

**DESCRIPTION**

GEX Parts P4405, P4410, P4420, and P4430 form a system designed for easy installation inside of the Thermo Scientific GENESYS 30 Spectrophotometer, allowing users to measure GEX DoseStix and WINdose style dosimeters. The holders can be inserted and secured in and out of the baseplate without the use of any tools.

**APPLICATION**

For use in conjunction with the GENESYS 30 Spectrophotometer to measure the optical absorbance of dosimeters.

**SPECIFICATIONS****Physical Specifications:**

Part No.	Product Description	Product Dimensions	Packaging Dimensions	Product Weight
P4405	Holder System Baseplate	14.5 (L) x 11.2 (W) x 1.3 (H) cm	12.7 cm x 12.7 cm x 12.7cm (13" x 10" x 2")	0.9 kg (2.0 lbs.)
P4410	DoseStix Holder	30.0 (L) x 50.0 (W) x 60.0 (H) mm	12.7 cm x 12.7 cm x 12.7cm (5" x 5" x 5")	0.2 kg (0.5 lb.)
P4420	WINdose Holder	Receiver Outer Dimensions: 41.0 (L) x 55.0 (W) x 44.0 (H) mm  Hinged Holder Dimensions: 2.9" (L) x 0.5" (W) x 0.525" (H)	12.7 cm x 12.7 cm x 12.7cm (5" x 5" x 5")	0.2 kg (0.5 lb.)
P4430	GEX B3 Holder	50.8 (L) x 30.5 (W) x 35.8 (H) mm	12.7 cm x 12.7 cm x 12.7cm (5" x 5" x 5")	0.2 kg (0.5 lb.)

<b>Material</b>	Holders: Nylatron Baseplate: Anodized aluminum
<b>Color</b>	Grey
<b>Packaging</b>	Cardboard box and wrapped in bulk packaging or shipped mounted inside of the GENESYS 30.

**Calibration:**

Not applicable.

**Maintenance:**

- The holders should be cleaned as part of a preventive maintenance program at a frequency dependent on the level of cleanliness of the area. Any accumulated particulates or dust can be removed using compressed air.
- The holders should be cleaned with a lint-free wipe, compressed air and/or isopropyl alcohol or equivalent at least annually. For extremely dusty environments, or concerns about particulate build-up inside the holder, the holder can be physically taken apart and cleaned.
- Avoid dropping or physically damaging the holders. If damage occurs, verify performance, and consult GEX Customer Service.

**Storage:**

No environmental storage requirements.



**PRODUCT PHOTOS**

<p><b>P4405 Baseplate and beam tubes</b></p>	
<p><b>P4410 DoseStix dosimeter holder</b></p>	
<p><b>P4420 Windose dosimeter holder</b></p>	
<p><b>P4430 GEX B3 dosimeter holder</b></p>	

**INSTALLATION**

1. If the instrument is not delivered with the GEX Dosimeter Holder Baseplate installed, the user must install it on site.
2. Remove the Thermo baseplate from the GENESYS 30 Spectrophotometer; it will not be used and can be stored in the original product box. The Thermo baseplate is held in place with magnets and lifts out. See *Figure 1* below.

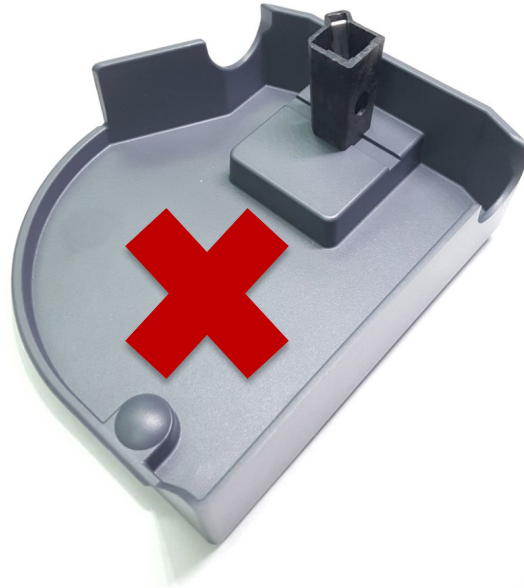


Figure 1: Thermo GENESYS 30 baseplate (Remove - Do Not Use)

3. Remove the beam tubes from the GEX baseplate (if you receive them attached) using a 3/32" driver tool. See Figure 2 below.



