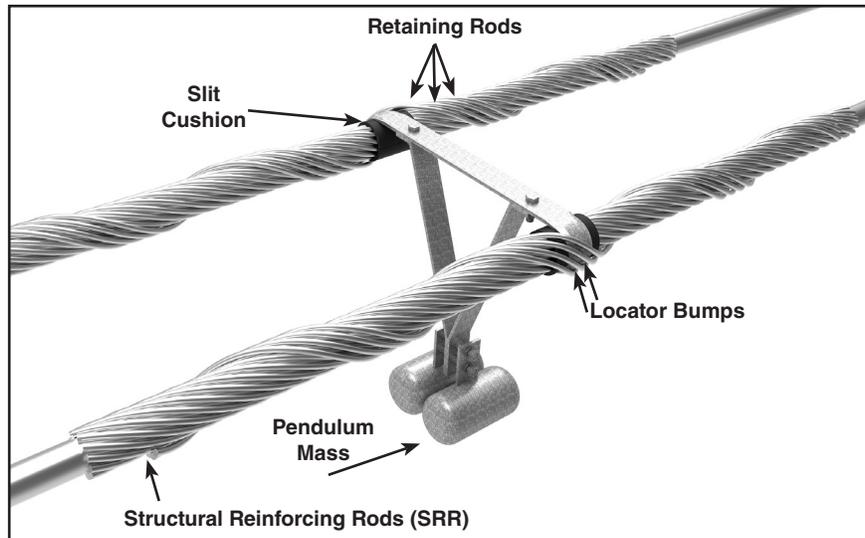




Detuning Pendulum

Be sure to read and completely understand this procedure before applying product. Be sure to select the proper PREFORMED™ product before application.

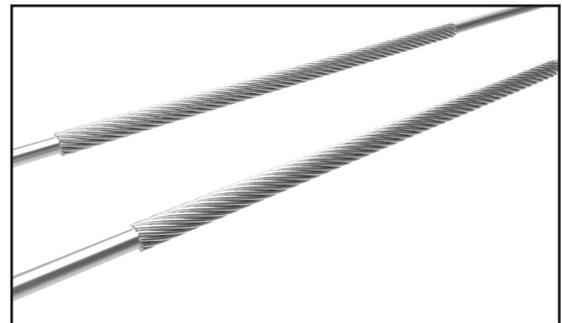


NOMENCLATURE

NOTE: The Detuning Pendulum is an anti-galloping device designed for single, twin, tri, and quad-bundled applications. The mass, number of weights, and torsion arm (i.e., center line distance between the conductor and the weights) will vary according to each particular span factor to which they are applied.

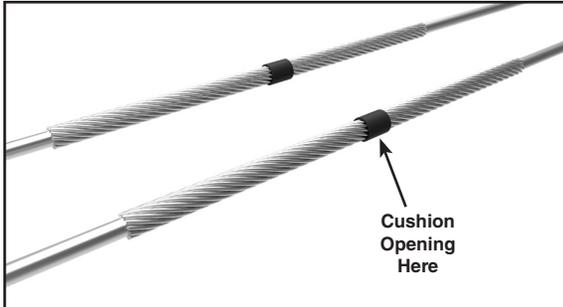
PLP will supply placement recommendations for the proper placement of the Detuning Pendulums. Placement of Detuning Pendulums are project-specific and must be followed in order to ensure proper performance of the product. If placement recommendations are not available, please contact PLP.

Step #2 Center the color code marks on the Structural Reinforcing Rods (SRR) with the mark on the conductor and apply the SRR to the first conductor. Repeat this step for the second, third, and fourth conductor depending on the configuration.

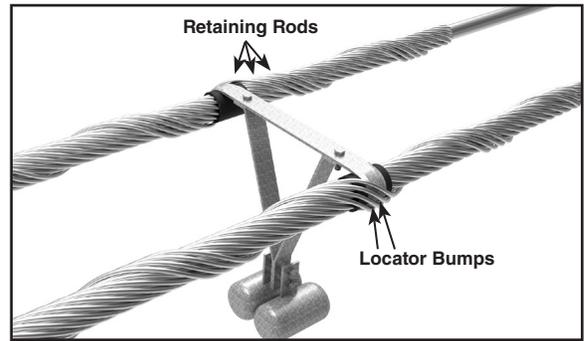


Step #1 Mark the conductor where the Detuning Pendulum will be applied. The pendulum placement should be within an accuracy of ± 3 feet.

