

Agilent Bravo Vacuum Filtration Station

Data Sheet

Introduction

The Vacuum Filtration Station for the Bravo Liquid Handling Platform makes automated vacuum filtration applications simple, quick, and highly reproducible. From the microplate-sized manifold footprint, to the optional, small, and quiet vacuum pump under direct VWorks control, this package of carefully matched components is both compact and robust. Included components are compatible with both filter-to-waste and filtrate collection applications. Separations can be performed manually, or fully automated using the Bravo gripper to stack and unstack the Vacuum Filtration Station components and microplates.



Features and Benefits

- Improve sample preparation reproducibility and increase the walkaway time with fully automated liquid handling and vacuum filtration procedure.
- Supporting a variety of labware and labware configurations with flexible vacuum manifold design (that is, Agilent Capiva or BondElut)
- Solvent resistant components provide compatibility with a broad range of applications for long life and durability.
- Two design options work with either Agilent standalone vacuum pump or existing house air.



Agilent Technologies

Applications

The Agilent Vacuum Filtration Station for Bravo Liquid Handling System can be used for a variety of applications. Different stacking configurations shown on page 4 can support various customer needs. Here are some examples of what our customers are using the vacuum filtration station for:

Genomics applications	
NA Nucleic Acid Isolation/Extraction	Agilent Absolutely 96 Isolation Kit (Application Note 5990-3558EN)
PCR Prep/Cleanup	Agilent Strataprep 96 Kit (Application Note 5990-3948EN)
Sequencing Cleanup	

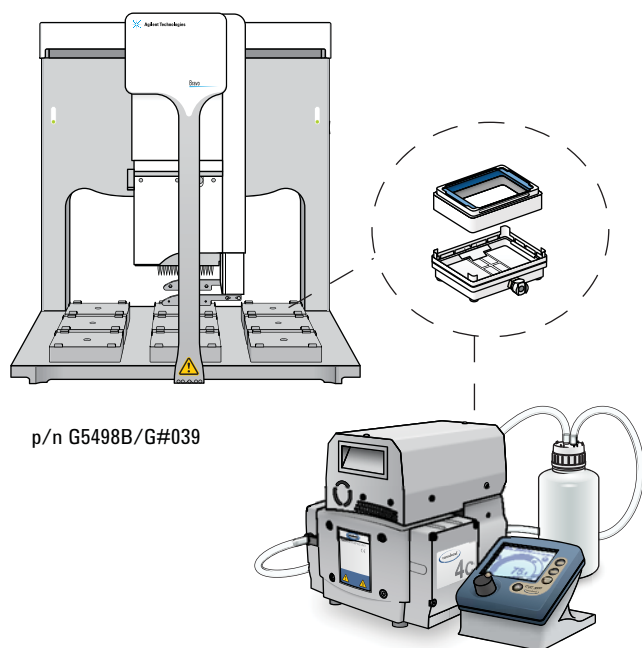
Biotech applications using filter plates	
Sample cleanup prior to analysis	
Removal of debris (Dilute and Shoot)	
Extraction of natural products	
General sample prep	
Protein	
Bioanalysis with Agilent Captiva plates	

Biotech applications using chromatography membranes	
Isolate analytes from a wide range of matrices (for example urine, blood, water, animal tissue, soil, and so forth)	
Microchromatography/SPE Solid-phase extraction (remove interferences or analytes)	

