

Cobra



Dynamic Cabling System

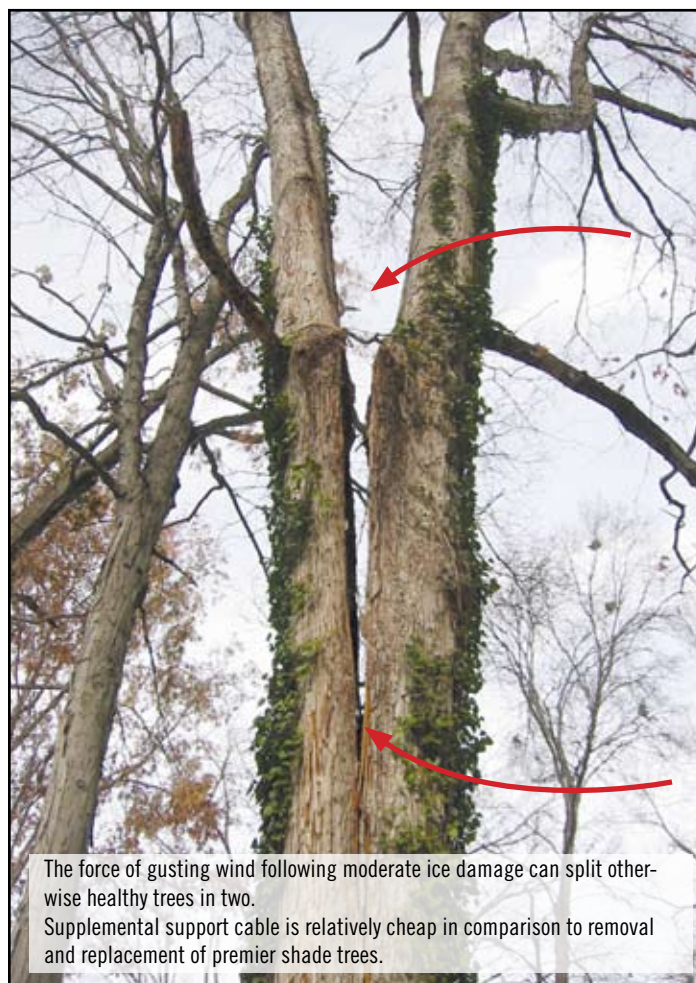
Tree cabling was developed in the early 1900's as an alternative to cutting down cherished and historic trees. Tree cutters (often moon-lighting utility workers) discovered that common steel utility wire, strung between branches could help keep wind and heavy ice from peeling trees apart, often isolating damage to above the cable. In time, this process became increasingly popular as an alternative to removing middle-aged "oddly shaped" trees and, as a sort of insurance policy for nearby structures.

Incredibly, since its discovery, tree cabling materials have changed very little. Although strong and cheap, steel wire used as dynamic restraint has virtually no capacity to absorb shock loading that occurs when mass moves against restraint. Just one example of this phenomenon requires that mariners dock their boat with rope instead of wire. The result of using wire could be devastating in the wrong conditions.

Cobra dynamic cable is an easy to install rope-like material that has excellent shock-absorbing properties. Made up of UV protected materials Cobra delivers restraint characteristics that mimic the tree's natural reaction to wind. In a gust, tree limbs usually collapse upward and then out in an exaggerated manner. Cobra is installed relatively loose in a manner that doesn't interfere with light wind exercising of growing wood tissue, but is there to halt excessive flailing that might cause over-stress to a limbs crotch.

Take the time to watch trees react to wind and we think you'll agree that dynamic cabling materials like Cobra are the best answer to a more natural supplemental support system.

According to the American National Standards Institute (ANSI), tree cabling should be monitored annually. Such inspection should be performed by a knowledgeable professional upon notification by and at the expense of the property owner. Inspection is necessary to manage potential hazards such as broken branches entangling cable or cable becoming stressed by the growing tree. In the US there are currently 3 choices for cabling mature trees that meet ANSI standards.



The force of gusting wind following moderate ice damage can split otherwise healthy trees in two. Supplemental support cable is relatively cheap in comparison to removal and replacement of premier shade trees.

WARNING

Supplemental support systems are not designed to hold dying trees together or prevent failure in the event of catastrophic weather.



Trees are different.

Even within the same species, two trees can have completely different architecture based on wind exposure. For example, an oak in the wind-protected forest grows tall quickly to reach for nourishing light. In open pasture where light is ample the same species will develop a broad yet flexible architecture that yields to high wind in what's considered nature's greatest "mass dampen structure." On a mountain side, where wind is strong and constant, this oak will grow slow, short and stocky and with a very distinct aerodynamic shape. This all goes to prove that exposure to wind (and ice) has tremendous influence on the shape of trees.



