

HAMILTON 

Microlab[®] 700 Series

Smart Liquid Handling





Microlab® 700 Series
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Table of contents

Introducing the Microlab 700..... 4

Dual Syringe Diluters 6

Dispensers10

Standalone Syringe Pumps12

Microlab 700 Hardware14

Microlab Software.....16

Controller.....18

Universal Valves..... 20

Bubble Free Prime Syringes 21

Accessories..... 22

Replacement Parts 24

Specifications..... 26

Introducing the Microlab[®] 700

The Microlab 700 is a highly precise syringe pump with a new generation touchscreen controller that brings a superior technological solution, an interface designed to quickly and easily dilute and dispense fluids. This positive displacement system provides better than 99% accuracy, independent of a liquid's viscosity, vapor pressure, and temperature. The inert fluid path minimizes sample carryover and is compatible with harsh chemicals.

All Laboratories can use the Microlab 700

Every laboratory has tasks too small to automate and too large to reliably accomplish by hand. The Microlab 700 is a semi-automated liquid handler designed specifically for these in-between applications that increase throughput and consistency while reducing cost and wasted buffer. Common industries using the product are:

- Pharmaceuticals
- Biotechnology
- In-Vitro Diagnostics
- Forensics
- Food and Beverage Industry
- Dairy Industry
- Environmental Analysis
- Mining Industry
- Textile Industry



Advantages of the new Microlab 700 Controller

- ✓ Innovative possibilities for communication options
- ✓ A full range of peripherals and documentation solutions
- ✓ Remote Diagnostic Support and Analysis
- ✓ Smart data storage
- ✓ Designed for easy integration into LIMS systems
- ✓ Comply with FDA GLP and GMP, 21 CFR Part 11



Dual Syringe Diluters

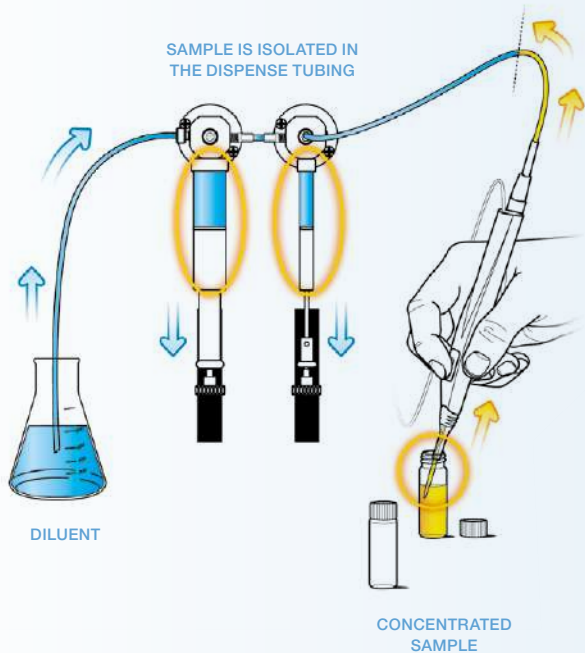
Concorde Hand Probe

The Dual Syringe Diluter configuration uses two syringes to create up to a 1:50,000 dilution in a single step, drastically reducing preparation time and wasted buffer. The diluent washes the tubing between each sample, minimizing carryover for even the most sensitive techniques including:

- Atomic absorption (AA)
- Inductively coupled plasma spectroscopy (ICP)
- High performance liquid chromatography (HPLC)
- Gas chromatography (GC)
- Liquid scintillation



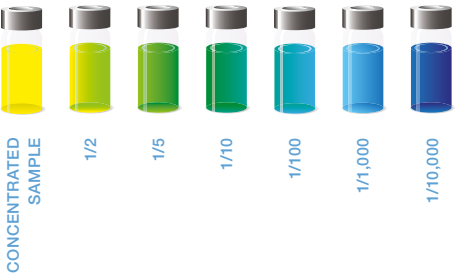
How Does It Work?