Figure 2: Removing the beam tubes

4. Using a 5/64" drive, loosen the two baseplate locking pin screws by one half to one full turn (from a fully tight position, loosen screw about 1/2 - 1 turn). See Figure 3.
  - a. How the locking pins work: When the locking screw is tightened, the brass anchor nut will slide along the angle of the stainless steel shaft and will lock the baseplate in place. Ensure the brass anchor nut is threaded on the screw, but not tightened fully. The brass nut should be loose enough along the steel shaft so that both pieces line up, but the brass piece should not be so loose that it falls off. See Figure 4 below.

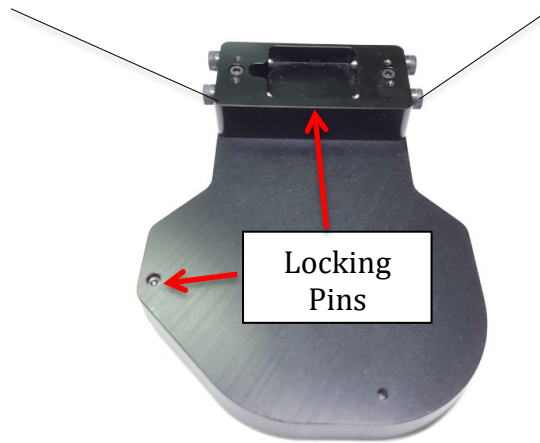
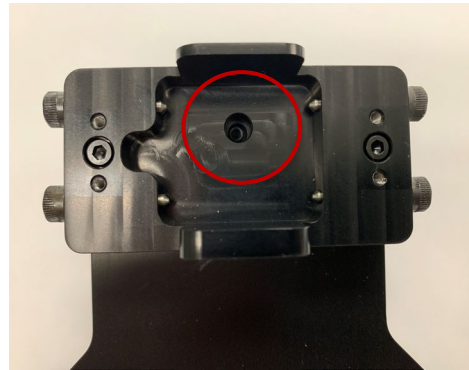


Figure 3: Locking Pins

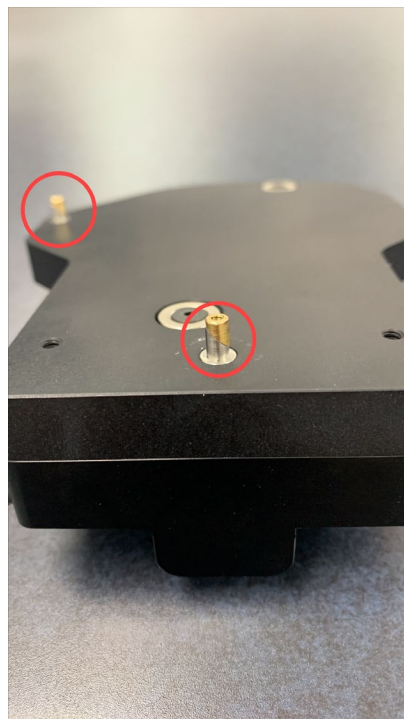
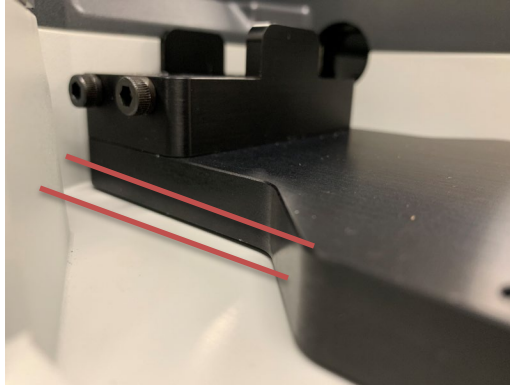