Supported Application Setup/Configuration

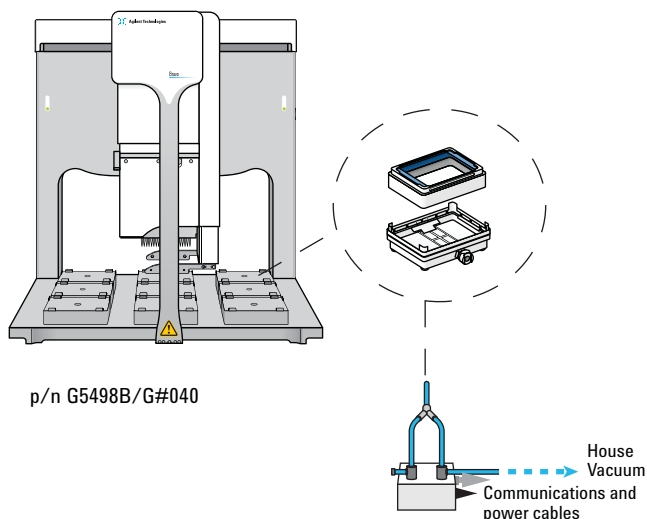
Vacuum Filtration Station with Agilent Vacuum Pump

Vacuum Filtration Station with Standalone Pump from Agilent



Vacuum Filtration Station with house vacuum or 3rd party vacuum pump

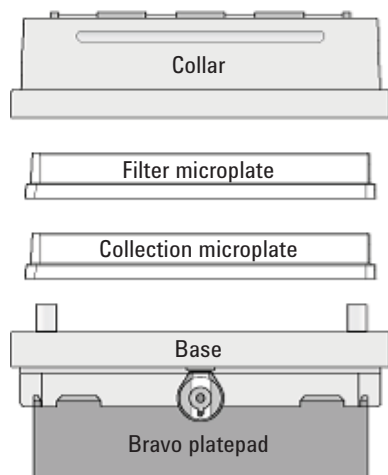
Vacuum Filtration Station with Pinch Valve and house vacuum



Each of the assemblies contains the following primary components:

Description	Quantity
Vacuum Manifold, Multiscreen HTS. Includes the manifold base, standard collar with a blue gasket, and several types of clear plastic gasket inserts	1
Black gaskets. May be used instead of the blue gasket in the collar to accommodate filter plates that cannot be seated in the blue gasket, such as the Agilent Captiva and Bond Elut plates. Note: Use G5550-67000 to order additional gaskets (package of 10)	3
Inserts, white plastic spacer, 1 cm (0.5 in) and 0.2 cm (0.09) height. May be placed in the vacuum manifold base to raise the height of a collection plate, if required. Note: Use G5498G#062 to order additional 1-cm spacers and G5498G#063 to order additional 0.2-cm spacers	1 thick (1-cm) 2 thin (0.2-cm)
Bottle, 2-L Nalgene polypro vacuum. Collects the filtration waste solution from the assembled station	1 set of 2
Filter, vacu-guard. Prevents particulates from entering the vacuum source	10 pack
Tubing fittings and connectors	
Tubing, Tygon, 1/4-in ID by 1/2 OD	12.5 ft
Short platepad. Recommended to accommodate the height of the assembled station on the Bravo deck.	–
Teach plate. Used for setting the teachpoint, if required, of the deck location where the Vacuum Filtration Station will be installed.	1
Note: The G5498B/G#040 also contains a Pinch-valve module	

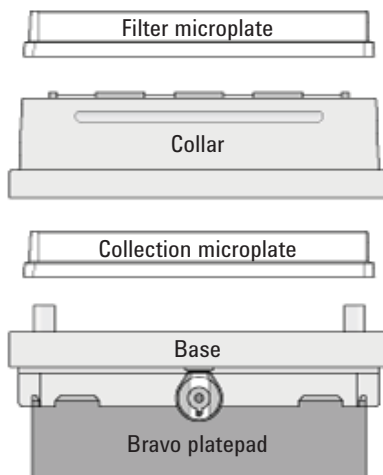
Supported Bravo Vacuum Filtration Station Stacking Configurations



A

Filter to Collection Plate

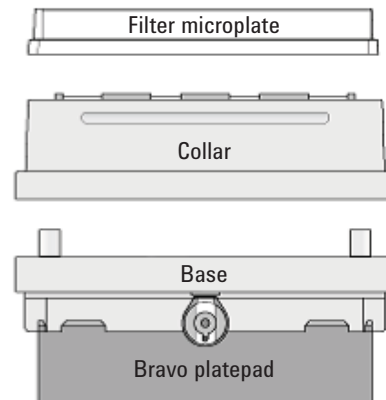
Assembly process can be automated during the protocol run using the Bravo gripper.



