

Installing an AVI-400 Vibration Isolation System With a Carl Zeiss Supra, Ultra, and FIB-SEM

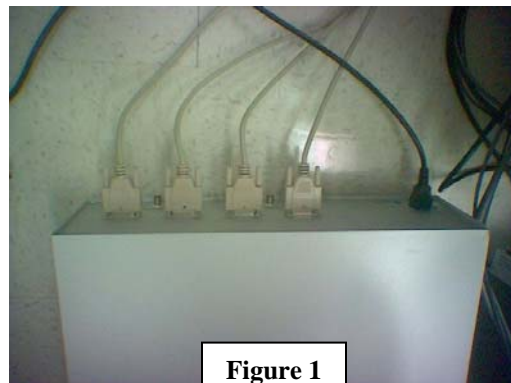
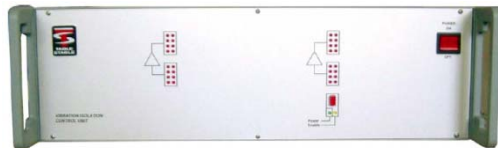
These instructions are meant to supplement, not replace, the AVI-400M instruction manual. Please read the complete instruction manual.

Items Included:

- Two Isolation Modules
- One System Controller
- Four D-Sub Cables and One Power Cable
- 2 mm Hex Wrench and Spanner Wrench
- AVI Instruction Manual and Zeiss Install Guide
- Two Aluminum Mounting Plates
- Four Wood Blocks
- Metal Shims

Unpacking the Isolation System

1. Remove the two AVI modules, controller, four controller cables, power cord, installation manual and tools from box.
2. The back of the controller has four connectors labeled A, B, C D. The isolation modules will also be labeled with A & B on one module and C & D on the other. Connect the cables from modules to controller, paying attention to correct linkage (module port A to controller port A, etc.). See Figure 1. Marking each end using a felt tip pen with the corresponding port letter is helpful.



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Placing the Plates and Modules

1. Remove side panels of SEM column, if possible.
2. Use SEM leveling feet to raise column at least 6" off of the ground. Place wood blocks under leveling feet to increase height if necessary.
3. Remove casters and caster bolts (if necessary).
4. Place first aluminum mounting plate on ground beneath SEM. 28" sides should be in front and back, 26" sides should be on the sides. Use a level to make sure the plate is sitting level. Press down on all corners to make sure that it is resting flush on the ground. If it is not level or flush, use shims to make sure it is level and sitting evenly on the ground on all sides.
5. The modules will be placed under the caster plates. Slide the AVI modules under caster plates so that the modules are spanning the underside of the column from side-to-side (not front-to-back). Place them as far outboard as possible without touching the sidewall of the legs. The cable ports on each module should be facing inwards, towards each other.
6. Slide second mounting plate on top of AVI modules, once again with 28" sides in front and back and 26" sides on the left and right, centered underneath the SEM caster plates. Ensure that neither the AVI modules nor the mounting plate will be in contact with the SEM side panels when re-attached. Ensure that neither the AVI modules nor the mounting plates are in contact with the SEM's legs in front or rear.
7. Once the system is in position, use SEM leveling feet to lower SEM until it rests on the mounting plate. Raise the leveling feet until they are up and out of the way.



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Adjusting the Modules for Load of SEM

1. Use 2 mm hex wrench (included) to remove end plates of modules.
2. Adjust the modules for the weight of the SEM.

- A. There should be a gap above and below the cross brace on each central column, allowing for approximately 2 mm of travel on each side (see Figure 3).

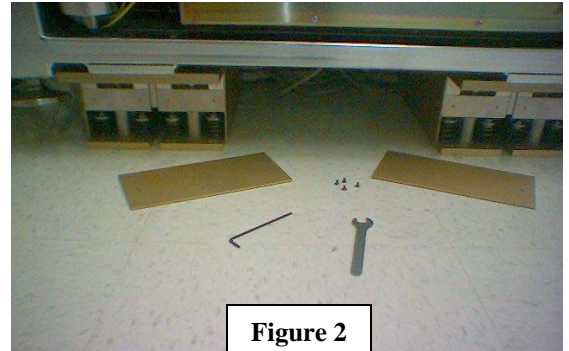


Figure 2

- B. Use the M6 spanner wrench (included) to turn the adjustment nuts located on top of the support springs (see Figure 4). Turning the wrench to the RIGHT lowers the modules and INCREASES the upper gap (between the central stopper nut and the cross brace). Turning the wrench to the LEFT raises the modules and DECREASES the upper gap.

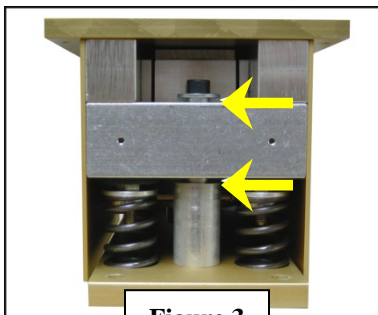


Figure 3

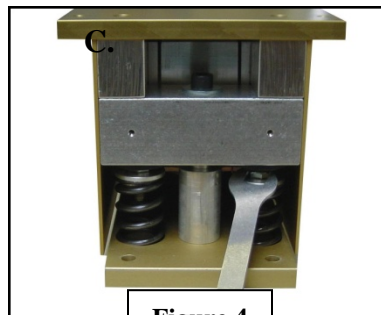


Figure 4

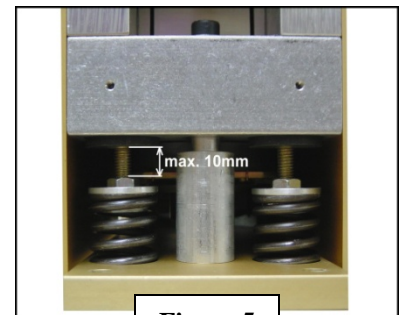


Figure 5

- D. Count the number of turns on each nut; adjust all nuts as equally as possible. It is not essential for the gap to be exactly the same on all central columns.
- E. Do not turn the nuts too far or you may damage the system. Under no circumstances should there be over 10 mm of exposed threads (see Figure 5).

3. Replace end plates on the modules.



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Verifying Performance of the Isolation System

1. Replace SEM side panels (if necessary). Check that all cables to isolation system AND SEM are connected loosely. Check to make sure nothing is coupling the SEM to the ground or other vibration sources.
2. Plug the power cable into the rear of the controller. Flip 'ON' switch on the front panel. Press red button to enable active isolation.
3. After several seconds the enable LED should turn solid, indicating the system is isolating properly. When tapping the SEM lightly, red lights on controller should light up briefly and then go out.
4. If one or more light stays on continually, if lights do not remain off in normal condition, or if lights will not activate with tapping, then the sensors are being overloaded. Please double check the following: that nothing is touching the modules, that all cables to modules and SEM are slack, and that the modules are adjusted properly for load. If all of these are in order and the lights are still behaving abnormally, please contact Herzan.



Please contact Herzan with any questions, support@herzan.com or 949-363-2905.



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