Figure 4: Brass nut and stainless steel shaft

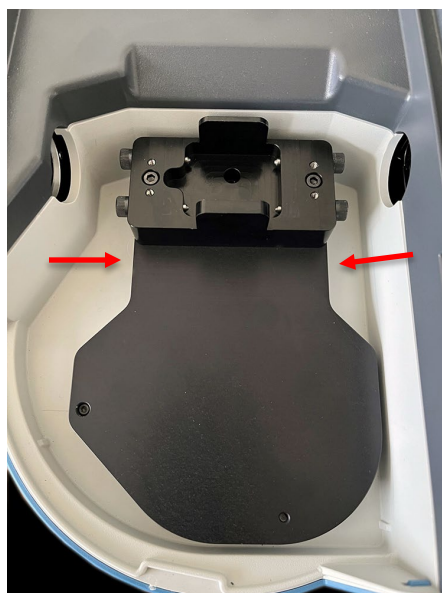


5. Carefully insert the bare baseplate into the GENESYS 30 sample chamber by lining up the locking pins with the cups in the base of the spectrophotometer. Gently tighten the screw (finger tight, ½-1 turn of the screw) into the brass locking nut.
  - a. **CAUTION:** When installing the baseplate, do not allow the brass nuts to fall off the locking pins.
6. Ensure that the baseplate is flush against the plastic bottom of the sample compartment housing of the GENESYS 30. There should not be a gap between the baseplate and the housing of the instrument (the spacing between the lines in *Figure 5* below should be evenly distributed).



*Figure 5: Baseplate installed flush with instrument body*

- NOTE:** Securing magnets are located in both the baseplate and in the bottom of the G30 sample compartment. The magnets are strong. Be careful when lowering the baseplate into the GENESYS 30.
7. Tighten the two locking pins firmly using the 5/64" driver tool. The pins are made from brass and can be stripped if tightened with excessive force; apply very firm pressure but not excessive force ("finger tight").
  8. Verify that the baseplate is secure.
    - a. Grip the baseplate on both sides and wiggle the baseplate side-to-side – see *Figure 6*. The baseplate should not move more than 1mm. If not secure, loosen the locking pins, and retry Steps 5-8 until it is secure.
    - b. Snap any dosimeter holder into the baseplate's pocket. Lift the holder out of the baseplate (see *Figure 7*). The holder should snap out of the pocket easily (normal force), and the baseplate should stay in place without moving. If not secure, loosen the locking pins, and retry Steps 5-8 until it is secure.



*Figure 6*

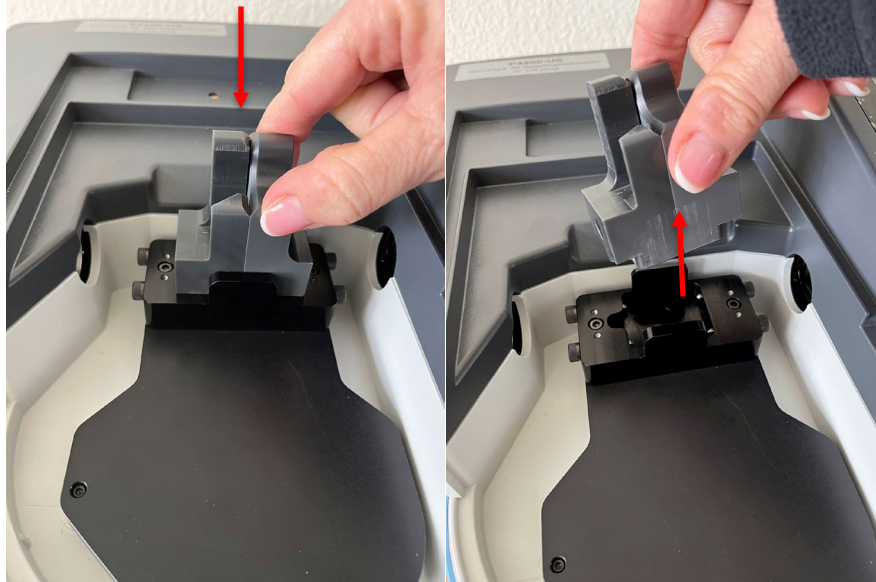


Figure 7

9. Install the beam tubes using the 3/32" driver tool. Ensure the beam tubes fit into the GENESYS 30 lens cavities without interference. See *Figure 8*.
10. The baseplate and beam tubes are installed. See *Figure 8*.

