56 Sparta Avenue • Newton, New Jersey 07860
(973) 300-3000 Sales • (973) 300-3600 Fax
www.thorlabs.com

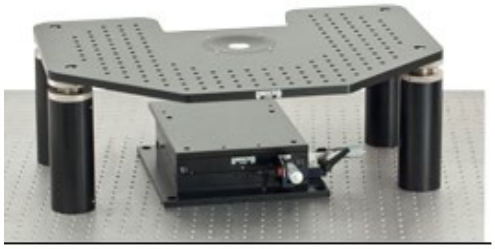
THORLABS

GMH-FS - July 16, 2021

Item # GMH-FS was discontinued on July 16, 2021. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

GIBRALTAR® PLATFORM FOR ZEISS AXIOSKOP FS

- ► Ultra-Stable Platform for Electrophysiology Research
- ► Options for Manual or Motorized Control
- ► Open Design Allows for Unrestricted Instrument Operation

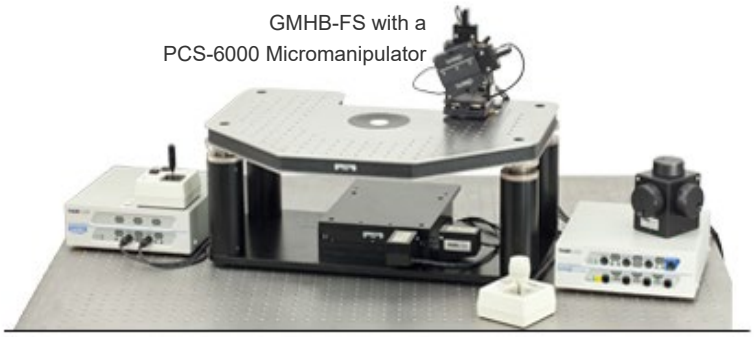


G-FS

Burleigh
a division of THORLABS

Application Idea

GMHB-FS with a
PCS-6000 Micromanipulator



Hide Overview

OVERVIEW

Features

- Compatible with Zeiss Axioskop FS Upright Microscope
- Designed to Integrate Micromanipulators
- Available with Manual Micrometer or Stepper Motor Control
- Available with Solid Aluminum or Stainless Steel Breadboard

Applications

- Multiple-Patch Experiments
- Time-Lapse Photography
- Photolysis and Patch-Clamp Recording in Different Field of Views
- Whole Specimen Imaging

Burleigh®, a division of Thorlabs, manufactures leading edge equipment for electrophysiology research such as this Gibraltar® Platform. The platforms featured here, which are designed for use with the Zeiss Axioskop FS upright microscopes, are a stable and flexible mechanical solution for electrophysiology research. The XY platform provides reliable and reproducible movement, either manual or motorized, of the microscope relative to the Gibraltar stage. This allows the user to change the field of view (FOV) without moving the sample itself, thus preventing disruption to patch recording.

Gibraltar Platforms By Microscope
Zeiss Axioskop FS
Zeiss Axioskop 2FS
Zeiss Axio Examiner
Nikon FN1
Nikon E600F
Olympus BX50W1 & BX51WI
Leica DM LFS

Thorlabs offers four versions of our motorized and four versions of our manual Gibraltar platform for Zeiss upright microscopes to meet the user's individual laboratory needs. Our platform can support the installation of multiple micromanipulators, chambers, or other instruments around the microscope objective while providing superior mechanical and thermal stability. This stability is particularly important in sensitive electrophysiology research such as multiple patching.

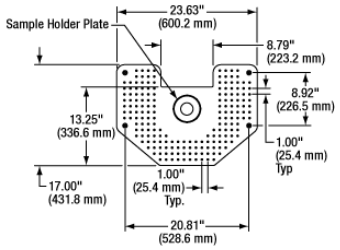
Our Gibraltar platform has four large-diameter columns that rigidly support the platform, enabling it to be directly bolted to an optical table or mounted to our base

plate. These columns are height adjustable, allowing the platform to accommodate various microscopes, chambers, headstages, and approach angles. When combined with our micromanipulators, the Gibraltar platform gives unparalleled control over pipette and microscope position. A hardware kit for assembling the Gibraltar platform is included.

Manual vs. Motorized Control

The Gibraltar platform is available with either a manual or motorized XY stage for manipulation of the Zeiss microscope position. The manual control uses micrometers that offer a total travel range of 1" at 40 threads/inch. These simple, yet reliable, micrometers have a resolution of <5 µm and feature a friction lock to maintain the platform's position.

