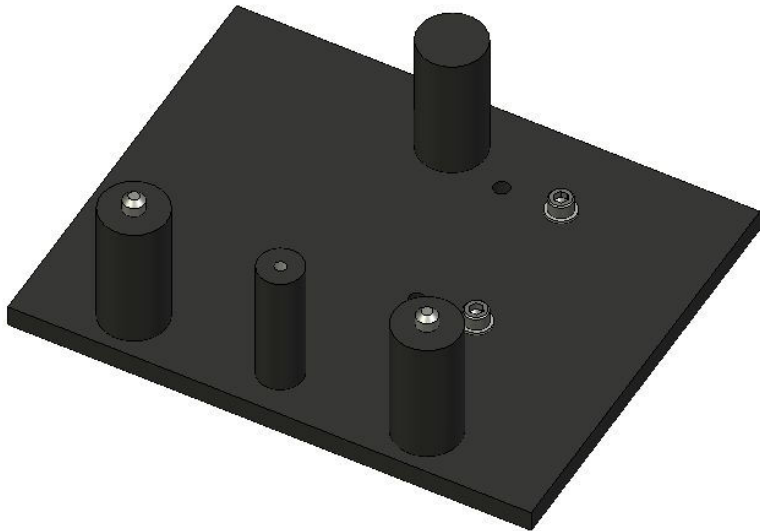




# Benchmark™ Baseplate Installation Guide

---

## *User Manual*









# Benchmark™ Baseplate Installation Guide

---

*User Manual*

# *Benchmark™ Baseplate Installation Guide*

---

## **BENCHMARK™ BASEPLATE INSTALLATION GUIDE**

PART NUMBERS 549-000 Series

### **USER MANUAL**

1. INTRODUCTION .....	3
2. UNPACKING AND CHECKLIST .....	5
3. INSTALLATION OF BENCHMARK™ BASEPLATE INTO SPECTROMETER ..	6

© April 2016 Specac Ltd. All rights reserved.

Benchmark™ is a trademark of Specac Ltd.  
Other product names that may be mentioned herein may be  
trademarks of their respective owners.

# 1. Introduction

---

## **Benchmark™ Baseplates**

Most Specac accessories are installed into a spectrometer sample compartment via an adapter baseplate. The most commonly used type is known as a Benchmark™ baseplate. The accessory locates onto the top of the Benchmark™ baseplate and is held secure by a single thumbscrew fixing, usually into a location pillar at the front of the baseplate. There are three further support and location pillars arranged in a triangular configuration on the plate to match the height of the thumbscrew location pillar, such that the accessory is placed level to be presented at the correct beam height and spatial position in the spectrometer sample compartment. It is this arrangement of pillars (or location holes and pins for low beam height spectrometer systems) on a support plate that denotes a Benchmark™ baseplate configuration.

The metal plate that carries the pillars or location holes and pins is a particular shape and unique to a specific spectrometer sample compartment. It is this metal plate that is directly attached to the floor of a spectrometer. The Benchmark™ baseplate may be suitable for a number of spectrometer models from the same manufacturer, and when placed into the spectrometer, will allow any Benchmark™ baseplate compatible accessory to be correctly mounted for operation.

The accessories can be changed over for operation simply by undoing the thumbscrew connection on the accessory itself. The Benchmark™ baseplate part does not need to be removed from the spectrometer sample compartment. An advantage is that once an accessory has been finely aligned for operation in a particular spectrometer on the Benchmark™ baseplate, as long as the optical settings on the accessory are not altered, it can be removed from the spectrometer as many times as required and is ready for use the next time it is installed.

Specac accessories that are Benchmark™ baseplate compatible are:-

All Golden Gate™ ATR systems GS10500 Series (NOT “Smart” Golden Gates).

Silver Gate™ Evolution ATR P/N GS10680 Series.

Quest ATR Accessory P/N GS10800 Series.

