8655/ ISO 17025 (two calibration levels available) |

\* if required/requested by the user

NOTE: Corning HTL SA reserves the right to change the offer without prior notice.

## Pipette maintenance

HTL pipette design provides the highest work standard. The combination of the high quality product and a regular maintenance and calibration is your guarantee of long and reliable operation. To ensure a troublefree maintenance, every pipette is supplied with a set of accessories, including a calibration key and a piston lubricant. All necessary maintenance instructions can be found in the user manual, for more detailed information please check our website [www.htl.com.pl](http://www.htl.com.pl).

# ISO 17025 Calibration

Since December 2016 HTL Laboratory has attained piston pipette calibration accreditation by the Polish Centre of Accreditation (PCA). The Certificate confirms technical competences and fulfillment of quality management system requirements according to the PN-EN ISO/IEC 17025:2018-02, accreditation number: AP169. Detailed information and the scope of accreditation can be viewed at the PCA website. The HTL Laboratory calibrates single-channel and multichannel pipettes using a gravimetric method, according to the EN ISO 8655-6 Standard. The range of measured volumes is presented in the table below:

|       |         |    |          |
|-------|---------|----|----------|
| from  | 0,2 µL  | to | 20 µL    |
| above | 20 µL   | to | 50 µL    |
| above | 50 µL   | to | 250 µL   |
| above | 250 µL  | to | 1000 µL  |
| above | 1000 µL | to | 5000 µL  |
| above | 1000 µL | to | 10000 µL |

All laboratories should check their equipment regularly by an accredited calibration laboratory. A calibrated pipette receives a calibration certificate which confirms metrological parameters and equipment's reliability of measurements. The calibration duty is defined by medical standards, ISO management systems, regulations and Good Laboratory Practice (GLP) basic principles, which are used in pharmaceutical, medical and food industry, published by the Food and Drug Administration (FDA), Health Canada and World Health Organization (WHO).

Regular pipette calibration reduces the number of errors during research and analysis, decreases control costs, and enables implementation of innovative solutions. Thanks to that practice the laboratory receives reliable and accurate results which are accepted all over the world, and consequently, it becomes a trustworthy business partner.



# SWIFTPET PRO pipette controller

Pipetting using glass and plastic volumetric pipettes has never been so easy as with SWIFTPET PRO pipette controller. Ergonomically shaped handle, together with well-located, smooth pushbuttons and switches guarantee effortless pipetting even during extensive use. Convenient charging stand helps to store the pipette controller while not in use. Easily accessible switches on the SWIFTPET PRO allow choosing different operation modes depending on the volume of pipette and viscosity of liquid. The SWIFTPET PRO is an excellent tool for pipetting in tissue culture laboratories, water treatment facilities, academic labs, and more.

## Safe and efficient work

- Protected by a PTFE filter blocking any liquid from entering the unit
- Autoclavable filter, the pipette holder and the nosepiece
- UV resistant body for safe sterilization
- Powerful, environmentally friendly 3 Ni-MH batteries enable many hours of continuous work
- LCD display showing battery charge level

## Speed and working mode adjustment

- Function buttons for SPEED and working MODE control in a reach of a thumb
- Additional speed adjustment by the pressure applied to the trigger buttons

## Working comfort

- Suitable for glass & plastic volumetric pipettes 0.5-100 mL
- Ergonomically shaped handle
- Well located function buttons
- Convenient charging stand for bench/wall mounting
- Easy access to the batteries



| Product                                   | Cat. no. |
|---|----------|
| SWIFTPET PRO with charging stand          | 0390     |
| Charging stand                            | 29056    |
| Pipette holder                            | SP29054  |
| Nosepiece                                 | 29053    |
| Standard battery cover                    | 29063    |
| Battery cover with „wings“                | 29064    |
| Micro filter 0.20 µm [5 pcs]              | 9143     |
| Micro filter 0.45 µm [5 pcs]              | 9144     |
| Universal charger 9V type: EU, US, UK, AU | SP29100  |
| Hanger                                    | 9029     |

# MINILAB 201 repetitive dispenser & syringes

MINILAB 201 dispenser was engineered to revolutionize repetitive pipetting work. Its positive displacement principle guarantees superior accuracy and precision of the dispenser, no matter how dense or viscous substances are dispensed. Its precise stepping mechanism ensures repeatability of dispensed doses. The MINILAB 201 dispenser offers as many as 48 dispensing steps from single syringe filling. Samples can be dosed at intervals as fast as one second. Disposable syringes applied in the MINILAB 201 dispenser prevent dispensing samples cross – contamination and speed up repetitive pipetting work.



