

## VGA for Zeeman Adapter Kit

### Installation Instructions

The VGA for Zeeman Adapter allows the VGA (Vapor Generation Accessory) to be used with the SpectrAA 240Z/280Z instruments. The adapter allows installation of the following cells in the sample compartment.

- Mercury flow-through cell
- Standard hydride absorption cell
- ETC 60 cell

In all cases, a VGA 77 is required. The ETC 60 is required for hydride analyses.

#### NOTE

The VGA 77 and ETC 60 are supplied separately.



Figure 1. Installed ETC with VGA

### Assembly

The following instructions outline the steps required to assemble and change cell holders of the VGA for Zeeman Adapter. When assembled the adapter is hooked over the sample compartment.

The VGA for Zeeman Adapter is shipped with the Standard Cell Holder and a bracket for the ETC 60 Workhead.



Figure 2. Standard Cell Holder, rear view (left) and ETC 60 Bracket, side view (right)

## Adapter and Standard Cell Holder Installation

### To install the adapter:

1. Remove the PSD 120 autosampler (if present).
2. Remove the Zeeman workhead from the instrument.

Refer to your sampler and instrument manuals for detailed instructions.

### WARNING



### Heavy Weight Hazard

The workhead weights approximately 16 kg (35 lbs). To avoid injury or damage always handle carefully.

## Cell Holder and Adapter Removal

The standard cell holder must be removed to allow installation of the ETC 60 Workhead.

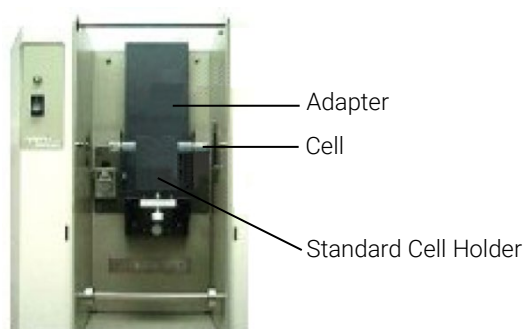


Figure 3. Adapter, standard cell holder and cell inside sample compartment

1. Lift the cell holder up to unhook cell holder from the adapter mounting.
2. Lift the adapter out of the sample compartment carefully avoiding the crossbar.

### NOTE

Now is a good time to develop a method and align the lamps.

## Installing the Workhead Bracket Adapter and Bracket

1. Lower the hooks of the ETC Bracket onto the pivot points of the bracket adapter.

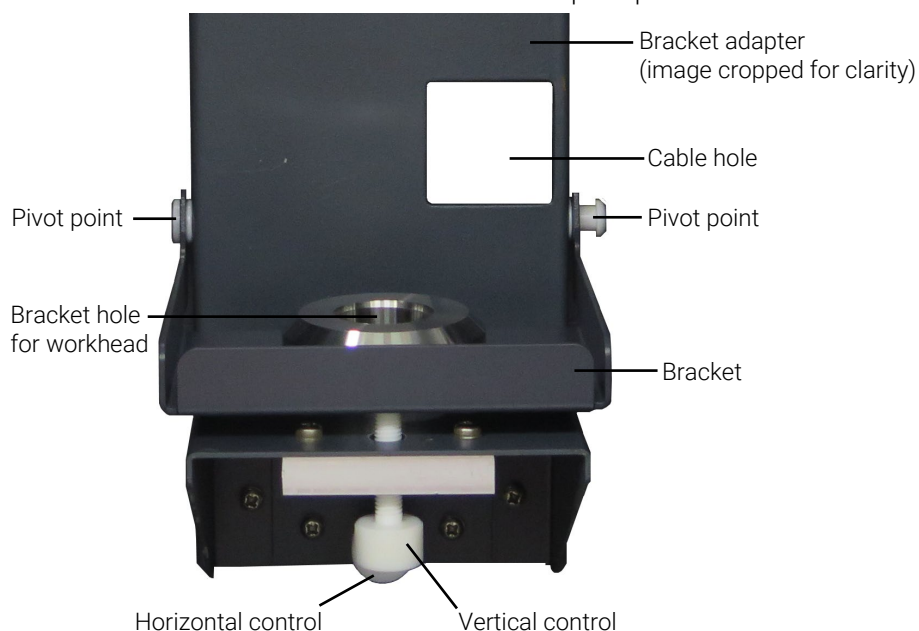
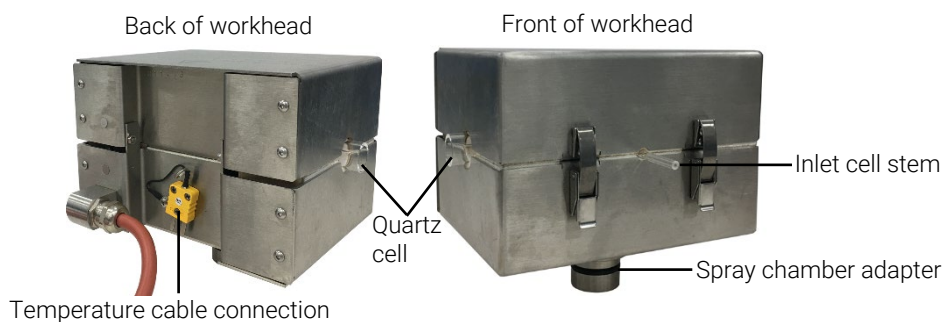