Gateway™ ATR P/N GS11165

Cyclone™ Gas Cells P/N's GS24102, GS24105, GS24110, GS24120

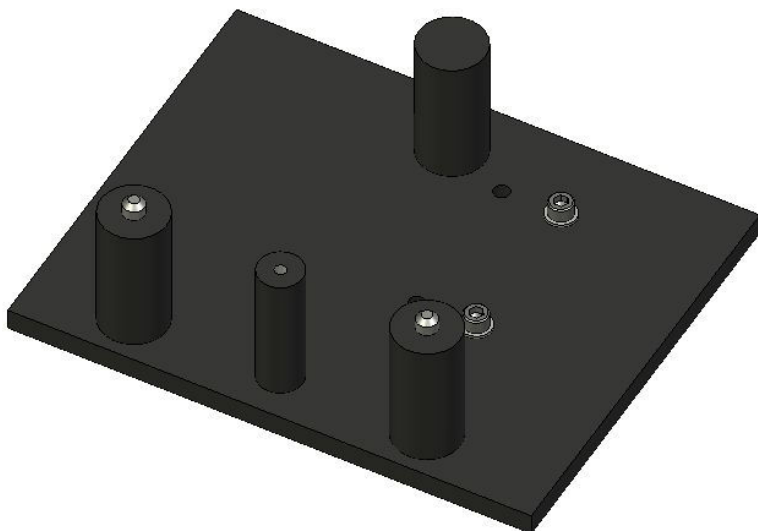
Tornado™ Gas Cells P/N's 24205, 24210, 24220

Minidiff Plus™ P/N GS04510

Microfocus Beam Condenser P/N's GS02560, GS02561

Variable Temperature Cell Holders P/N's GS21525, GS21530.

Fixed 30° Angle Specular Reflectance Accessory P/N GS19820



**Fig 1. Typical Benchmark™ Baseplate**



## *2. Unpacking and Checklist*

---

If your Specac Accessory requires installation into a Spectrometer system via use of a Benchmark™ baseplate, the Benchmark™ baseplate will be provided along with the appropriate accessory if ordered.

Alternatively, you may receive a Benchmark™ baseplate on its own to adapt a previously existing Benchmark™ baseplate compatible accessory to be installed into a particular Spectrometer system.

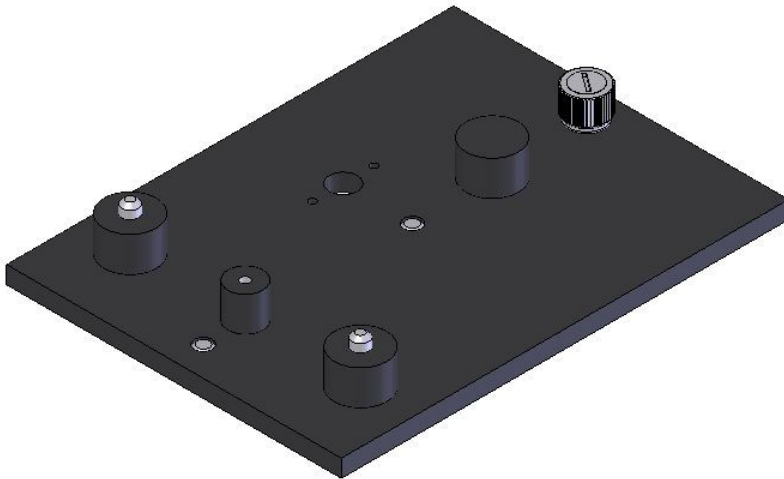
On receipt of the items remove carefully from their packaging and proceed to Section 3 of this instruction manual for the particular instructions of installation of your Benchmark™ baseplate into the appropriate spectrometer system.

### 3. Installation of the Benchmark™ Baseplate into the Spectrometer

---

The following is a description of how to fit a Benchmark™ baseplate into your spectrometer system. In most cases it is best to fit the Benchmark™ baseplate into the spectrometer sample compartment first and then fix the accessory to the installed baseplate.

**P/N 549-094 (GS49094) - Agilent/Varian/Biorad FTS7, 40, 60, 65, 100, 135, 155, 165, 175, 185, 660, 670, 680, 6000, Excalibur, Scimitar - Beam direction: Right to Left**



Remove any 3" x 2" mount plate used in the spectrometer.

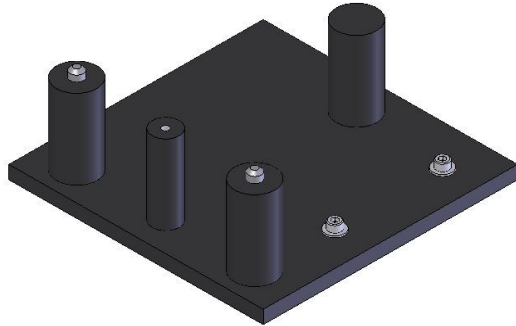
Place the Benchmark™ baseplate into the sample compartment with the two dowel pins on the underside of the baseplate locating into the spectrometer dowel holes in the floor of the instrument.

