Accessories Catalog for the
Agilent Bravo Automated Liquid Handling Platform

APPLICATIONS MADE EASY   2012-2013 Edition

The Measure of Confidence

GENOMICS

PROTEOMICS

PHARMACEUTICALS

INTEGRATED BIOLOGY

Agilent Technologies

MEET THE AGILENT BRAVO AUTOMATED LIQUID HANDLING PLATFORM

Achieve accurate and precise pipetting over a wide volume range to improve your data quality and consistency. The Agilent Bravo Platform has the versatility and scalability to provide you with an extensive choice of configurations and a unique open design that facilitates its integration into existing workflows in your laboratory. Incorporating the Bravo Platform into your research will free you from hours spent manually setting up and running complex applications.

Agilent Bravo Automated Liquid Handling Platform on Risers.

High-accuracy liquid handling heads

Accurately, reliably, and reproducibly dispense 100 nL—250 µL into 96, 384, and 1536-well plates.

9-deck positions

An open, integration-friendly design that delivers maximum versatility for shaking, heating, cooling, and filtration.

On-deck accessories

Tools that custom configure the Bravo Platform for your applications.

Available in two space-saving models

The Agilent Bravo Automated Liquid Handling Platform is available in two models: the standard Bravo Platform fits most laminar hoods and the Bravo SRT Platform is three inches shorter to accommodate smaller hoods. Both versions enable automated liquid handling for cell-based assays or hazardous reagent handling. Their ease-of-use is facilitated by Agilent VWorks Automation Control Software, which features an intuitive graphical user interface that makes it easy to create and run protocols, connect and configure devices, and monitor progress.

AGILENT AUTOMATION SOLUTIONS

Higher throughput and greater reproducibility for your laboratory

The Bravo Automated Liquid Handling Platform offers an expansive line of tools that enable applications across all major life science research areas. The Agilent accessories showcased in this catalog are the dozens of carefully designed tools used to create customized and turnkey solutions for a wide range of research and discovery applications. This catalog will help you explore the possibilities so you can make better use of your samples and process them with greater efficiency.

Customize or choose preconfigured

With Agilent, you can choose a preconfigured hardware/accessory bundle based on a very specific application requirement, such as protein purification with the AssayMAP Bravo package or sample preparation for Next Generation Sequencing (NGS). Alternatively, you can take a hands-on approach and select the specific accessories that allow you to freely customize the deck of the Bravo Platform so it meets changing assay requirements. Whether you are automating ADME assays, or preparing and running cell viability assays, you will find that Agilent has the accessories and configurations that fit your workflow.

Research Areas	Applications/Assays	Agilent Automation Solutions
Genomics Proteomics Pharmaceuticals Integrated Biology	NGS sample preparation CGH CGH+SNP AssayMAP sample preparation LC/MS sample preparation Cytochrome P450 Small molecule screening Colony inoculation Cell viability ADME Toxicology Cell Biology	**Customized** Select individual accessories from this guide and create a custom configuration for your application, see page 6. **Preconfigured** Order a new application-based Bravo Platform bundle, pre-packaged with everything you need to automate NGS, CGH, CGH+SNP, and AssayMAP Sample Preparation technology—see page 7.

BUILD A CUSTOMIZED BRAVO PLATFORM

Choose a Base Bravo Platform and Add Agilent Accessories

Agilent offers four base Bravo Platform configurations with 9-position, open decks that can be customized by adding your choice of liquid handling head and the other accessories found on pages 8 – 35 of this guide.
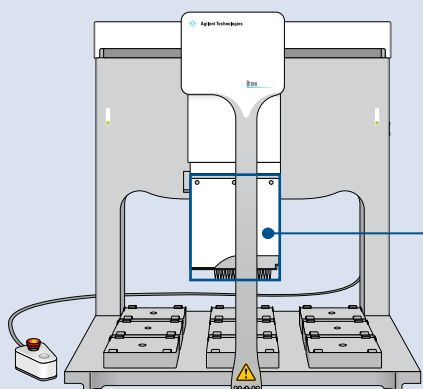
All four base Bravo Platform configurations do not include a liquid handling head (shown in these examples for position only).

3 Inches

Bravo G5523A#001
Includes 1 Passive Alignment Deck Platepad and 8 Bravo Standard Deck Platepads*
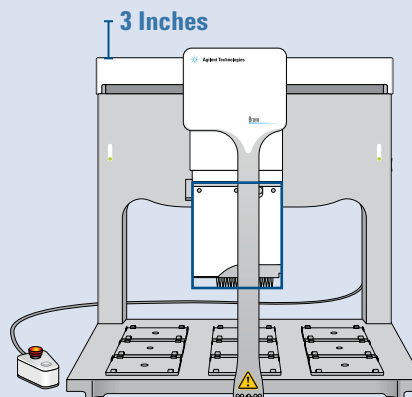
Bravo SRT G5523A#002
(SRT=ShoRT, 8 cm/3.2 in shorter)
For challenging hood applications. Reduced feature set. Includes 1, 250 µL Tip Box Platepad and 8 Bravo SRT Short Deck Platepads*

Gripper

3 Inches
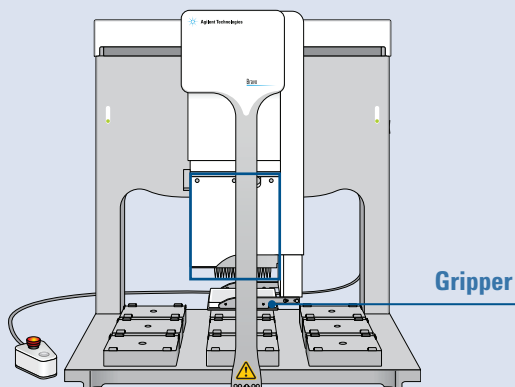
Gripper

Bravo with Gripper G5523A#003
Includes 1 Passive Alignment Deck Platepad and 8 Bravo Standard Deck Platepads*
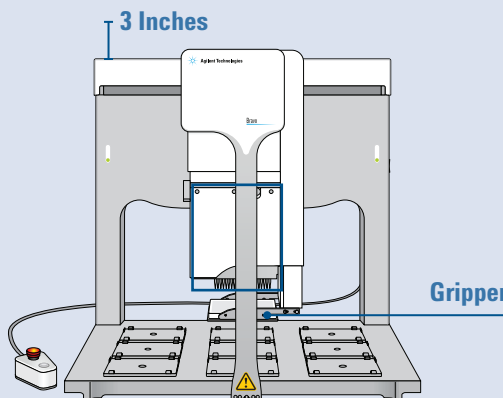
Bravo SRT with Gripper G5523A#004
(SRT=ShoRT, 8 cm/3.2 in shorter)
For challenging hood applications. Reduced feature set. Includes 1, 250 µL Tip Box Platepad and 8 Bravo SRT Short Deck Platepads*

* All standalone Bravo Platform configurations include a notebook PC with VWorks Automation Control Software and One Simulation License, except where indicated. European Union bound Bravo configurations all include safety Light Curtain option by default.

CHOOSE A PRECONFIGURED APPLICATION BUNDLE

Agilent offers four preconfigured application-based Bravo Platform bundles to simplify your workflow. These packages include an appropriate base Bravo Platform PLUS all required or typically used accessories. Application notes describing these bundles are referenced below and are available at www.agilent.com/lifesciences/automation.

Nine deck positions are available for accessories and labware.

| Part Number	G5539A	G5540A	G5541A	G5542A
Application	CGH Genomics	CGH + SNP Genomics	NGS Genomics	AssayMAP Sample Preparation Technology
Bravo Base	Bravo with Gripper	Bravo with Gripper	Bravo with Gripper	Bravo with Gripper
Bravo Liquid Handling Head	96 Channel Disposable Tip Head (96LT)	96 Channel Disposable Tip Head (96LT)	96 Channel Disposable Tip Head (96LT)	Bravo 96AM Head
Accessories [deck position]		Risers, 146 mm (not shown)	Risers, 146 mm (not shown)	
	96 Well Manual Fill Reservoir [5]*	96 Well Manual Fill Reservoir [5]*		96 AM Tip Wash Station [3]*
		2-Peltier Thermal Stations, 2-STC Controllers, 2-Slot/ Shaker Cards [4,6]*	2-Peltier Thermal Stations, 1-MTC Controller, 2-Slot/ Shaker Cards [4,6]*	Pump Module 2.0
			2-Custom Plate Nests for Peltier Thermal Stations [4,6]*	96 AM 250 µL Tip Loading Station
			Orbital Shaking Station [5]*	
			Magnetic Bead Accessory [7]*	
			Thermal Station, short-side connectors [9]*	
			Chiller, Peltier, 400 watt	
	Notebook PC	Notebook PC	Desktop PC	Notebook PC
Application Note	Publication 5990-4660EN	Publication 5990-4660EN	Publication 5990-9690EN	Publication 5990-8633EN

* Number refers to Bravo Platform deck position.
Note: Only key differentiating accessories are noted here.

CHOOSE ACCESSORIES TO CUSTOMIZE YOUR BRAVO PLATFORM

The versatile Bravo Platform is easily adapted to a wide range of applications using the accessories found on the following pages. Chose on-deck heating, cooling, shaking, and separation, or swap liquid handling heads to meet changing assay and throughput requirements.

The sections included are shown below:

INSTALLATION SERVICES – APPLICATIONS MADE EASY

Whether you are choosing a new Bravo Platform and accessories, or upgrading an existing Bravo Platform for a new application—Installation Services can make the experience as easy as you choose.

Customers with a stand alone Bravo Platform may choose to install accessories themselves, or take advantage of two levels of installation and training support. At the time of Bravo Platform purchase, on-site accessory installation is included.

For accessory-only upgrades, most items in this catalog include a labor hours estimate for Agilent on-site Field Service installations, which may be added to the quotation—a visit by a Hardware Expert. Estimates for an on-site visit from an Applications Expert are also available through an Agilent Product Specialist and Agilent's Professional Services department (As an optional add-on service).
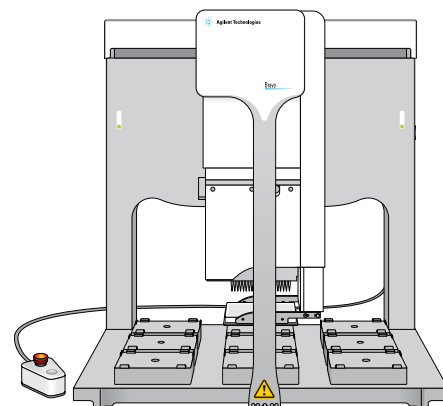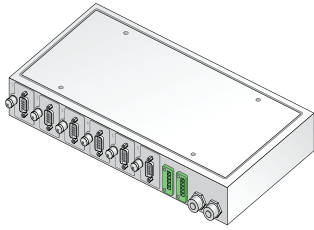
Hardware Expert

Field Service Engineers (FSEs) provide Installation & Familiarization (Hardware installation and simple training basics)

Applications Expert

Field Application Scientists are available after the accessory has been installed and can provide in-depth training on the Bravo Platform, accessory, or software.