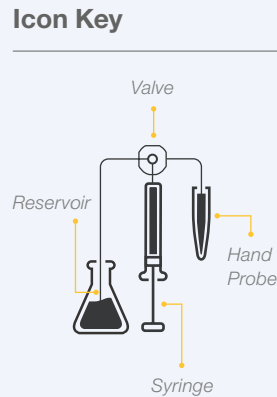
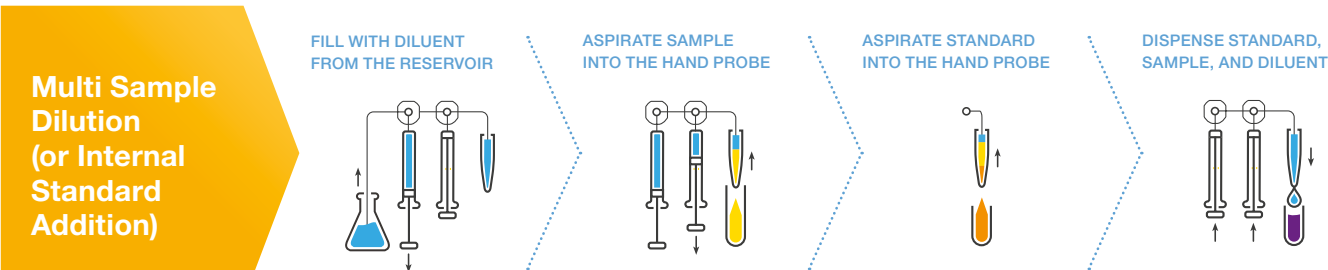
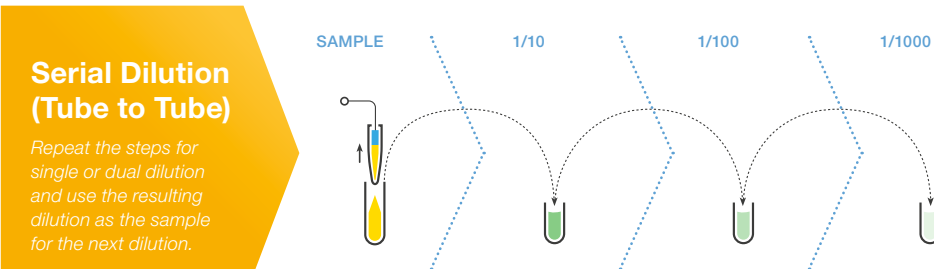
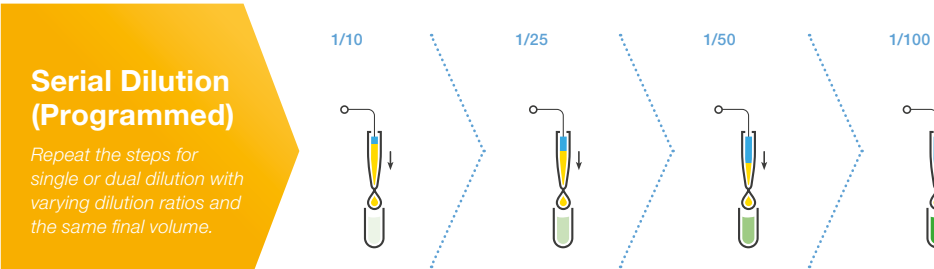
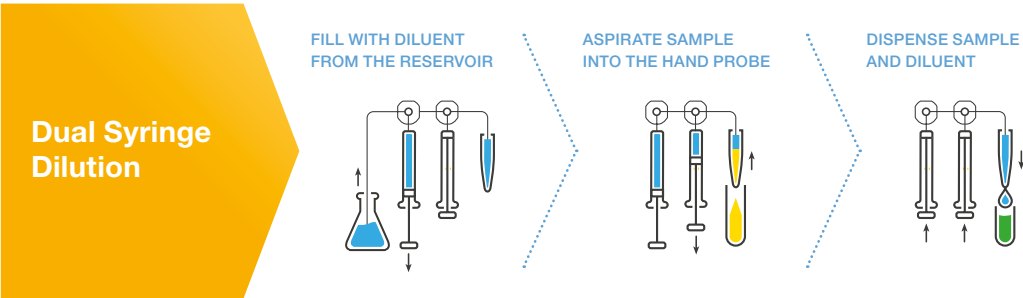
Step 1
Program sample and diluent volume.

Step 2
Trigger the hand probe to fill left syringe with diluent and aspirate sample into the hand probe with the right syringe.

Step 3
Trigger the hand probe to dispense the sample and then the diluent into the vial to complete the dilution and wash the tube for the next sample.



Dilution Wizard
Accurately dilute concentrated samples with diluent over a wide range of dilution ratios.



- Color Guide**
- Diluent 1 / System Fluid
 - Sample
 - Diluted Sample
 - Standard
 - Diluted Sample + Standard

Diluter Ordering Information

| Part number | Product name | Description |
|-------------|--------------|-----------------------------------------------|
| 10103468 | ML715-DIL | Dual syringe diluter with Advanced controller |
| 10103471 | ML725-DIL | Dual syringe diluter with Premium controller |

The -DIL model ships with the Concorde hand probe, universal valves, fill/dispense tubing, accessory holder, country-specific power cord, and the choice of two syringes. If syringes are not selected at the time of the order, 2.5 mL and 250 µL syringes are included.





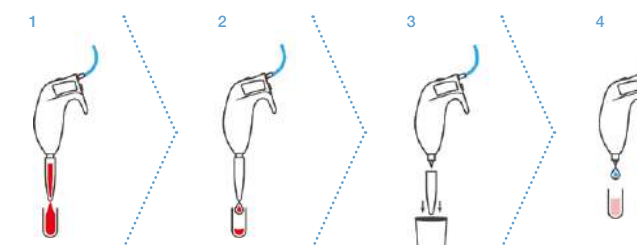
Disposable Tip Hand Probe (DTHP)

For sensitive applications, the sample is aspirated into a disposable plastic tip which is thrown away between each sample, eliminating any chance for carryover. Applications that benefit from the DTHP include:

- Forensics – for some applications regulatory considerations make disposable tips the preferred option
- Sterile samples – sterile disposable tips can be used to
- avoid transferring contamination between sample vessels
- DNA amplification – for applications where a single amplified strand of DNA is enough to impact results

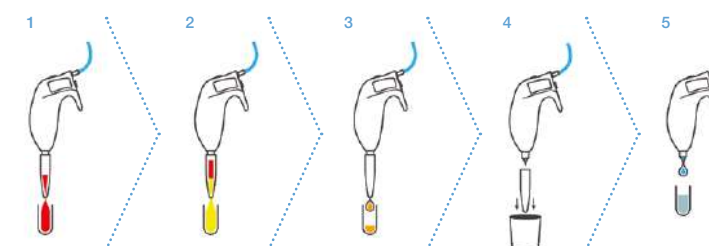
Dilution Options

Single Sample Dilution



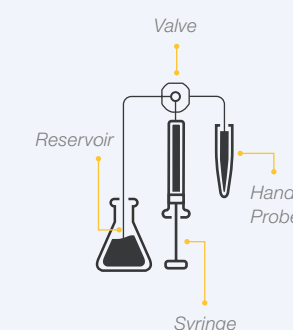
- 1 The trigger is pressed and the sample is aspirated into the tip using the right syringe while diluent is drawn into the left syringe
- 2 The trigger is pressed again and the sample is dispensed from the tip
- 3 The tip is ejected
- 4 Another trigger dispenses the diluent to complete the dilution

Multi Sample Dilution



- 1 Aspirate Sample 1 into ClickSure Tip
- 2 Aspirate Sample 2. Repeat with additional solutions
- 3 Dispense Samples
- 4 Discard ClickSure Tip
- 5 Dispense Diluent

Icon Key



Color Guide

- Sample 1
- Sample 2
- Dispensed Samples
- Diluted Sample
- Diluted Samples

Disposable Tip Hand Probe Ordering Information

| Part number | Product name | Description |
|-------------|--------------|-----------------------------------------------------|
| 10103470 | ML725-DTHP | Microlab 700 Diluter with Disposable tip Hand probe |

ClickSure Tips for DTHP Ordering Information

| Part Number | Description | Part Number | Description |
|-------------|-----------------------------------------------------|-------------|----------------------------------------------------|
| 235537 | 50 µL, non-sterile ClickSure Tips, 960 tips, racked | 235539 | 1 mL, non-sterile ClickSure Tips, 960 tips, racked |
| 235543 | 50 µL, non-sterile ClickSure Tips, 960 tips, bulk | 235545 | 1 mL, non-sterile ClickSure Tips, 960 tips, bulk |
| 235536 | 50 µL, sterile ClickSure Tips, 960 tips, racked | 235538 | 1 mL, sterile ClickSure Tips, 960 tips, racked |

The -DTHP model ships with the Disposable Tip Hand Probe, universal valves, fill tubing, Cable Management System, country-specific power cord, and the choice of two syringes. If syringes are not selected at the time of the order, 2.5 mL and 250 µL syringes are included.



