

AR® Ring Damper

High Frequency Vibration Control
for Guy Cables and Broadcast Towers



APPLICATIONS

The AR® Ring Damper is a vibration control damper for guy wires supporting tall towers. The units are mounted along the cable at pre-selected positions from the end of the guy cable. Multiple units may be required depending on the size and length of the guy cable. Installation position along the cable is close to ground level.

Vibration may occur in any direction of a 360 degree circle around the cable axis depending upon the orientation of the cable relative to the wind direction. Further, the vibration may be resolved into vector components parallel to and perpendicular to the plane containing the ring. Thus, the damper must provide energy absorption in both planes simultaneously during the vibration.

Expert engineering customizes the product application and installation to the design features of the tower and guy cables. This HF vibration control system is specified by optimizing the diameter of the hoop, the size of the clamps, the number of units and spacing of the ring dampers, and occasionally the composition of the material.

This solution is available in models with ring diameters and clamp sizes to fit a wide range of tall towers and guy cable.

SPECIFICATIONS

- Steel Spring Ring 12", 15" 18" and 20" Models
- Vibration Control Clamps 5 sizes scaled for guy cables with O.D. ranging from <1.0" to 3.0"
Ring assembly holds 2 clamps to handle a range of guy cable levels and lengths

HOW IT WORKS

The dampers vibrate at high frequency along with the guy cable creating an impact against the cable with each cycle of vibration, thus dissipating energy by kinetic impact against the clamp. Frequency of vibration is typically from 5 Hz to 30Hz. The design of the device is rugged enough to resist heavy ice and hurricane force winds.

PERFORMANCE TESTED

AR® Ring Dampers have been in service for more than 10 years, with no reported failures. The product has been tested at NEETRAC for strength and vibration control.

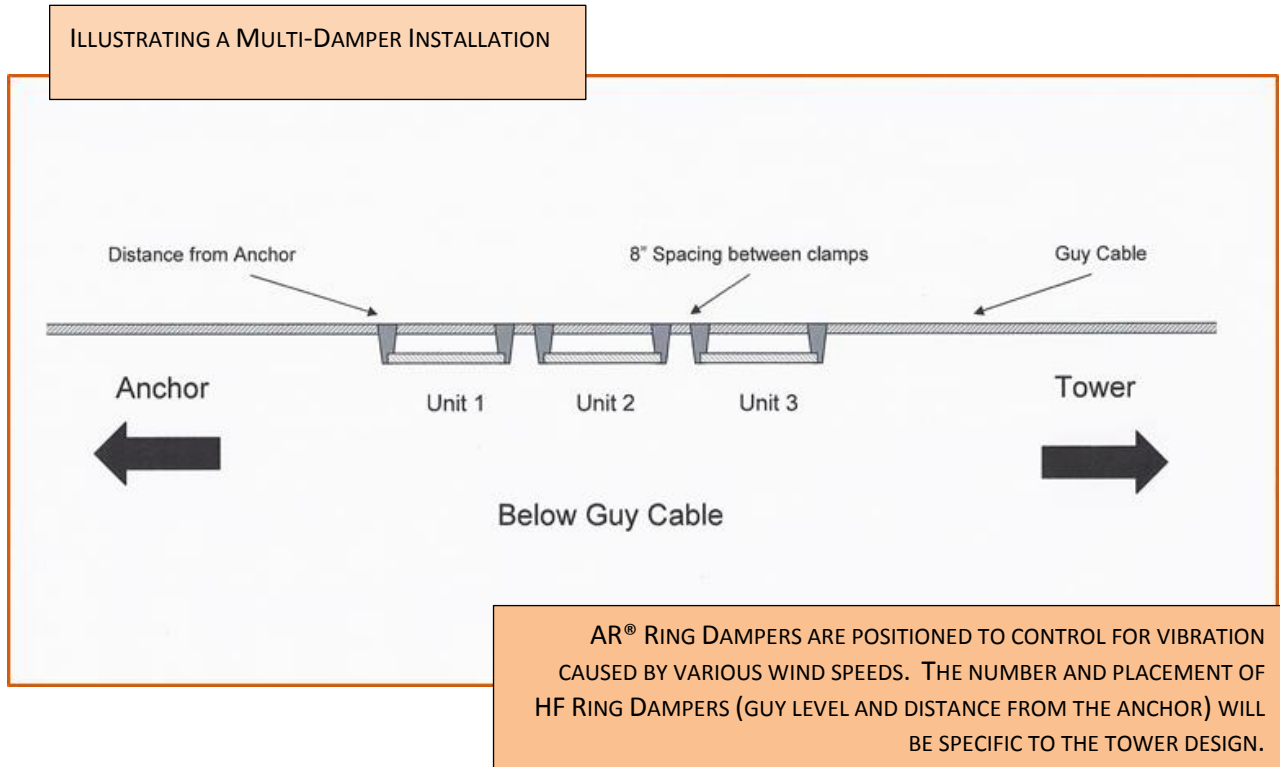
A steel spring ring increases the compressive strength of the unit. By test, it was found that compressive strength exceeds 1,800 lbs.

AR® Clamps have been strength tested at Helical Line Products. Slipping tests found clamp strength to exceed 1000 lbs. In tension tests, the clamp withstood 8000 lbs.

CONSTRUCTION AND IMPACT ON THE CABLE

AR® Ring Dampers are constructed of a steel hoop inside of two galvanized steel springs and two aluminum clamps for weight and strength. This HF damper is attached with the ring tilted along the cable direction and the clamps rotated downwards to grasp the cable. A single galvanized bolt and ANCO lock-nut secure the clamps to the steel cable. There is minimal structural loading on the cable because of its low profile, compact design and weight.

The smooth, round inner edges of the clamp and flexibility in clamp sizes makes the AR® Ring Damper suitable for a range of guy sizes and tower designs. Total weight is 18 lbs.



AR®CLAMP & RING SIZE		GUY CABLES OD RANGE
EXTRA LARGE	20"	2.50 +
	18"	
LARGE	18"	2.00 – 2.50
	15"	
MEDIUM	15"	1.50 – 2.00
	12"	
SMALL	12"	< 1.50