AGILENT ACCESSORIES HUB

Agilent Accessories Hub

The Agilent Accessories Hub is a central electrical and communication connection point for a number of Bravo Platform accessories and the controlling computer. You can customize the hub by installing the desired accessory modules to feed power or communication signals to the corresponding accessories. You are able to configure and control the hub and accessories using VWorks Automation Control Software.

The Accessories Hub is optional and compatible with the Light Curtain, Barcode Reader, and Orbital Shaking Station. The Microplate Vacuum Alignment Station requires the Accessories Hub for its operation.

- Requires AC power, 100-240 V, 50/60 Hz
- Provides USB communication with host PC running VWorks software, allowing VWorks control of compatible devices
- Includes Accessories Hub, USB cable, power supply, country-appropriate power cord
- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Accessories Hub	G5498B#023	17374-001 (100-240 V)

AGILENT AC RELAY

Agilent AC Relay

The Agilent AC Relay enables you to control power to an accessory located on the Bravo Platform using VWorks Automation Control Software. It is connected to the power source and the accessory. VWorks software control operates through a serial connection between the controlling computer and the AC Relay.

There are currently no Agilent Automation Solutions products which require this item, but it is helpful if you are using a tool or device with your Bravo Platform which only requires its power to be turned on or off.

- Requires AC power 100-240 V, 50/60 Hz (8 A Fuse)
- Provides serial connection to host PC running VWorks and allows VWorks control of compatible devices
- Includes AC relay, serial cable DB-9 M to DB-9 F, USB to serial adapter, power supply (24 V, 1.1A), USB cable, power supply, and country-appropriate power cord
- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
AC Relay	G5498B#002	20192-001 (100-240 V)

AGILENT RISERS

Flexibility is a key benefit of using the Bravo Automated Liquid Handling Platform. Agilent risers make it easier to add taller devices that must pass through the deck (Locations 4 or 6), such as the Peltier Thermal Station or the Deck Position Trash. For example, with on-deck trash, disposable tips can fall through the deck for more convenient collection.

Risers are also used for integration, such as when an automated microplate handler, robot, or other adjacent device must be placed at a higher level.

- Includes a set of two, 146 mm risers, and a set of four screws and washers
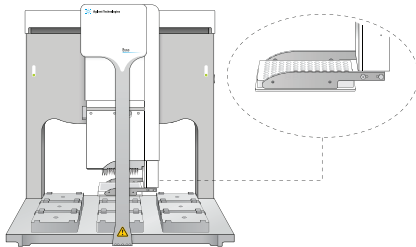- Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included)

Agilent Bravo Automated Liquid Handling Platform with Risers

Description	Part Number	Agilent Internal Part Number (Assembly)
Risers, 146 mm	G5498B#055	18503-001

AGILENT GRIPPER UPGRADE

The Agilent gripper upgrade allows a Field Service Engineer to add a labware gripper to your existing Bravo Platform. The gripper is used to pick up and place plates and tip boxes on the platepads of the Bravo deck. It can also move plates and pipette tips between the plate pads, but is not designed for off-deck placements.

- Includes labware gripper accessory, hardware components only
- Estimated Field Service Engineer (FSE) installation time is 8 hours (required, not included)

Agilent Bravo Platform with Gripper Upgrade

Description	Part Number	Agilent Internal Part Number (Assembly)
Gripper Upgrade	16545-101	16545-101

AGILENT LIGHT CURTAIN
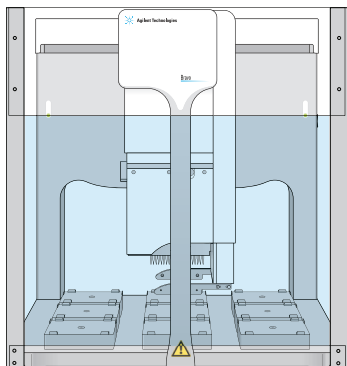
Agilent Bravo Platform with Light Curtain

The Bravo Platform Light Curtain arrives with a Bravo Platform purchased in compliance with regional safety requirements, or it can be purchased separately and added to an existing Bravo Platform.

As part of the safety interlock circuit, the Light Curtain works in a manner similar to the robot-disable pendant. Two light posts mounted at the front of the Bravo Platform project light beams across the front of the device. If an object disrupts the light beams, the safety interlock circuit disables the pipette head motors.

- Includes a junction box for electrical and communication connections (derived from connection to the Pendant Port of Bravo), clear plastic shields for the front, sides, and rear opening of the Bravo
- The Agilent Accessories Hub can replace the junction box to simplify the deck layout
- Estimated Field Service Engineer (FSE) installation time is 2 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Light Curtain, Bravo	G5498B#022	G5409-60074
Light Curtain, Bravo SRT	G5409-60075	G5409-60075

AGILENT MIRRORED BARCODE READER

Agilent Mirrored Barcode Reader

Agilent offers an automation friendly Microplate Labeler which prints and applies 1D or 2D adhesive labels directly to microplates.
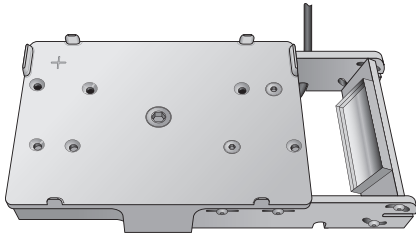
The Agilent Mirrored Barcode Reader reduces errors and saves time tracking samples. It is compatible with machine readable linear (1D) barcode labels, and is used to identify samples and match them with relevant information through a database lookup. It replaces a platepad at any deck position and is compatible with VWorks Automation Control Software.

- Works with any serial port or the Bravo Accessory Hub
- Compatible symbologies include Code 39, Code 128, Interleaved 2 of 5, Code 93
- Barcode height 3.34 mm (0.13 in) or higher
- Required print contrast 25 % at 650 nm
- Includes Mirrored Barcode Reader
- Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Mirrored Barcode Reader	G5498B#031	18444-101

AGILENT DISPOSABLE-TIP PIPETTE HEADS
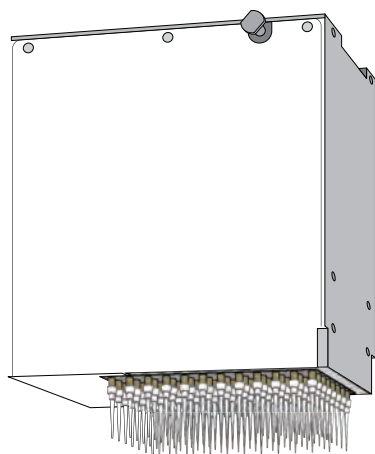
Agilent Disposable-tip Pipette Head

To learn more about Agilent certified Disposable Pipette Tips, visit www.agilent.com/lifesciences/pipettetips

Many of today's laboratory liquid handling applications require the use of disposable tips to prevent carryover/contamination (e.g., PCR). The Bravo Platform uses interchangeable disposable tip liquid handling heads that when combined cover a very wide volume range (300 nL to 250 µL).

Agilent Pipette Heads are designed to be easily mounted or exchanged, and offer the advantage of being more forgiving than metal-tipped, fixed-tip heads during collisions, increasing uptime during the life of your instrument.

Single-well, column, row, array, and full plate liquid handling

The Bravo Platform provides liquid handling automation for microplates—including low volume single-well, column, row, array, and full plate liquid handling.

Disposable-tip Pipette Heads can aspirate or dispense into one sample well or an array of sample wells (which include a corner and are contiguous). This is primarily used for single-tip cherry picking and occasionally for multiple-tip or array cherry picking. This feature is available in Agilent's VWorks Automation Control Software, within the Bravo Platform's liquid handling tasks (**Set Head Mode**). The **Set Head Mode** allows use of all tip barrels, full columns, full rows, or partial row/column.

Liquid handling performance*

Together, Agilent Disposable-tip Pipette Heads and tips cover a pipetting volume range from 300 nL to 250 µL with 5 % CV. High precision is achieved by optimizing each head for a specific portion of the pipetting volume range. Typical %CV's for dispensing 2 µL are 2.1 % using DMSO. Agilent Pipette Heads are designed to be compatible with most common life science laboratory reagents and with optimization, CV's better than 5 % can be achieved across many liquid types.

Agilent Disposable-tip Heads are designed to work in two liquid volume ranges: small transfer (ST) and large transfer (LT).

Description	Part Number	Agilent Internal Part Number (Assembly)	Maximum Volume	Compatible Well Formats
384ST 384-Well Disposable Tip Pipette Head	G5498B#043	04318-201	70 µL	96, 384 or 1536-well
96ST 96-Well Disposable Tip Pipette Head	G5498B#041	04730-201	70 µL	384 or 1536-well
96LT 96-Well Disposable Tip Pipette Head	G5498B#042	04730-202	250 µL	96 or 384-well

* Agilent Bravo Platform performance data is based on the use of Agilent-certified thin-walled, low-retention tips and optimized liquid classes.

AGILENT FIXED-TIP PIPETTE HEADS
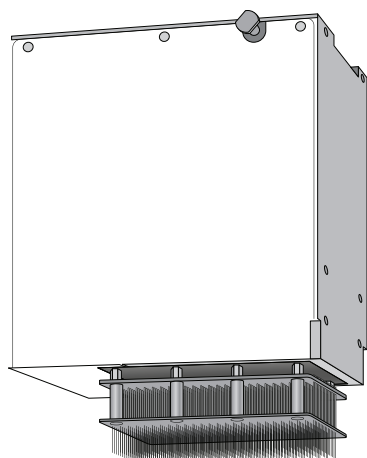
Agilent Fixed-tip Pipette Head

Agilent Fixed-tip Pipette Heads are designed for use on Bravo Platforms without a gripper.

Fixed-tip Pipette Heads are available in 96 or 384-well configurations for pipetting into 96, 384, or 1536-well microplates.

Fixed-tip Pipette Heads are fitted with non-disposable pins for dispensing liquid into the entire microplate simultaneously. For flexible dispensing options, including dispensing into single wells or columns, choose Agilent Disposable-tip Pipette Heads.