Secure the baseplate by screwing the thumb screw at the back of the baseplate into the instrument floor. (A long flat head screwdriver may be of help).

Locate the accessory onto the installed baseplate and secure using the captive thumb screw.

**P/N 549-101 (GS49101) - Bomem M100 Series (110, 120)**

**Beam direction: Left to Right**



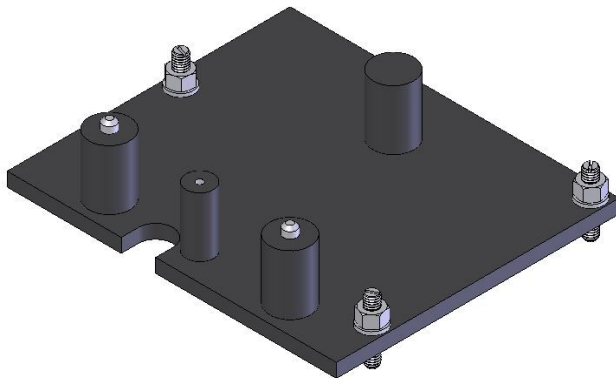
Remove the spectrometer cover and 3" x 2" sample mount to gain access to the sample compartment.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

Fix the Benchmark™ baseplate to the spectrometer platform with the two 10-32UNC screws supplied.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-102 (GS49102) - Bomem MB100 Series Kinematic Mount (155, 157) and MB3000 - Beam direction: Left to Right**



## User Manual

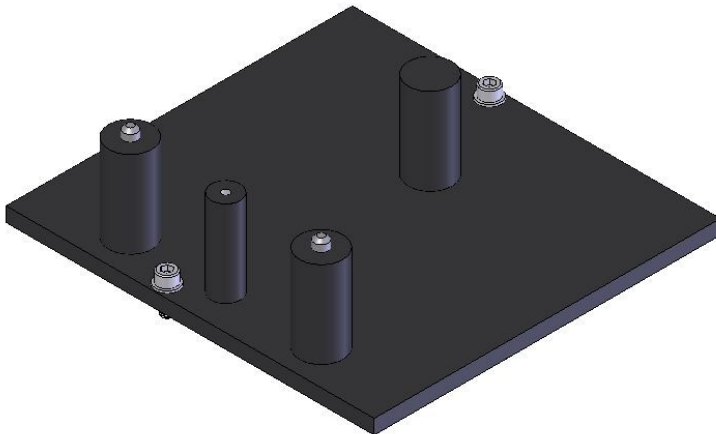
Remove the spectrometer cover and 3" x 2" sample mount to gain access to the sample compartment.

Locate the Benchmark™ Baseplate onto the kinematic mount of the spectrometer with the three support pillars in a straight line to the front of the compartment. This involves placing the screws on the underside of the baseplate on three location features (a conical countersink, a 'V' slot and a plain flat) on the floor of the spectrometer.

The Benchmark™ baseplate screws can be adjusted for height and leveling.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-110 (GS49110) - Bomem (Arid Zone) MB100, 2000 Series Non-Kinematic Mount (MB3000) - Beam direction: Left to Right**



Remove the spectrometer cover and 3" x 2" sample mount to gain access to the sample compartment.

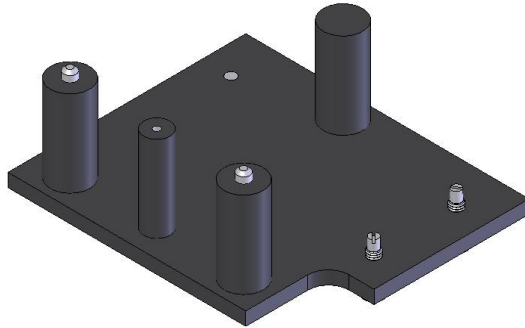
Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

Fix the Benchmark™ baseplate to the spectrometer platform with the two 10-32UNC screws supplied.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

## Benchmark™ Baseplate Installation Guide

**P/N 549-096 (GS49096) - Bruker IFS 25, 55, 66, 66V, 88, Vector22, Equinox**  
**Beam direction: Right to Left**



Remove any 3" x 2" mount plate used in the spectrometer from the Bruker baseplate.

