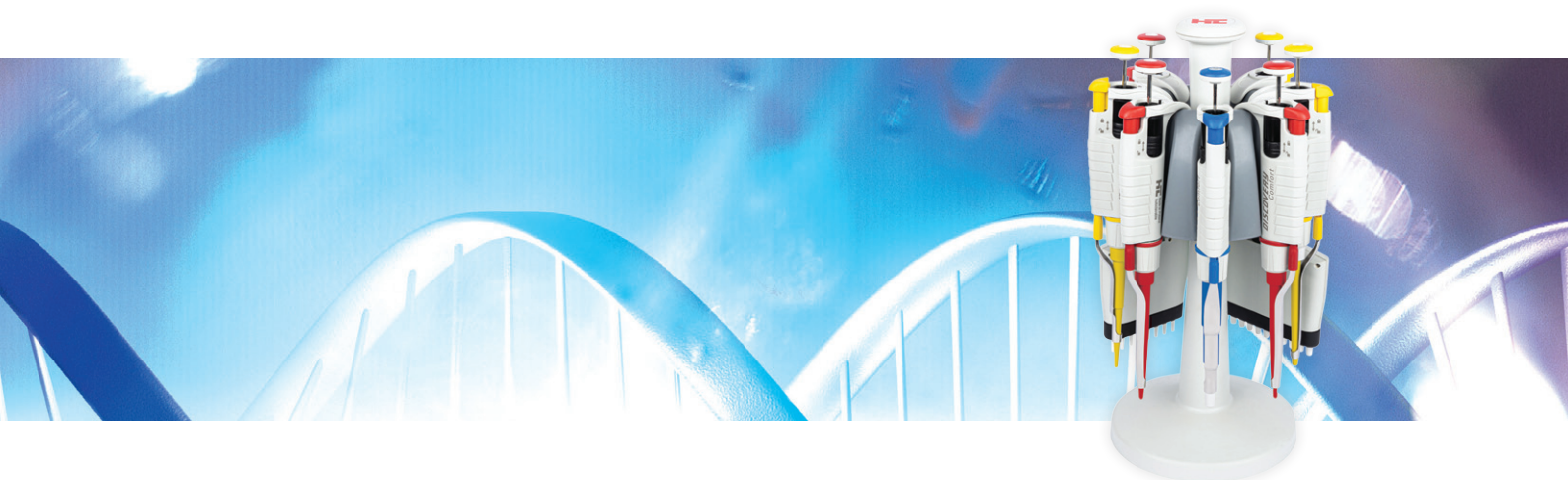




HTL™ Product Catalog



www.htl.com.pl

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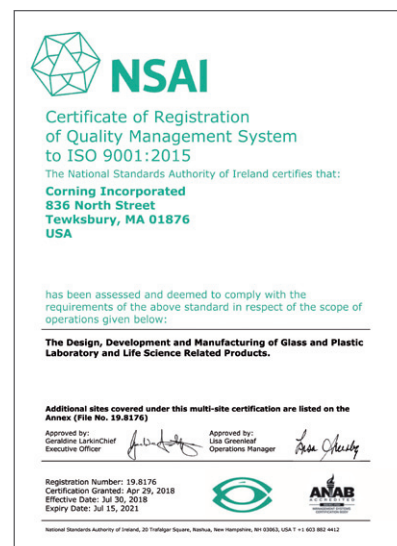
Corning HTL SA is a modern, expanding enterprise that is part of Corning Incorporated. We have our own product development department and an experienced highly qualified staff. We use established production and management standards to deliver products of the highest quality to the global market. Throughout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