Our motorized stage gives the user fast, reliable translation with greater functionality than our manual stage. This motorized stage offers 1" of travel in each direction and a position resolution of 5 µm (at min speed). The translation is controlled by a joystick and has two speed settings, allowing for quick and precise movement of the stage. Additionally, the motorized stage has two position buttons, allowing the user to store up to two positions for quick and accurate transition between two separate FOVs.



Click for Details
Gibraltar platform dimensions
with the included sample holder plate.

Solid Aluminum vs. Stainless Steel Platform

There are two available options for the top platform: solid aluminum or stainless steel. Our solid aluminum platform is coated in black epoxy and features through holes. The stainless steel platform offers a magnetic surface with 1/4"-20 taps. Instruments such as micromanipulators may be mounted using either magnetic bases or 1/4"-20 screws. Additionally, the stainless steel platform offers a honeycomb structure for vibration stability and spill-proof holes to protect the microscope from accidental spills. The drawing to the right shows the dimensions and hole spacings for the aluminum and stainless steel platforms. See the *Components Guide* tab for more information on the available options.

For questions and ordering details, please contact Tech Support.

Hide Specs

S P E C S

Gibraltar Platform Top (Choose One)		
Material	Black Epoxy-Coated Aluminum	Magnetic Stainless Steel
Dimensions	23.63" × 17.00" × 0.50" (600.2 mm × 438.1 mm × 12.7 mm)	23.63" × 17.00" × 1.36" (600.2 mm × 438.1 mm × 34.5 mm)
Weight	16.0 lbs (7.26 kg)	29.5 lbs (13.4 kg)
Columns		
Material	Black Epoxy-Coated Aluminum and Stainless Steel	
Threads	Ø1.5" (38.1 mm), 12 threads/inch	
Weight	6 lbs (2.72 kg) Each (Four per System)	
XY Translation Stage and Adapter Plate		
Load Capacity	110 lbs (49.90 kg)	
Material	Black-Plated Aluminum	
Bearings	Ball Bearings	
Size	8" × 8" × 2" (203.2 mm × 203.2 mm × 50.8 mm) (Without Microscope Adapter Plate)	
Weight	18 lbs (8.16 kg) (With Microscope Adapter Plate)	
Translation Mechanism (choose one)		
Type	Motorized	Manual
Range	1" (25.4 mm) in Both X and Y	1" (25.4 mm) in Both X and Y
Speed (Max)	0.4 mm/s	N/A
Speed (Min)	3.0 µm/s	N/A
Resolution	5 µm at Min Speed	<5 µm
Electrical		

Power	90 - 260 VAC, 50/60 Hz, 45 W (Max)	N/A
Controller Dimensions	10" × 10"× 4" (254 mm × 254 mm × 101.6 mm)	N/A
Weight	4.5 lbs (2.04 kg) (Controller and Joystick)	N/A
Environment		
Operating Temperature	10 - 40 °C, <60% Relative Humidity	
Storage Temperature	-10 to 70 °C, <90% Relative Humidity	
Base Plate (Optional)		
Material	Black Epoxy-Coated Aluminum	
Dimensions	23.6" × 11.6" (599.44 mm × 294.64 mm)	
Weight	14 lbs (6.35 kg)	
Sample Plate		
Material	Black-Plated Aluminum	
Dimensions	4.32" (109.7 mm) OD, 1.26" (32.0 mm) ID, 0.20" (5.0 mm) thick	
Compatible Vibration-Isolation Tables (When Base Plate is not Purchased)		
Tables Type	Imperial	Metric
Hole Pattern	1/4"-20 Tapped Holes on a 1" Square	M6 × 1.0 Tapped Holes on a 25 mm Square

Hide Components

COMPONENTS

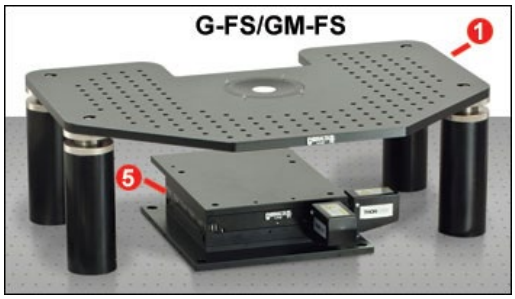
Component	Description	Image	Available On	Label*
Solid Aluminum Top Plate	Non-Magnetic, Black Epoxy-Coated Aluminum Top with 14"-20 Through Holes		G-BX, GM-BX, GB-BX, & GMB-BX	1
Stainless Steel Top Plate	Magnetic, Spill-Proof Stainless Steel Top with 1/4"-20 Tapped Holes		GH-BX, GMH-BX, GHB-BX, & GMHB-BX	2
Base Plate	Black, Epoxy-Coated Aluminum Base Plate with Rubber Grommet Feet		GB-BX, GMB-BX, GHB-BX, & GMHB-BX	3
Manual Translation Stage	Black, XY Translation Stage For Microscope with Mechanical Micrometer		G-BX, GB-BX, GH-BX, GHB-BX	4
Motorized Translation Stage	Black, XY Translation Stage For Microscope with Stepper Motor		GM-BX, GMB-BX, GMH-BX, GMHB-BX	5

