

APPLICATION SOLUTION: CT Scanning Gantry



Product Family: Electric
Product Used: MXE-S Rodless Electric Actuator
Product Type: Standard with custom screw & nut assembly

Application Requirements:
Stroke: 48 in (1.2 m) + 60 in (1.5 m)
Speed: Complete stroke within 30 sec.
Load: 3000 lb (1120 kg)

Application Description:

Equine X-ray CT imaging with rapid 3D imaging of the lower limbs and head without subjecting the horse to general anesthesia.

Challenge:

Traditional equine CT (Computerized Tomography) scanning requires full anesthesia of the animal and moving the horse into the stationary CT scanner unit. This new design moves the 3,000 lb (1,120 kg) CT scanner along the inside of two guide/support columns, allowing a lightly sedated horse to simply stand in position. The donut shaped CT scanner is initially flush with the ground. It lifts vertically to scan both front or rear legs. It is rotated perpendicular to the ground to image the horse's head and neck.

Tolomatic Solution:

Two MXE63S Electric Rodless Actuators were selected for Z axis motion for their high thrust capacity. For the X axis transition two MXE40S Actuators were chosen. For increased safety a custom ball screw safety spring assembly and keyed motor mount were added.

Customer Benefit:

- Smooth, precise motion of heavy CT scanner unit results in high quality imaging allowing detection and diagnosis of subtle defects
- Flexible limb and head/neck scanning
- Rugged construction is suited to the demands of use with horses
- Horses require only light sedation in part because of quiet component movement
- Future designs will be mobile allowing on-site use at stables