

Agilent G5574A NGS Workstation Option B – Site Preparation Checklist

For Research Use Only. Not for use in diagnostic procedures.

Thank you for purchasing the **Agilent G5574A NGS Workstation Option B**. To get you started and to assure a successful and timely installation, please refer to this specification or set of requirements. Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an **information guide AND checklist** prepared for you that outlines the supplies, consumables, space and utility requirements for your equipment.

Customer Responsibilities

Make sure your site meets the following specifications before the installation date. For details, see specific sections within this checklist, including:

- The laboratory space requirements to accommodate the size and weight of the instrument (See Other Requirements section for dimensions and weight of the shipping containers.)
- The laboratory table specifications
- The environmental conditions for the lab as well as laboratory gases and plumbing
- The power requirements related to the product, for example, number and location of electrical outlets
- The required operating supplies necessary for the product and installation
- Please consult Other Requirements section below for other product-specific information.
- For more details, please consult the instrument safety and installation guides listed in the Other Requirements section.

If Agilent is delivering installation and familiarization services, users of the instrument should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.

Important Customer Information

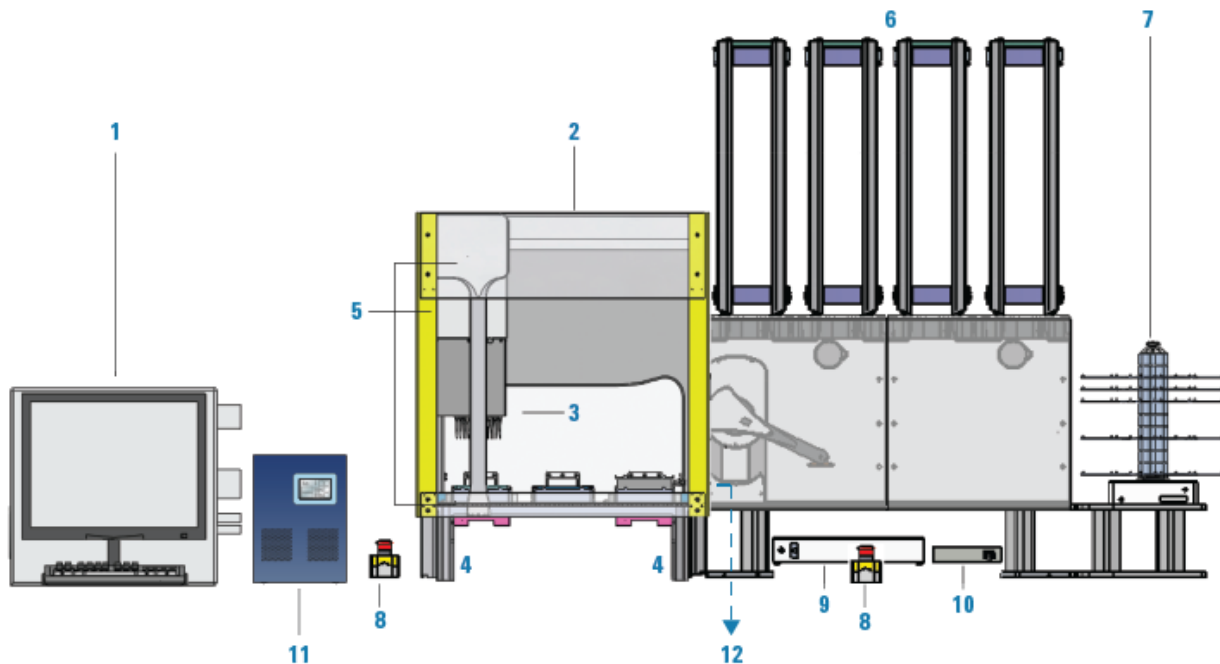
1. If you have questions or problems in providing anything described as a Customer Responsibility above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.
2. Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.
3. Other optional services such as additional training and consultation for user-specific applications may also be provided at the time of installation when ordered with the system, but should be contracted separately.