Figure 4. Workhead bracket adapter fitted with bracket

2. With the Zeeman Workhead removed, hook the adapter fitted with the ETC 60 bracket on the top rear edge of the sample compartment. See Figure 1 on Page 1.
3. Continue to 'Installing the Workhead'.

### Installing the Workhead



**Figure 5** The ETC 60 workhead

#### To install the workhead:

1. Connect the temperature sensor cable to the workhead.

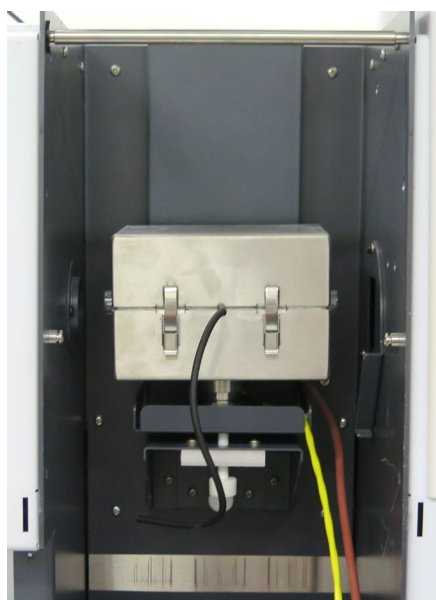


**Figure 6.** Temperature cable connected to the workhead. An older style cell heater cable is shown.

#### NOTE

The pins on the connector are sized differently and will only fit one way.

2. Fit the ETC 60 workhead into the hole in the bracket and push down firmly to seat it in the bracket. See Figure 4 on Page 2.



**Figure 7.** ETC 60 workhead installed

3. Ensure the two cable curves down to the rear of the sample compartment and then out towards the front of the AA.

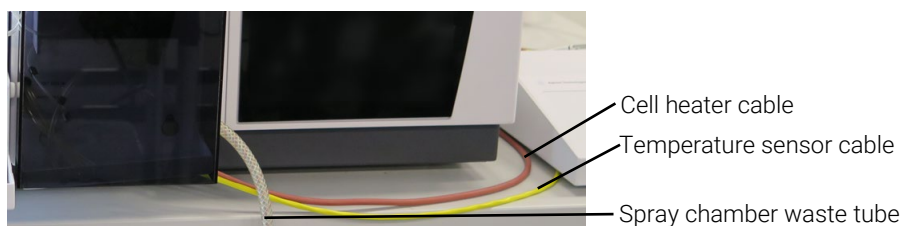


Figure 8. ETC 60 cable layout

### CAUTION

The cables must be lying naturally with no strain on them; otherwise, the workhead may be pulled out of alignment.