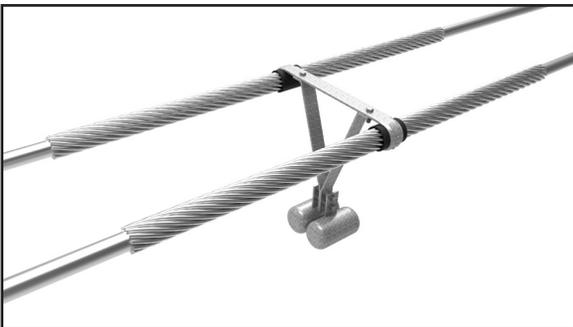
Step #3 Apply the slit cushion to the first conductor over the SRRs at the center color code mark and rotate the slit cushion around so that the open portion is facing downward. The slit cushion (shown below) is made from very tough and durable materials. In cold temperatures, it becomes stiff and somewhat difficult to spread open. It helps to keep in a warm place until it is applied. Repeat this step for the second, third, and fourth conductor depending on the configuration.



Step #5 Apply the retaining rods over the Detuning Pendulum and conductor on the first conductor. There are three locator bumps on the outside arm that show the location of the rods. Ensure that the center color code marks on the retaining rods are positioned between the locator bumps. Repeat for the second, third, and fourth conductor depending on the bundle configuration.



Step #4 Apply the Detuning Pendulum so that the arms of the pendulum are centered over the slit cushions on each conductor. Adjust cushions on the conductor if necessary to ensure that each arm is centered over the slit cushions.



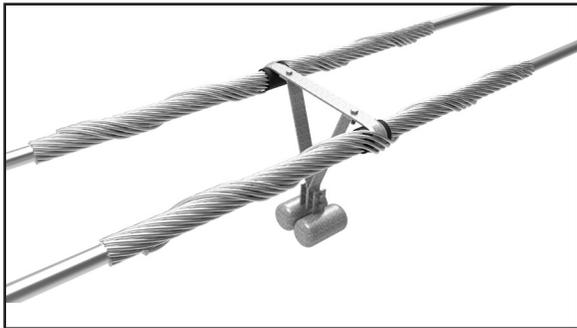
ADDITIONAL NOTES & GUIDELINES:

- Pendulums should be located at the positions indicated on the placement chart with an accuracy of ± 3 feet.
- The placement of the pendulums within the span could, in some instances, coincide with inaccessible terrain conditions. Should this occur, there are two alternatives which might improve access possibilities:
 1. Reverse the placement pattern in the problem span. Start measurements from the opposite end of the span. This approach may be used for any span, but it is important to reverse the patterns for the entire span and not just for a portion.
 2. It is possible to devise alternate placement charts, but this must be carefully done to maintain effectiveness of the units. These alternate charts can be provided on a span-by-span basis, if necessary. Contact PLP for more information on alternate placements.
- The additional sag caused by the weight of the pendulums is noted in the 5th column of the placement chart. It assumes the increase to be at the center of the horizontal (level) span at 30°F final unloaded.
- The tension increase caused by the weight of the pendulums is noted in the 6th column of the placement chart. It is computed for each span at 30°F final unloaded.

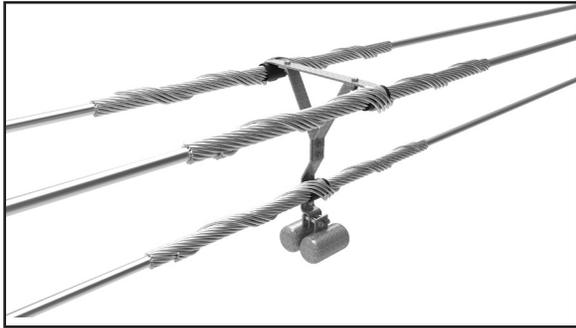
Step #6 Completed Installations.



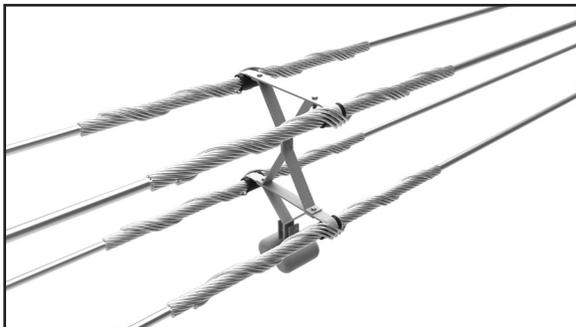
Single Detuning Pendulum



Twin Detuning Pendulum



Tri Detuning Pendulum



Quad Detuning Pendulum

SAFETY CONSIDERATIONS

This application procedure is not intended to supersede any company construction or safety standards. This procedure is offered only to illustrate safe application for the individual. **FAILURE TO FOLLOW THESE PROCEDURES MAY RESULT IN PERSONAL INJURY OR DEATH.**

Do not modify this product under any circumstances.

This product is intended for use by trained technicians only. **This product should not be used by anyone who is not familiar with, and not trained to use it.**

When working in the area of energized lines, extra care should be taken to prevent accidental electrical contact.

For proper performance and personal safety, be sure to select the proper size PREFORMED™ product before application.

PREFORMED products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.



PREFORMED LINE PRODUCTS

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