Agilent pipette heads are designed to be easily mounted or exchanged by the end-user. However, since Fixed-tip Heads can be severely damaged if crashed, it is important to understand all principals in setting up the hardware before operating a Bravo Platform with a Fixed-tip Pipette Head.

Liquid handling performance

Agilent Fixed-tip Pipette Heads can dispense from 20 nL to 50 µL into plates with 5 % CV. Typical % CV's for dispensing 2 µL are 2.1 % when using DMSO. Agilent Pipette Tip Heads are designed to be compatible with most common life science laboratory reagents, and with optimization, CV's better than 5 % can be achieved across many liquid types.

Description	Part Number	Agilent Internal Part Number (Assembly)	Maximum Volume	Compatible Microplates
384F50 384-Barrel Fixed Tip, Stainless, 50 µL	G5498B#045	06134-201	50 µL	384, 1536-well
96F50 96-Barrel Fixed Tip, Stainless, 50 µL	G5498B#044	06147-201	50 µL	96, 384-well

AGILENT ASSAYMAP SAMPLE PREPARATION TECHNOLOGY HEAD AND ACCESSORIES

To learn more about Agilent AssayMAP Technology, visit www.agilent.com/lifesciences/assaymap-bravo

The Agilent Bravo Platform for AssayMAP technology provides open access, walkaway automation for complex sample preparation workflows. The platform is equipped with a Bravo 96AM Head containing 96 ultra-low dead-volume syringes, which are capable of highly precise positive-displacement flow control in either direction. The Bravo 96AM Head is designed to be easily installed and removed by a user.

When paired with AssayMAP cartridges, the platform delivers a high-throughput, high-precision solution for affinity purification and quantitation of antibodies, post-translational modifications, and biomarker research and development.

Adding AssayMAP capability to an existing Bravo Platform requires the components listed below, as well as AssayMAP Cartridges. Different AssayMAP cartridge work flows may require alternate accessory configurations.

Description	Part Number	Agilent Internal Part Number (Assembly)
Bravo 96AM Head	G5498B#046	24235-001
96AM Wash Station	G5498B#057	11961-311
Pump Module 2.0	G5498B#058	06118-002
96AM Cartridge & Tip Seating Station*	G5409-20025	G5409-20025

* Mounting 250 µL LT tips requires the 96AM Cartridge & Tip Seating Station (special tip holder) instead of a 250 µL tip box.
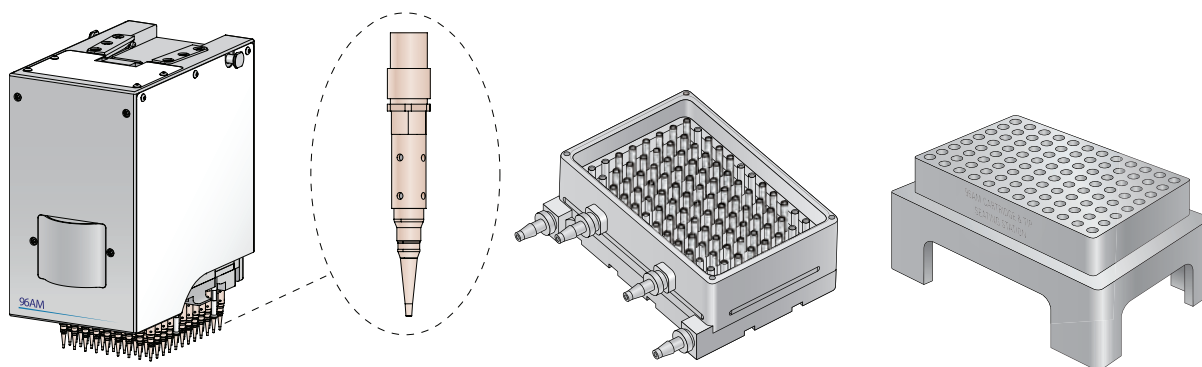
Agilent Bravo 96AM Head, Wash Station, and Cartridge & Tip Seating Station

AGILENT PIN TOOLS

Agilent Pin Tools are capable of delivering volumes ranging from 3 nL to 5000 nL in formats of 1536, 384, 96, 48, and 24 pins. They are supported in VWorks Automation Control Software (10.0.0.709 or higher), and are designed to be easily mounted or exchanged by an end-user. With regard to pipetting accuracy, reproducible CVs of 5-7 % are possible.

Pin tool applications include liquid transfers, high-density array creation, inoculation, and colony transfers.

The Automation team has found that optimal results are obtained when a pin tool is specifically chosen for the particular liquid. To produce the highest quality pin tools for your application, Agilent has partnered with V&P Scientific, experts in pin tool design and production.

Description	Part Number	Agilent Internal Part Number (Assembly)
Pin Tool Head, Custom	G5420A	G5420A
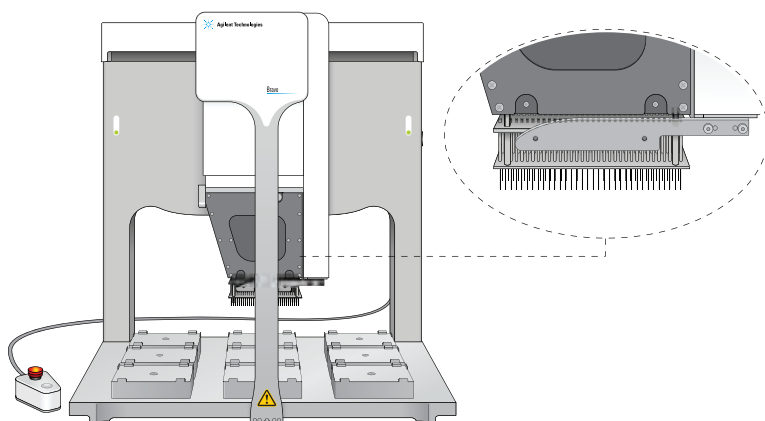
Agilent Bravo Platform with Pin Tool Head

AGILENT PLATEPADS

Glossary of Terms

Platepad—holds microplate on deck

Alignment station—platepad designed to align microplates and tip boxes

Tip box platepad—holds tip boxes on deck

Insert—sits within platepad to hold compatible devices in place (e.g., Teach Plate or Thermal Plate Insert)

The deck of the Bravo has been designed to be compatible with a wide range of labware, tip boxes, and devices through the use of standard and specialized platepads and inserts. Most platepad hardware can be easily relocated by an end-user, but there may be software or protocol constraints that govern when and where certain platepad types may be used.

- May be located in any deck position
- Estimated Field Service Engineer (FSE) installation time is 0.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Deck Platepad, Short (Standard Bravo SRT)	G5498B#005	18535-001
Deck Platepad (Standard Bravo)	G5498B#004	16890-001
Deck Platepad, Tall*	G5498B#TBD	G5550-22131

*Sometimes used for NGS applications.
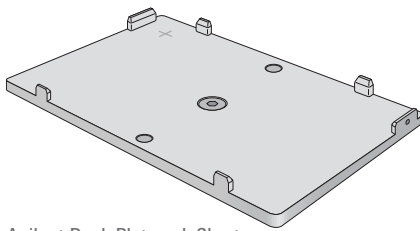
Agilent Deck Platepad, Short

Agilent Deck Platepad

Agilent Deck Platepad, Tall

AGILENT ALIGNMENT STATION

Agilent Alignment Station

The Agilent Alignment Station improves the alignment and positioning of microplates and tip boxes. It is recommended for 384-tip boxes and can be located in any deck position.

- Included in some Bravo Platform configurations
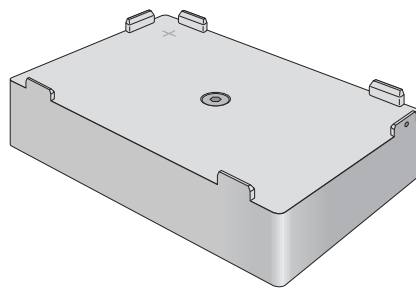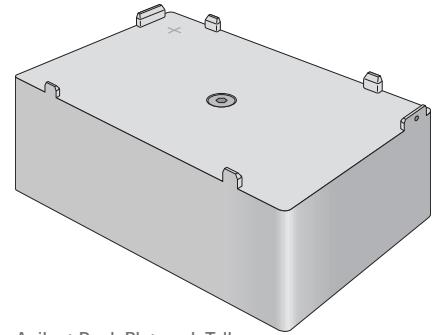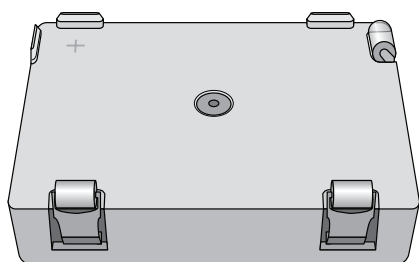- Estimated Field Service Engineer (FSE) installation time is 0.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Alignment Station (Passive, 3-springed rollers 384/1536 plates, ST tip boxes)	G5498B#028	17377-001

AGILENT MICROPLATE VACUUM ALIGNMENT STATION
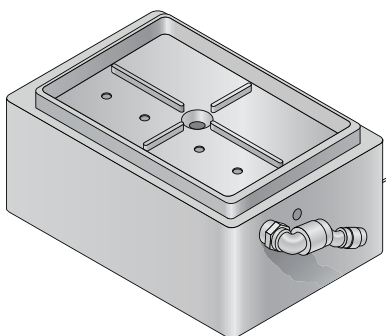
Agilent Microplate Vacuum Alignment Station

The Agilent Microplate Vacuum Alignment Station uses a vacuum to hold microplates that have a tendency to warp. Designed to be used with the Accessories Hub, the Microplate Vacuum Alignment Station can be installed in place of a platepad at any deck location. It is not for use with tip boxes.

- Requires compressed air, vacuum, and the Agilent Accessories Hub
- Requires that microplate compatibility be tested prior to purchase
- Can only be installed on the outermost deck locations (1, 3, 4, 6, 7, or 9) with ports facing left (1, 4, or 7) or right (3, 6, or 9)
- Estimated Field Service Engineer (FSE) installation time is 2 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Microplate Vacuum Alignment Station	G5498B#032	17086-001

AGILENT TIP BOX PLATEPADS
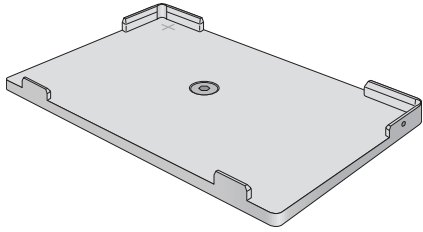
Agilent Disposable Tip Box Platepads provide extra support and improve the alignment of disposable tip boxes. They may be located in any deck position and are also known as Tip Loading Stations.