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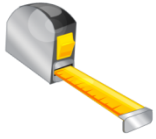
The NGS Workstation Option B contains the following components:

1. Computer and monitor
2. Bravo Automated Liquid Handling Platform with the following accessories installed on the deck:
 - Peltier Thermal Station (CPAC) at locations 4 and 6, which use the Inheco MTC Controller
 - Orbital Shaking Station at location 5
 - Magnetic Bead Accessory at location 7
 - Thermal Station (cooling pad) at location 9, which uses the Thermo Cube controller
3. Liquid-handling head (96LT Head, standard)
4. Bravo risers, 146 mm
5. Bravo safety equipment, including Light Curtain and shields
6. BenchCel Microplate Handler 4R (installed on risers, standard)
7. Labware MiniHub (installed on risers, standard)
8. Emergency-stop pendants
9. Robot Disable Hub
10. Ethernet switch
11. Inheco MTC Controller (for Peltier Thermal Stations on Bravo deck)
12. Thermo Cube (not shown)
13. PlateLoc Thermal Microplate Sealer (standard, not shown)

Figure. NGS Workstation Option B components (with risers on the BenchCel and MiniHub)



Note: The MTC Controller may be placed between the Bravo Platform and the computer to provide accessibility during a protocol. The Thermo Cube may be positioned underneath the table.

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Dimensions and Weight

Identify the laboratory table space before your system arrives based on the following information.

Pay special attention to the **total height and total weight requirements for all workstation components you have ordered and avoid bench space with overhanging shelves.**

Special Notes:

See laboratory table specifications under Other Requirements. See also the figures following this table.

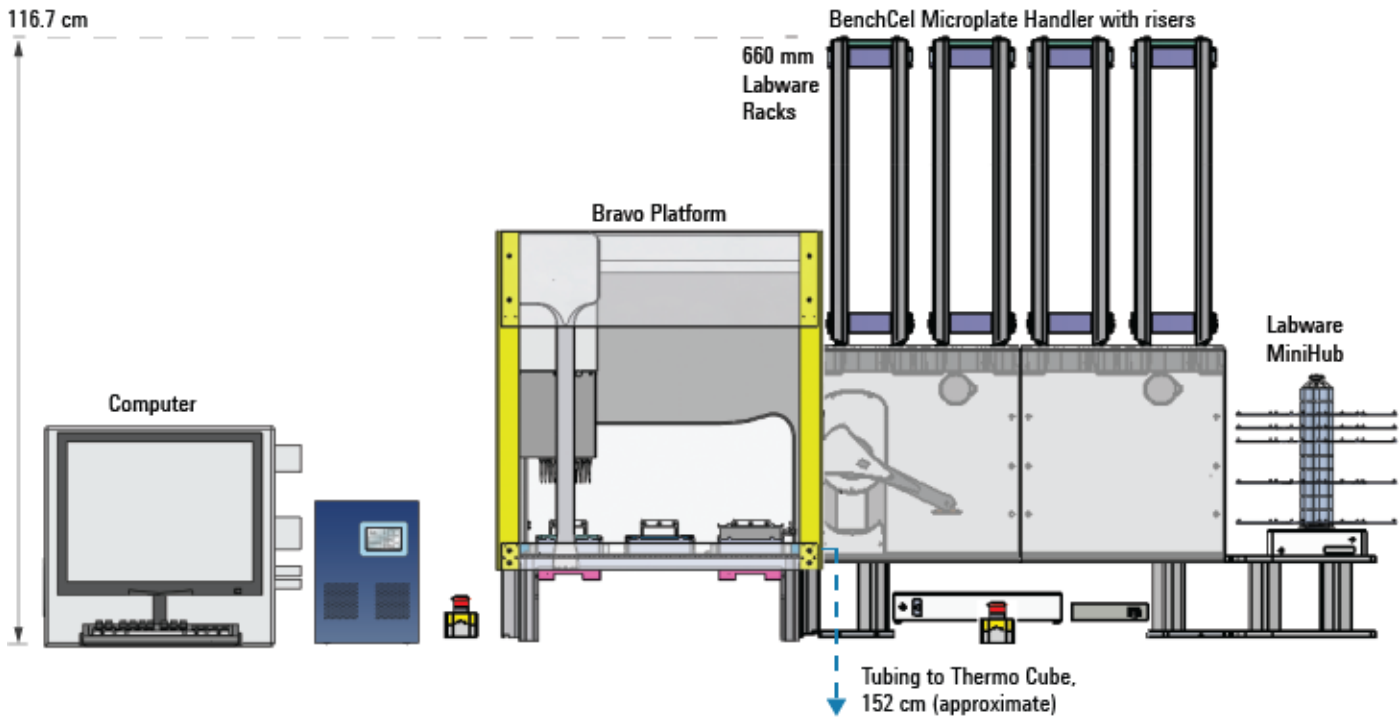
Description	Weight		Height		Depth		Width	
	Kg	lbs.	cm	in	cm	in	cm	in
Workstation minimum dimensions* (Includes only the Bravo, BenchCel, and MiniHub devices)	125**	276**	112.1	44.1	55	22	188	74
G5563A Bravo Platform with risers (not including Bravo deck accessories)	52.1	114.9	84.5	33.3	43.8	17.2	64.8	25.5
G5580A BenchCel Microplate Handler with four 660-mm stacks								
with risers	-	-	126.0	49.5	20.3	8	86.4	34
without risers	48.6	107.1	112.1	44.1	20.3	8	86.4	34
G5584A Labware MiniHub								
with risers	-	-	55.0	21.7	38	15	38	15
without risers	10.8	23.9	37.3	14.9	38	15	38	15
Robot Disable Hub	4	8.8	Fits under the Bravo Platform between the risers.					
Computer workstation with space for pendant	29.5 approx	65 approx	36.3	14.3	61.6	24.3	72.6	28.6
MTC Controller (Inheco)	5.8	12.9	28	10.24	25.4	10	18.5	7.3
Thermo Cube (Mecour)	13	28	32	13	32.4	12.8	30.5	12
G5585A PlateLoc Sealer, standalone (with roll of seal and open door)	20	45	58	23	39.9	15.7	21.6	8.5