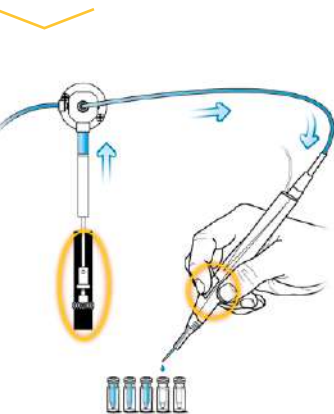
Dispensers

The Microlab 700 is able to dispense volumes from 100 nL to 50 mL and uses positive displacement syringes to accurately dispense volatile, viscous, and dense liquids independent of atmospheric influences. The inert fluid path is compatible with harsh chemicals, making the Microlab 700 the most reliable and robust dispensing system available.



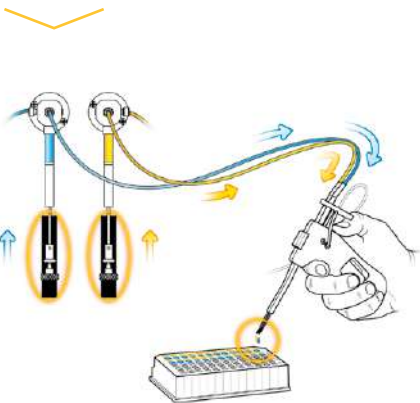
Single Syringe Dispenser

The syringe fills from a reservoir and dispenses from the hand probe.



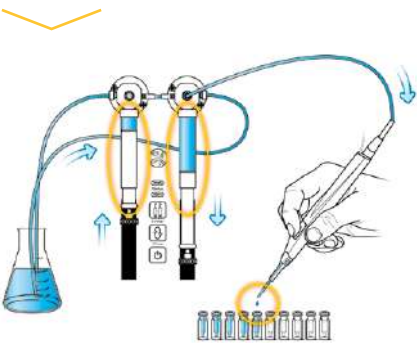
Dual Syringe Dispenser

Each syringe fills from a separate reservoir and dispenses separately from the hand probe.



Continuous Dispenser

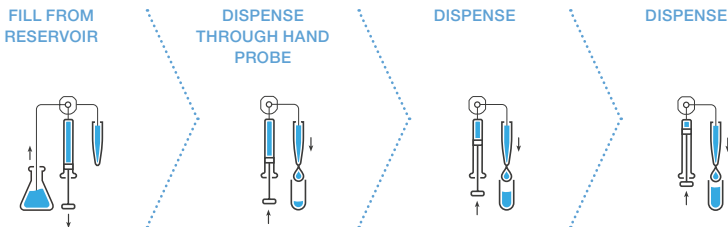
One syringe fills while the other syringe is dispensing from the same reservoir.



Aliquot Dispense Wizard

Repetitively dispense aliquots of the same volume at the press of a button.

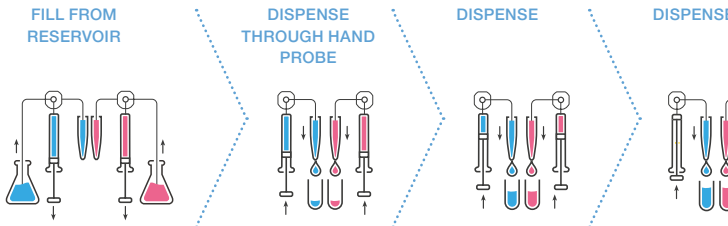
Single Syringe Aliquot or Serial Dispense



Serial Dispense Wizard

Repetitively dispense aliquots of differing volumes at the press of a button.

Dual Syringe Aliquot or Serial Dispense

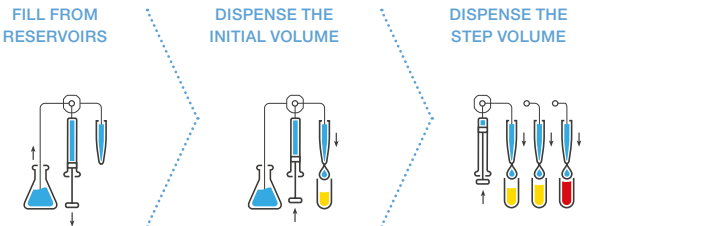


Titration Wizard

Slowly add liquid to another liquid until an end-point is reached. An example of this application is adding acid or base to a pH buffer.

Titration

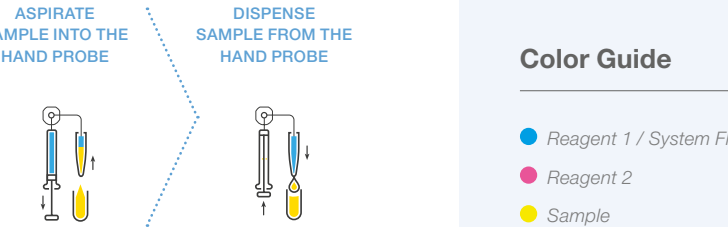
A large initial volume is dispensed to get close to the endpoint. Then a smaller step volume is dispensed until the endpoint is reached.



Pipette Wizard

Simulate a manual pipette used to transfer liquid from one vessel to the next.