4. Plug the cell heater and temperature sensor cables into the appropriate sockets in the rear of the Temperature Control Module.

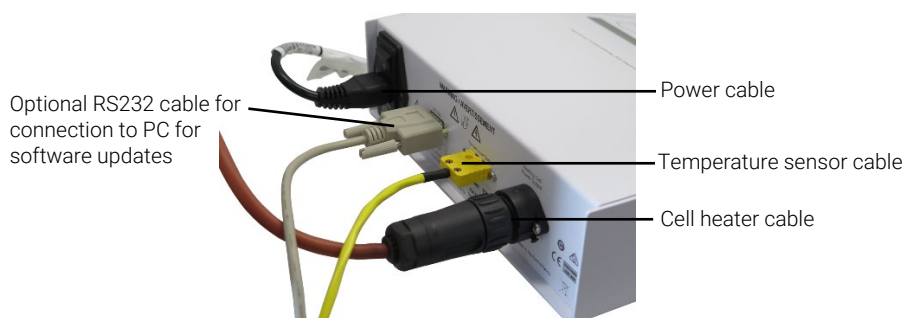


Figure 9. Cable connections on the back of the ETC 60

5. Ensure the ETC power switch is in the OFF position.
6. Plug in the power cable and optional RS232 cable (if required).

### NOTE

The RS 232 connector on the back panel of the control module is used to download software upgrades to the ETC 60. Plug in the RS 232 cable (option) to this connector and connect the other end of the cable to your computer. This connection allows direct control of the temperature settings from within the SpectrAA software, version 5 or later.

7. Optimize the workhead position for maximum light transmission by using the burner adjustment controls on the adapter bracket. See Figure 4 on Page 2
8. Check the rotational alignment of the workhead by rotating it to maximize the signal.

## Installing an Absorption Cell

To install an absorption cell:

1. Carefully slide the black fluoroelastomer tubing onto the inlet cell stem.



Figure 10. Black fluoroelastomer tubing on the inlet cell stem

### WARNING



#### Sharp Objects

Broken glass can cause severe cuts to hands. Handle the workhead with care, as the sidearm of the quartz tube is fragile and easily broken.

2. Undo the latches on the ETC 60 workhead cover and open the cover.
3. Carefully place the cell into the workhead. Ensure that the inlet stem is located in the groove at the front of the workhead.



**Figure 11.** Cell placed in workhead

4. Carefully close the workhead cover and secure the latches.
5. If necessary, reoptimize the workhead position using the adjuster controls.

### Installing the VGA

1. Hook the VGA into the slots at the front of the sample compartment.
2. Connect the black tubing from the gas-liquid separator of the VGA to the absorption cell. Refer to your VGA 77 Operation Manual.

For information on how to use the 240Z/280Z AA with the ETC, see the ETC User's Guide provided with the accessory or the SpectrAA Help.

## Alignment and Optimization

### NOTE

This instruction sheet assumes the Zeeman workhead has been moved out of the light path and the lamp has been optimized before the installation of the adapter. To optimize the lamp, refer to the appropriate instrument operation manual.

The adapter has two alignment screws to allow optimization of the cell position in the optical path. To align the cell, go to the 'Optimization' page and adjust the horizontal and vertical adjustment screws to achieve maximum light throughput. See Figure 4 on Page 2

## Software

To use the VGA for Zeeman accessory with the SpectrAA 240Z/280Z Zeeman systems you must develop a vapor method.

To complete an automated sequence of elements in one run you must develop and run a vapor sequence.

When you develop a vapor method set the atomizer type to 'Cold vapor' when the element being determined is Hg. Select 'Electric Hydride' when determining any other hydride element with the ETC 60 (to atomize the analyte hydride).

### NOTE

Ensure background correction is deselected on the 'Optical parameters' page, or errors will result. This is because SpectrAA Zeeman systems do not have deuterium background correction.

Refer to your SpectrAA Help for further information on the development and running of methods and sequences.

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This information is subject to change without notice.



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