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* In addition, you must plan space for the computer workstation, MTC Controller, and Thermo Cube. The position of the Thermo Cube and MTC Controller may vary. However, the controllers must be placed within proximity of the Bravo deck to accommodate the reach of the cables and plumbing lines that connect to the accessories installed on the deck.

**Approximate: Includes additional weight to account for the accessories installed on the Bravo deck. For PlateLoc Sealer, see the PlateLoc Sealer site preparation checklist.

Figure: Overall height of the NGS Workstation Option B (front view)



WARNING: The table surface must be at least 86 cm (34 in) from the floor to restrict reach-over access above the Light Curtain and shields. Reaching over the Light Curtain and shields can expose operators to moving-parts hazards.

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Figure: Overall width and depth of the NGS Workstation Option B (top view)

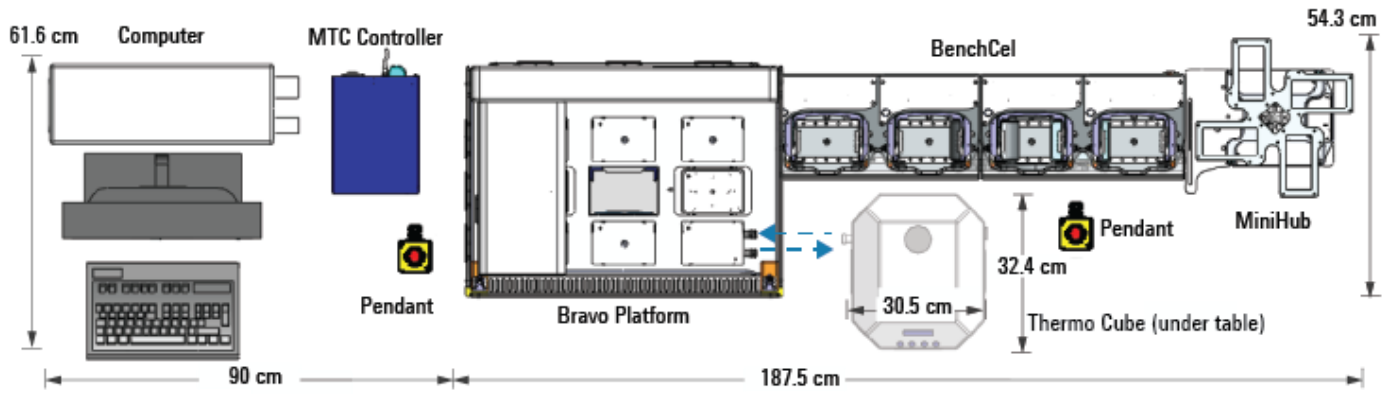
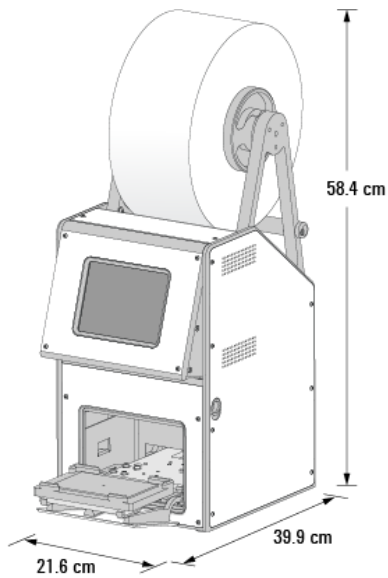


Figure: PlateLoc Sealer dimensions



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Environmental Conditions

Operating your workstation within the recommended environmental conditions ensures optimum instrument performance and lifetime. The site's ambient temperature conditions must be stable for optimum performance.