*See images below

Solid Aluminum vs. Stainless Steel Top Plate

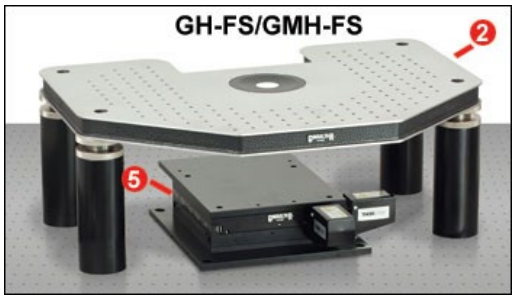
Our solid aluminum top plate provides a solid surface for electrophysiology research. Consisting of a 1/2" solid piece of aluminum, this top plate delivers a stable platform for mounting hardware and equipment near the microscope objective. With through holes for 1/4"-20 (M6) bolts, this plate can be integrated with either imperial or metric devices.

Our stainless steel top plate offers several advantages over its solid aluminum counterpart. This top plate is magnetic, providing the user with the freedom to conveniently place hardware in the optimal position (through the use of a magnetic base). Instead of through holes, this plate features 1/4"-20 tapped holes. These tapped holes not only provide the option of mounting equipment directly to the board with a 1/4"-20 hex screw, but they have also been designed to be leak proof. Each tapped hole is sealed with a nylon-based cup; liquid spills on the surface of the top plate are collected within these cups, thereby preventing liquid from dripping down onto the microscope below. One final advantage of our stainless steel top plate is the honeycomb structure, which provides additional vibration isolation and stability.



Click to Enlarge

Gibraltar Platform shown with Solid Aluminum Top and No Base Plate



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Gibraltar Platform shown with Stainless Steel Top and No Base Plate

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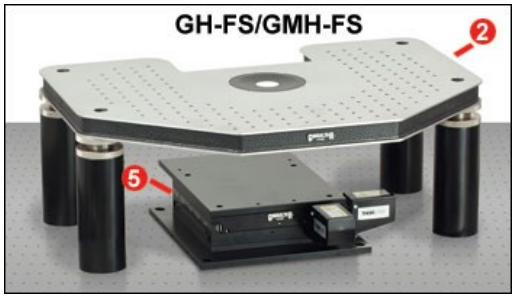
Base Plate

Our Gibraltar Platform is available with or without an attachable base plate with rubber grommet feet. When purchased without a base plate, the Gibraltar platform is mounted directly to any imperial or metric optical table or ScienceDesk™ (please refer to the Owner's Manual for instructions on mounting the Gibraltar to an optical table). Both options provide a secure, stable, and static mounting solution for our platform.

The inclusion of the base plate allows the user greater flexibility in platform placement. The rubber feet and weight of the Gibraltar platform will ensure that it cannot be accidently moved. However, it will allow the user to pick up and move the platform (please note, when moving the platform the microscope and mounted hardware needs to be removed first) and move it to a new desired location without deconstructing the entire platform.



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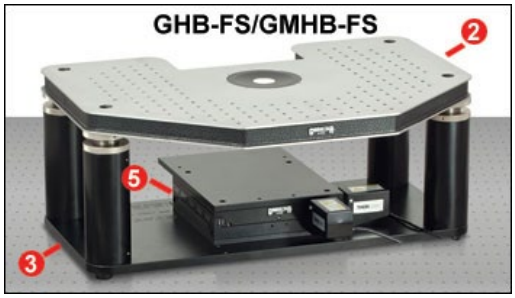
Gibraltar Platform shown with a Stainless Steel Top and No Base Plate



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Gibraltar Platform shown with a Stainless Steel Top and Base Plate

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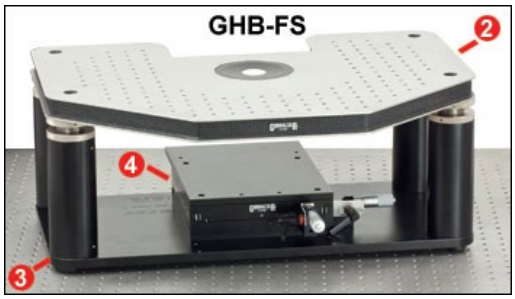
Manual vs. Motorized Translation

The Gibraltar's XY translation stage for microscope position manipulation is available with either manual or motorized translators. Manual translation is accomplished through two simple, yet precise, mechanical micrometers. These micrometers provide 1" (25.4 mm) of translation in both directions with a resolution <5 µm. Additionally, these micrometers feature a friction lock, allowing the user the ability to lock down the translation stage, preventing movement of the microscope relative to the sample.