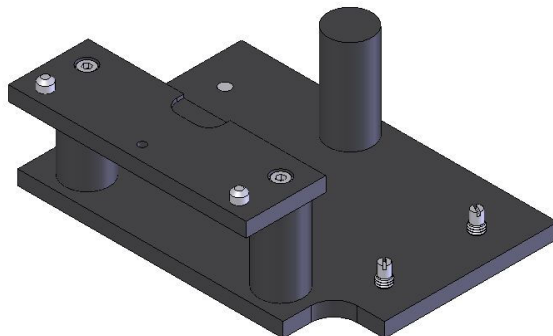
Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

The two fixing screws and dowel pins of the Benchmark™ plate are passed through the larger hole ends of the slots on the Bruker baseplate and the Benchmark™ plate is slid from right to left to centralize it on the Bruker plate.

The two screws are then turned anti-clockwise to tighten the plates together.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-120 (GS49120) - Bruker IFS 25, 45, 55, 48, 66, 66V, 85, 88, Vector22, Equinox - Beam direction: Right to Left**



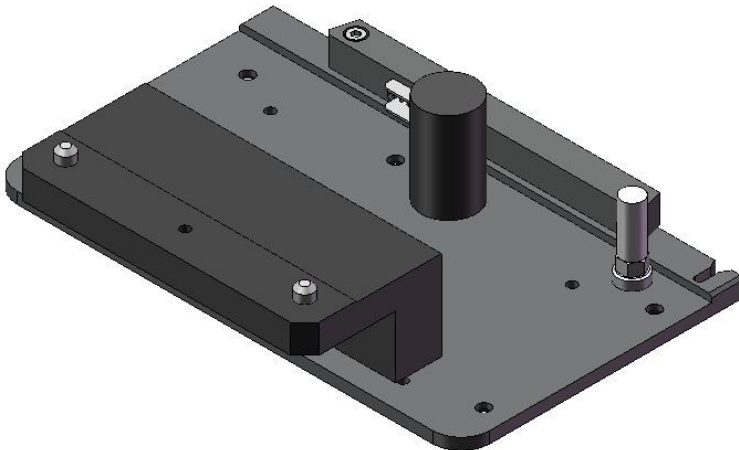
## User Manual

Remove any 3" x 2" mount plate used in the spectrometer from the Bruker baseplate. Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

The two fixing screws and dowel pins of the Benchmark™ plate are passed through the larger hole ends of the slots on the Bruker baseplate and the Benchmark™ plate is slid from right to left to centralize it on the Bruker plate.

The two screws are then turned anti-clockwise to tighten the plates together. Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-433 (GS49433) - Bruker Tensor 25, 37, II, Quicklock 33, Vertex 70, 80**  
**Beam direction: Right to Left**

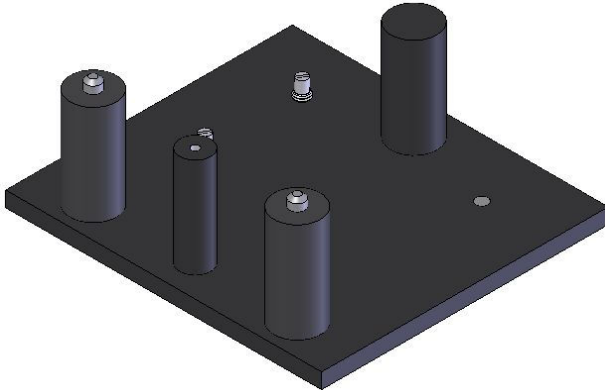


Remove any 3" x 2" mount plate used in the spectrometer from the spectrometer sample compartment.

Place the Benchmark Quicklock™ baseplate into the sample compartment with the two location pins and tapped hole on the front edge of the support plate to the front of the compartment. The baseplate locates securely by connection to the rear with the electric plug sockets and a push clip at the front.

Install the accessory onto the Benchmark™ rear pillar and front plate fixing and secure using the captive thumb screw into the small central hole on the plate at the front.