Special Notes

1. Performance can be affected by sources of heat and cold, for example, direct sunlight, heating or cooling from air conditioning outlets, and drafts.
2. The workstation is intended to operate in a low-vibration environment. Excessive vibration may induce pipettor and robot errors.
3. The workstation is for indoor use only.

Operating temp range °C (F)	Operating humidity range (%)	Altitude	Pollution degree	Installation category
5 to 40 °C	20% to 90% RH, non-condensing	Up to 2000 m	2	II



Power Consumption

Special Notes

1. If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
2. Provide an appropriate power strip with outlets to accommodate power for up to 15 devices. Note that the Orbital Shaking Station has a large plug that can occupy up to 3 sockets on a power strip unless it is plugged into the socket on the edge of the power strip.

Instrument Description	Line Voltage & Frequency (V, Hz)	Maximum Power Consumption (VA)
G5563A Bravo Platform	100 - 240 VAC, 50/60 Hz	300 VA
G5580A BenchCel Microplate Handler	100 - 240 VAC, 50/60 Hz	5 A at 120 V~ 2.5 A at 240 V~
G5584A Labware MiniHub	100 - 240 VAC, 50/60 Hz	150 VA
G5585A PlateLoc Sealer	North American model: 100 - 120 VAC, 50/60 Hz European model: 200 - 240 VAC, 50/60 Hz	4 A at 120 V~ 2.5 A at 240 V~

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Note: In addition, you should consider the power requirements for the computer workstation and accessories.


Required Operating Supplies by Customer
Special Notes

1. See the table below for **required** supplies in order to ensure successful installation.

Item Description (including dimensions, etc.)	Vendor's Part Number (if applicable)	Recommended Quantity
Coolant or process fluid, such as 25% EtOH, for the Thermal Station (cooling pad) with ThermoCube	-	600 mL, approximately
Disposable, 250 μ L tips, filtered, sterile (for 96LT Head) To order, go to: http://www.agilent.com/en/products/automation-solutions/automated-liquid-handling/disposable-pipette-tips	Agilent 19477-022	Case of 50
Labware, such as microplates and reservoirs See the specific NGS applications guide for the list of labware requirements.	Various	-
Heat seal for the PlateLoc Sealer (standard) To order, go to: http://www.agilent.com/en/products/automation-solutions/microplate-management-robotics/heat-seal	Agilent seal - various	-

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Other Requirements

Shipping container dimensions and weight

The following table lists the dimensions and weights of a couple of the largest and heaviest containers. The workstation shipment will include additional packages. Depending on the order, the shipping container dimensions and weights will vary. Ensure all doorways, hallways, floors, and elevators along the pathway to the installation site can accommodate the following containers.

Description	Weight		Height		Depth		Width	
	Kg	lbs.	cm	in	cm	in	cm	in
BenchCel device and container	94	207	66.7	26	65.9	25.9	106.7	42
Bravo device and container	85.1	187	100	40.4	67.1	26.4	87.1	34.3

Laboratory Table Specifications

1. The laboratory table must support the weight of the NGS Workstation Option B without excessive shaking or movement. The table should be fixed in place, for example, castors that lock.
2. The table must be level in the direction of the width and the depth of the workstation. Using a traditional bubble level, the table should be leveled such that the bubble is centered between the two limit lines of the level
3. The table surface must meet the following requirements:
 - a. Be chemical resistant. Agilent Technologies does not recommend using laminated particle board, because the board might be exposed to liquids around the mounting holes.
 - b. Have a thickness relative to the material that will prevent warping when the workstation and computer are set upon the table.
 - c. Permit predrilled or tapped holes (M6 thread) for securing integration parts.
4. The table surface must be attached to the table frame.
5. The table frame must have:
 - a. A leveling mechanism in the feet or castors.
 - b. Cross members to prevent the table from swaying when the workstation is in operation and to prevent the table surface from bending when the workstation and computer are placed on top.
 - c. Table legs that are spaced a maximum of 90 cm (36 n) apart to properly support and distribute the weight.
 - d. Dimensions that enable support of the table surface without overhang.
 - e. Have castors that can be unlocked to enable moving the system away from a wall to provide maintenance access to the rear of the workstation.
6. The table should have available surface space or an extra shelf to accommodate the controllers for the accessories, such as the Peltier Thermal Station (CPAC).

