

Naval Railgun Testing



U.S. Navy Railgun Auto-Loader Test (screen shot via NAVSEA Warfare Centers Dahlgren video quicklook report N00178-17-QLR27)

What Is It?

The EM Railgun launcher is a long-range weapon that fires projectiles using electricity instead of chemical propellants. Magnetic fields created by high electrical currents accelerate a sliding metal conductor, or armature, between two rails to launch projectiles at 4,500 mph.

How Does It Work?

Electricity generated by the ship is stored over several seconds in the pulsed power system.

Next, an electric pulse is sent to the railgun, creating an electromagnetic force accelerating the projectile up to Mach 6.

Using its extreme speed on impact, the kinetic energy warhead eliminates the hazards of high explosives in the ship and unexploded ordnance on the battlefield.

More Powerful & Faster Than Ever, the U.S. Navy Railgun Makes its Public Debut

Story Contributor: Bruce Crowder, District Sales Manager, Duff-Norton

CUSTOMER CHALLENGE

Many of our customers' projects are classified, and we often don't know at the time of order exactly where our screw jacks will end up. In this case, we only knew the customer was looking for reliable components for an elevation adjustment in a critical new technology. They also required units capable of withstanding a powerful recoil and exposure to harsh outside elements. Nearly two years later, we now know exactly where our products have been installed. An article posted in the *Business Insider* reports the Navy has been testing a new Railgun Auto Loader at the Naval Surface Warfare Center Dahlgren Division in Virginia.

DUFF-NORTON SOLUTION

Two 150T Screw Jacks with a 70" travel were installed with Anti-Backlash nuts, keyed with solid bar stock threaded ends to accommodate a double clevis fitment, 20 HP IP55 high ratio gearmotor with encoder and brake, full/dual seals, limit switches/enclosure, and special lubrication, along with couplings and shafts to enable mechanical synchronization.

The most powerful large-caliber high velocity gun in the U. S. Navy's arsenal could soon see deployment aboard Zumwalt-Class (guided missile) destroyers, with Duff-Norton screw jacks carrying the load. [See the full article and a video showing the testing currently underway.](#)



Shown front and center, a pair of Duff-Norton 150T Screw Jacks controlling the barrel elevation on the The Office of Naval Research (ONR) futuristic electromagnetic railgun. (Screenshot via Business Insider - Military & Defense)