**P/N 549-107 (GS49107) - Bruker IFS113V, 120HR, 125HR**  
**Beam direction: Right to Left**



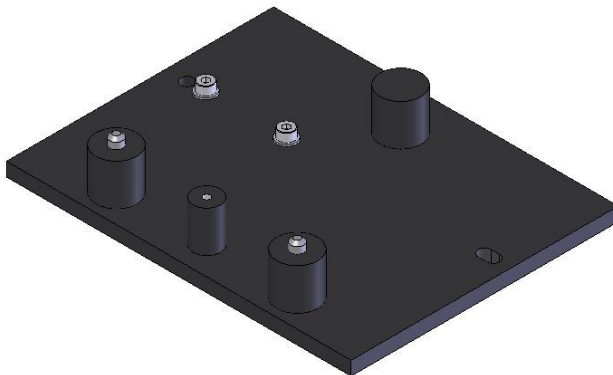
Remove any 3" x 2" mount plate used in the spectrometer from the Bruker baseplate.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

The two fixing screws and dowel pins of the plate are passed through the slots of the Bruker plate and the two screws are turned anti-clockwise to tighten the plates together.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-117 (GS49117) - Jasco (All Jasco models) - Beam direction: Left to Right**



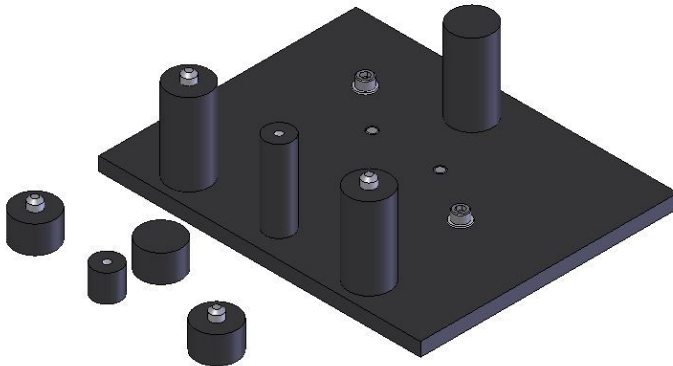
## User Manual

Remove the spectrometer cover and 3" x 2" sample mount to gain access to the sample compartment.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.  
Secure the baseplate in position using the two cap head M4 screws supplied.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-104 (GS49104) - Mattson Galaxy Series 2000, 3000, 4000, 5000, 6000, 7000, 8000 Genesis Series, RS, Infinity**  
**Beam direction: Right to Left (8000 is Left to Right)**



There are two sets of pillars supplied with the Benchmark™ baseplate for Mattson spectrometers. (Long pillars (1.5") for Galaxy Series and short pillars (0.5") for Genesis Series).

Remove any 3" x 2" mount plate used in the spectrometer.

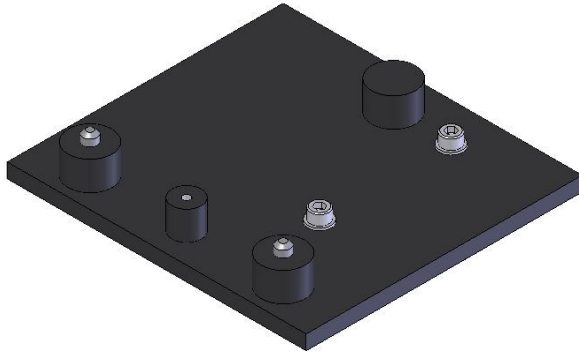
Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment and such that the dowel pins on the underside of the baseplate locate into the floor of the spectrometer.

Secure the baseplate in position using the two cap head 8-32UNC screws supplied.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.



**P/N 549-106 (GS49106) - Midac (All Midac models) - Beam direction: Left to Right**



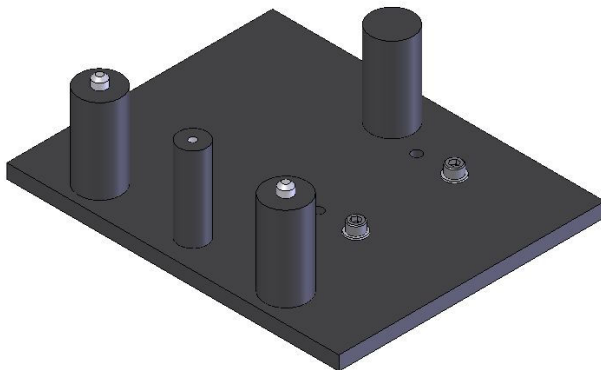
Remove the spectrometer cover and 3" x 2" sample mount to gain access to the sample compartment.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

Secure the baseplate in position using the two cap head 10-32UNC screws supplied.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-093 (GS49093) - Nicolet 500, 700, 710, 740, 800, 5PC, 5SXC, Magna, Protege, Avatar, Nexus, 6700, 8700, iS10, iS50 - Beam direction: Right to Left**



