



## Setup Instructions GX-271 Liquid Handler and GX-271 ASPEC™ GX-27X Series Z-Arm (Part Number 260465)

This document contains instructions for setting up and installing the Z-arm on the GX-271 instruments. For complete setup instructions, refer to the user's guide included on the documentation CD that is shipped with the instrument.

**Warning!** All of the components on the Z-arm must be installed before the Z-arm is attached to the instrument. Do not install the Z-arm until instructed to do so in this document.

The Z-arm and its components should be assembled and installed in the following order:

- 1 Isolator Probe Holder Installation
- 2 Guide Foot Installation
- 3 Fraction Collection Valve Installation (Optional)
  - a) Low Mount
- 4 Z-Arm Installation
- 5 Adjusting the Z Travel Height
- 6 Probe Installation
- 7 LLD (Liquid Level Detection) Cable Installation
- 8 Final Z-Arm Height Adjustment

### Technical Specifications

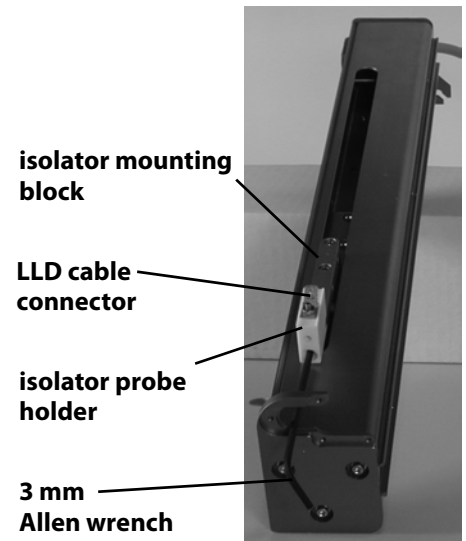
<i>Technical Specification</i>	<i>Definition</i>
<b>Arm speed</b>	125 mm/sec in Z dimension
<b>Vertical punch strength</b>	4.5 kg (10.0 lb)

## Isolator Probe Holder Installation

Follow the instructions below to install the isolator probe holder (part number 2604615) on the isolator mounting block on the Z-arm.

**Note:** The isolator mounting block is factory-installed. Do not remove it from the Z-arm.

- 1 Using the 3 mm Allen wrench included in the GX-27X accessory package, remove the screw from the bottom of the isolator mounting block on the Z-arm.
- 2 Slide the isolator mounting block down as far as it will go to the bottom of the Z-arm.  
**Note:** There may be some resistance when sliding the isolator mounting block.
- 3 Lay the Z-arm on its back on a flat surface.
- 4 Orient the isolator probe holder so that the D notch is at the top and the connector for the LLD cable is facing out. Place the D notch in the isolator probe holder over the lower part of the isolator mounting block.
- 5 Place the screw removed in step 1 up through the bottom of the isolator probe holder and into the isolator mounting block and tighten using the 3 mm Allen wrench.



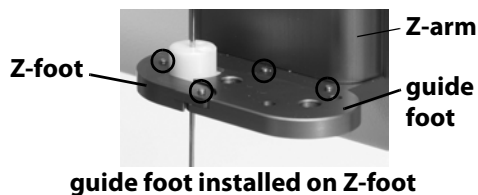
## Guide Foot Installation

The guide foot (ordered separately) includes the probe guide insert and four screws.

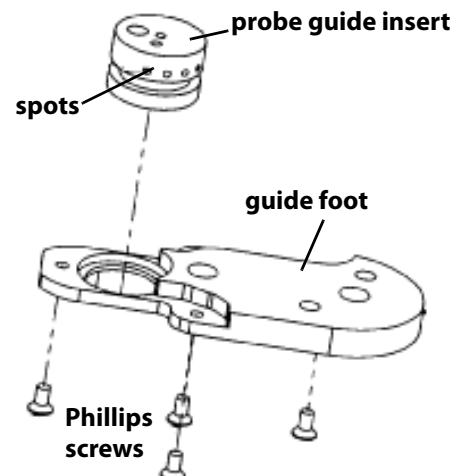
There are different size probe guide inserts available depending on the outer diameter of the probe being used. Each insert is marked with a number of spots. Refer to the table on the right for more information.

The guide foot is installed on the Z-foot of the Z-arm.

- 1 Lay the Z-arm on its back on a flat surface.
- 2 Locate the probe guide insert and place it on the top of the guide foot. The probe guide insert should be oriented so the wider part is at the bottom and the three holes are at the top.
- 3 Place the guide foot below the Z-foot and align the holes on the guide foot with the holes on the Z-foot.
- 4 Place the four Phillips screws through the bottom of the guide foot into the Z-foot and tighten.



