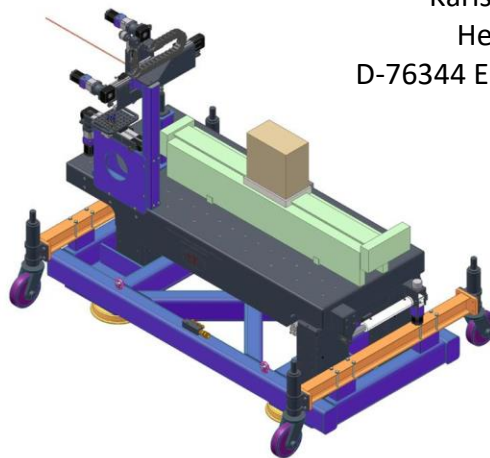


# Four Axis High Precision System



## Customer:

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This high precision table consists of a large, black granite top, with working surface measuring 2000 mm by 800 mm, flat within .1 mm, and containing a grid of M6 holes for mounting required items. The granite is 254 mm thick and weighs 1200 kg, thus providing a highly stable platform for sample stages, detector, 205 kg detector translation system, and the fast sample exchange system. Total loading on the table is 1500 kg. It remains stable within 1µm for up to 3 hours. Removable jacking casters are provided for transporting the system from receiving areas to test and acceptance areas and then to the destination. Within the hutch, the table will be periodically moved off line when other kinds of experiments are scheduled. For this purpose, air bearing supports are provided under the frame for ease of movement on the smooth marble floor. In order to avoid the need to survey the table back in parallel to the beam when it is returned to operation, motorized yaw adjustment of  $\pm 3$  degrees is provided. The yaw motion is centered on the nominal sample position. Transverse location of the sample is accomplished within the stack of sample stages. Additional requirements for table movements to accommodate various experiments include motorized vertical movement of 200 mm with a resolution of 0.01 mm, and 2 degrees of pitch movement with a resolution of 0.005 degrees. The center of pitch rotation is directly below the sample. Under the sample is a single jack with capacity of 25 kN and interfacing the table with a spherical plain bearing. At the downstream end there are two jacks with capacity of 10 kN each and tied together with a common drive motor. The interface to the table consists of a line of ball transfer units, ensuring that the table is level transverse the beam.