## User Manual

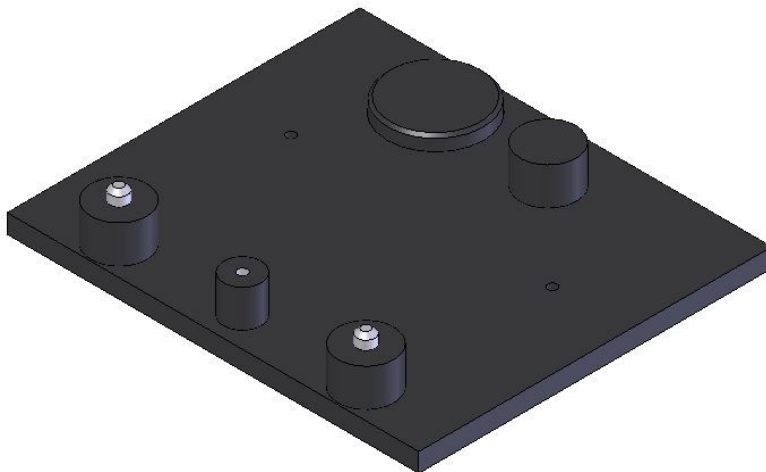
Remove any 3" x 2" mount plate used in the spectrometer.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

Secure the baseplate in position using the two cap head 8-32UNC screws supplied.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-435 (GS49435) - Nicolet iS5 - Beam direction: Right to Left**

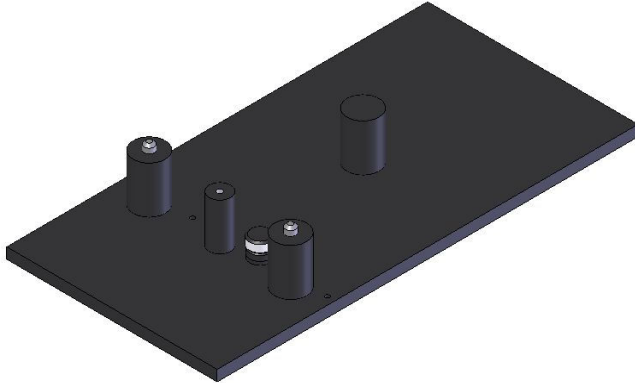


Remove any 3" x 2" mount plate used in the spectrometer.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

Align the two small fixing holes on the baseplate with the two location pins on the spectrometer compartment floor. The baseplate is secured into position from "pull down" attraction of the two magnetic discs on the spectrometer compartment floor to the two metallic discs on the underside of the baseplate.

**P/N 549-099 (GS49099) - Perkin Elmer PE1700, PE1800**  
**Beam direction: Left to Right**



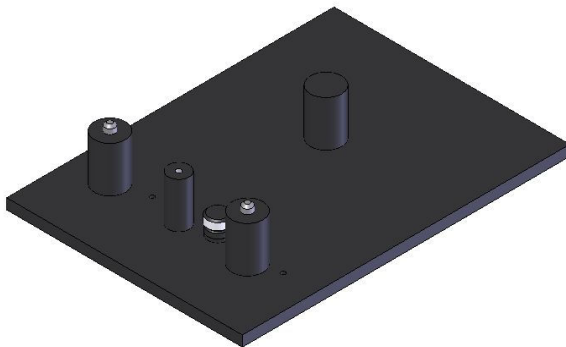
Remove any 3" x 2" mount plate used in the spectrometer.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

The baseplate is held in position by two location pins into the front support rail of the spectrometer and by tightening of the pull down thumb nut (supplied) to the instruments own fixing screw that passes through the slot at the front of the baseplate.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-098 (GS49098) - Perkin Elmer PE2000, Spectrum2000, GX**  
**Beam direction: Left to Right or Right to Left**



## User Manual

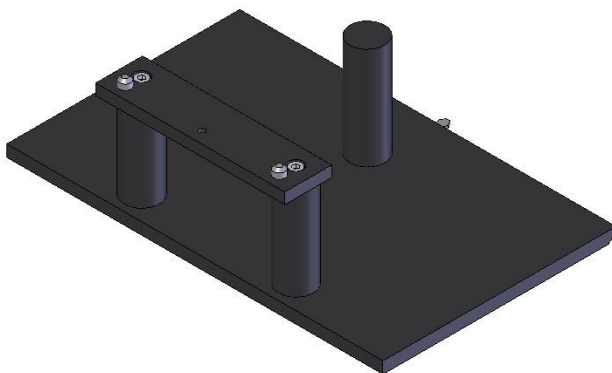
Remove any 3" x 2" mount plate used in the spectrometer.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment.