Pipette



Color Guide

- Reagent 1 / System Fluid
- Reagent 2
- Sample
- Titration Endpoint

Dispenser Ordering Information

| Part number | Product name | Description |
|-------------|--------------|------------------------------------------------------------|
| 10103458 | ML710-DIS | Single Syringe Dispenser with Advanced Controller |
| 10103460 | ML720-DIS | Single Syringe Dispenser with Premium Controller |
| 10103461 | ML715-DIS | Dual Syringe Dispenser with Advanced Controller |
| 10103464 | ML725-DIS | Dual Syringe Dispenser with Premium Controller |
| 10103465 | ML715-CNT | Dual Syringe Continuous Dispenser with Advanced Controller |
| 10103467 | ML725-CNT | Dual Syringe Continuous Dispenser with Premium Controller |

All dispensers ship complete with a Concorde hand probe (the dual -DIS uses the Dual Push Button hand probe), universal valve(s), fill/dispense tubing assembly, accessory holder, country-specific power cord, and the choice of syringes. If no syringe(s) are selected at the time of the order the -DIS will ship with 1 mL syringe(s) and the -CNT will ship with 10 mL syringes.

Standalone Syringe Pumps

Simple to Integrate

Take full command of your diluting and dispensing applications with the Microlab 700 standalone syringe pump. The standalone syringe pump allows you to custom program methods and deploy commands to any instrument on your network from anywhere in the world, giving you unparalleled control of your process.



PROGRAM YOUR
OWN METHODS IN
Visual C#®
Visual Basic®
LabVIEW™

Choose Ethernet or RS-232 Communication

Choose Ethernet Communication if

- The application requires control over all details of the pump like the front LED lights, acceleration speeds, custom initialization routines, etc.
- Remote control or monitoring of the pump is important. This includes dispensing in restricted environments like clean rooms, rooms with high radioactivity, or chemical contamination, etc.
- Development is being done in a Microsoft .NET 2.0 programming environment. The API simplifies programming with on screen help in an industry standard format.

Choose RS-232 Communication if

- The control device is a Programmable Logic Controller.
- The control device is not a PC running Windows® or the programming language is not compatible with Microsoft® .NET 2.0 framework.
- The application has already been implemented using an older RS-232 device like Microlab 500.
- The application requires the use of another Hamilton RS-232 device like Modular Valve Positioner.

Standalone Pump Ordering Information

| Part Number | Description |
|-------------|---------------------|
| ML630 | Single Syringe Pump |
| ML635 | Dual Syringe Pump |

All standalone pumps ship complete with a universal valve(s), country-specific power cord, Custom Programmer kit, and choice of syringes. If no syringe(s) is/are selected at the time of the order 1 mL syringe(s) will be included automatically.



Microlab 700 Hardware

Controller Features

The Microlab 700 controller features a large, easy-to-use touchscreen with a performant processor, two USB ports for connection of RFID scanner, QR/Barcode scanner, USB flash drive; two RS232 Port for connection of balances, label printer; two Ethernet Ports for connection to Microlab base unit and network.



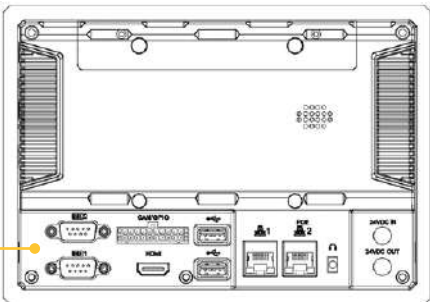
MICROLAB LABEL PRINTER



MICROLAB DIGITAL SCANNER



MICROLAB RFID READER



Microlab 700 Connectors

| Connector | Interface | Function |
|--------------------|------------------------|-----------------------------------------|
| IOIO #1 | RS232C COM1 | Analytical or precision balance |
| IOIO #2 | RS232C COM2 | Label printer, Log printer |
| Micro SD card slot | Micro SD | Slot for SD cards up to 64 GB |
| USB-A #1 | USB 2.0 host | Slot for micro SD cards up to 64 GB |
| USB-A #2 | USB 2.0 host | RFID-scanner, QR code scanner |
| RJ-45 #1 | LAN-1 100M | Microlab 700 base unit |
| RJ-45 #2 | LAN-2 100M | LAN for intranet and internet |
| Power Jack IN | 24VDC IN | Power input from DC power cable |
| Power Jack OUT | 24VDC OUT, 3A max | Power output for Microlab 700 base unit |
| Wi-Fi | 802.11 a/b/g/n 2.4 GHz | Wireless LAN for intranet and internet |
| Bluetooth 4.0 | 2402MHz-2480MHz | Used for accessories in future |

Syringe Pump Features

The Microlab 700 is available as a single or dual syringe system. The high torque, precision stepper motors provide unsurpassed positional accuracy across the full range of Hamilton syringes from 10 µL to 50 mL. The instrument communicates with the controller or a corporate network via an Ethernet port. Serial communication via RS-232 is also possible for programming in a non Windows® environment.



- 1 High torque valve motors
- 2 Precision syringe drives with 48,000 step resolution over 60 mm
- 3 Illuminated power and prime buttons
- 4 Independent left and right trigger ports



- 5 Fanless heat vent
- 6 24 volt power input
- 7 CAN daisy chain input/output
- 8 RS-232 console port
- 9 Power over Ethernet (PoE)
- 10 TTL input/output

Controller Accessories

| Part number | Product name |
|-------------|-----------------------------------|
| 10106736 | Microlab RFID Reader |
| 10106738 | Microlab Digital Scanner |
| 10106739 | Microlab Label Printer* |
| 10106806 | Labels for Microlab Label Printer |

* Power supply cord will be selected from page 24



Microlab Software

NEW UTILITIES



New Utility Menus

- Easy to access and human readable error log
- Audit Trail viewer
- Update software via internet
- Update software via USB flash drive / SD card
- Log Viewer: Logs can be opened with PDF viewer, directly on the controller screen
- Possibility to create a full encrypted system backup and device specific (protected to access only for a specific device)
- Restore function

UPDATED WIZARD



Dry Weight Dilution 2.0

- Improved usability
- Save to favorites
- Support of many balance models (Mettler, Sartorius, Kern, Ohaus)