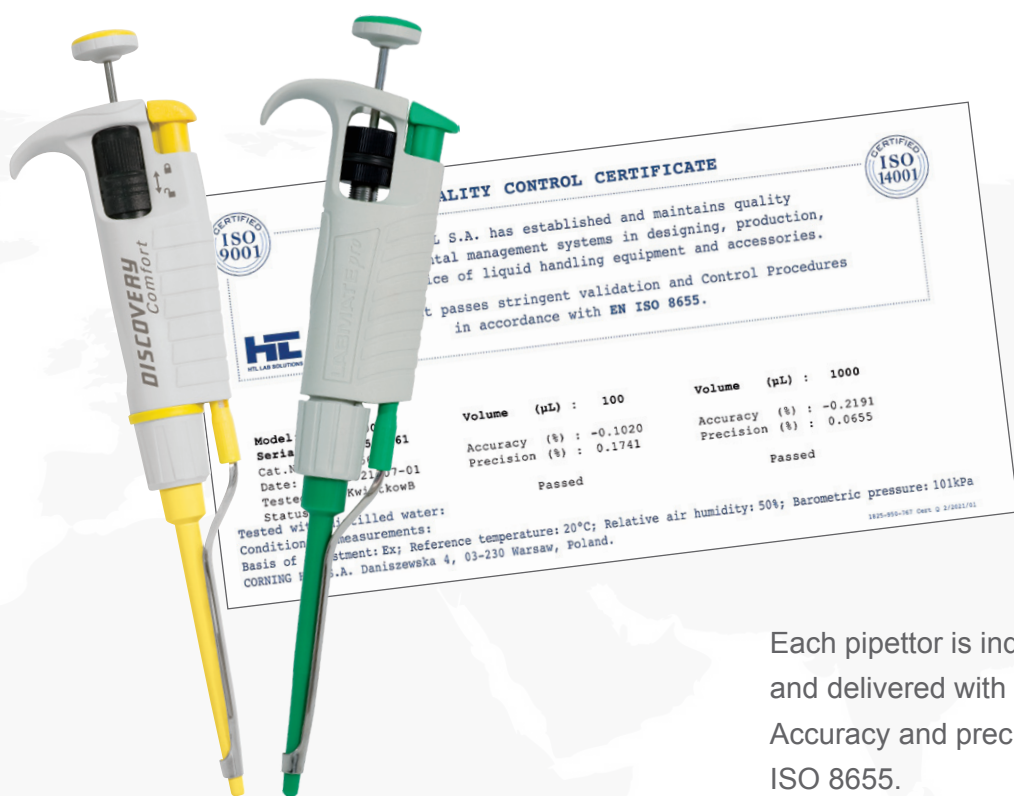
Corning HTL SA has a certified Quality Management System, compliant with ISO 9001, that is reflected in all significant processes within the company.

Thanks to an organized sales network, HTL™ products reach laboratories worldwide. In Poland, our home market, we have a countrywide distributor network.

Corning HTL SA is an ISO 14001 registered facility. Our company puts a major emphasis on issues related to environmental protection. The core tenet of Corning HTL's environmental policy is to make its operations environmentally friendly. We meet this commitment by complying with applicable legal provisions and environmental protection standards as well as by meeting the rules of conduct set in the corporate policy. Regular environmental audits are carried out to identify potential threats and areas of non-compliance and implement corrective measures. Ongoing monitoring is performed to facilitate the implementation of pro-environment measures in new areas and the improvement of the Environmental Management System.



Corning HTL Calibration Laboratory is an accredited ISO/IEC 17025 laboratory. ISO accreditation is the most important means of demonstrating that a laboratory uses an internationally accepted quality management system along with procedures that guarantee and improve the quality of its products and services. The Corning HTL Calibration Laboratory's official accreditation number is AP169 (see details on the page 14).



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

Contact Us

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The wide range of liquid handling products available are designed to address the evolving expectations of our customers, who place a high value on the safety, ease of use and reliability offered by HTL™ products.

Thanks to over 45 years of experience and the dedication of our entire team, the products we manufacture are of the highest quality.

HTL™ Discovery™ Comfort Pipettors

Single- and Multi-channel pipettors

HTL Discovery Comfort pipettors combine optimal levels of accuracy and precision with traditional design to provide a comfortable and safe pipetting experience. The pipettors are available in single- and multi-channel versions.

- ▶ Low pipetting forces and ergonomic design to reduce the risk of RSI
- ▶ Easy volume setting with volume locking
- ▶ Robust design
- ▶ Excellent precision in long pipetting series

fully
121°C
autoclavable

UV
resistant

years
3
warranty



Color-coded rings

- ▶ Perfect tip sealing with minimal effort
- ▶ 5 and 10 mL shafts protected by a filter

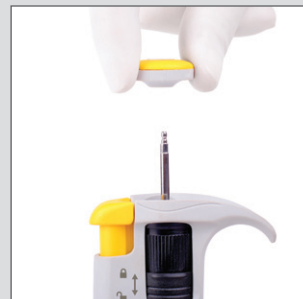


Easy disassembly and adjustment of the tip ejector

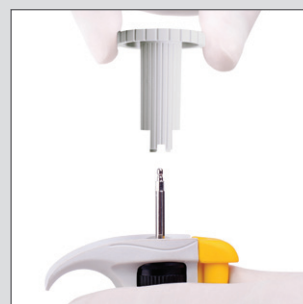


- ▶ Curved ejector bar – sequential tip ejection with minimal effort
- ▶ 360° rotating manifold for optimal comfort while working
- ▶ Tip loading mechanism for perfect tip sealing