The baseplate is held in position by two location pins into the front support rail of the spectrometer and by tightening of the pull down thumb nut (supplied) to the instruments own fixing screw that passes through the slot at the front of the baseplate.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-097 (GS49097) - Perkin Elmer PE1600 Series, Paragon, Spectrum 1000, BX, RX - Beam direction: Left to Right**



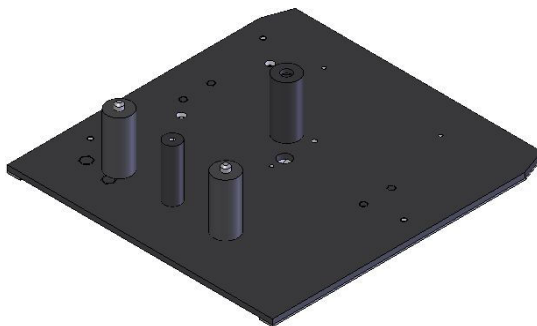
Remove any 3" x 2" mount plate used in the spectrometer.

Remove the sliding baseplate floor from the sample compartment by pulling it firmly forward. The catch mechanism at the rear will release automatically.

Install the accessory onto the Benchmark™ baseplate support bar and pillar and secure using the captive thumb screw into the tapped hole in the support bar.

Slide the complete accessory and Benchmark™ baseplate assembly into the sample compartment. The catch mechanism and Velcro type strips secure the assembly in position.

**P/N 549-352 (GS49352) - Perkin Elmer Spectrum One, Spectrum 65, 100, 400, 4000, 8000 (Frontier) - Beam direction: Left to Right**



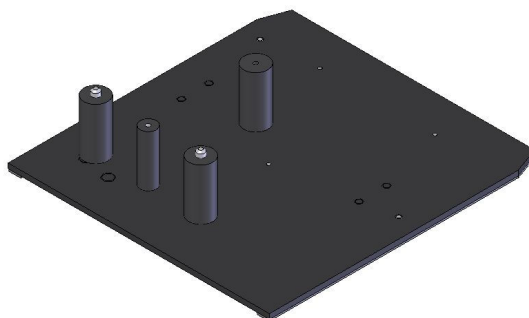
Remove any 3" x 2" mount plate used in the spectrometer.

Slide the Benchmark™ baseplate into position along the side edges of the sample compartment with the three support pillars in a straight line to the front of the compartment.

The baseplate locates into the spectrometer by engagement of the 15pin connector at the back of the plate into the spectrometer and by guidance clips on the underside of the plate. The lilac colored pivoting handle on the underside of the plate is pulled towards you when you need to remove the plate from the spectrometer.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

**P/N 549-452 (GS49452) – Quest ATR ONLY Baseplate for Perkin Elmer Spectrum One, Spectrum 65, 100, 400, 4000, 8000 (Frontier) - Beam direction: Left to Right**



## User Manual

P/N 549-452 is very similar in look to the Benchmark™ baseplate P/N 549-352, but the support pillars have been moved further to the left of centre of the baseplate platform for correct use with the Quest ATR Accessory (Specac P/N GS10800 Series) ONLY in the aforementioned Perkin Elmer spectrometers.

Installation of baseplate P/N 549-452 is exactly the same procedure as described for the Benchmark™ baseplate P/N 549-352.

### **P/N 549-436 (GS49436) - Perkin Elmer Spectrum Two** **Beam direction: Left to Right**



Remove any 3" x 2" mount plate used in the spectrometer.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment and the electrical connection plate on the underside of the baseplate towards the rear.

The baseplate requires a "push down and slide fit" action to be held correctly in position. Clips on the underside of the baseplate locate with ball catches on the floor of the spectrometer. Angle the back of the baseplate downwards such that the electrical connection plate is close to its engagement mechanism and then push down towards the middle and front of the baseplate onto the ball catches for a snap fit.