- Estimated Field Service Engineer (FSE) installation time is 0.5 hours (not included)
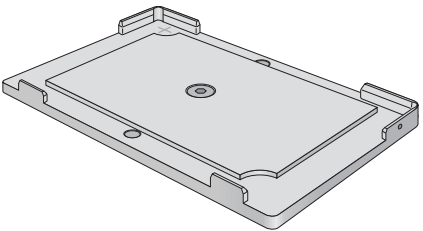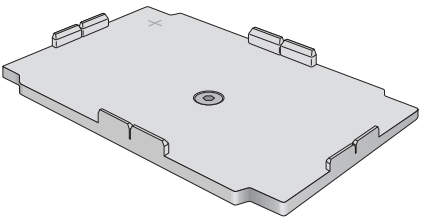
Description	Part Number	Agilent Internal Part Number (Assembly)
ST Tip Loading Station (Bravo SRT)	G5498B#029	18749-001
SRT Platepad for 250 µL LT Tip Boxes	G5498B#006	G5409-20001
LT Tip Rack Insert, for legacy 200 µL tips (Bravo SRT)	G5498B#007	20689-001

Note: the Agilent Bravo Platform works in two liquid volume ranges: small transfer (ST) and large transfer (LT).

Agilent Deck Platepads: ST Tip Loading Station, SRT Platepad, and LT Tip Rack Insert.

AGILENT INSERTS
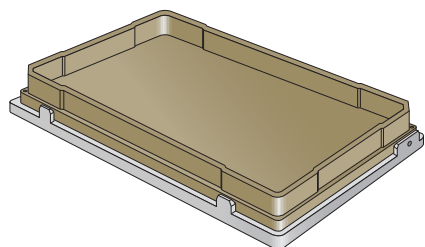
Agilent Nested Rack Insert on a Bravo
SRT Platepad

Agilent Inserts are typically passive, machined metal blocks which sit on a platepad on the Bravo deck. They can be used in various configurations with other Agilent Accessories for the Bravo Platform.

There are 3 kinds of inserts available:

- **Nested Rack**—support nested disposable tips, to save deck space.
- **Teach Plate**—marked with a cross, for teaching the Bravo where labware is located on deck.
- **Thermal Plate**—improves heat transfer to microplates on a standard or Peltier Thermal Station

Nested Rack Insert

The Agilent Nested Rack Insert is required for use with nested tips when they are used with small transfer (ST) heads. They can be located in any deck position on a regular Agilent Platepad, but not on a Tip Box platepad.

- Estimated Field Service Engineer (FSE) installation time is 0.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Nested Rack Insert	G5498B#003	G5401-20000
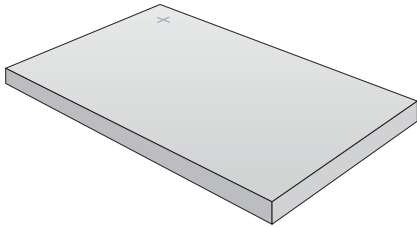
Agilent Teach Plate Insert

Teach Plate Insert

The Agilent Teach Plate Insert is marked with a cross and is used to adjust the teachpoint for an accessory, such as the Orbital Shaking Station, after it has been installed on the Bravo deck. It is included with all new Bravo Platforms and can be placed in any deck position.

- Estimated Field Service Engineer (FSE) installation time is 0.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Teach Plate, HW1	G5550-17692	G5550-17692

Thermal Plate Inserts

Agilent Thermal Plate Inserts improve heat transfer to microplates when they are placed on a standard Thermal or Peltier Thermal Station

Description	Part Number	Agilent Internal Part Number (Assembly)
PCR Plate Insert	G5498B#013	G5536-60003
Insert 384 Eppendorf twin.tec PCR	G5498B#060	G5498B#060
Deepwell Plate Insert	G5498B#012	G5536-60004
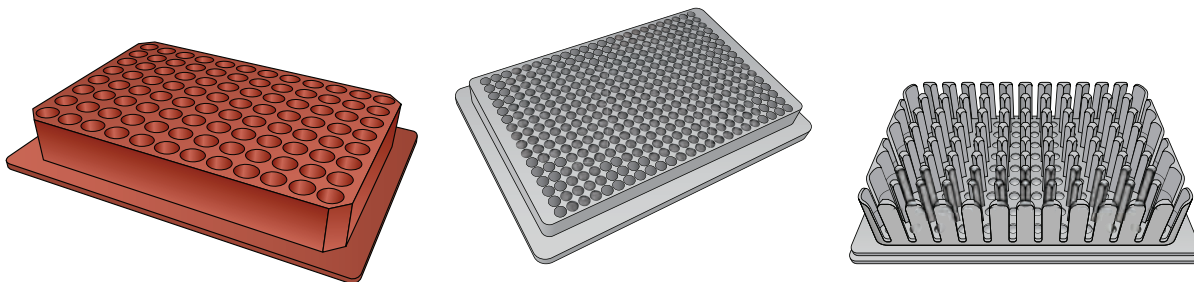
Agilent PCR Plate Insert, Insert 384 Eppendorf twin.tec, and PCR Deepwell Plate Insert.

AGILENT REAGENT RESERVOIRS & TIP WASH STATIONS
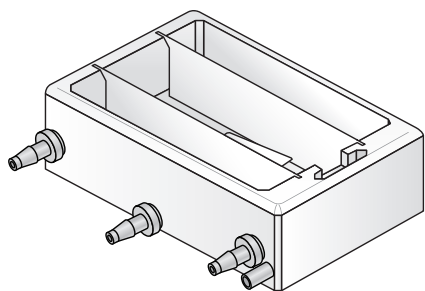
Agilent Auto Filling Reservoir

Integration tips

- Requires Pump Module
- Pump is VWorks controlled
- Ideal deck locations: 1, 2, and 3
- Compatible with all Bravo and Bravo SRT models

Agilent offers three different types of reagent reservoirs:
- Open reservoirs
- Reservoirs with overflow troughs
- Reservoirs with arrays of individual tip chimneys (96 or 384)

Agilent Reagent Reservoirs are approved for use with many reagents and solvents commonly used in life science applications. If you have questions on the use of a particular chemical or solvent in an Agilent Reservoir, contact Automation Solutions Technical Support prior to use.

Agilent Auto Filling Reservoir - Good Efficiency

The Agilent Auto Filling Reservoir is an open reservoir that can supply reagents to 96- and 384-channel pipette heads providing **good efficiency** in washing tips and conserving precious wash fluid. The Auto Filling Accessory is compatible with an optional Weigh Station and may be located in any deck position.

Although open reservoirs are typically used to hold reagents and reservoirs with chimneys are typically used to wash tips, both can be used for either application depending on the wash fluid or reagent, and its sensitivity to air or light.

Agilent Auto Filling Accessories can be automatically filled or drained with VWorks using the peristaltic Pump Module (purchased separately).

- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Auto Filling Reservoir	G5498B#053	08106-101
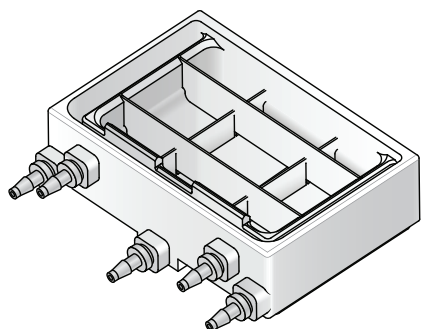
Agilent Open Bath Tray

Agilent Open Bath Tray[1]—Better Efficiency

This is an open tray that can supply reagents to 96- and 384-channel pipette heads. It has an overflow trough to reduce the mixing of fresh and spent fluids. It provides **better efficiency** in washing tips and conserving precious wash fluid. It is an auto-filling accessory that is compatible with the optional Agilent Weigh Station and may be located in any deck position.

- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Open Bath Tray	G5498B#048	18284-001
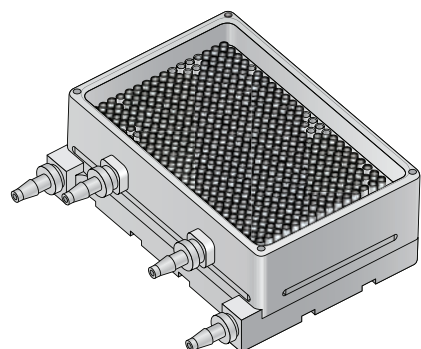
Agilent 384-Chimney Tip Wash Station

Tip Wash Stations[2]—Best Efficiency

This reservoir has individual tip chimneys and an overflow trough to reduce the mixing of fresh and spent fluids. It demonstrates the **best efficiency** in washing tips and conserving precious wash fluid. It is an auto-filling accessory that is compatible with the optional Agilent Weigh Station and may be located in any deck position.

- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)	Pipette Head Compatibility
384-Chimney	G5498B#052	11962-101	384-well
96-Chimney	G5498B#051	11961-301	96 well or 384-well
AssayMAP (96)	G5498B#057	11961-311	AssayMAP Bravo

1- Formerly the Open Reservoir and Open Wash Station
2- Also known as the MicroWash Reservoir

AGILENT PERISTALTIC PUMP MODULE 2.0

The Agilent Peristaltic Pump Module 2.0 can be used with auto-filling accessories to automatically fill reagent reservoirs. It works with the optional Agilent Weigh Station, which when properly configured in Bravo Diagnostics, can be used to ensure that the reservoir or tray is filled to a constant liquid level during the Pump Reagent task in a protocol. By monitoring the weight of the reservoir that sits on it, the Weigh Station controls when the Pump Module is activated. One Pump Module is used for each pairing of reservoir and Weigh Station. The Weigh Station replaces a standard Bravo Platepad and resembles it closely.