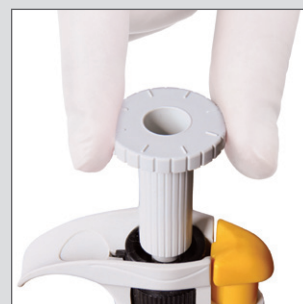
Easy user calibration



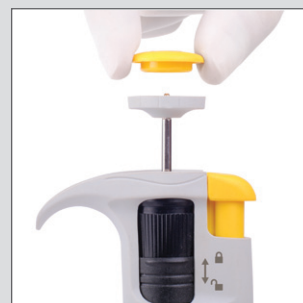
Remove the pushbutton set.



Insert the calibration key into the calibration knob. The calibration key is supplied with the pipettor.



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



Replace the pushbutton set. The procedure is complete.

HTL™ Discovery™ Comfort single-channel pipettor shafts come in red, yellow, green, blue, or white depending on the volume range of the pipettor and the corresponding tip size.

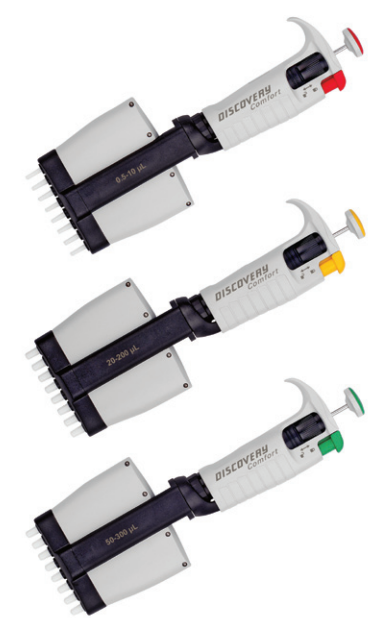
HTL Discovery Comfort Single-channel pipettors

Model	Cat. No.	Color Code	Volume (µL)	A (%)	P (%)	Non-filter Tips			
D2	4051-D	●	Min.	0.1	±40.0	≤ 12.0	10 µL		
				1.0	± 2.7	≤ 1.3			
			Max.	2.0	± 1.5	≤ 0.7			
D10	4052-D	●	Min.	0.5	± 4.0	≤ 2.8			
				5.0	± 1.5	≤ 0.7			
			Max.	10.0	± 1.0	≤ 0.4			
D20	4053-D	●	Min.	2	± 3.5	≤ 1.5		200 µL	
				10	± 1.0	≤ 0.5			
			Max.	20	± 0.8	≤ 0.3			
D50	4057-D	●	Min.	5	± 3.5	≤ 1.3			
				25	± 1.0	≤ 0.5			
			Max.	50	± 0.8	≤ 0.3			
D100	4054-D	●	Min.	10	± 3.0	≤ 1.0	300 µL		
				50	± 1.0	≤ 0.3			
			Max.	100	± 0.8	≤ 0.2			
D200	4055-D	●	Min.	20	± 2.0	≤ 0.7			
				100	± 1.0	≤ 0.3			
			Max.	200	± 0.6	≤ 0.2			
D250	4050-D	●	Min.	50	± 1.0	≤ 0.4		1,000 µL	
				125	± 0.8	≤ 0.3			
			Max.	250	± 0.6	≤ 0.3			
D1000	4056-D	●	Min.	100	± 2.5	≤ 0.6			5,000 µL
				500	± 0.8	≤ 0.3			
			Max.	1,000	± 0.6	≤ 0.2			
D5000	4058-D	○	Min.	500	± 1.2	≤ 0.5	10,000 µL		
				2,500	± 0.6	≤ 0.2			
			Max.	5,000	± 0.5	≤ 0.15			
D10000	4059-D	○	Min.	1,000	± 2.5	≤ 0.6			
				5,000	± 0.8	≤ 0.3			
			Max.	10,000	± 0.5	≤ 0.2			



HTL Discovery Comfort Multi-channel pipettors

Model	Cat. No.	Color Code	Volume (µL)	A (%)	P (%)	Non-filter Tips			
DV8-10 DV12-10	5121 5125	●	Min.	0.5	±10.0	≤ 8.0	10 µL		
				5	± 4.0	≤ 2.0			
			Max.	10	± 2.0	≤ 1.2			
DV8-50 DV12-50	5122 5126	●	Min.	5	± 4.0	≤ 2.5		200 µL	
				25	± 3.0	≤ 1.2			
			Max.	50	± 1.6	≤ 0.6			
DV8-200 DV12-200	5123 5127	●	Min.	20	± 3.0	≤ 1.5			300 µL
				100	± 1.5	≤ 0.8			
			Max.	200	± 1.0	≤ 0.6			
DV8-300 DV12-300	5124 5128	●	Min.	50	± 1.6	≤ 1.5			
				150	± 1.2	≤ 1.0			
			Max.	300	± 1.0	≤ 0.6			



NOTE: Actual products may vary from the images shown.