NEW CLEANING MENU



Cleaning features

- Cleaning reminder (time period-based)
- Cleaning reminder (cycle count based)
- Auto reset of reminder after cleaning

MAINTENANCE

Maintenance features

- Error statistics
- Maintenance reminder (date-based)
- Maintenance warning (time period-based)

NEW USER SUPPORT



New Help Menu

- Send emails to customer support directly from device
- Read user manual directly from device
- Screen sharing (Remote control)
- Tutorial videos
- Easier understanding of the Microlab platform functionalities through the new help menu

NEW CONFIGURATIONS



New LyncStore 700 Menu

Premium Version only

- Add LyncStore Account
- Sync Log files
- Sync Audit Trail
- Sync Custom Methods
- Sync Favorite Methods (created by means of the existing Wizards)
- Allow Remote Access



New Communication Menu

- Manage WLAN
- Manage LAN
- Manage external devices & accessories



New GLP Printer Menu

- Configure GMP/GLP complaint print content (Protocol Printer)



New Security Settings

- Multiple Administrator accounts
- Enable Audit Trail Dialogs (Parameter change must be justified)
- Enable PDF signatures
- Automatic sign out after X minutes
- Sign-in with RFID card

Advanced Controller Software

The controller is ideal for completing simple diluting and dispensing tasks. Quickly set the desired volume in the Quick Start Run Screen and begin.

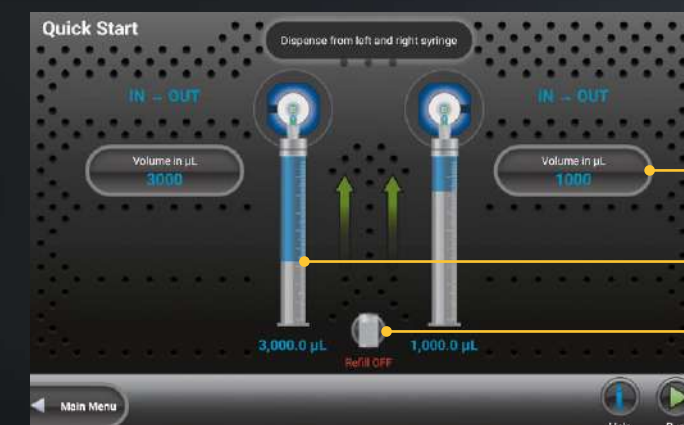
Simple Diluting

Diluent is drawn by the left syringe and sample is drawn into the tubing by the right syringe. Both syringes dispense to complete the dilution.

Simple Dispensing

Solvent is drawn into the syringe and dispensed out through the hand probe.

Run Screen



Press this button to adjust the dispense volume at any time

Graphical status of the current valve and syringe position

Toggle the Auto Refill button ON and OFF

Configuration Screen



Dedicated Wizards for aliquot dispensing, serial dispensing, dilution, pipetting, and titration

Create custom applications not covered by a Wizard

Help menu (see on the left)

Press to proceed to the Run screen

Configure valves, syringes, system settings, view firmware revision, etc.

Review system logs and run system updates



Controller



Compliance and Logging

The software provides a variety of security protections, simplifies adherence to FDA GXP regulations, ability to administer user accounts and passwords, create log files that conform to 21 CFR Part 11 and manage log files on a PC using the LyncStore application.



Language Support

The Microlab 700 features language support for English, Spanish, German, French, Italian, and Chinese.