Removal of the baseplate is a reverse action. Lift at the front and pull up and out towards the front.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

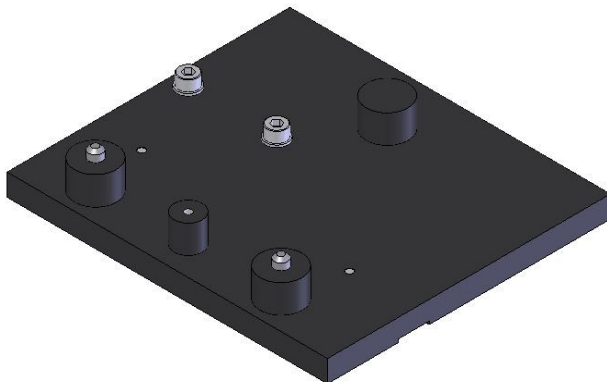
**P/N 549-453 (GS49453) – Quest ATR ONLY Baseplate for Perkin Elmer Spectrum Two - Beam direction: Left to Right**



P/N 549-453 is very similar in look to the Benchmark™ baseplate P/N 549-436, but the support pillars have been moved further to the left of centre of the baseplate platform for correct use with the Quest ATR Accessory (Specac P/N GS10800 Series) ONLY in the aforementioned Perkin Elmer Spectrum Two spectrometer.

Installation of baseplate P/N 549-453 is exactly the same procedure as described for the Benchmark™ baseplate P/N 549-436.

**P/N 549-103 (GS49103) - Shimadzu 8000, 8100, 8200, 8300, 8400, 8500, Prestige 21, IR Affinity, IR Tracer 100 - Beam direction: Right to Left**



## **User Manual**

Remove any 3" x 2" mount plate used in the spectrometer.

Place the Benchmark™ baseplate into the sample compartment with the three support pillars in a straight line to the front of the compartment. Make sure that the bar on the underside of the baseplate locates in the slot in the spectrometer sample compartment floor.

Move the baseplate from side to side until the location pins in the spectrometer enter the holes in the bar. Secure the baseplate by screwing the two cap head M5 screws through the baseplate into the spectrometer sample compartment floor.

Install the accessory onto the four Benchmark™ baseplate pillars and secure using the captive thumb screw into the small central pillar at the front.

### **Any Other Spectrometers**

For advice concerning spectrometers not included in this manual please consult your nearest Specac representative.







# Worldwide Distribution

## **France**

Eurolabo - Paris.  
Tel.01 42 08 01 28  
Fax 01 42 08 13 65  
email: [contact@eurolabo.fr](mailto:contact@eurolabo.fr)

## **Germany**

L.O.T. - Oriel GmbH & Co,  
KG - Darmstadt  
Tel: 06151 88060  
Fax: 06151 880689  
email:[info@LOT-Oriel.de](mailto:info@LOT-Oriel.de)  
Website: [www.LOT-Oriel.com/de](http://www.LOT-Oriel.com/de)

## **Japan**

Systems Engineering Inc. -Tokyo  
Tel: 03 3946 4993  
Fax: 03 3946 4983  
email:[systems-eng@systems-eng.co.jp](mailto:systems-eng@systems-eng.co.jp)  
Website: [www.systems-eng.co.jp](http://www.systems-eng.co.jp)

## **Spain**

Teknokroma S.Coop C. Ltda  
Barcelona  
Tel:93 674 8800  
Fax: 93 675 2405  
email:[comercial@teknokroma.es](mailto:comercial@teknokroma.es)

## **Switzerland**

Portmann InstrumentsAG  
Biel-Benken  
Tel: 061 726 6555  
Fax: 061 726 6550  
email:[info@portmann-instruments.ch](mailto:info@portmann-instruments.ch)  
Website: [www.portmann-instruments.ch](http://www.portmann-instruments.ch)

## **USA**

SPECAC INC.  
414 Commerce Drive  
Suite 175,  
Fort Washington,  
PA 19034, USA  
Tel: 215 793 4044  
Fax: 215 793 4011

## **United Kingdom**

Specac Ltd. - London  
River House, 97 Cray Avenue,  
Orpington  
Kent BR5 4HE  
Tel:+44 (0) 1689 873134  
Fax:+44 (0) 1689 878527  
Registered No. 1008689 England

# Brilliant Spectroscopy™

*[www.specac.com](http://www.specac.com)*

**SPECAC INC.**

414 Commerce Drive  
Suite 175,  
Fort Washington,  
PA 19034, USA  
Tel: 215 793 4044  
Fax: 215 793 4011

**SPECAC LIMITED**

River House, 97 Cray Avenue  
Orpington  
Kent BR5 4HE  
Tel: +44 (0) 1689 873134  
Fax: +44 (0) 1689 878527  
Registered No. 1008689 England