## Easy long series dispensing

- Lightweight – 100 g
- Maintenance free
- Ideal for viscous samples
- Compatible with most syringes available on the market
- Supplied with adapter for 50 mL syringes



Adapter 25  
5710



Adapter 50  
5709



## Syringes

The MINILAB 201 dispenser works with eight sizes of disposable, pure polypropylene syringes from 0,05 mL to 50 mL. HTL syringes provide most accurate pipetting when used with the MINILAB 201 dispenser. Each syringe is marked to indicate the total capacity and the repetitive volumes it can dispense. Volumes from 1 µL to 5 mL can be dispensed, depending upon the volume selected.

Syringe selection is shown in the table below:

| Dial setting         | 1                  | 2    | 3    | 4    | 5    | A%    | P%    |
|----------------------|--------------------|------|------|------|------|-------|-------|
| Number of doses      | 48                 | 23   | 15   | 11   | 8    |       |       |
| Syringe volume* (mL) | Sample volume (μL) |      |      |      |      |       |       |
| 0.05                 | 1                  | 2    | 3    | 4    | 5    | ± 6.0 | ± 9.0 |
| 0.50                 | 10                 | 20   | 30   | 40   | 50   | ± 1.0 | ± 1.5 |
| 1.25                 | 25                 | 50   | 75   | 100  | 125  | ± 0.9 | ± 0.9 |
| 2.50                 | 50                 | 100  | 150  | 200  | 250  | ± 0.7 | ± 0.9 |
| 5.0                  | 100                | 200  | 300  | 400  | 500  | ± 0.3 | ±0.8  |
| 12.50                | 250                | 500  | 750  | 1000 | 1250 | ± 0.3 | ± 0.7 |
| 25.00                | 500                | 1000 | 1500 | 2000 | 2500 | ± 0.5 | ± 0.6 |
| 50.00                | 1000               | 2000 | 3000 | 4000 | 5000 | ± 0.5 | ± 0.6 |

\*Please use the syringe 0.05 mL with an attached pipette tip (10 µL). Values for a syringe 0.5mL, 1.25 mL and 2.5 mL were measured with an attached 200 µL pipette tip, values for a syringe 0.05 mL were measured with an attached 10 µL pipette tip.

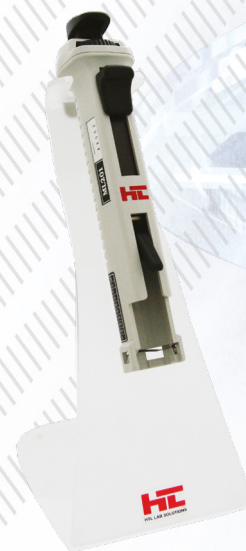
| Product                                     | Cat. no. |
|---|----------|
| MINILAB 201 with adapter for 50 mL syringes | 0020     |
| Adapter for syringes 50 mL                  | 5709     |
| Adapter for syringes 25 mL                  | 5710     |
| Plexi 1-position stand                      | 5479     |

The syringes are compatible with dispensers\*\*:

- Ripette®
- Multipette® 4780
- Minilab 100/101
- Distriman® - EasyStep
- HandyStep®
- HandyStep® electronic

| Syringe [mL] | Cat. no.<br>Non Sterile | Cat. no.<br>Sterile | Pcs / pack |
|--------------|-------------------------|---------------------|------------|
| 0.05         | 5701                    | -                   | 100        |
| 0.50         | 5702                    | 5752                | 100        |
| 1.25         | 5703                    | 5753                | 100        |
| 2.50         | 5704                    | 5754                | 100        |
| 5.00         | 5705                    | 5755                | 100        |
| 12.50        | 5706                    | 5756                | 100        |
| 25.00        | 5707                    | 5757                | 25         |
| 50.00        | 5708                    | 5758                | 25         |