Plexi 4-position stand
(Cat. No. 5480)

Plexi 1-position stand
(Cat. No. 5479)

Carousel stand
(Cat. No. 5484)

Multiple stand
(Cat. No. 5449)

HTL™ Discovery™ Comfort Starter packs

Economy set of 3 or 4 pipettors and accessories.

Model	Cat. No.	Includes
D10 D20 D200 D1000	7904	<ul style="list-style-type: none"> ▶ Plexi 4-position stand ▶ Tips (10 µL/96 pcs, 200 µL/96 pcs, 1,000 µL/100 pcs) ▶ Calibration tool (4) ▶ Shelf clip (4) ▶ Instruction manual
D20 D200 D1000	7926	<ul style="list-style-type: none"> ▶ Tips (200 µL/96 pcs, 1,000 µL/100 pcs) ▶ Calibration tool (3) ▶ Shelf clip (3) ▶ Instruction manual
D10 D100 D1000	7925	<ul style="list-style-type: none"> ▶ Tips (10 µL/96 pcs, 200 µL/96 pcs, 1,000 µL/100 pcs) ▶ Calibration tool (3) ▶ Shelf clip (3) ▶ Instruction manual



HTL™ Labmate™ Pro Pipettors

Single- and Multi-channel pipettors

The HTL Labmate Pro pipettor family contains models with a wide variety of volumes for different laboratory applications. A durable, UV-resistant and autoclavable body is combined with high accuracy and precision performance to ensure many years of reliable service.

- ▶ Contoured handle shape and lightweight design
- ▶ Proven accuracy and precision
- ▶ 5 and 10 mL shafts protected by a filter
- ▶ Color-coded for easy volume identification

fully
121°C
autoclavable

UV
resistant

years
3
warranty

Available in 8- and 12-channel versions

A suspension system 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 eliminates the common issue of tips becoming jammed. The 360° rotating manifold enables optimal comfort while working.



- ▶ Soft spring system for smooth, effortless pipetting



Easy user calibration



Dual volume setting using the pushbutton or the thumbwheel



Adjustable ejector height system – to accommodate various brands of tips



Plexi 4-position stand
(Cat. No. 5480)



Plexi 1-position stand
(Cat. No. 5479)



Carousel stand
(Cat. No. 5484)



Multiple stand
(Cat. No. 5449)

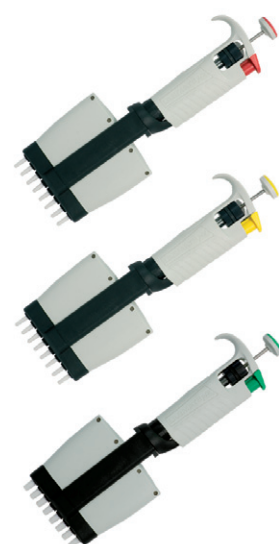
HTL™ Labmate™ Pro Single-channel pipettors