What is tree cabling?

Tree cabling is the practice of tethering two or more limbs together, not to keep unhealthy trees from "falling apart," but to assist healthy, odd shaped trees in resisting the stresses of extreme weather (wind and ice).

What can cabling do for my tree?

Cabling can add a degree of support to codominant trees or limbs with potentially weak crotches by acting as supplemental support to already strong and flexible wood fiber. Over millions of years, trees have evolved to environmental stresses through flexibility and by growing excess support tissue only where needed, anything more is a waste of energy. Cabling should be done in a manner that works with, not against the tree's natural and flexible defense to wind. Poor cabling practices can adversely alter this response. Dynamic cables absorb shock associated with wind activity (shock loading) and can be installed relatively loose (compared to steel cables) to encourage self-supporting growth in light wind and ice. If installed prior to a split, dynamic cable provides a great chance of deterring future failure while providing the type of support that encourages ongoing strong, healthy growth.

What will cabling NOT do for my tree?

Hold it together. If a tree has failed to the point that an open crack is visible, then bracing with rod AND supplemental cable may necessary to help

keep environmental stress from shearing the canopy apart.

What causes a tree to need cable?

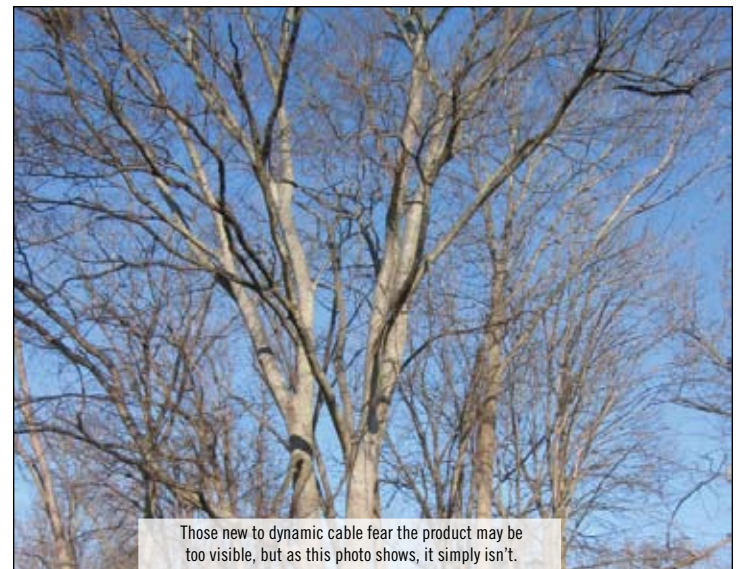
Most often a lack of proper pruning during the tree's formative years, leaving codominant stems or sharp v-shaped crotches to grow into support for primary energy producing parts of the mature tree. Other causes include an effort to add some measure of protection to nearby, valuable structure or property (homes or swimming pools).

Of the 3 types of tree cable discussed here, which should I choose?

Rely on the advice of a local, trained and professional arborist as well as your own instinct. Tree cabling is as much an art as it is a science and, unlike replacing the worn axle of a car, cabling live trees presents a wide range of internal and external variables. A good installer should be able to verbalize intended long and short term goals as well as provide a projection of time between replacement depending on tree species and current age. If a contractor has no knowledge of dynamic cabling systems, it is fair to conclude that they are out of touch with modern arboricultural.

How long does cable last?

Although cables can physically last up to 50 years, usefulness ends at around 10 years. After this period the tree will have grown longer than is mechanically advantageous for the cable and the roll of leverage will begin to reverse. After this period it will be necessary to replace the cable with a higher system.



Those new to dynamic cable fear the product may be too visible, but as this photo shows, it simply isn't.

Currently available cabling systems INFORMATION

Cobra

Dynamic Cable is a non-invasive, German made system that requires no drilling or installation of metallic hardware in trees. This UV protected rope-like material has a unique self-adjusting feature that helps prevent girdling (choking) of the branch attachment point. Shock-absorbers can be installed to enhance rope elasticity depending upon the species, shape and age of the tree. The useful life span of this product is between 10 and 15 years, which happens to be longer than cable should remain in one location in any tree. Although a relatively new cable system (10 years old), it has become a popular favorite of arborists and tree enthusiasts around the world. This easily installed, award winning system is the leading tree cable used in most of Europe.