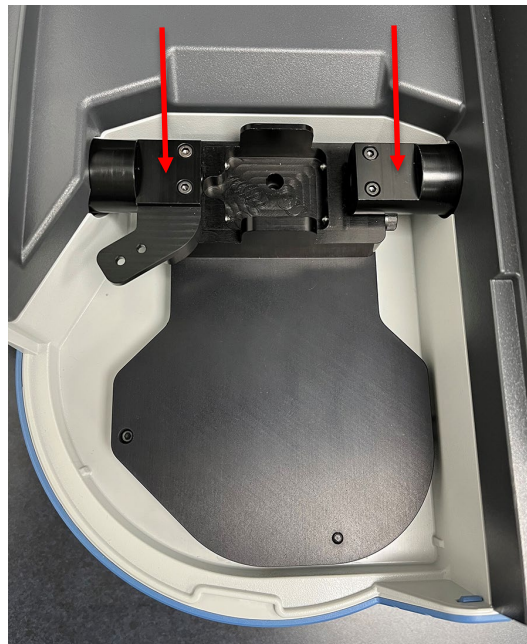


Figure 8: Baseplate and beam tubes installed.

11. Test the fit of the dosimeter holders into the pocket. See *Figure 9*.
  - a. Insert each dosimeter holder into the pocket to secure the holder in position. The holders are keyed on the bottom to only allow insertion in one direction.
  - b. The holder should snap in easily but securely.
  - c. The beam tubes may need to be loosened using the 3/32" driver tool to allow the dosimeter holder to insert properly. Ensure all four beam tube screws are tightened equally across the holder to maintain performance.

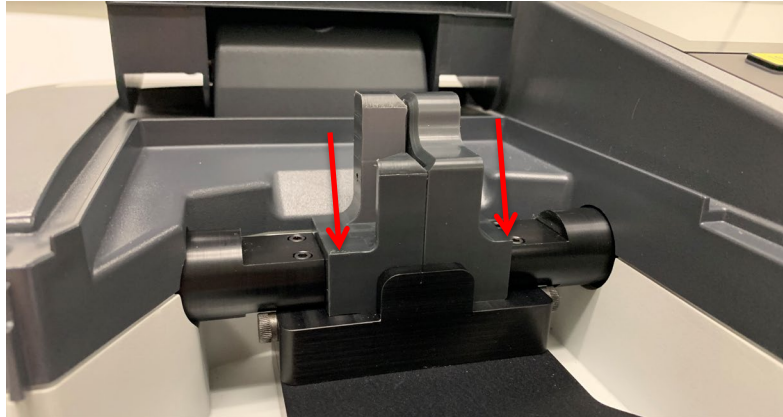


Figure 9: Dosimeter holder fits into the baseplate.

## QUALIFICATION

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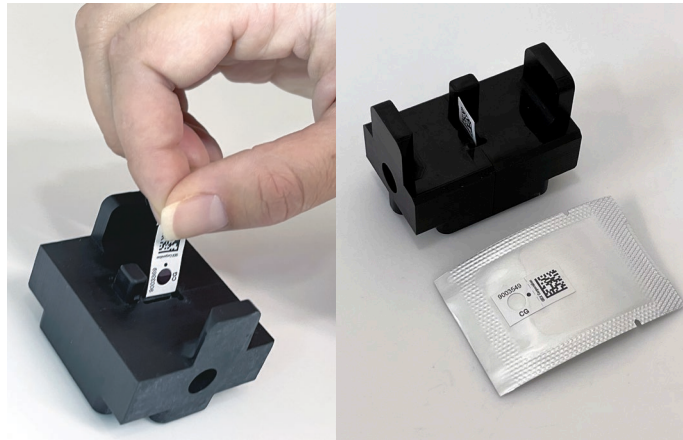
The holder system should be qualified with IQ/OQ testing to confirm that it is installed correctly, and that measurement repeatability with the complete system is within specification. Refer to *GEX Doc #100-267, DoseControl Implementation Guide* and *GEX Doc #100-281, DoseControl Hardware IQ/OQ Qualification Protocol* for details.