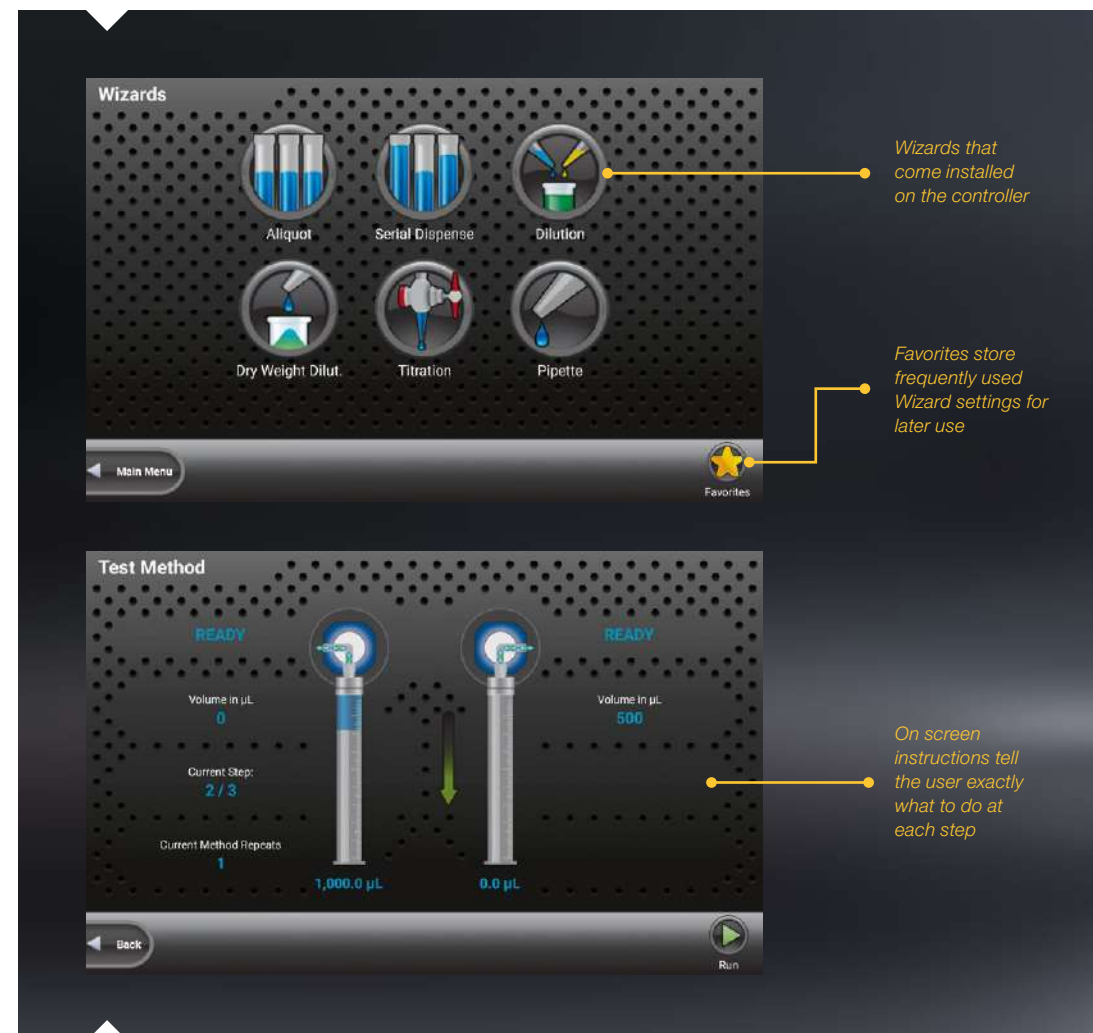


Archiving and Sharing Methods

Favorites and Custom Methods are stored on the Internal Storage or external: USB, microSD or remotely by LyncStore connectivity.

Wizards

Wizards are designed to simplify the programming of common everyday methods. The controller ships with the most popular Wizards installed but it is simple to add or delete Wizards from the menu. Visit www.hamiltoncompany.com/microlabwizards to see a complete list of available Wizards.



Custom Methods

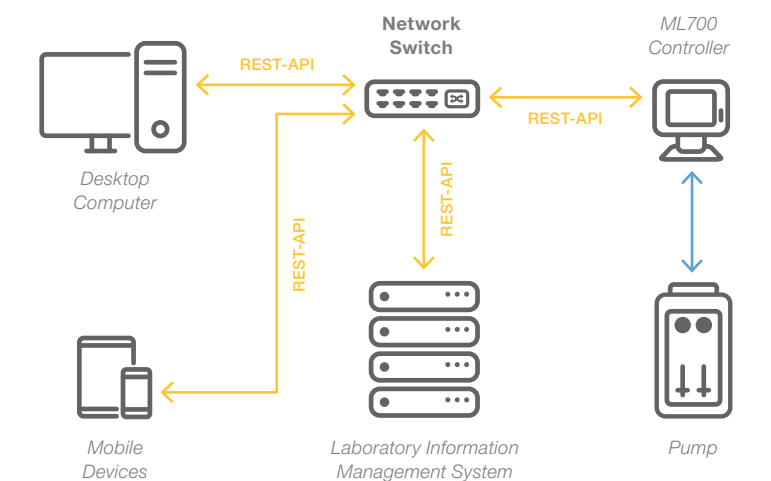
Custom methods can be created to accomplish unique liquid handling tasks. Incorporate loops, delays, external triggering, and execution counters with valve and syringe movements to create complex methods.



Premium Configuration

LyncStore 700 features

- Best-Practice API documentation with swagger
- Compliant with 21 CFR Part 11
- API comes with a web interface
- Realtime access to Microlab 700
- Automatic data backup
- Remote control



Premium Configuration Screen

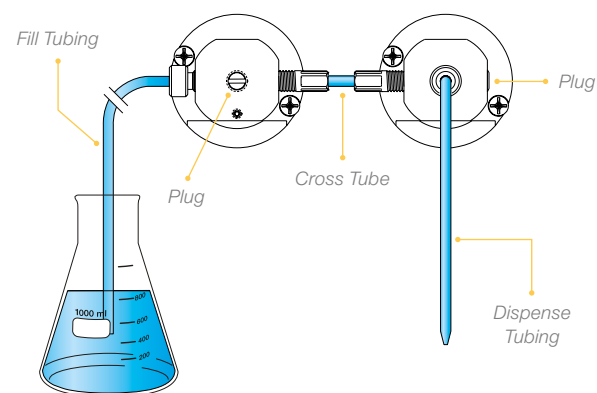


Universal Valves

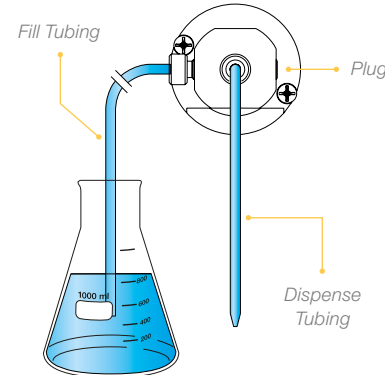
Innovative fluid logic allows the same universal valve to be used in all Microlab 700 diluting and dispensing applications. Interchange the valve plugs and tubing to achieve the following configurations in a matter of minutes.

Valve Plumbing Based on Instrument Configuration:

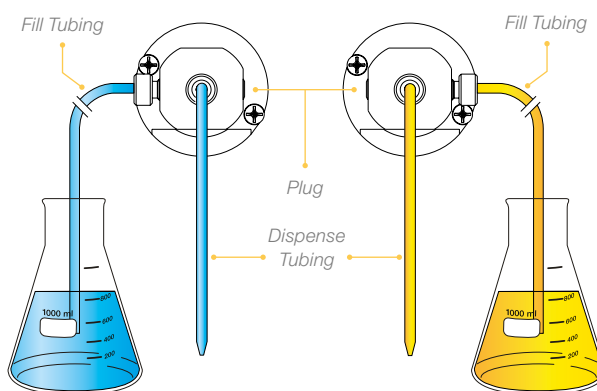
Dual Syringe Diluter



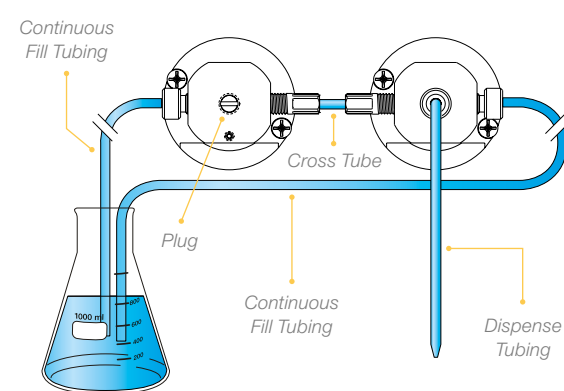
Single Syringe Dispenser



Dual Syringe Dispenser



Continuous Dispenser

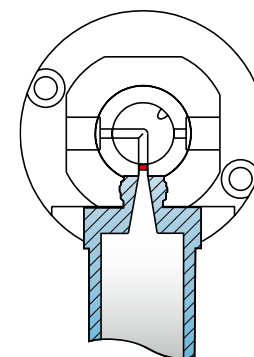


Bubble Free Prime Syringes

For any syringe pump, the key to achieving the most accurate dispenses is eliminating all air from the fluid path. Traditional syringes trap approximately 50 μL of air between the tip of the syringe and the valve. For small syringes, this trapped air is the last to leave the syringe and the first to be drawn back in, making them difficult if not impossible to prime.

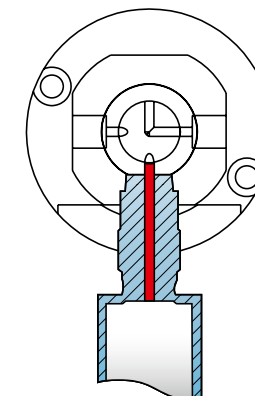
The Bubble Free Prime syringe has a conical plunger tip that extends through the threaded termination and into the valve. This unique design expels the air from the syringe and valve decreasing the number of priming cycles required.

Bubble Free Prime Syringe



Bubble Free Prime syringes eliminate air from the fluid path

Standard Syringe



Traditional Luer Lock syringes trap approximately 50 μL of air, making small syringes nearly impossible to prime

Color Guide

Trapped Air Syringe Plunger

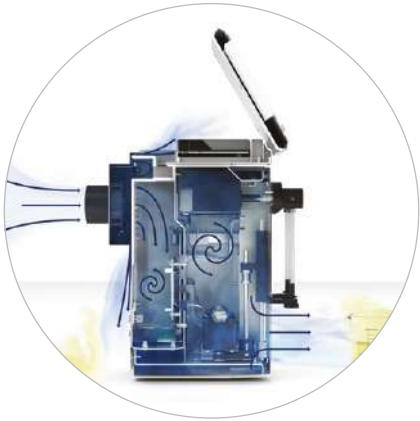
Patented conical tip extends through the threaded termination and into the valve



Accessories

Protect Your Investment with AirShield

The AirShield is a separate accessory that can be purchased for any Microlab 700 instrument. It creates a positive pressure blanket of fresh air inside the pump that pushes air out over critical components on the outside of the pump, protecting them from the environment.



Localized Harsh Environment

In many labs the air is relatively clean but samples and reagents placed near the instrument result in a localized environment that can be harmful. For these labs, it is sufficient to source clean air from the back of the instrument away from the microenvironment.



Optional Snorkel for Fresh Air Supply

For labs with a more demanding atmosphere it is possible to source clean air via a snorkel that connects directly to the AirShield. Fresh air is then brought from outside the harmful environment to create a shield of clean air around all critical instrument components.



LUER LOCK CONVERSION KIT
P/N 58381-01

CONCORDE CT HAND PROBE
Standard with the Single Syringe Dispenser,
Dual Syringe Diluter, and Continuous Dispenser



DUAL PUSH BUTTON HAND PROBE
Standard with the Dual Syringe Dispenser



DISPOSABLE TIP HAND PROBE
0.5–1000 μ L



LARGE VOLUME DISPOSABLE TIP HAND PROBE
1–5 mL

Hand Probes, Foot Switch, and Printer Kit



FOOT SWITCH

Accessories

| Part Number | Description |
|-------------|-------------------------------------------------|
| 61401-01 | Concorde CT Hand Probe |
| 62541-01 | Dual Push Button Hand Probe |
| 63960-02 | Disposable Tip Hand Probe (0.5–1000 μ L)* |
| 62575-01 | Large Volume Disposable Tip Hand Probe (1–5 mL) |
| 75702 | 5 mL Disposable Tips (250/pk) |
| 62576-01 | Foot Switch |
| 68562-01 | AirShield |
| 93009-01 | AirShield Tubing (includes tubing clamp) |

* Tips for this probe can be found on page 9

Replacement Parts

Syringes and Power Supplies

Standard Syringes

| Part Number | Syringe Size | Optimal Range |
|-------------|--------------|---------------|
| 59000-05 | 10 µL | 1–10 µL |
| 59000-10 | 25 µL | 2.5–25 µL |
| 59000-15 | 50 µL | 5–50 µL |
| 59000-20 | 100 µL | 10–100 µL |
| 59000-25 | 250 µL | 25–250 µL |
| 59000-30 | 500 µL | 50–500 µL |
| 59000-35 | 1.0 mL | 100 µL–1.0 mL |
| 59000-40 | 2.5 mL | 250 µL–2.5 mL |
| 59000-45 | 5.0 mL | 500 µL–5.0 mL |
| 59000-50 | 10.0 mL | 1–10.0 mL |
| 59000-55 | 25.0 mL | 2.5–25.0 mL |
| 59000-60 | 50.0 mL | 5–50.0 mL |

SaltLine Syringes

| Part Number | Syringe Size | Optimal Range |
|-------------|--------------|---------------|
| 208335 | 1 mL | 100 µL–1.0 mL |
| 208336 | 5 mL | 500 µL–5.0 mL |
| 208337 | 10 mL | 1–10.0 mL |

Power Supply & Power Cords

| Part Number | Description | Diagram of Plug |
|-------------|-----------------------------------------------------|-------------------------------------------------------------------------------------|
| 61092-01 | Power Supply Universal (110–220 VAC) | |
| 355008 | Switzerland |  |
| 3892-01 | Continental Europe, Russia, Schuko |  |
| 3892-02 | Australia, New Zealand, Argentina, China |  |
| 3892-03 | UK, Ireland, Malaysia, Middle East |  |
| 3892-05 | USA, Canada, Mexico, Central America, Brazil, Japan |  |

Selecting a Syringe

Select the smallest syringe with a maximum volume that is greater than the largest volume to be dispensed. Ideally the smallest volume to be dispensed should fall within the optimal ranges listed to the left. The Microlab 700 can dispense volumes below the optimal range but there will be some impact on accuracy and precision. The SaltLine Syringes should be used when working with solutions that have a high salt concentration. Contact a Hamilton sales representative for additional assistance.