B

Filter to Collection Plate – High Throughput Filter Plate Exchange

Assembly process can be automated during the protocol run using the Bravo gripper.



C

Filter Directly to Waste (No Collection Plate Required)

Assembly process can be automated during the protocol run using the Bravo gripper.

The above illustrations show general principals and may not include all required hardware components—see the Bravo Automated Liquid Handling Platform User Guide, which you can access in the VWorks Knowledge Base at www.agilent.com/chem/askb. Also see the Millipore MultiScreenHTSTM Vacuum Manifold User Guide (Millipore publication P36530) for details. Also compatible with deepwell collar not shown and not included (Millipore MSVM HTS 0D).

Agilent Bravo Vacuum Filtration Labware Compatibility Matrix

Collection plates	Part number	Agilent				Millipore			MN		Qiagen		Waters		Pall	
		Captiva	Bond Elut Plexa	Bond Elut Square	Versaplate	Solvinert 96 PP	Solvinert 96 PS	Multiscreen HTS 384	Chromafil	Nucleospin	Qiaprep	Turbofilter	uElution	Acroprep 1 mL	Acroprep 350 µL	Acroprep 384 Short Tip
Agilent - Captiva	A8690D1000	X	X	X	X	X	X		X	X			X		X	
Eppendorf 96/500	0030 507.103	X	X	X		X	X		X	X	X	X	X		X	
Eppendorf 96/1000	0030 507.200	X	X	X	X				X	X			X			
Nunc	260252	X	X		X	X	X		X	X			X		X	
Costar	3959	X	X		X	X	X		X	X	X	X	X		X	
Greiner U-bottom	650101	X	X	X	X	X	X		X	X			X	X	X	
Greiner 384	781101							X								X X

■ Not supported

These sample plates were tested for hardware compatibility. No claim of actual application data is implied here. For additional information on how each of these plates were set up, please visit the Bravo Automated Liquid Handling Platform User Guide in the VWorks Knowledge Base. You can access the VWorks Knowledge Base on the web at www.agilent.com/chem/askb.

Specifications

Vacuum Filtration Station

Chemical compatibility (24 hours, 25 °C/77 °F) [for details see Use Millipore User Guide]	
Acids	Not recommended for use with Formic, HCL (37 %), TCA, TFA
Aqueous solutions	Compatible with most
Other	Not recommended methylene chloride, sodium hypochlorite, THF
Solvents	Compatible with DMSO, not recommended for use with hexane or toluene
Dimensions	
Vacuum manifold base	128 mm × 85 mm (5.0 in × 3.4 in)
Labware compatibility	
See the Agilent Bravo Vacuum Filtration Labware Compatibility Matrix	
Manufacturer(s)	
Millipore, Agilent	Millipore MultiScreen HTS Vacuum Manifold plus custom parts for Bravo Liquid Handling Platform
Warranty	
	12 months
Storage conditions	
Temperatures	Between 15 °C and 30 °C (59 °F and 86 °F)

Specifications

Vacuum Pump (ME4C NT VARIO Vacuum Pump)

Certifications	
Declaration of conformity	CE
Computer/software requirements	
Host computer	PC with Windows 7 (64 bit)
Software	VWorks Automation Control Software
Interface	RS-232 Serial Port with DB9 connector
Dimensions/weight	
Vacuum pump	345 × 240 × 235 mm; approximately 16.8 kg (13.6 × 9.5 × 9.3 in; approximately 37 lbs)
Manufacturer(s)	
VACUUBRAND, Agilent	ME4C NT VARIO Vacuum pump, customized
Operating requirements	
Ambient temperature storage/operation	-10 to +60 °C
Performance	
Max pumping speed/ultimate vacuum	4.9 m ³ /h diaphragm pump/70 mbar
Warranty	
	12 months