<i>Insert</i>	<i>Number of Spots</i>
1.3 mm	0
1.5 mm	1
1.8 mm	2
2.3 mm	3
2.7 mm	4



# Fraction Collection Valve Installation (Optional)

## Low Mount

The fraction collection valve is installed on the guide foot.

To install the fraction collection valve:

- 1 Place the valve on top of the guide foot as shown in the photo. Align the two holes on the bottom of the valve with the holes on the guide foot. Attach the valve to the guide foot using the two Phillips screws included with the valve.
- 2 Connect the black wiring from the top of the valve to the FC VALVE port on the side of the Z-arm.



FC valve installed on the guide foot

## Tube and Wire Routing Strip Installation

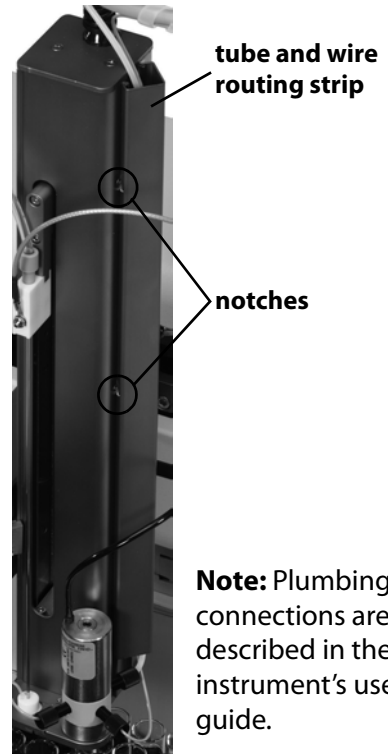
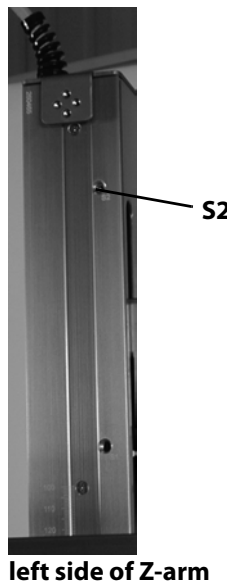
The tube and wire routing strip is included with the fraction collection valve.

To install the tube and wire routing strip:

- 1 Using the 3 mm Allen wrench included in the accessory package, loosen the stop pin so that it is flush with the right side of the Z-arm.

**Note:** The stop pin is installed on the left side of the Z-arm in the hole labeled S2.

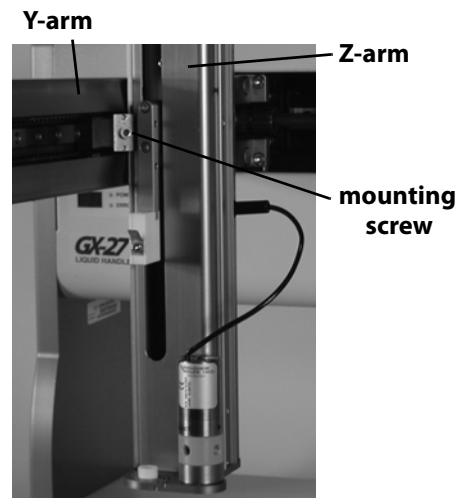
- 2 Orient the tube and wire routing strip so that the side with two smaller notches is on the left.
- 3 Slide the tube and wire routing strip over the two raised rails on the right side of the Z-arm. The notch should line up with the hole in the Z-arm for the stop pin.
- 4 Fully tighten the stop pin. The tip of the stop pin should be visible on the right side of the Z-arm.



## Z-Arm Installation

Follow these steps to install the Z-arm:

- 1 Using the 3 mm Allen wrench included in the accessory package, loosen the mounting screw on the Z-arm mounting bracket located on the Y-arm. Turn counterclockwise to loosen.
- 2 Partially pull out the bracket. Do not remove completely.
- 3 Place the Z-arm into the mounting bracket. You will need to insert one side of the Z-arm into place at a time (back to front).
- 4 Tighten the screw on the mounting bracket until the Z-arm is secure.
- 5 The Z-arm will be set to its proper height as the final step of the installation. This adjustment is described on page 5.

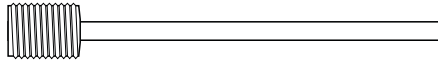


## Adjusting the Z Travel Height

The Z travel height is set by default to the S2 position (for 125 mm probes).

Follow these steps to adjust the Z travel height:

- 1 Using the 3 mm Allen wrench included in the accessory package, remove the stop pin (part number 260463) from the Z-arm. The stop pin is installed on the left side of the Z-arm in the hole labeled S2.



stop pin

**Note:** If you will be setting the Z travel height to 175 mm, you will not use the stop pin. If the stop pin is not being used, it should be stored for future use.