\*\* Multipette® is a registered trademark of Eppendorf AG;  
HandyStep® is a registered trademark of Brand GmbH + Co. KG;  
Distriman® is a registered trademark of Gilson Inc.; ripette® is a registered trademark of Ritter Medical Care



# HTL MINI MICROCENTRIFUGE

HTL MINI MICROCENTRIFUGE is designed and dedicated to a wide range of applications in medical, veterinary, biochemical and other laboratories where constituents of investigated materials are to be separated under the effect of centrifugal force. The product is simple and convenient to operate. It is equipped with a quick-release rotor system and electronic brake. Once samples are loaded and the lid is closed, the rotor rapidly accelerates to 6,000 rpm, making it an ideal centrifuge for bringing small droplets to the bottom of tubes for micro-filtrations or basic separations.

- Accommodates up to 8 microcentrifuge tubes or 4 PCR strip tubes
- Comes with adapters for smaller tubes such as 0.2, 0.25, and 0.5 mL
- Quick release rotor system - no tools needed to exchange rotors
- Electronic braking - allows for more rapid deceleration
- Dual lid switch
- Compact, rugged design
- 2-year warranty



## Parameters:

- Maximum Capacity: 8 x 1.5/2.0 mL or 4 x 0.2 mL strips
- Maximum speed: 6,000 rpm
- RCF: 2,000 x g
- Dimensions (L x W x H): 5.9 x 5.9 x 4.6 in. (15 x 15 x 11.6 cm)
- Weight: 2.65 lbs. / 1.2 kg
- Electrical: Universal 100-240V
- Compliance: CE/TUV/CSA

## Accessories included in the box:

| Product  | Cat. no.    |
|--|-------------|
| HTL MINI MICROCENTRIFUGE   | 8000        |
| Rotor for 8 x 1.5/2.0 mL tubes   | 6770-RT     |
| Rotor for 4 x 0.2 mL strip tubes                                       | 6770-RTS    |
| Individual adapters for 0.2mL tubes, fits in rotor 6770-RT, pack of 8  | 6770-RTA.20 |
| Individual adapters for 0.25mL tubes, fits in rotor 6770-RT, pack of 8 | 6770-RTA.25 |
| Individual adapters for 0.5mL tubes, fits in rotor 6770-RT, pack of 8  | 6770-RTA.5  |
| Power adapter, 24V   | 401025      |





# PIPETTE SERIES COMPARISON BY PRODUCT FEATURE

Surprisingly, the purchase of an automatic pipette is not a simple task. When you make the choice you should consider both parameters, as well as the skills of the pipette user. For example, in research, where precision is particularly important, it is the 4-digit counter and volume lock that would really matter. But for people who are just learning to work with a pipette it would be important to use a pipette with perceptible pipetting stops to minimize the risk of error.

The following table compares the features of all the variable volume pipettes currently offered by Corning HTL:

| Pipette series<br>Feature                      | OPTIPETTE  | LABMATE pro                                  | DISCOVERY Comfort  | DISCOVERY PRO                                    |
|--|--|--|--|--|
| Volume range (µL)<br>for single channel models | 0.1-10,000   | 0.1-10,000                                   | 0.1-10,000   | 0.1-1,000  |
| Volume range (µL)<br>for multichannel models   | 0.5-300  | 0.5-300                                      | 0.5 - 300  | 0.5 - 300  |
| Counter type                                   | 3-digits   | 3-digits                                     | 3-digits   | 4-digits   |
| Pipetting forces                               | Well perceptible pipetting stops                           | Lowered pipetting forces, soft spring system | Lowered pipetting forces, soft spring system   | Ultra low pipetting forces                       |
| Autoclavability*                               | Lower parts  | Fully  | Fully  | Fully  |
| UV resistance*                                 | Yes  | Yes  | Yes  | Yes  |
| User calibration                               | Yes  | Yes  | Yes  | Yes  |
| Volume setting system                          | Volume setting knob  | Volume setting knob or pipetting pushbutton  | Volume setting knob or pipetting pushbutton  | Volume setting knob                              |
| Volume lock                                    | No   | No   | Yes  | Yes (automatically)                              |
| Tip ejector height adjustment                  | Yes, additional spacers                                    | Yes, 'turn-to-fix' system                    | Yes, 'turn-to-fix' system  | No, long ejector stroke                          |
| Universal shafts                               | Yes  | Yes  | Yes  | Yes  |
| Thermal insulation                             | No   | No   | No   | Yes  |
| Colour coding                                  | Yes, identification rings                                  | Yes, pipetting pushbuttons & shafts          | Yes, pipetting pushbuttons &/or shafts   | Yes, ejector pushbutton cap & calibration switch |
| Filters in 0.5-5 & 1-10 mL model               | Yes  | Yes  | Yes  | N/A  |
| Starter sets                                   | OPTIPETTE STARTER 4 PACK<br>OPTIPETTE COLOR STARTER 4 PACK | LABMATE PRO STARTER 4 PACK                   | DISCOVERY COMFORT STARTER 4 PACK<br>DISCOVERY STARTER KIT<br>DISCOVERY STARTER KIT BIO | DISCOVERY PRO STARTER 4 PACK                     |

\* For detailed information on autoclaving conditions and UV sterilization please refer to the product instruction manual.

# GOOD PIPETTING PRACTICE

Achieving reliable results when pipetting, depends largely on users skills. Errors resulting from poor pipetting techniques can significantly affect test results, as proper pipetting plays an important role in achieving accurate and repeatable measurements. Here are some tips on how to pipette properly:

## 1 Select the pipetting technique

There are two pipetting techniques: standard pipetting for pipetting of water, aqueous solutions, buffers, diluted acids and bases, and reverse pipetting for liquids of high density and viscosity as well for these easy foaming.

## 2 Pay attention to the environmental conditions

The volume of liquid measured using a pipette varies with the temperature, thus the room temperature during pipetting, the pipette tip and the liquid should be constant in the range 20-25 °C.

## 3 Store the pipette on the stand

Warmth of the hand during pipetting can have an impact on the thermal equilibrium and consequently influence the volume of sample dispensed, thus do not hold the pipette continuously in your hand between pipetting cycles.

After pipetting, always put the pipette back on its stand.

## 4 Use the right tip

The tip should be flexible, thin-walled and seal well on the pipette shaft. The use of inadequate quality tips may result in an error up to 10%!

## 5 Always rinse the tip

Rinsing is based on single or double aspiration and dispensing of liquid into the same container. It is especially important when pipetting volatile, dense or viscous liquids or its temperature is different than ambient temperature.





## 6 Hold the pipette vertically when aspirating the liquid

Leaving the pipette flat on the bench, especially with liquid in the tip, could cause the liquid to enter the shaft and piston area and finally result in internal parts corrosion.

## 7 Immerse the tip into the liquid correctly

Tip immersion depth depends on the volume range of the pipette in use:

| Pipette volume range (µL) | Tip immersion depth (mm) |
|---------------------------|--------------------------|
| 2-20                      | ≤1                       |
| 20-100                    | 2-3                      |
| 200-1000                  | 2-4                      |
| 5000                      | 3-6                      |
| 10000                     | 5-7                      |

## 8 Operate the pipetting button slowly and smoothly, after aspirating wait 1 second before removing the tip from the liquid

Rapid aspiration can result in liquid entering inside the pipette shaft or formation of air bubbles in the tip. Gently pull out the tip from the liquid to prevent the residual liquid remain on the outer tip surface.

## 9 Change the tip

Always change the tip for the new one when changing dispensed liquid or if visible liquid droplets remained inside the tip. Applying the same tip repeatedly may result in an error of approx. 4%!