Ordering Information

Part Number (Instrument Order/Configuration)	Description	Part Number (Agilent Internal Use Only)
Important: VWorks software version 12.3 or later is required to operate the Agilent Bravo Vacuum Filtration Station.		
Vacuum filtration station <i>Custom Agilent/Millipore MultiScreen™ HTS Vacuum Manifold Package</i>		
G5498B/G#039	Vacuum Filtration Station <i>without External Pinch Valve Module</i> (Order this when using the Agilent Vacuum Pump below with built-in valves, not included). Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included).	17376-011
G5498B/G#040	Vacuum Filtration Station <i>with External Pinch Valve Module</i> (Order this if you intend to use your own facility house vacuum or non-Agilent vacuum pump). Estimated Field Service Engineer (FSE) installation time is 1.5 hours (not included).	17376-001
Vacuum pump <i>Custom Agilent/Vacuubrand ME4CNT Pump. The pump includes built-in valves for automated control by VWorks Software when used with Vacuum Filtration Station G5498B#039 above.</i>		
G5498B/G#027	Vacuum Pump	
	100-120 Volt 50–60 Hz	20122-011
	230 Volt 50–60 Hz	20122-002
	For use with Agilent Vacuum Filtration Station G5498B#039.(Agilent Order System Automatically Localizes from Ship To). Estimated Field Service Engineer (FSE) installation time is 1.0 hours (not included).	
Miscellaneous related components		
G5498B/G#056	Filter Plate Holder Pad (<i>Deck Position Trash hardware reconfigured in the software as Filter Plate Holder accessory</i>) This special platepad accommodates the placement of a filter plate with sample well nozzles that extend below the skirt. For use on Bravo deck positions 4 or 6 only.	G5550-18817
G5550-67000	Black gaskets (pack of 10)	
G5498G#063	Spacer, Bravo 0.09 in, 1 each	
G5498G#062	Spacer, Bravo 0.5 in, 1 each	
Miscellaneous related components – Available from other suppliers		
	Deepwell Collar (<i>not currently available from Agilent, please buy directly from Millipore</i>) (Primarily for 2 mL deepwell collection plates–NOT included with Agilent Vacuum Filtration Station). Millipore part number MSVM HTS 0D.	

Additional Helpful Information Resources

Collateral



VWorks Knowledge Base

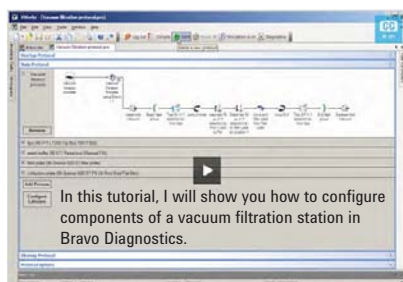
Help System within VWorks (F1) and available at www.agilent.com/chem/askb ["Vacuum Filtration Station"]

Provides direct access to user guides for VWorks Software and Bravo Platform

Most helpful information is here:

- Bravo Platform User Guide > Accessories and platepads > Setting up the Vacuum Filtration Station
- VWorks User Guide > Setting parameters for liquid-handling tasks > Move and Filter Plate (Bravo) [Good Practice Protocol]

Tutorials



VWorks Video Tutorials – Tips and Tricks: Vacuum Filtration

Learn how to set up the Vacuum Filtration Station and use the Assemble, Disassemble, and Move and Filter tasks. Or, go to <http://www.agilent.com/en-us/products/software-informatics/automation-solutions/vworks-automation-control-software/vacfiltration>

Videos



Bravo Automated Liquid Handling Platform Video

Includes the automated assembly of the Vacuum Filtration Station.

Video listed on the Agilent Bravo home page at: <http://www.agilent.com/en-us/products/automation-solutions/automated-liquid-handling/bravo-automated-liquid-handling-platform>

Warranties

Warranty for Instrumentation. A 12-month Warranty is provided on all instruments manufactured by the Agilent Automation Solutions business unit. For more information, please see the Agilent *Terms of Sale* document.

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