- 2 Insert the stop pin in the proper hole on the left side of the Z-arm.

- S1 for 56 mm probes
- S2 for 125 mm probes
- No pin installed for 175 mm probes

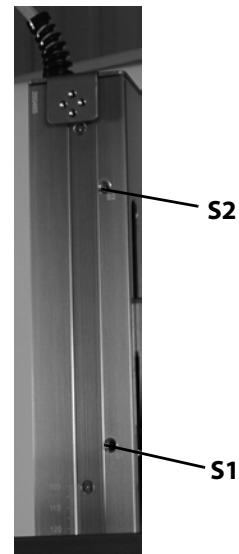
- 3 Using the 3 mm Allen wrench, tighten the head of the stop pin until it reaches a hard stop.

**Note:** The stop pin is inserted in a hole on the left side of the Z-arm and as it is tightened should enter the adjacent hole on the right side of the Z-arm. The tip of the stop pin is visible on the right side of the Z-arm.

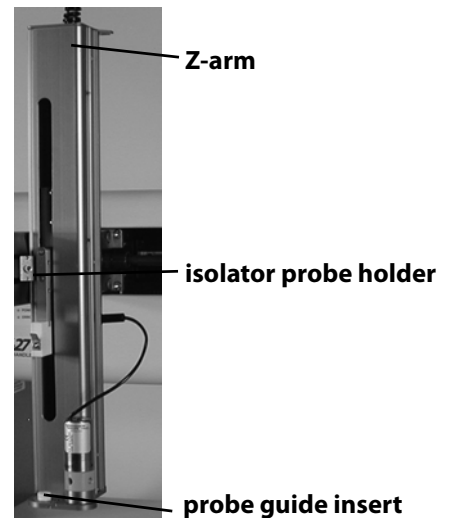
## Probe Installation

There are different probes available for use on the instrument. Depending upon your application, you have purchased the appropriate probe and guide foot. When installing the probe, refer to the following procedure and diagram that show where they are installed on the Z-arm.

To install the probe on the Z-arm, insert the probe into the top of the isolator probe holder and pull it through until the tip of the probe is in the probe guide insert.



left side of Z-arm

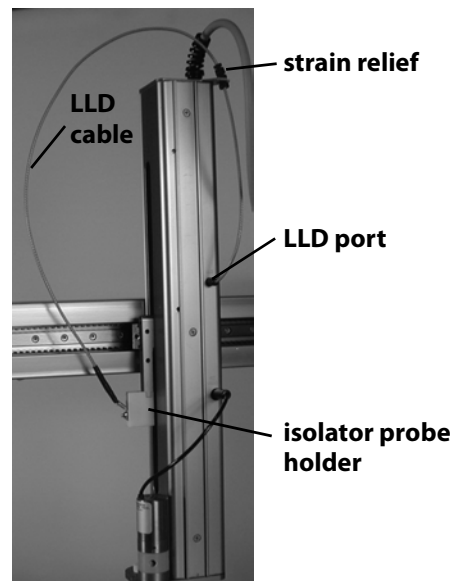


## LLD (Liquid Level Detection) Cable Installation

To install the liquid level detection cable assembly (part number 260461126):

- 1 Tighten the hex nut on the front of the isolator probe holder.
- 2 Place the metal slot end of the cable over the metal tab on the isolator probe holder.
- 3 Place the strain relief in the bracket at the top of the Z-arm.
- 4 Plug the other end of the cable into the LLD port on the right side of the Z-arm.

Before proceeding with the final Z-arm height adjustment, complete all of the installation steps for the instrument, including locator pan installation, accessory installation, rear panel connections, and plumbing connections. These instructions can be found in **Chapter 2, Installation**, in the user's guide included on the documentation CD that is shipped with the instrument.



## Final Z-Arm Height Adjustment

Follow these steps to adjust the Z-arm to the proper height.

- 1 Locate one of the Z-height adjustment tools that was shipped with the instrument.
- 2 Using the 3 mm Allen wrench included in the accessory package, loosen the mounting screw on the Z-arm mounting bracket and slightly raise the Z-arm.
- 3 Place the Z-height adjustment tool under the Z-foot of the Z-arm.
- 4 While holding the adjustment tool in place, use the other hand to carefully lower the Z-arm until it lightly rests on the adjustment tool.
- 5 Tighten the mounting screw on the Z-arm mounting bracket so the Z-arm is secure.
- 6 While holding the adjustment tool in place, slide the Z-arm off the tool. Ensure that the bottom of the Z-arm lightly rubs against the adjustment tool as it moves. Repeat steps 2 through 5 until this is true.