- Uses a dedicated RJ45 Serial Connector on the Bravo
- Operates under full VWorks software control
- Estimated Field Service Engineer (FSE) installation time:
  - Pump Module: 1.5 hours (not included)
  - Weigh Station: 2.0 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Pump Module 2.0	G5498B#058	06118-002
Pump Tubing Kit	G5498B#001	09354-001
Weigh Station	G5498B#030	16911-001

Agilent Pump Module 2.0 (A) with Tip Wash Station (B) and Weigh Station (C)
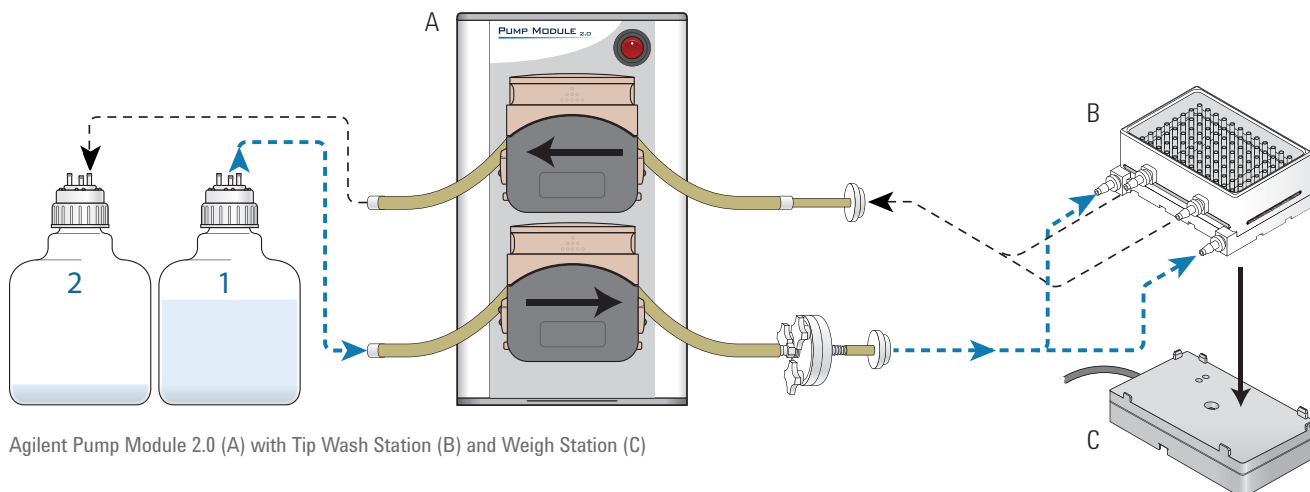
MANUAL FILL RESERVOIRS

Reservoir Chemical Properties

- Made of polypropylene
- Autoclaving and sterilization is not recommended, as warping may occur
- Offers good chemical resistance to water, DMSO, and many acids and bases at low concentrations
- Suitable for use with certain acids, bases, and solvents at room temperature (e.g. acetic acid, and ethyl and methyl alcohol)
- Not recommended for use with concentrated acids or some bases at elevated temperatures.

Contact Automation Solutions Technical Support for more information.

The Agilent Manual Fill Reservoir is an open tray, made of polypropylene, which can be installed on a platepad in any position to supply reagents to 96- and 384-channel pipette heads.

It has been optimized for use with 96-well and 384-channel pipette heads and has grooved slots to minimize dead volume, capture and collect precious reagents, and minimize waste. You must manually refill and empty the reservoir.

Automation Solutions reservoirs are approved for use with many reagents and solvents commonly used in life science applications. If you have questions on the use of a particular chemical or solvent in an Automation Solutions reservoir, contact Automation Solutions Technical Support prior to use.

- Both Manual Fill Reservoirs hold a maximum volume of approximately 150 mL (actual maximum volume varies by application)
- Both Manual Fill Reservoirs have been designed to minimize dead volume (liquid which can not be aspirated). Actual dead volume varies by application and is affected by tip size, diameter, etc.
- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Manual Fill Reservoir (96-well)	G5498B#049	08105-001
Manual Fill Reservoir (384-well)	G5498B#050	08104-001
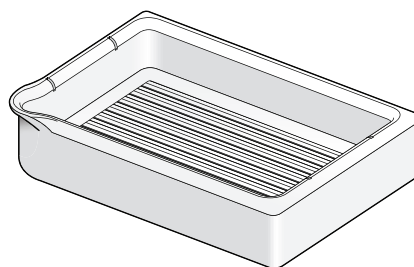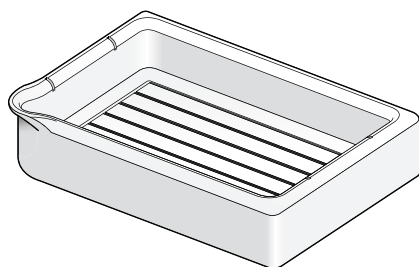
Agilent Manual Fill Reservoirs (96-well and 384-well)

AGILENT VACUUM FILTRATION STATION

Integration Tips

- Requires vacuum source
- Agilent Vacuum Pump Module is VWorks controlled
- Ideal deck locations: 1, 2, or 3
- Requires Bravo Gripper for automated assembly and disassembly
- Compatible with all Bravo and Bravo SRT models

Agilent provides an array of components to make separations simple, quick, and productive. They are assembled and tested to work with the Bravo Liquid Handling Platform and VWorks software.

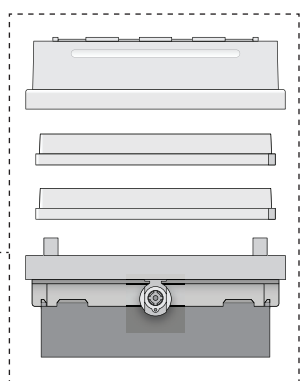The Agilent Vacuum Filtration Station features a microplate-sized manifold footprint that can be used in locations 1, 2, or 3. It works along with an optional, small, quiet vacuum pump under direct VWorks control. It is compatible with both filter-to-waste and filtrate collection applications. Separations can be performed manually or in fully automated mode using the Bravo gripper to stack and unstack the Vacuum Filtration Station components. This device is also known as the custom Agilent/Millipore MultiScreen™ HTS Vacuum Manifold Package.

- Requires a vacuum source (not included)
- Two manifold kits are available to choose from, depending on vacuum source: Agilent Vacuum Pump or House Vacuum / 3rd-party Vacuum Pumps
- Optional Agilent Vacuum Pump is quiet and is compatible with VWorks software (11.2 or greater)
- Includes a 1-2 L Vacuum Trap Bottle, a 1-2 L Filter-to-Waste Bottle, 1 Vacuum Manifold Kit, 1 Teach Plate, a 10-pack of filters to protect pump, 1 Short Deck Platepad, Tygon tubing, miscellaneous fittings, connectors, and fasteners
- Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Vacuum Filtration Station without Valves- for use with Agilent Vacuum Pump	G5498B#039	17376-011
Vacuum Filtration Station with Valves- for use with house vacuum or 3rd-party vacuum pump	G5498B#040	17376-001
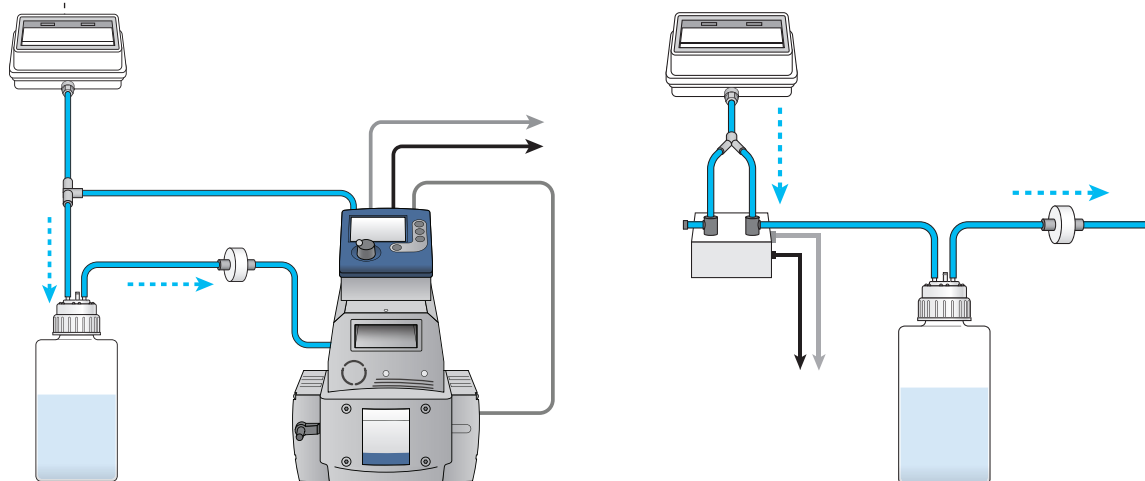
Agilent Vacuum Filtration Station without Valves (Vacuum Pump sold separately) and Agilent Vacuum Filtration Station with Valves

AGILENT VACUUM PUMP
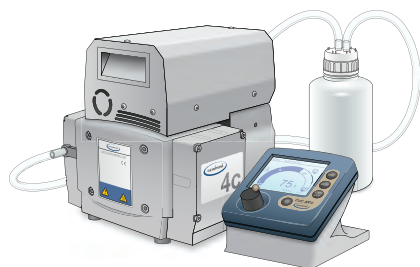
Agilent Vacuum Pump and Controller

The Agilent Vacuum Pump offers quiet, efficient operation in a small footprint, under direct VWorks control. It is also known as the custom Agilent/ Vacuubr and Vacuum Pump ME 4C NT VARIO.

- Compatible with VWorks software (11.2 or greater)
- Features built-in vent valve and pressure transducer (gauge)
- Includes 0.91 m (3 ft) Communication Cable DB9F Null Modem, ME 4C NT VARIO Vacuum Pump, CVC 3000 Controller with LCD panel, Pump Instruction Guide
- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Vacuum Pump	G5498B#027	20122-011 (115 V)
		20122-002 (230 V)

AGILENT MAGNETIC BEAD ACCESSORY
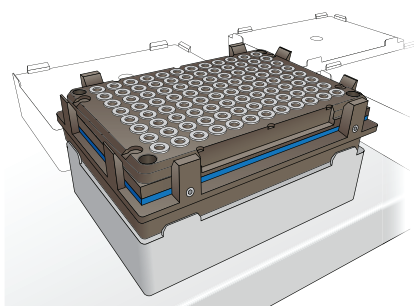
Agilent Magnetic Bead Accessory

The Agilent Magnetic Bead Accessory fits on a standard Bravo deck platepad and is designed to separate smaller volumes (up to 350 µL). It can be located in any deck position and is featured in all Agilent Bravo NGS Workstation packages. It is also known as the custom ALPAQUA 96S Super Magnet Plate package.

The Agilent Magnetic Bead Accessory is compatible with a range of common labware in standard and deepwell formats.