TreeSave

is an American made, UV protected, rope-like material with a specially formulated shock-absorbing core. This product can be used noninvasive or attached to implanted anchor hardware (drilled into the tree's living tissue). When used with invasive hardware, TreeSave provides shock absorbency that increases holding power of the anchors while greatly reducing snap-load effects that have been known to prematurely fatigue the supporting hardware and/or injure trees. Additional shock absorbency can be added to TreeSave systems according to a tree's requirement. Although non-invasive synthetic materials average about 20% more material expense than steel wire, they're much easier to install, remove and/or reposition than steel.

Steel wire

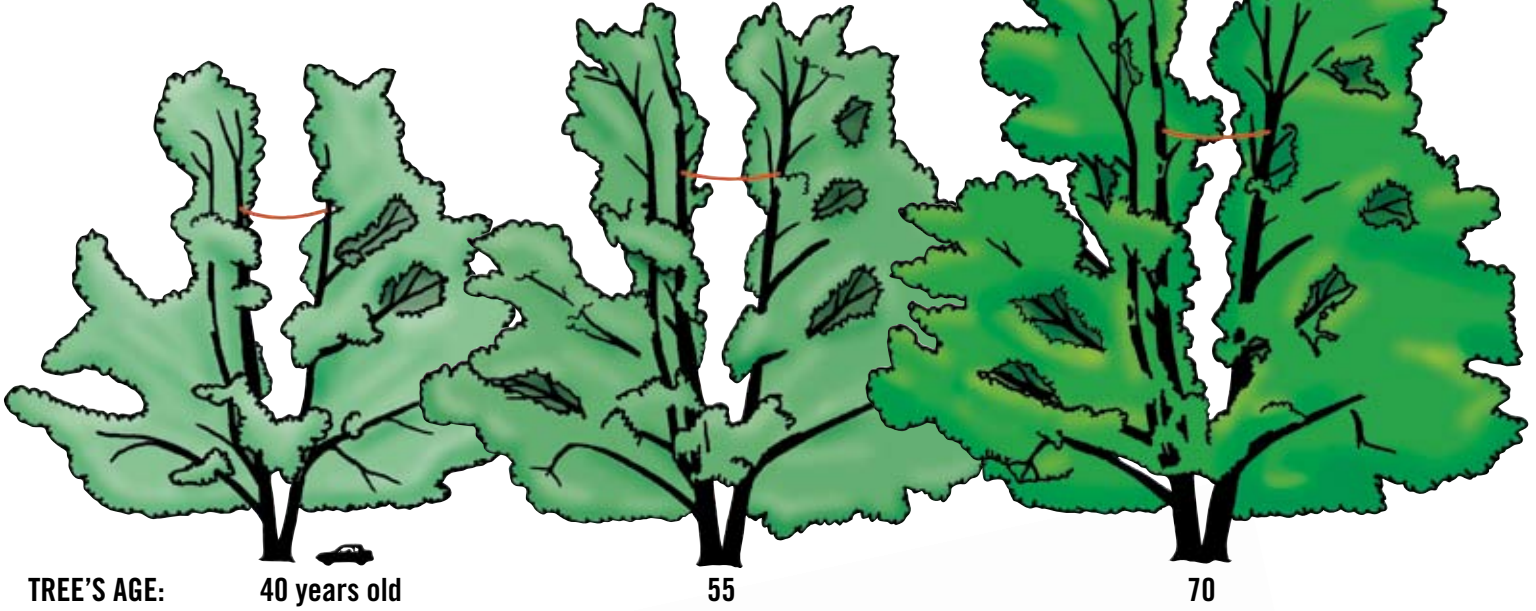
(static material) was first used as tree cabling in the early 1900's and remains the most widely used supplemental support material in North American arboriculture as of 2001. Seven-strand galvanized steel wire is cheap and longer lasting than most applications require, which is why many unattended systems installed decades ago have become many tree limb's primary means of support. Steel wire's non-shock absorbing characteristic is a less-than-perfect match to swaying canopies but provides effective support to stiffer or previously cracked structures. Lack of shock absorbency forces installers to pull wire taut in an attempt to minimize system fatigue. Such taut installation is often counter productive to healthy tree growth since trees are known to build strong, supportive wood tissue in reaction to periodic environmental stresses.

