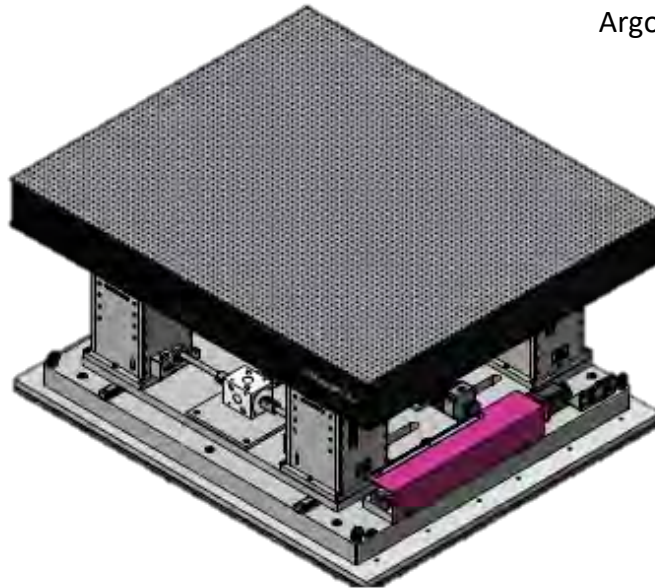


# APS 2 Degree of Freedom Optical Table



**Customer:**  
Argonne National Laboratory  
9700 S. Cass Avenue  
Lemont, IL 60439



This optical table is a 2-axis motion system designed to lift a 250 lb load and move +/- 25 mm both horizontally and vertically for Argonne National Lab. The horizontal motion is based on a linear slide design that ADC has continually improved in the past few years to meet the high demands of the industry. The linear motion is supported by THK HSR25 guide rails and bearings. A preloaded 16x2 mm ball screw coupled to a NEMA 23 motor and a 20:1 gear reduction allows the unit to have a 0.5  $\mu\text{m}$  resolution. The vertical motion consists of 2 ADC DJ450-50 jacks that are driven by one Nema 23 motor and a 20:1 gear reduction, which is then coupled to a Tandler spiral bevel gear box which allows the jacks move simultaneously. The simultaneous motion is preferred to avoid potential binding of the jacks which is common with driving each jack individually. NB SVS 6100 crossed roller bearings provide a stable and smooth platform for the vertical motion. A 2 in thick Newport bread board will be mounted on top of the jacks, by the customer, and will provide a stable base for mounting equipment as necessary. To learn more about APS please go to: <http://www.aps.anl.gov/>

