



# **TetraTek Products, Inc.**

***We Put It All Together***

## **Large Multiaxis Positioning Robot**

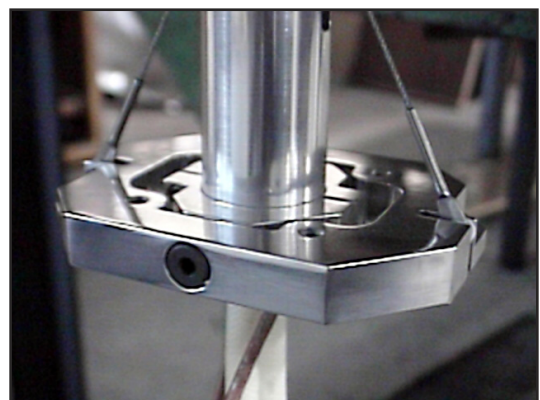
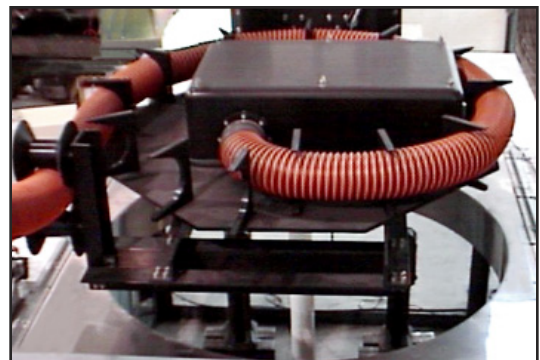
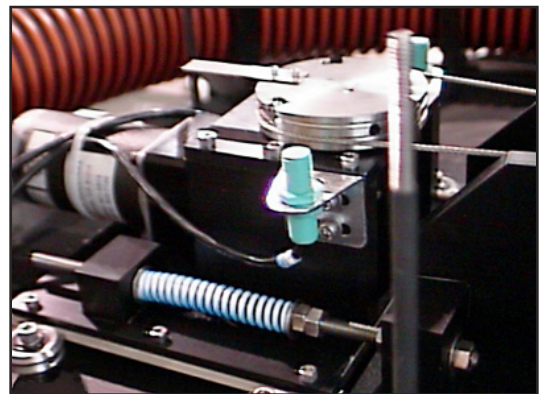
TetraTek has manufactured a vertical travel, rotational (azimuth), and angular gimbal (pitch) robot to position samples within a test chamber.

This assembly includes:

- A hollow stem to support the gimbal and test load.
- Fluid lines with disconnects for the test load.
- Electrical cables to attach and monitor the test load.
- A vertical shuttle to hold the rotational (azimuth) and gimbal (pitch) motor drives.
- A lead screw driven vertical drive system with stepper motor, position encoder, and brake.
- A vapor sealed hose to protect and isolate the fluid and electrical connection lines with a ceiling mounted hose retraction and tensioning assembly.
- A linear rail and bearing assembly to support the vertical shuttle.
- A rotational (azimuth) drive stepper motor mechanism and drive control.
- A gimbal (pitch) drive stepper motor and drive control.
- A sensor system to monitor system motion and position.

The entire structure is fabricated from black anodized aluminum. A vapor sealed enclosure is furnished to house the top of the hollow product support stem and the rotational and gimbal motor mechanisms. The hollow stem and the test item support gimbal plate is electropolished. An inflatable gasket seals against the stem to maintain a vapor seal.

An Allen Bradley PLC control system monitors and controls the robot.



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