In contrast to the mechanical micrometers, the motorized option provides the user with two stepper motors through which the stage is translated. These fast and precise motors provide 1" of translation in both directions with a resolution of 5 µm. Although the resolution of the mechanical micrometer is slightly better, the resolution of the motors is still appropriate for microscope movement and provides several advantages over the mechanical option. These motors utilize a simple joystick for user interface that can translate the stage in both the X and Y directions. Two speeds are available for user convenience: a fast speed (0.4 mm/s) for rapid translation and a slow speed (3.0 µm/s) for precise positioning. The motorized option also incorporates the ability to save two independent positions to memory, and simple two button control allows the user to quickly translate the stage between these set values. This feature is particularly useful for experiments that demand the quick and accurate investigation of two completely different Fields of View (FOV) within the same sample.



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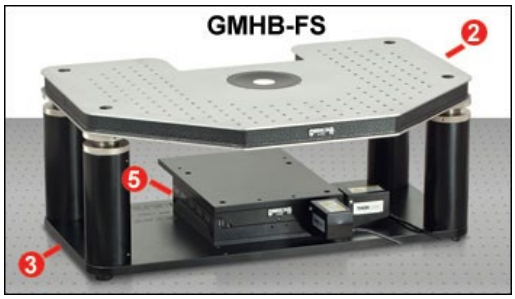
Gibraltar Platform shown with Stainless Steel Top, Manual Stage, and Base Plate



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Gibraltar Platform shown with Stainless Steel Top, Motorized Stage, and Base Plate

Hide Axioskop FS Manual Gibraltar Tables

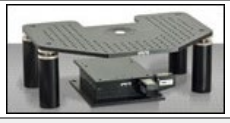
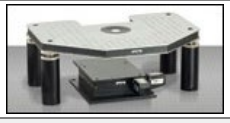
Axioskop FS Manual Gibraltar Tables

Product Image (Click for Zoom)				
Item #	G-FS	GH-FS	GB-FS	GHB-FS
Platform Top	Solid Aluminum	Magnetic Stainless Steel	Solid Aluminum	Magnetic Stainless Steel
Mounting Holes	Clearance Hole for 1/4"-20	Tapped 1/4"-20	Clearance Hole for 1/4"-20	Tapped 1/4"-20
Base Plate	No	No	Yes	Yes

Part Number	Description	Price	Availability
G-FS	Manual Gibraltar Stage for Zeiss Axioskop FS Microscopes, Aluminum Platform w/o Base Plate	$7,108.03	Lead Time
GH-FS	Manual Gibraltar Stage for Zeiss Axioskop FS Microscopes, Stainless Steel Platform w/o Base Plate	$9,548.10	Lead Time
GB-FS	Manual Gibraltar Stage for Zeiss Axioskop FS Microscopes, Aluminum Platform with Base Plate	$7,638.48	Lead Time
GHB-FS	Manual Gibraltar Stage for Zeiss Axioskop FS Microscopes, Stainless Steel Platform with Base Plate	$10,078.55	Lead Time

Hide Axioskop FS Motorized Gibraltar Tables

Axioskop FS Motorized Gibraltar Tables

Product Image (Click for Zoom)				
Item #	GM-FS	GMH-FS	GMB-FS	GMHB-FS
Platform Top	Solid Aluminum	Magnetic Stainless Steel	Solid Aluminum	Magnetic Stainless Steel
Mounting Holes	Clearance Hole for 1/4"-20	Tapped 1/4"-20	Clearance Hole for 1/4"-20	Tapped 1/4"-20
Base Plate	No	No	Yes	Yes

Part Number	Description	Price	Availability
GM-FS	Motorized Gibraltar Stage for Zeiss Axioskop FS Microscopes, Aluminum Platform w/o Base Plate	$8,699.38	Lead Time
GMH-FS	Motorized Gibraltar Stage for Zeiss Axioskop FS Microscopes, Stainless Steel Platform w/o Base Plate	$11,139.45	Lead Time
GMB-FS	Motorized Gibraltar Stage for Zeiss Axioskop FS Microscopes, Aluminum Platform with Base Plate	$9,229.83	Lead Time
GMHB-FS	Motorized Gibraltar Stage for Zeiss Axioskop FS Microscopes, Stainless Steel Platform with Base Plate	$11,669.90	Lead Time