- Standard height options include many 96-well U-bottom and V-Bottom plates: Costar 3795 series, most PCR plates (full, semi or non-skirted); Axygen P-96-450R-C 450 µL shallow plate with larger diameter wells, Axygen P-1 mL-SQ-C half deep well plate.
- Deepwell options include Abgene AB_1127 half-deep well, AB_0661, and Ritter Riplate (2 mL).
- The Agilent Magnetic Bead accessory is incompatible with Eppendorf TwinTec 96-Well PCR Plate (with rigid frame)
- Estimated Field Service Engineer (FSE) installation time is 1 hour (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Magnetic Bead Accessory	G5498B#008	22035-001

AGILENT CONTROLLERS FOR HEATING, COOLING, AND SHAKING DEVICES

Many of the products featured in this section are customized INHECO devices which are controlled by INHECO TEC Control units (temperature/rpm control).

TEC Controllers are available as in two versions: Single Tec Control (STC), which controls a single compatible device; and Multi Tec Control (MTC), which controls up to six compatible devices. TEC Controllers are purchased separately for most devices, except where indicated.

- USB Communication with Host PC running VWorks Automation Control Software
- Accuracy ± 0.5 °C
- Universal input 100-240 V AC, 50/60 Hz
- Output: STC 1 x 24 V DC, 4.5 A; MTC 6 x 24 V DC, 4.5 A
- Dimensions (l x w x h); weight
  STC: 224 x 177 x 146.5 mm (8.82 x 6.97 x 5.77 in); 3.3 kg (8.9 lbs)
  MTC: 255 x 248 x 185 mm (10.0 x 9.73 x 7.28 in); 5.5 kg (14.8 lbs)
- Includes STC or MTC unit, USB memory stick with manuals, USB cable, country appropriate power cord
- Estimated Field Service Engineer (FSE) installation time is 2 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
STC Controller (1-Device)	G5498B#016	G5409-80000 (100-240 V)
MTC Controller (6-Device)	G5498B#015	G5537-60001 (100-240 V)
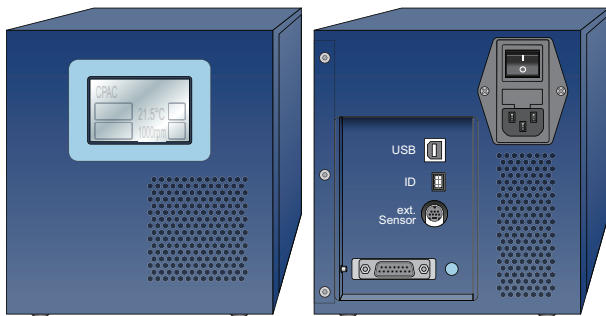
INHECO STC Controller

INHECO MTC Controller

AGILENT ORBITAL SHAKING STATION
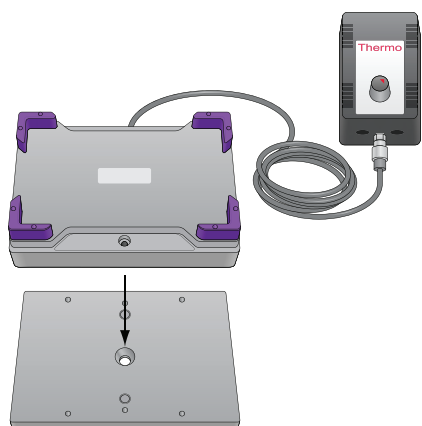
Agilent Orbital Shaking Station
with Control Unit and Mounting Plate

The Agilent Orbital Shaking Station is designed to agitate liquid within tissue culture plates or microplates in typical life sciences applications. It is a magnetic shaker with its own wired, combination remote control and power supply. The compact Orbital Shaking Station replaces a standard deck pad, when placed on the included adaptor pad, and may be located in any deck position.

The Orbital Shaking Station automatically returns to its original start position to ensure safe, continuous, unattended operation. Its automatic startup function ensures a gradual start to the shaking process to reduce sample splashing. The inductive drive is wear-free and maintenance free. It is also known as the custom INHECO Teleshake and includes the Control Unit as shown.

- Compatible with VWorks Automation Software
- Use with any serial port or the Agilent Accessory Hub
- Input Voltage 115 V 50/60 Hz or 230 V 50/60 Hz
- Rotation speed range: 100-2,000 rpm; Amplitude: 2.2 mm
- Dimensions (l x w x h); weight
  Orbital Shaking Station
  146 x 103 x 39 mm (5.75 x 4.06 x 1.54 in); 2000 g (4.41 lbs)
  Control Unit
  65 x 100 x 85 mm (2.56 x 3.94 x 3.35 in); 500 g (1.10 lbs)
- Includes Orbital Shaking Station, Control Unit, Teach Plate, USB to serial adapter, Orbital Shaking Station Integration Plate for mounting directly to deck, module connecting cable, serial RS-232 connecting cable to PC
- Estimated Field Service Engineer (FSE) installation time is 2 hours (not included)

Usage Tips

- Rectangular sample wells provide better mixing performance than cylindrical or conical wells
- 384 and 1536-well plates with conical wells are less suitable for very high shaking frequencies
- Maximum shaking frequency of 2,000 rpm may not be attainable with filled plates weighing >200 g
- Maximum shaker load is 500 g

Description	Part Number	Agilent Internal Part Number (Assembly)
Orbital Shaking Station includes Control Unit	G5498B#033	17311-001 (115V) 17311-002 (230V)
Orbital Shaking Station, High Speed includes Control Unit	G5498B#034	17311-003 (115V) 17311-004 (230V)

AGILENT HEATING SHAKING STATION
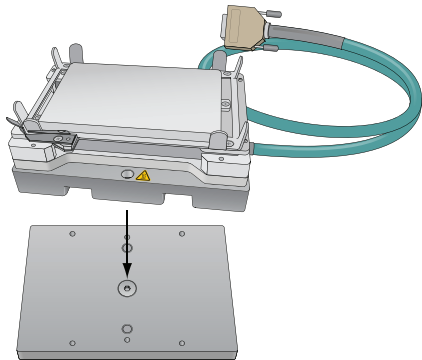
Agilent Heating Shaking Station
and Mounting Plate

Integration tips

- Requires INHECO STC/
  MTC Controller and
  Communication Card
- Controller allows VWorks
  software control
- Compatible with all Bravo
  and Bravo SRT models

Many of the products featured in this section are customized INHECO devices which are controlled by INHECO TEC Control units (temperature/rpm control). The controllers are purchased separately for most devices except where indicated.

The Agilent Heating Shaking Station replaces an existing platepad can be located in any deck position. This combination heating and shaking station requires the use of an INHECO STC or MTC Controller (purchased separately and also featured in this catalog). It is also known as the custom INHECO Teleshake 95.

- VWorks Automation Software compatible
- 24 V DC power is provided through the required INHECO Controller (which has a universal power supply and is purchased separately)—See page 28 for INHECO Controllers
- Heating capacity: 100 watts
- Temperature range: ambient to + 95 °C
- Maximum frequency: 2,000 rpm (varies with load); Amplitude: 2 mm
- Dimensions (l x w x h); weight
  146 x 103 x 55 mm (5.75 x 4.06 x 2.17 in); 2.6 kg (5.73 lbs)
- Communication Card for Controller not included and also required
- Includes Heating Shaking Station, USB to serial adapter, Teach Plate, Orbital Shaking Station Integration Plate for mounting directly to deck.
- Estimated Field Service Engineer (FSE) installation time is 2 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Heating Shaking Station	G5498B#009	22744-001 (24V)
Communication Card Required for Controller (Slot/Shaker Card)	G5498B#019	G5409-60020

AGILENT HEATING STATION
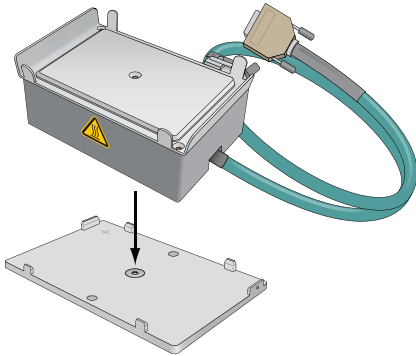
Agilent Heating Station and Short Deck Platepad

Integration tips

- Requires INHECO STC/MTC Controller and Communication Card
- Controller allows VWorks software control
- Compatible with all Bravo and Bravo SRT models

The Agilent Heating Station is mounted on top of the deck, in any deck position. It has a footprint slightly larger than a microplate with a low, robot friendly profile. When used in conjunction with the required INHECO STC or MTC controller (purchased separately), it can be used to keep samples between ambient and approximately 95 °C. (Contact surface may reach ~135 °C). The Heating Station can control samples above ambient temperature only. A heating/cooling device is suggested for temperatures below ambient or for samples requiring rapid cooling. Standard and custom aluminum adapter plates can be used to optimize heat transfer to labware and are available directly from INHECO. This item is comparable to the INHECO HeatPAC.

- 24 V DC Power is provided through the required INHECO Controller (which has a universal power supply and is purchased separately)—See page 28 for INHECO Controllers
- At 37 °C, target temperature accuracy is ± 0.5 °C, (uniformity ± 0.5 °C)
- Convenient, practical channel built-into bottom of device allows cable to be routed along short or long side of the device
- Dimensions (l x w x h): 128 x 88 x 40 mm (5.04 x 3.47 x 1.58 in)
- Includes Heating Station with Metal Plate Nest, Mounting Frame for PCR-adapter plate, Teach Plate, and Short Deck Platepad (Standard Bravo SRT) for aligning/positioning/holding device on deck
- Estimated Field Service Engineer (FSE) installation time is 2 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Heating Station	G5498B#018	G5536-60001 (24 V)
Communication Card Required for Controller (aka Slot/Shaker Card)	G5498B#019	G5409-60020

AGILENT PELTIER THERMAL STATION
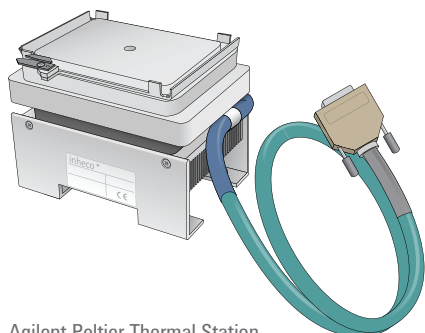
Agilent Peltier Thermal Station

Able to provide temperature cycling within a range of approximately +4 °C to +100 °C, the compact, Peltier Thermal Station has a foot print slightly larger than a deck platepad and is designed to fit through the deck in positions 4 or 6 only. It requires that the Bravo be used with the optional 146 mm Risers (p 10).