Model	Cat. No.	Color Code	Volume (µL)	A (%)	P (%)	Non-filter Tips
LMP2	5661	●	Min. 0.1	±40.0	≤ 12.0	10 µL
			1.0	± 2.7	≤ 1.3	
			Max. 2.0	± 1.5	≤ 0.7	
LMP10	5662	●	Min. 0.5	± 4.0	≤ 2.8	
			5.0	± 1.5	≤ 0.7	
			Max. 10.0	± 1.0	≤ 0.4	
LMP20	5663	●	Min. 2	± 3.5	≤ 1.5	
			10	± 1.0	≤ 0.5	
			Max. 20	± 0.8	≤ 0.3	
LMP50	5667	●	Min. 5	± 3.5	≤ 1.3	
			25	± 1.0	≤ 0.5	
			Max. 50	± 0.8	≤ 0.3	
LMP100	5664	●	Min. 10	± 3.0	≤ 1.0	
			50	± 1.0	≤ 0.3	
			Max. 100	± 0.8	≤ 0.2	
LMP200	5665	●	Min. 20	± 2.0	≤ 0.7	
			100	± 1.0	≤ 0.3	
			Max. 200	± 0.6	≤ 0.2	
LMP250	5660	●	Min. 50	± 1.0	≤ 0.4	
			125	± 0.8	≤ 0.3	
			Max. 250	± 0.6	≤ 0.3	
LMP1000	5666	●	Min. 100	± 2.5	≤ 0.6	
			500	± 0.8	≤ 0.3	
			Max. 1,000	± 0.6	≤ 0.2	
LMP5000	5668	○	Min. 500	± 1.2	≤ 0.5	
			2,500	± 0.6	≤ 0.2	
			Max. 5,000	± 0.5	≤ 0.15	
LMP10000	5669	○	Min. 1,000	± 2.5	≤ 0.6	
			5,000	± 0.8	≤ 0.3	
			Max. 10,000	± 0.5	≤ 0.2	



HTL Labmate Pro Multi-channel pipettors

Model	Cat. No.	Color Code	Volume (µL)	A (%)	P (%)	Non-filter Tips
LMP8-10 LMP12-10	6281 6285	●	Min. 0.5	± 10	≤ 8.0	10 µL
			5	± 4.0	≤ 2.0	
			Max. 10	± 2.0	≤ 1.2	
LMP8-50 LMP12-50	6282 6286	●	Min. 5	± 4.0	≤ 2.5	
			25	± 3.0	≤ 1.2	
			Max. 50	± 1.6	≤ 0.6	
LMP8-200 LMP12-200	6283 6287	●	Min. 20	± 3.0	≤ 1.5	
			100	± 1.5	≤ 0.8	
			Max. 200	± 1.0	≤ 0.6	
LMP8-300 LMP12-300	6284 6288	●	Min. 50	± 1.6	≤ 1.5	
			150	± 1.2	≤ 1.0	
			Max. 300	± 1.0	≤ 0.6	



HTL Labmate Pro Starter 4-pack

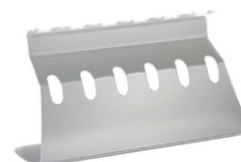
Model	Cat. No.	Includes
LMP10 LMP20 LMP200 LMP1000	7905	<ul style="list-style-type: none"> ▶ Plexi 4-position stand ▶ Tips (10 µL/96 pcs, 200 µL/96 pcs, 1,000 µL/100 pcs) ▶ Calibration tool (4) ▶ Shelf clip (4) ▶ Instruction manual



Accessories

For pipettor storage, protection, and identification

Cat. No.	Description	For Pipettors
5484	Carousel stand	Single-channel pipettors (0.1-1,000 µL): <ul style="list-style-type: none"> ▶ HTL™ Discovery™ Comfort ▶ HTL Labmate™ Pro
5449	Multiple stand	Single- and multi-channel pipettors: <ul style="list-style-type: none"> ▶ HTL Discovery Comfort ▶ HTL Labmate Pro
5479	Plexi 1-position stand	Single- and multi-channel pipettors: <ul style="list-style-type: none"> ▶ HTL Discovery Comfort ▶ HTL Labmate Pro
5480	Plexi 4-position stand, transparent	Single- and multi-channel pipettors: <ul style="list-style-type: none"> ▶ HTL Discovery Comfort ▶ HTL Labmate Pro
5469	Plexi 6-position stand, transparent	
SP19451	Shelf clip	Single- and multi-channel HTL Discovery Comfort pipettors
SP19483	Shelf clip	Single- and multi-channel HTL Labmate Pro pipettors
SP19630	Color-coded rings	Single-channel pipettors (2-1,000 µL): <ul style="list-style-type: none"> ▶ HTL Discovery Comfort ▶ HTL Labmate Pro
SP19476	Protective filter for pipettors, set of 10	Single-channel pipettors (5 and 10 mL): <ul style="list-style-type: none"> ▶ HTL Discovery Comfort ▶ HTL Labmate Pro
SP19477	Protective filter for pipettors, set of 50	



Pipette Tips

Standard and filtered

Pipette tips are integral components of any pipetting system. Their shape, material properties, and purity have an influence on the pipetting results. These pipette tips are manufactured from virgin polypropylene in clean room conditions and free from biocontaminants. The range includes standard, sterile, and filtered versions in all standard packaging formats.