Description	Tensile Strength	Material	Useful Life Expectancy	INVASIVE (Permanent Anchors)	Shock Absorbing	Adjustable (Length)	Adjustable (Diameter)	Average Installation COST	Average Material COST	Total COST
Cobra Mini	1 ton	ppe/UV	10yr	no	yes	no	self adjusting	\$50	\$50	\$100
Cobra ST	2 ton	ppe/UV	10yr	no	yes	no	self adjusting	\$50	\$70	\$120
Cobra PL	4 ton	ppe/UV	10yr	no	yes	no	self adjusting	\$50	\$148	\$198
TreeSave 10/5	2.5 ton	polyester	15yr	either	yes	yes	no	\$50	\$140	\$190
TreeSave 10/20	10 ton	polyester	15yr	either	yes	yes	no	\$50	\$220	\$270
TreeSave 13/11	5.5 ton	polyester	15yr	either	yes	yes	no	\$50	\$150	\$200
1/4" EHS steel	3.5 ton	steel	25yr	yes	no	no	no	\$110	\$52	\$162
5/16" EHS steel	5.5 ton	steel	25yr	yes	no	no	no	\$110	\$68	\$178
3/8" EHS steel	7.5 ton	steel	25yr	yes	no	no	no	\$110	\$80	\$190

Keep in mind that most cable systems need repositioning or replacement within 10-15 years due to tree height and diameter growth
Prices reflect information polled from professional installers. Material and installation costs may vary.

For further information or a retailer nearest you call
1-800-525-8873

This aging codominant tree reflects three 15-year installations in ascending positions that maximize cable leverage and minimize stress. Tree cabling should not be performed if periodic inspection, maintenance and eventual replacement is not intended.



TREE'S AGE:

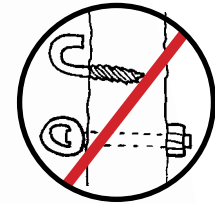
40 years old

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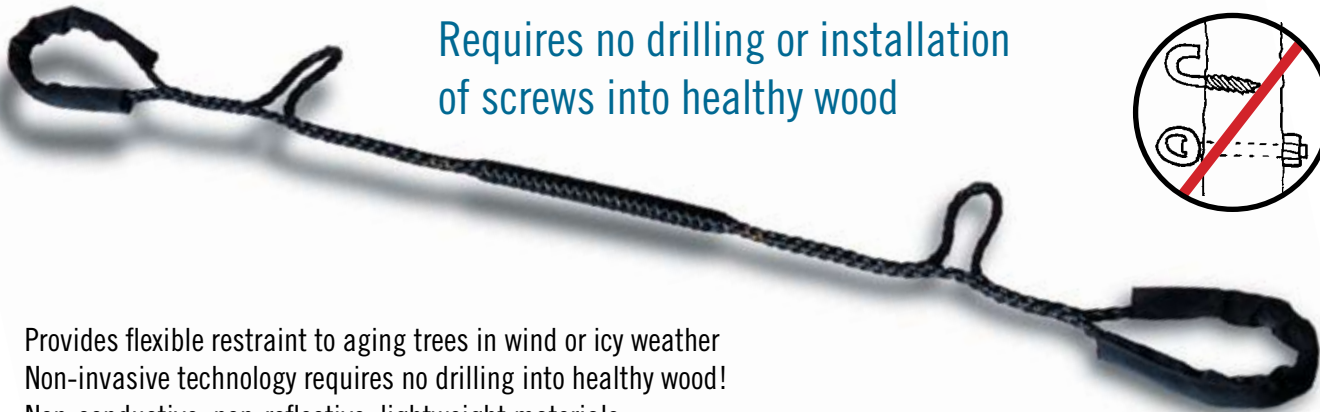
70

Cobra features

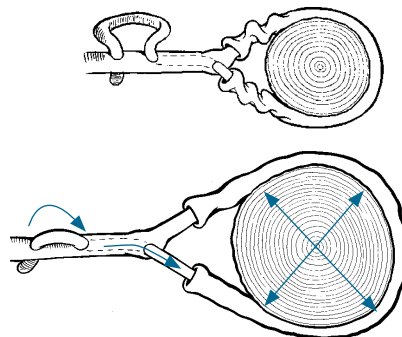
Requires no drilling or installation of screws into healthy wood



- Provides flexible restraint to aging trees in wind or icy weather
- Non-invasive technology requires no drilling into healthy wood!
- Non-conductive, non-reflective, lightweight materials
- Economical- Installs in half the time of steel systems. • Provides shock-absorption at a fraction of the cost of metal springs
- Long lasting, UV protected materials
- Strong yet flexible- choose from 3 sizes: 1-ton, 2-ton or 4-ton strengths
- Easy installation requires none of the tools associated with bending or cutting heavy wire.



Self-adjusting feature expands with the tree



With 3 sizes to choose!

Cobra MINI (1.5 ton)
Used for (small) ornamental trees

Cobra STANDARD (2 ton)
Used for limbs up to 19 in. at limb base

Cobra PLUS (4 ton)
Used for limbs over 19 in. at limb base