This device requires the Tec Control Model STC, which controls a single device, or the Model MTC, which controls up to six. Temperatures are approximate and may reflect temperatures provided by the device manufacturer. This device is also known as the customized INHECO CPAC Ultraflat HT2TEC.

- Requires INHECO Controller (Purchased separately)
- At 37 °C target temperature accuracy ± 0.3 °C, uniformity ± 0.5 °C
- 24 V DC / 4 A power is derived from the STC or MTC Controller
- Dimensions (l x w h): 128 x 88 x 80 mm (5.04 x 3.47 x 3.15 in)
- Includes generic plate nest and adapter for standard microplates
- Both items below include G5498B#019 (Communications Card for Controllers)
- Includes Peltier Thermal Station, Teach Plate, Deck Bracket, Cover Plate, Flat Bottom Plate Adapter, Slot/Shaker Card and Controller when ordered
- Estimated FSE Field Service Engineer installation time is 1.5 hours (not included)

Integration tips

- Requires Bravo on risers or hole in benchtop
- Is a through the deck accessory that must be located in position 4 or 6
- Compatible with all Bravo and Bravo SRT models

Description	Part Number	Agilent Internal Part Number (Assembly)
Peltier Thermal Station - with STC Controller	G5498B#035	20071-001 (24 V)
Peltier Thermal Station - without Controller	G5498B#021	20071-002 (24 V)
Risers, 146 mm	G5498B#055	18503-001

Installation requires Bravo Platform Risers (Purchased Separately); must be located in positions 4 or 6 on deck.
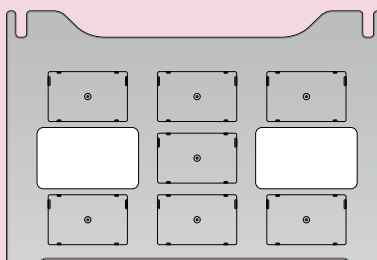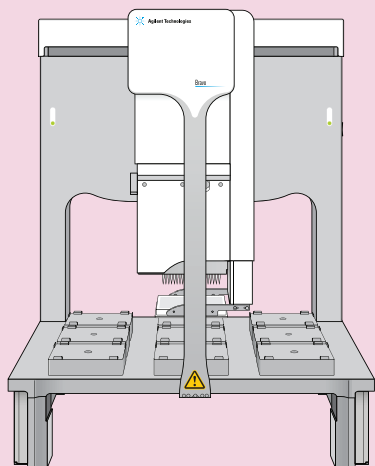
AGILENT PLATE NEST AND INSERTS – FOR PELTIER THERMAL STATION
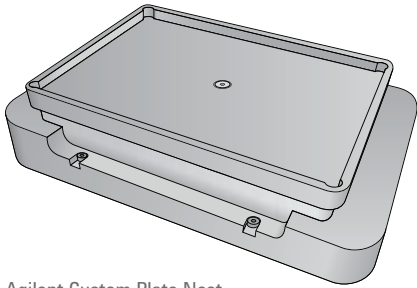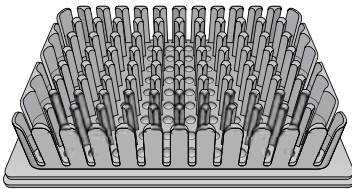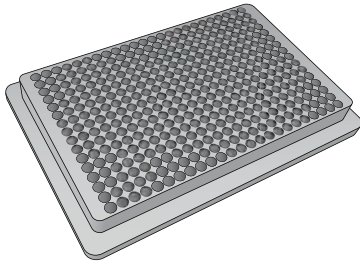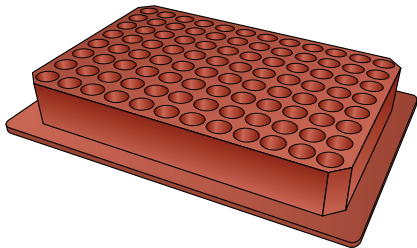
Agilent Custom Plate Nest

The Peltier Thermal Station (page 32) includes a generic plate nest and adapter typically used for standard labware microplates plates (14.4 mm tall).

The Agilent Custom Plate Nest can be used to replace the generic plate nest, to broaden the range of compatible standard or custom plate inserts. Thermal plate inserts are used to improve temperature transfer to microplate samples.

The Custom Plate Nest can accommodate three types of inserts:
*   **PCR Plate Insert**, which is compatible with most 96 well PCR plates. It is made of red-anodized aluminum, with conical holes. Plates with higher volume sample wells may protrude 4-5 mm above the top of the block. This robot friendly device can also be used to position PCR plates on liquid handler deck
*   **Insert 384 Eppendorf twin.tec PCR**, which is compatible with Eppendorf twin.tec PCR Plates
*   **Deepwell Plate Insert**, which is compatible with NUNC, Deep Well 96 HT, 1.3 mL, 26025x,278743/52, U-Bottom, Square Well plates

Description	Part Number	Agilent Internal Part Number (Assembly)
Custom Plate Nest	G5498B#017	G5505-20007
PCR Plate Insert	G5498B#013	G5536-60003
Insert 384 Eppendorf twin.tec PCR	G5498B#060	G5498B#060
Deepwell Plate Insert	G5498B#012	G5536-60004

Agilent PCR Plate Insert, Insert 384 Eppendorf twin.tec, and PCR Deepwell Plate Insert.

The components on this page are most often used in the Agilent NGS Next Gen Sequencing Workstations.

AGILENT RECIRCULATING HEATER/CHILLER — FOR THERMAL STATION

Agilent Recirculating Heater/Chiller

Integration tips

- Recirculating Heater/Chiller is used to heat and cool Thermal Station (sold separately)
- Standalone device offers manual temperature control (not VWorks adjustable)
- Compatible with all Bravo and Bravo SRT models

Clean, compact, and quiet (<63 dBA), the Agilent Recirculating Heater/Chiller is a Peltier-based unit which recirculates a temperature controlled liquid. It's used with the Agilent Thermal Station, a thermal block designed to be heated or cooled by recirculation, to provide reliable temperature control of ± 0.1 °C across an entire microplate. The operating range of the Recirculating Heater/Chiller is -5 °C to +50 °C. However, temperatures are approximate and may reflect temperatures provided by the controller manufacturer rather than actual achievable microplate temperatures.

The Recirculating Heater/Chiller and the Thermal Station (sold separately) are standalone units which do not communicate with VWorks software. Instead, all temperatures are manually set and fixed. This Recirculating Heater is also known as the customized Solid State Cooling Systems ThermoCube 400 watt.

- Works in combination with Bravo Thermal Station (sold separately below)
- Universal input 100-240 VAC, 5.4 A maximum
- Dimensions (l x w h); weight
  32.4 x 27.9 x 32.4 cm (12.75 x 11.0 x 12.75 in); 11 kg (23 lbs)
- Includes two, standard 1.83 meter (6 ft) lines.
- Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Recirculating Heater/Chiller	G5498B#024	22019-002 (100-240 V)

AGILENT THERMAL STATION FOR HEATING/COOLING
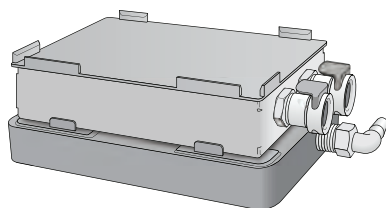
Agilent Thermal Station - short side connectors

Integration tips

- Plate insert may be required to ensure thermal uniformity across microplates
- Compatible with all Bravo and Bravo/SRT models

The Agilent Thermal Station is a platepad designed for heating and cooling, and is compatible with the Agilent Recirculating Heater/Chiller. Its operating range is from -5 °C to +50 °C, and its temperature control is controlled to ± 0.1°C across the microplate when using Recirculating Heater/Chiller (sold separately).

The Agilent Thermal Station is available in two configurations, with short-side connectors for deck positions 4-9, and with long-side connectors for positions 1-3. It is also available as a three-plate module for positions 1, 2, and 3.

- Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included)

Description	Part Number	Agilent Internal Part Number (Assembly)
Thermal Station – short side connectors	G5498B#036	16583-001
Thermal Station – long side connectors	G5498B#037	16583-002
Thermal Station – 3-plate	G5498B#038	19198-001

AGILENT DECK POSITION TRASH
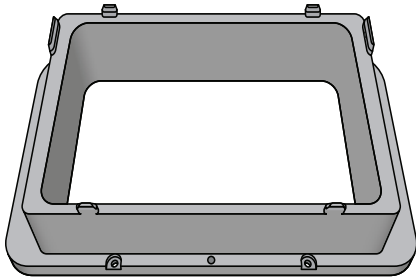
Agilent Deck Position Trash

The Agilent Deck Position Trash provides a convenient location for the disposal of consumables by replacing a deck platepad at through-deck positions 4 and 6.

The device requires a customer-supplied through-hole in the table supporting the Bravo and a trash collection receptacle.

• Estimated FSE Field Service Engineer installation time of 0.5 hours (not included). Based on standard deck platepad replacement only; does not include collection hardware or its installation.

Integration tips

• Requires through-deck mounting and Bravo Risers
• Must be located in deck positions 4 or 6
• Compatible with all Bravo and Bravo SRT models

Description	Part Number	Agilent Internal Part Number (Assembly)
Deck Position Trash	G5498B#056	G5550-18817
Risers, 146 mm	G5498B#055	18503-001

Installation requires Bravo Platform Risers (Purchased Separately); must be located in positions 4 or 6 on deck.
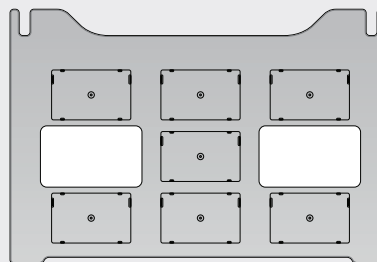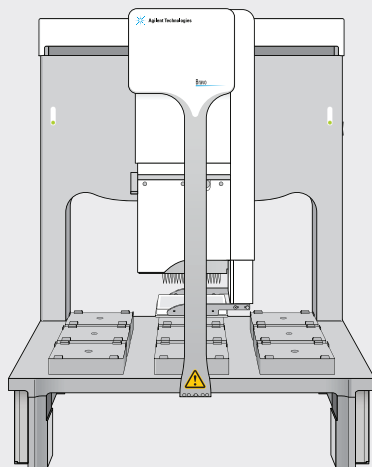
Accessories for the Bravo Automated Liquid Handling Platform