- ▶ For use with HTL™ pipettors for optimal accuracy and precision
- ▶ Compatible with many pipettor brands
- ▶ Strict quality standards (pursuant to ISO 9001) followed from R&D to production and delivery
- ▶ Premium quality virgin polypropylene used as raw material
- ▶ Suitable for sterilization with autoclave (121°C, 15 minutes, without dry cycle)

Bulk Packs

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



Racks

Racked pipette tips are in a durable polypropylene box for good stability on the lab bench. One rack contains 96 or 100 tips depending on the tip volume.



Refill System

One refill system contains 10 trays with 96 tips plus an empty rack box. Available only for 10 µL and 200 µL tips with graduation marks.



Standard pipette tips

Cat. No.	Volume (µL)	Pipettor Volume Range (µL)	Sterile	Packaging	Qty
301-03-052			No	Bulk	1,000 pipette tips/pack
301-03-102			No	Rack	96 pipette tips/box, 10 boxes
301-03-152	0.1 - 10 (short)	0.1 - 2 0.5 - 10	Yes	Rack	96 pipette tips/box, 10 boxes
301-79-102			No	Refill	96 pipette tips/tray, 10 removable trays*
301-22-052			No	Bulk	1,000 pipette tips/pack
301-22-102	0.1 - 10 (extended)	0.1 - 2 0.5 - 10	No	Rack	96 pipette tips/box, 10 boxes
301-22-152			Yes	Rack	96 pipette tips/box, 10 boxes
301-02-052			No	Bulk	1,000 pipette tips/pack
301-02-152	1 - 200	2 - 20 5 - 50 10 - 100 20 - 200	No	Rack	96 pipette tips/box, 10 boxes
301-02-202			Yes	Rack	96 pipette tips/box, 10 boxes
301-06-052			No	Bulk	1,000 pipette tips/pack
301-06-352	1 - 200 (graduation marks at 10, 50, 100 µL)	2 - 20 5 - 50 10 - 100 20 - 200	Yes	Rack	96 pipette tips/box, 10 boxes
301-79-052			No	Refill	10 removable trays of 96 pipette tips*
301-16-052			No	Bulk	1,000 pipette tips/pack
301-16-102	1 - 300 (fine-point)	50 - 250 50 - 300	No	Rack	96 pipette tips/box, 10 boxes
301-01-202			No	Bulk	1,000 pipette tips/pack
301-01-302	100 - 1,000 (beveled)	100 - 1,000	No	Rack	100 pipette tips/box, 10 boxes
301-01-352			Yes	Rack	100 pipette tips/box, 10 boxes
301-71-052	500 - 5,000	500 - 5,000	No	Bulk	250 pipette tips/pack, 10 packs
301-75-052	1,000 - 10,000	1,000 - 10,000	No	Bulk	100 pipette tips/pack, 20 packs

*Refill contains 10 trays with pipette tips plus 2 racks.

Filtered pipette tips, Rack

Cat. No.	Volume (µL)	Pipettor Volume Range (µL)	Sterile	Qty
302-05-102	0.1 - 10 (short)	0.1 - 2 0.5 - 10	Yes	96 pipette tips/box, 10 boxes
302-26-152	0.1 - 10 (extended)	0.1 - 2 0.5 - 10	Yes	96 pipette tips/box, 10 boxes
302-03-102	0.1 - 20 (graduation marks)	2 - 20	Yes	96 pipette tips/box, 10 boxes
302-08-102	1 - 100 (graduation marks)	10 - 100	Yes	96 pipette tips/box, 10 boxes
302-04-102	1 - 200 (graduation marks)	20 - 200	Yes	96 tips/box, 10 boxes
302-12-102	1 - 300 (fine-point)	50 - 250 50 - 300	Yes	96 tips/box, 10 boxes
302-01-102	100 - 1,000 (beveled)	100 - 1,000	Yes	100 pipette tips/box, 10 boxes



HTL™ Swiftpet™ Pro Controller

Pipet Controller

Pipetting using glass and plastic volumetric pipets has never been easier than with the Swiftpet Pro Pipet Controller. An ergonomically shaped handle along with optimally located, smooth pushbuttons and switches offer effortless pipetting even during periods of extended use. A convenient charging stand allows the pipet controller to be stored when not in use. Easily accessible switches on the Swiftpet Pro allow the user to select different operation modes depending on the volume of pipet 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 that blocks liquids from entering the unit
- ▶ Autoclavable filter, pipet holder and nose piece
- ▶ UV-resistant body for safe sterilization
- ▶ Compliance: CE/UKCA



