

THE SHOW MUST GO ON

Nook Customized Components Fit Talk Show Set...

By a Thread

Chicago Scenic Studios, Inc. (CSSI) knows a thing or two about set construction. From studio sets and exhibits to special-event stages and theatrical productions, CSSI combines practical applications of technology, craftsmanship and project management into each assignment. These assignments have included television sets for the *Big Ten Network*, scenic pieces for *The Addams Family* musical and plenty of technological bells and whistles for various Shakespeare productions.

When a broadcast set for an afternoon talk show in Chicago was needed—one that required nearly 50 points of motion—CSSI was called in to provide some much needed innovation. “The set design included some engineering and construction challenges,” says Mark Ewing, CSSI head of automation. “We had to develop a system for vertically lifting and retracting transparent, 300-pound acrylic walls that contain light boxes so they could be hoisted away from the set with rigging.”

A series of mechanized devices supported numerous stage configurations and provided great flexibility, but there was a bit of a snag when it came to controlling the walls.

“The walls are 16-feet high and the studio ceiling is 30 feet high,” Ewing says. “We needed a means for cutting the height of the wall in half by lifting and retracting the lower portion inside the upper portion so the collapsed eight foot wall could be removed from or brought onto the set. We needed to achieve this movement relatively quickly and quietly to facilitate fast set changes. We were also working with frosted Plexiglas with double-sided light boxes that you can see through and needed to hide the linear motion

control system in the side of the upper wall in a space that only provided a few inches in which to work.”

Enter Nook Industries.

CSSI had used linear motion systems from Nook in the past and knew from experience that a customized solution was possible. Nook offered a 50 mm ball screw solution in which the system uses an AC motor that drives a miter gearbox to turn the ball screws, raising the ball nut on the lower wall and lifting the wall.

“There were not any standard systems that could accommodate an eight-foot travel length in such a small space,” Ewing says. “Nook provided an effective solution with specially configured ball screws having a custom length and diameter.”

In addition to the travel length and footprint challenges, the retractable wall system had to move the wall at a rate of six inches per second without creating excess noise, resonance or vibration. Because the walls needed to retract while other portions of the broadcast set were in use, the retraction had to be relatively quiet and vibration free.

“We had no time for trial and error or trying different prototypes of possible systems. We needed something that worked out of the box and had

zero margin of error.”

Nook's success helped lift the 300-pound set walls over a travel length of eight feet, dampened vibration and resonance with 50 mm diameter lead screws and achieved six-inches-per-second-lift speed with steep pitch thread pattern. This all occurred on-time and on-budget without any further need to customize the television talk show set.

“We turned to Nook because we had confidence in their engineering expertise and ability to come through for us,” Ewing adds. “Nook's responsiveness contributed to the on-time, on-budget delivery of this sophisticated, technically challenging project.”

The end result was a television production set that provided multiple ways for guests, bands and special sets to be revealed. It further enhanced Nook's reputation as a component manufacturer that can offer timely, customized solutions on tight deadlines without compromising quality. Most importantly, they saved CSSI in a pinch when the show had no choice but to go on.

For more information on this or other unique power transmission applications, visit www.nookindustries.com.