	Part Number	Description	VWorks[1] Control	Available Deck Positions	Temp Range	3rd-Party Components[2]	Page Number
	Communication, Input/Output, and Integration						
	G5498B#023	**Accessories Hub** (Central electrical and communication connection point)	Yes	NA[3]	NA	NA	9
	G5498B#002	**AC Relay** (Powers device on/off)	Yes	NA	NA	NA	9
	G5498B#022	**Light Curtain** (Safety)	Yes	NA	NA	NA	11
	G5498B#055	**Risers, 146 mm**	No	NA	NA	NA	10
	16545-101	**Gripper Upgrade**	Yes	NA	NA	NA	10
	Identification						
	G5498B#031	**Mirrored Barcode Reader** (Requires serial port or accessory hub)	Yes	All	NA	NA	12
	Liquid Handling Heads						
	Disposable-tip heads (Dispenses fluid into selected wells simultaneously: M x N array, single columns, single rows, or single wells)						
	G5498B#043	**384ST 384-Barrel Disposable Tip Pipette Head**	Yes	NA	NA	NA	13
	G5498B#041	**96ST 96-Barrel Disposable Tip Pipette Head**	Yes	NA	NA	NA	13
	G5498B#042	**96LT 96-Barrel Disposable Tip Pipette Head**	Yes	NA	NA	NA	13
	Fixed-tip (Dispense fluid into all wells simultaneously)						
	G5498B#045	**384F50 Fixed Tip, Stainless, 384-Channel 50 µL**	Yes	NA	NA	NA	14
	G5498B#044	**96F50 Fixed Tip, Stainless, 96-Channel 50 µL**	Yes	NA	NA	NA	14
	AssayMAP Sample Preparation technology (Requires G5498B#057, G5498B#058, and G5409-20025)						
	G5498B#046	**Bravo 96AM Head** (with positive displacement syringes for AssayMAP cartridges)	Yes	NA	NA	NA	15
	Pin tools						
	G5420B	**Pin Tools** (Custom engineered for small nL volume transfers)	Yes	NA	NA	V&P Scientific Pin Tool	16
	Platepads and Inserts						
	Platepads for microplates						
	G5498B#004	**Deck Platepad** (Standard on Bravo)	No	All	NA	NA	17
	G5498B#005	**Deck Platepad, Short** (Standard on Bravo SRT)	No	All	NA	NA	17
	G5498B#028	**Alignment Station** (Passive; 384/1536 plates or ST tip boxes)	No	All	NA	NA	18
	G5498B#032	**Microplate Vacuum Alignment Station** (For warped plates)	Yes	All	NA	NA	18
	G5498B#027	**Agilent Vacuum Pump** (ME 4C NT VARIO)	Yes	All	NA	NA	27
	Platepads for tip boxes						
	G5409-20025	**96AM Cartridge & Tip Seating Station** (AssayMAP Bravo)	No	All	NA	NA	15
	G5498B#028	**Alignment Station** (Passive; 384/1536 plates or ST tip boxes)	No	All	NA	NA	18
	G5498B#029	**Tip Loading Station** (Bravo SRT)	No	All	NA	NA	19
	G5498B#007	**200 µL Tip Box** (Legacy 200 µL tips Bravo SRT)	No	All	NA	NA	19
	G5498B#006	**250 µL Tip Box** (Bravo SRT)	No	All	NA	NA	19
	Inserts						
	G5498B#003	**Nested Rack Insert** (Required when nested tips are used with ST heads)	No	All	NA	NA	20
	G5550-17692	**Teach Plate, HW1** (Included with all new Bravo platforms)	No	All	NA	NA	21
	Reagent Reservoirs and Tip Wash Stations						
	Auto-filling (All use pump module, except where indicated)						
	G5498B#053	**Auto Filling Reservoir** (Reagent)	Yes	All	NA	NA	22
	G5498B#052	**Tip Wash Station** (MicroWash Reservoir, 384-Chimney)	Yes	1, 2, 3	NA	NA	23
	G5498B#051	**Tip Wash Station** (MicroWash Reservoir, 96-Chimney)	Yes	1, 2, 3	NA	NA	23
	G5498B#057	**96AM Wash Station** (MicroWash Reservoir, 96-Chimney)	Yes	1, 2, 3	NA	NA	23
	G5498B#048	**Open Bath Tray** (Formerly Open Wash Reservoir, Open Wash Station)	Yes	All	NA	NA	23
	Peristaltic pumps for auto-filling reservoirs						
	G5498B#058	**Pump Module 2.0** (Required for ALL autofilling reservoirs and wash stations)	Yes	NA	NA	NA	24
	G5498B#001	**Pump Module Tubing Kit**	NA	NA	NA	NA	24
	G5498B#030	**Weigh Station** (For precise liquid-level control)	Yes	1, 2, 3	NA	NA	24
	Manual Filling (Not recommended for tip washing)						
	G5498B#050	**Manual Fill Reservoir** (Reagent, 384 well)	No	All	NA	NA	25
	G5498B#049	**Manual Fill Reservoir** (Reagent, 96 well)	No	All	NA	NA	25

	Part Number	Description	VWorks[1] Control	Available Deck Positions	Temp Range	3rd-Party Components[2]	Page Number
	Separation						
	G5498B#039	**Vacuum Filtration Station Without Valves** (For use with Agilent vacuum pump, sold separately)	Yes	1, 2, 3	NA	Millipore MultiScreen HTS Vacuum Manifold	26
	G5498B#040	**Vacuum Filtration Station With Valves** (For use with customer-supplied house or 3rd party vacuum pump)	Yes	1, 2, 3	NA	Millipore MultiScreen HTS Vacuum Manifold	26
	G5498B#027	**Agilent Vacuum Pump** (ME 4C NT VARIO)	Yes	NA	NA	Vacuubrand ME4C/ME4C NT Vario	27
	G5498B#008	**Magnetic Bead Accessory**	NA	All	NA	NA	27
	Shaking and Temperature Control						
	Controllers for Heating/Cooling/Shaking (Requires heating/cooling/shaking platepad)						
	G5498B#016	**Controller, Heating/Cooling/Shaking** (For 1 device)	Yes	NA	NA	INHECO STC Single TEC Controller	28
	G5498B#015	**Controller, Heating/Cooling/Shaking** (For up to 6 devices)	Yes	NA	NA	INHECO MTC Multi TEC Controller	28
	Platepad for Shaking (With self-contained controller featuring VWorks speed control; does not require G5498B#019)						
	G5498B#033	**Orbital Shaking Station**	Yes	All	NA	INHECO Teleshake 2 mm Amplitude	29
	G5498B#034	**Orbital Shaking Station, High Speed**	Yes	All	NA	INHECO Teleshake 3 mm Amplitude (High speed)	29
	Platepad for Shaking and Heating						
	G5498B#009	**Heating Shaking Station** (Requires G5498B#016 or G5498B#015, and G5498B#019)	Yes	All	RT to 95 °C	INHECO Teleshake 95	30
	Platepad for Heating						
	G5498B#018	**Heating Station** (Requires G5498B#016 or G5498B#015, and G5498B#019)	Yes	All	RT to 110 °C	INHECO HeatPac	31
	Platepad for Heating/Cooling (Use Generic Nest for 14.4 mm tall plates and Custom Nest is for specialized plates; requires 146 mm risers)						
	G5498B#035	**Peltier Thermal Station** (Includes Generic Nest, G5498B#016, and G5498B#019)	Yes	4, 6	4 to 110 °C	INHECO CPAC Ultraflat HT2TEC	32
	G5498B#021	**Peltier Thermal Station** (Includes Generic Nest and G5498B#019; requires G5498B#016 or G5498B#015)	Yes	4, 6	4 to 110 °C	INHECO CPAC Ultraflat HT2TEC	32
	G5498B#017	**Custom Plate Nest for Thermal Station** (Use with G5498B#12 or G5498B#013)	NA	NA	NA	NA	33
	G5498B#012	**Insert, Deepwell Plate** (Use with G5498B#017)	NA	NA	NA	NA	33
	G5498B#013	**Insert, PCR Plate** (Use with G5498B#017)	NA	NA	NA	NA	33
	Recirculating Heater/Chiller						
	G5498B#024	**Chiller, Peltier, 400 watt** (Required for G5498B#036, G5498B#037, and G5498B#038)	No	NA	5 to 50 °C	Solid State Cooling Systems ThermoCube	34
	Platepads for Heating/Cooling						
	G5498B#036	**Thermal Station** (Recirculator-based; short-side connectors; use with G5498B#024)	No	4, 5, 6, 7, 8, 9	See Chiller	NA	34
	G5498B#037	**Thermal Station** (Recirculator-based; long-side connectors; use with G5498B#024)	No	1, 2, 3	See Chiller	NA	34
	G5498B#038	**Thermal Station, 3-Position** (Recirculator-based; use with G5498B#024)	No	1, 4, 7, and 3, 6, 9	See Chiller	NA	34
	Trash, Disposable Tip						
	G5498B#056	**Deck Position Trash** (Requires customer-supplied collector)	No	4, 6	NA	NA	35

1. Agilent VWorks Automation Control Software.
2. Agilent Bravo Platform accessories may contain 3rd-party components which have been customized and optimized for use with the Bravo Platform, and which are supported by Agilent.
3. NA = Not applicable.

CUSTOMER SERVICE AND TECHNICAL SUPPORT

Automation Solutions Customer Service

Americas Customer Service

For referral to a local product specialist call 866-428-9811

Customer Contact Center Japan

For sales, applications, support, or technical information

Address	9-1, Takakura-cho, Hachioji-shi, Tokyo, 192-8510 Japan
Telephone	+81 0120 477 111
Email	email_japan@agilent.com
Web	www.agilent.com/chem/jp

Customer Contact Center ANZ Australia and New Zealand

For sales, applications, support, or technical information

Telephone	1-800-802-402

Automation Solutions Technical Support

USA and countries outside of Europe

Telephone	1-800-979-4811 (US only) or +1-408-345-8011
Email	service.automation@agilent.com

This Tech Support team is located within our Santa Clara, CA Automation Solutions headquarters and is happy to help route any automation inquiry related to Customer Service, Technical Support, and Instrument Service/Repair/Field Service, as well as Professional Services (Contracted hardware, software, and application support by engineers and scientists).

Automation Solutions Technical Support for Europe

Telephone	+44 (0) 845 712 5292
Email	euroservice.automation@agilent.com

For more information

Learn more
www.agilent.com/lifesciences/automation

Find a local Agilent customer center
www.agilent.com/chem/contactus

U.S. and Canada
1-800-227-9770

agilent_inquiries@agilent.com
Europe
info_agilent@agilent.com

Asia Pacific
inquiry_lsca@agilent.com

Agilent Technologies