## USAGE

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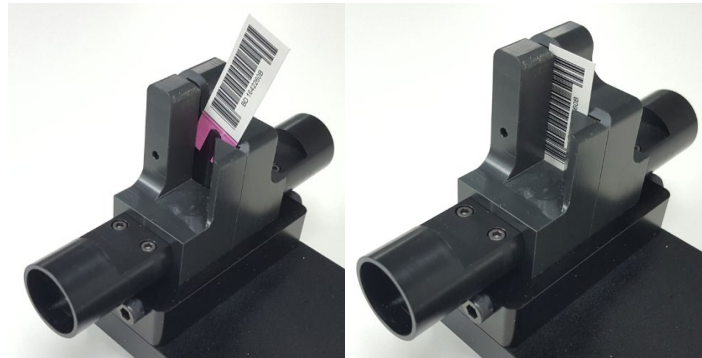
### **GEX B3 Dosimeter Holder (GEX P/N: P4430)**

The GEX B3 dosimeter holder allows any GEX B3 dosimeter to be inserted with the barcode facing out of the slot to allow for barcode scanning. The user slides the dosimeter into position, pushing the dosimeter until it stops. See images below.



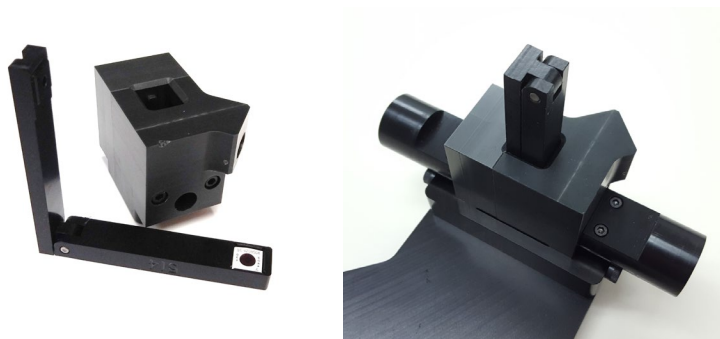
### **DoseStix Dosimeter Holder (GEX P/N: P4410)**

The DoseStix dosimeter holder allows any DoseStix dosimeter to be inserted with the barcode facing out of the slot to allow for barcode scanning. The user slides the dosimeter into position, pushing the DoseStix until it stops. See images below.



**WINdose Dosimeter Holder (GEX P/N: P4420)**

The WINdose dosimeter holder is used for 1 cm square radiochromic films. There are two parts; the receiver and the holder (see images below). The dosimeter holder is keyed to the receiver and can only be inserted when properly aligned. The dosimeter is inserted into the hinged holder and is closed.



**GUARANTEE:**

1 year satisfaction guarantee. Product may be returned within one year from the date of delivery for any customer dissatisfaction.

**RELATED DOCUMENTS**

- GEX Doc# 100-101, B3 Film Dosimeter Products – Production Specifications and Usage (PSU)
- GEX Doc# 100-167, GENESYS 30 Spectrophotometer – Production Specifications and Usage (PSU)
- GEX Doc #100-280, IQOQ Plan and Protocol for DoseControl System

**REVISION HISTORY**

DATE	CHANGE DESCRIPTION	REVISION
10/03/18	Replaced reference of “Genesys” with “GENESYS”. Description section updated. Replaced figures 9 and 10 with new images. ECO 70403.	B
05/23/19	Added new related documents and re-wrote installation procedures with many new pictures. ECO 70444.	C
01/26/2023	- Specification section: added new GEX B3 dosimeter product holder P4430 information and photos. - Added Figure 5 to show complete installed baseplate and beam tubes. ECO 70633.	D