## 10 Clean your pipette regularly and often check its calibration

Cleaning the pipette should be carried out on a daily basis to ensure that there are no shaft damages and the pipette will not cross-contaminate the samples. Sterilize the pipette if necessary.



# Troubleshooting

Is your product not operating properly? Did you know that in many cases the issue can be solved by yourself? Remember! Always follow the user manual during any maintenance or repair work. Depending on the nature of the problem you may find the adequate information in chapters:

RECOMMENDATIONS

TROUBLESHOOTING

CLEANING AND STERILISATION

Looking for more information? Visit our website where you will find all needed manuals and other instructions referring to product use and maintenance – **www.htl.com.pl**, *Service & Support*.

## 1. Liquid aspiration/dispensing – the tightness of the pipette

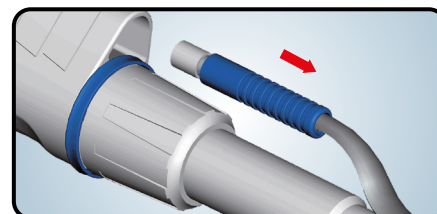
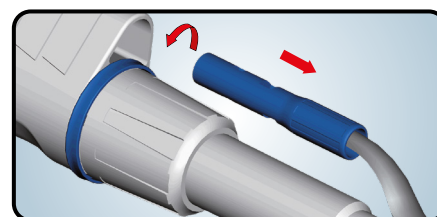
| Description  | Possible cause  | Solution   |
|--|---|--|
| Liquid aspiration not possible/<br>possible at reduced speed   | Contamination inside the shaft<br>(shaft opening blocked) | 1 – remove the shaft, clean or replace<br>2 – check the condition of piston and<br>sealing parts   |
|  | Contaminated shaft filter<br>(models 5 mL and 10 mL)      | Replace for new  |
| Liquid aspiration not possible/<br>Amount of aspirated<br>liquid incorrect (low)/<br>liquid leaking out of the tip | Incomplete or improperly fixed<br>sealing parts           | 1 – remove the shaft, check condition<br>of the parts (replace damaged items)<br>2 – fix the parts in order, following the<br>user manual* |
|  | Damaged or stained shaft<br>(tip sealing surface)         | Clean the shaft or replace for new   |

\*Detailed description of the assemble procedure can be found at [www.htl.com.pl](http://www.htl.com.pl) *Service & Support*



## 2. Tip ejector removing and adjustment

| Pipette model  | Operation principle  |
|--|--|
| <b>Discovery Comfort, Labmate Pro</b><br>(models 2 µL to 1,000 µL)<br>with 'turn- to-fix' tip ejector                      | Turn the colour ejector bush to the left<br>by 1/3 of a turn. Ejector can be released<br>after a 'click'.  |
| Tip ejector height adjustment  | When ejector button is removed, turn<br>the colour bush to the left - to increase or<br>to the right - to decrease the length of tip<br>ejector. |
| <b>Optipette, older models of the<br/>Discovery and Labmate</b><br>(models 2 µL to 1,000 µL)<br>with 'push-in' tip ejector | Press the ejector button and pull down the tip<br>ejector by the ejector (grey or colour) bush.  |
| Tip ejector height adjustment  | When tip ejector is removed, take off the<br>spacer or replace with other (2 sizes available).   |
| <b>Macro pipettes – all pipette lines</b><br>(models 5,000 µL and 10,000 µL)<br>with 'screw-in' tip ejector                | When ejector button is removed, turn the arbor<br>(using the screwdriver) to the left until ejector<br>is released.                              |
| Tip ejector height adjustment<br>(increasing the length only)  | a) when ejector button is removed,<br>turn the arbor to the left to increase<br>the length of tip ejector<br>b) use a tip ejector cap            |
| <b>Discovery Pro</b><br>with 'screw-in' tip ejector<br>No height adjustment  | Unscrew the lower part of the pipette.<br>Hold the shaft nut and unscrew the tip ejector.  |



More information at [www.htl.com.pl](http://www.htl.com.pl), *Service & Support*



## Notes

[illegible]



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