Comfort while working

- ▶ An ergonomically shaped handle
- ▶ A convenient wall hanger allows the pipet controller to be stored when not in use
- ▶ Suitable for glass and plastic volumetric pipets 0.5 - 100 mL
- ▶ Powerful Li-ion battery enable 6 hours of continuous work



- ▶ LCD display showing battery charge level



Adjustment of speed and working mode

- ▶ Easily accessible function buttons for control of speed and working mode
- ▶ Additional speed adjustment via the pressure applied to the pushbuttons
- ▶ LCD display showing battery charge level

Product	Cat. No.
Swiftpet Pro	4743

Accessories and Spare Parts	Cat. No.
PTFE autoclavable filter, 0.2 µm, pack of 5	SP9143
PTFE autoclavable filter, 0.45 µm, pack of 5	SP9144
Charging stand, 2-positions	SP29056
Charging stand, 1-position	5411
Wall hanger	SP9029
Silicone pipet holder	SP29054
Nose piece	SP29053
Li-ion battery set	SP29096
Battery cover	SP29090
Universal power supply, 9V with set of adapters (EU, USA, GBR, KOR, and AUS)	SP29100

Service and Calibration

Factory-authorized repair and calibration services

All HTL products are designed and operate according to the ISO 8655 standard. Each pipettor is calibrated and supplied with a unique individual certificate of accuracy and precision. This confirms that it meets the standard.

Calibration and pipettor service

HTL liquid handling products are very precise measurement devices and may be affected by a range of unnoticed and unintended interactions, even under ideal laboratory conditions. It is strongly recommended for laboratory equipment to be inspected and maintained at least once a year by an authorized service provider. This will ensure its correct and precise operation during the lifespan of the product. Corning HTL offers services including maintenance, calibration and repairs. These services are available for a wide range of HTL products.

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
Disassembly and checking	+	+	+	Evaluation of wear to parts
Replacement of sealing parts	*	+	+	Replacement of worn parts*
Lubrication of parts	+	+	+	Cleansing and lubrication of the piston surface
Replacement of damaged parts	–	–	+	Based on evaluation
As found test	–	–	+	Examination of pipettor as received
Pipettor modernization	*	*	*	Installation of the most up-to-date parts*
2-point calibration	+	–	+	Gravimetric test based on 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 range of services without prior notice.

Pipettor maintenance

HTL pipettors are designed to the highest standard. To ensure hassle-free maintenance, each pipettor 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 Manuals for each product. For more detailed information, visit: www.htl.com.pl.

ISO 17025 Calibration

Calibration according to the EN ISO 8655-6 standard

For many years, Corning HTL Calibration Laboratory has been accredited to carry out piston pipettor calibration by the Polish Centre of Accreditation (PCA). The certificate confirms HTL's technical competencies and fulfillment of quality management system requirements according to PN-EN ISO/IEC 17025 (accreditation number: AP169). Detailed information and the scope of accreditation can be viewed on the PCA website. The Corning HTL Calibration Laboratory calibrates single- and multi-channel pipettors using a gravimetric method according to the EN ISO 8655-6 standard. See table below for range of measured volumes.

from	0,2 µL	to	20 µL
above	20 µL	to	50 µL
above	50 µL	to	250 µL
above	250 µL	to	1,000 µL
above	1,000 µL	to	5,000 µL
above	1,000 µL	to	10,000 µL

All laboratories should have their equipment checked regularly by an accredited calibration laboratory.

A calibrated pipettor is returned with a calibration certificate confirming the metrological parameters and the measurement reliability of the equipment. The calibration duty is defined by the medical standards, ISO management systems, regulations and Good Laboratory Practice (GLP) principles used in the pharmaceutical, medical and food industries; these are published by the Food and Drug Administration (FDA), Health Canada and World Health Organization (WHO).

Regular pipettor calibration reduces the number of errors during research and analysis, decreases control costs, and enables the implementation of innovative solutions. Thanks to the practice of regular calibration, a laboratory receives reliable and accurate results that are accepted worldwide.

Good Pipetting Practice

The achievement of reliable results when pipetting depends largely on the user's skills. Errors resulting from poor pipetting techniques can significantly affect test results, since proper pipetting plays an important role in obtaining accurate and repeatable measurements. Below are some tips on how to pipette properly.

1. Select the right pipetting technique

There are two pipetting techniques: standard pipetting, for the pipetting of water, aqueous solutions, buffers, diluted acids and bases; and reverse pipetting, for liquids of high density and viscosity as well for those that foam easily.

