

CATENARY ARCH

MAINTENANCE INSTRUCTIONS

GENERAL INFORMATION:

Catenary Arch is an arch assembled out of numbered blocks. The blocks are laid out on a horizontal board and then tilted into a vertical position. In spite of the fact the blocks are relatively slender, they stand due to their catenary shape. Visitors can compare the shape of the wooden arch to the shape of a freely hanging chain and see that the shapes are the same. Graphics, drawings and photographs explain why the catenary is a good shape for an arch; the mathematical formulae for the catenary is also presented.

General Cleaning:

Most of the exhibit may be cleaned with a soap solution including the polyurethane blocks. The acrylic fences and graphics panel should be cleaned with a plastic cleaner and a soft grit-free rag.

Damper Adjustment:

A hydraulic damping mechanism mounted in the tilting panel prevents the arch panel from falling too quickly. An adjustment on the hydraulic cylinder controls the rate at which the panel falls when released. Adjustment is done from the underside of the exhibit by turning the knob in the side of the cylinder. (This knob will only adjust the down direction as the cylinder's extension is 'free-flow' or not damped.) The damper should be set to keep the panel from slamming the table and should not be adjusted any harder as this may cause damage to the hinges if a visitor can push down on the panel while it is dropping.

Base Hinge Adjustment:

The base hinge is equipped with an adjustable friction clutch. The nylock nuts that adjust the tension in the clutch are accessible from the sides of the hinge. The tension should be only enough to keep the blocks from sliding down the panel as it is raised to vertical. Any additional friction will only make it harder to raise the base when another visitor first approaches the exhibit.