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Compressed Air Requirements

The workstation requires the use of clean, dry, compressed air to move pneumatic components. The compressed air can be from a centralized source (house), compressed-air cylinders, or portable pumps. The air source must meet the following specifications:

Instrument	Quality	Flow rate	Pressure
BenchCel device	Clean, dry, compressed	34.0 Lpm (1.2 cfm)	0.65 to 0.69 MPa (95 to 100 psi)
PlateLoc Sealer	Clean, dry, compressed	70.8 Lpm (2.50 cfm)	0.62 to 0.69 MPa (90 to 100 psi)

CAUTION: Using oil compressors can cause oil to leak into the BenchCel Microplate Handler and void your warranty.

CAUTION: Air pressure greater than 0.69 MPa (100 psi) can damage the BenchCel Microplate Handler.

Computer Requirements

If your organization uses a computer other than one configured by Agilent Technologies, make sure the computer meets the minimum requirements:

- Windows 10 (64-bit edition)
- VWorks Automation Control software v13.1
- 3.20 GHz, 8 MB cache, processor, 4 cores
- 8 GB DIMM
- 500 GB hard drive capacity (100 GB, minimum)
- HD Graphics
- 1280 x 1924 screen resolution
- Browser with JavaScript enabled: Microsoft Internet Explorer 8.0, or later, or Mozilla Firefox 3.0, or later (required for viewing the knowledge base)
- A PDF viewer, such as Adobe Reader (required for opening the user guide PDF files)
- Dedicated 10BaseT or faster Ethernet card for connecting to the workstation LAN.
A second network card is required if the controlling computer will be connected to the site LAN. The Agilent service representative will ensure that the workstation LAN is connected and that communication is established with the workstation devices.
- Note: Agilent Technologies is not responsible for establishing communication with your site LAN.
- USB ports, 2 minimum
- Serial port, if available (provides more reliable communication with the Orbital Shaking Station than a USB-to-serial adapter)
- Microsoft Office (required for viewing .xlsx and .docx files for the applications)

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Safety Equipment and Precautions

WARNING Changing or modifying the safety equipment can prevent the safe operation of the workstation, invalidate its safety compliance, and lead to personal injury or property damage. Any customer who does not use the supplied safety equipment or who modifies the supplied safety equipment assumes full responsibility for providing an appropriate level of safety for its operators and for providing the applicable safety compliance marking and documentation.

All safety equipment supplied with the workstation will be installed for you. The safety equipment includes shields and a Light Curtain to prevent access to moving-parts hazards. The robot-disable hub is a central connection point for the workstation devices. The robot-disable hub provides the emergency-stop function for the integrated devices that are equipped with emergency-stop circuitry. The Bravo Platform and BenchCel robot are connected to the robot-disable hub. Pressing the red emergency-stop button on a pendant or interrupting the Light Curtain will stop the motion of both devices.

Ensure that you understand the potential safety hazards and how to avoid them. For details see:

- [Automation Solutions Product General Safety Guide](#) (part number G5500-90015)
- [G5562A, G5563A Bravo Platform Safety and Installation Guide](#) (part number G5562-90001)
- [BenchCel Microplate Handler User Guide](#) (part number G5580-90000)
- [Labware MiniHub Safety and Installation Guide](#) (part number G5484-90004)
- If applicable, [PlateLoc Thermal Microplate Sealer User Guide](#) (part number G5402-90001).

You can find these guides and others in the VWorks Knowledge Base at:

<http://www.agilent.com/chem/askb>

Important Customer Web Links

- For additional information about Agilent Automation Solutions, please visit our web site at <http://www.agilent.com/en-us/products/automation-solutions>
- Need to get information on your product?
 - NGS Sample Preparation Automation page - <http://www.agilent.com/en/products/automation-solutions/ngs-sample-preparation-automation/ngs-workstation>
 - VWorks Knowledge Base - <http://www.agilent.com/chem/askb>
 - Literature Library - <http://www.agilent.com/en-us/library/literature>
- Need to know more? Customer Education – <http://www.agilent.com/crosslab/university/>
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