2. Pay attention to the environmental conditions

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

3. Store the pipettor on the stand

Warmth from a user's hand during pipetting can have an impact on the thermal equilibrium and may influence the volume of the sample dispensed. For this reason, do not hold the pipettor continuously in your hand between pipetting cycles.

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

4. Use the right pipette tip

The tip should be flexible, thin-walled and must fit well on the pipettor shaft. The use of inadequate quality pipette tips may result in errors of up to 10%.

5. Always rinse the pipette tip

It is especially important when pipetting volatile, dense or viscous liquids, or if the temperature of the liquid is different than the ambient temperature.



6. Hold the pipettor vertically when aspirating the liquid

Leaving the pipettor on the bench, especially with liquid in the pipette tip, could cause the liquid to enter the shaft and piston area. This may eventually result in the corrosion of internal parts.



7. Immerse the pipette tip into the liquid correctly

The pipette tip immersion depth depends on the volume range of the pipettor in use.

Pipettor Volume Range (µL)	Pipette Tip Immersion Depth (mm)
2-20	≤1
20-100	2-3
200-1,000	2-4
5,000	3-6
10,000	5-7



8. Operate the pipetting button slowly and smoothly. After aspirating, wait 1 second before removing the pipette tip from the liquid

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



9. Change the pipette tip

Always change the pipette tip for a new one when changing the dispensed liquid or if visible liquid droplets remain inside the pipette tip. Using the same pipette tip repeatedly may result in errors of approximately 4%.



10. Clean your pipettor daily and regularly check its calibration

The pipettor should be cleaned daily to ensure that there is no shaft damage and the pipettor does not cross-contaminate the samples. The pipettor should be sterilized if necessary.

Troubleshooting

Is your product not working properly?

Did you know that in many cases, the issue can be solved by you? Remember to always follow the user manual during any maintenance or repair work. Depending on the nature of the problem, you may find adequate information in the chapters on:

- ▶ Recommendations
- ▶ Troubleshooting
- ▶ Cleaning and sterilization

Liquid aspiration/dispensing/pipettor tightness

Problem	Possible Cause	Solution
Liquid aspiration not possible or only possible at reduced speed.	Contamination inside the shaft (shaft opening blocked).	<ul style="list-style-type: none"> ▶ Remove the shaft and clean or replace it. ▶ Check the condition of the piston and sealing parts.
	Contaminated shaft filter (5 mL and 10 mL models).	Replace with a new one.
Liquid aspiration not possible; amount of aspirated liquid incorrect (too low); liquid leaking out of the tip.	Incomplete or improperly fixed sealing parts.	<ul style="list-style-type: none"> ▶ Remove the shaft, check the condition of the parts (replace damaged items). ▶ Fix the parts in the correct order, following the user manual*.
	Damaged or stained shaft (tip sealing surface).	Clean or replace with a new shaft.

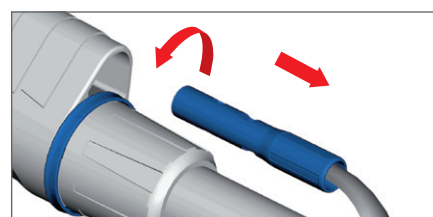


*For more information, visit www.htl.com.pl, Service & Support, where you'll find all the manuals and other instructions you need for product use and maintenance.

Tip ejector removing and adjustment

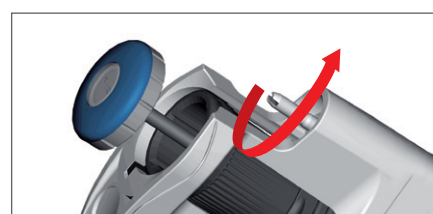
HTL™ Discovery™ Comfort and HTL Labmate™ Pro (models 2 µL to 1,000 µL)

- ▶ **Tip ejector removing**
Turn the colored ejector bush to the left by 1/3 of a turn. The ejector can be released after a “click”.
- ▶ **Tip ejector height adjustment**
When the ejector button is removed, turn the colored bush to the left (to increase the length of the tip ejector) or the right (to decrease the length of the tip ejector).



Macro pipettors – all pipettor lines (models 5,000 µL and 10,000 µL)

- ▶ **Tip ejector removing**
When the ejector button is removed, turn the arbor (using the screwdriver) to the left until the ejector is released.
- ▶ **Tip ejector height adjustment**
 - a) When the ejector button is removed, turn the arbor to the left to increase the length of the tip ejector.
 - b) Use a tip ejector cap.



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