POWER CORD



POWER SUPPLY

Miscellaneous Accessories

Universal Valves & Accessories

| Part Number | Valve Assembly Description |
|-------------|----------------------------|
| 60676-01 | Left Valve Assembly |
| 60675-01 | Right Valve Assembly |
| 61498-01 | Valve Cross Tube Assembly |
| 61729-01 | Valve Plug (1/pk) |

FEP Tubing Assemblies

| Part Number | Gauge | Type | Length | Internal Volume |
|-------------|-------|------------------------|---------------|-----------------|
| 10106145 | 18 | Fill Tubing | 48" (1219 mm) | 0.96 mL |
| 10106147 | 18 | Dispense Tubing | 54" (1372 mm) | 1.08 mL |
| 10106177* | 18 | Fill/Dispense Tubing | Custom Length | 0.79 µL/mm |
| 10106148 | 12 | Fill Tubing | 48" (1219 mm) | 3.83 mL |
| 10106149 | 12 | Dispense Tubing | 54" (1372 mm) | 4.31 mL |
| 10106177* | 12 | Fill/Dispense Tubing | Custom Length | 3.14 µL/mm |
| 61491-02 | 18 | Continuous Fill Tubing | | 0.79 µL/mm |
| 61491-01 | 12 | Continuous Fill Tubing | | 3.14 µL/mm |

* Specify gauge (12 red / 18 blue), length, and wether tapered or blunt end. Maximum length: 5 meters

Activation Key

| Part Number | Upgrade Kit |
|-------------|------------------------------|
| 10101502 | ML700 Premium Activation Key |

Other Accessories

| Part Number | Description |
|-------------|--------------------------------------|
| 88990 | Tubing Clips (5/pk) |
| 61710-01 | Accessory Holder & Tubing Wire Stand |
| 65160-01 | Cable Management System |



LEFT VALVE



RIGHT VALVE



VALVE PLUGS



CROSS TUBE



FILL & DISPENSE TUBING
Dispense tubing has tapered end



WIRE STAND



TUBING CLIPS



ACCESSORY HOLDER



Specifications

Controller Specifications

| | |
|----------------------|------------------------------------------------|
| System Configuration | CPU NXP i.MX 6DualLite 800MHz |
| | ARM Cortex-A9 processor |
| | RAM: 1 GB DDR3, ROM: 8 GB |
| | GPU 3D Vivante GC880 35Mtri/s 266Mpxl/s |
| | Open GL ES 2.0 |
| Media | OS: Android 5.1.1 / Linux Debian 8.0 |
| | Audio: MP3, MP4, WMA, WAV... |
| | Video Decode 1080p30 + D1 |
| | Video Encode 1080p30 H.264 BP / Dual 720p |
| | |
| Interface | HDMI output, support up to 720p |
| | Micro SD (TF) card slot, support up to 64G |
| | SIM card slot (mini SIM) |
| | USB Device 2.0(OTG)x1, USB host 2.0x2 |
| | Gpio inputx4, Gpio outputx6, CAN 2.0Bx2 |
| | IOIO1 (COM1 COM4 COM5) |
| | IOIO2 (COM2 RS422 RS485) |
| | LAN1 100M |
| | LAD2 200M, PoE for optional |
| | Earphone jack |
| Function (Optional) | DC power input |
| | 3G / 4G |
| | Wi-Fi 802.11a/b/g/n 2.4 GHz |
| | Bluetooth 4.0 2402MHz~2480MHz |
| | PoE (Power over Ethernet) |
| Touch Panel | Capacitive |
| Display | 7" LED backlit |
| | Screen Resolution: 1280 x 800 |
| | Brigthness: 400cd/m2 |
| | Contrast: 800:1 |
| | Viewing Angle: 140°/160° (H/V) |
| Power supply | DC 9-36V |
| Power Consumption | ≤10W (Normal mode) |
| Temperature | Working: -20°C – 60°C Storage: -30°C – 70°C |
| Dimension | 206 x 144 x 30.9 mm |
| Weight | 790g |

Single and Dual Syringe Pump Specifications

| | |
|-------------------------|-------------------------------------------------------------------------|
| Accuracy | +/- 1% |
| Precision | +/- 0.2% |
| Syringe drive mechanism | 1.8° stepper motor with variable volumetric flow rate |
| Flow rate | 0.003–6000 µL/second (depending on the syringe that is selected) |
| Syringe resolution | 0.002% of the nominal syringe volume |
| Compatible syringes | 10, 25, 50, 100, 250, 500 µL, 1, 2.5, 5, 10, 25, and 50 mL BFP Syringes |
| Volume range | 1.0 µL–50 mL |
| Fluid path | Borosilicate, PTFE, CTFE |
| Communication type | Ethernet, 10/100 BASE-T |
| Communication protocol | .NET 2.0 Application Programming Interface (API) |
| Pump memory | One method stored in non volatile memory |
| Calibration | Factory tested and traceable to N.I.S.T. standards |
| Certifications | CE, CSA |
| Power requirements | 100–240 V 1.5 A max 50160 Hz |
| Power rating | 24 VDC, 2.5 A |
| Dimensions | 7 x 5.5 x 10.5 inch (177.8 x 139.7 x 266.7 mm) |
| Weight | 13 lbs (5.9 kg) |

About Hamilton

The Measure of Excellence®

Hamilton Company specializes in the development, manufacturing, and customization of precision measurement devices, automated liquid handling workstations, and sample management systems. Hamilton's processes are optimized for quality and flexibility. Whether it's a custom needle with a quick delivery timeframe, a special length pH sensor, or a comprehensive solution to fully automate your assay workflow, trust that Hamilton's products will always meet your needs.

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