Chapter 15
Full-strength anchor systems

Full-strength anchors can support an anchor system with no other assistance. Examples include a tree, a large boulder, and three equalized cams. When using artificial protection, a minimum of three pieces is considered the standard.

Recall the anchor principles: anchors should be Solid, Redundant, Equalized, and have No Extension or, alternatively, ERNEST. The following anchors exhibit various degrees of redundancy, equalization and extension. Recall also that the angle between the outermost legs of an anchor should be less than 90 degrees and, preferably less than 60 degrees.

Two-bolt anchors

Two draws, reversed and opposed
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally.
Extension: None.

Two slings in sliding X configuration

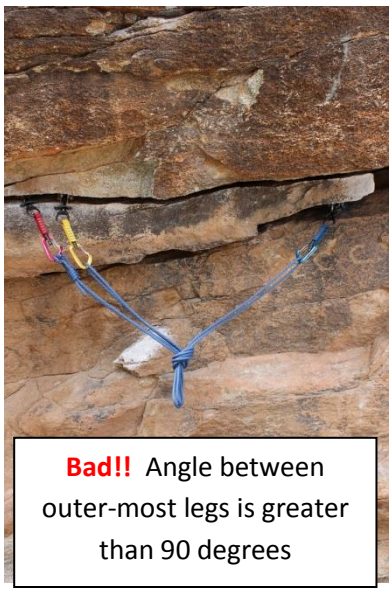
Redundant: Yes.
Equalized: Yes.
Extension: None, if a sling cuts. Some, if a piece fails. It is best to use short slings for this technique.

Quad anchor
Redundant: Yes.
Equalized: Yes.
Extension: Limited to a portion of the distance between the knots.
Comment: Make sure to leave one loop out of the master point biners to maintain redundancy.

Cordelette (closed)
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally between anchors.
Extension: None.
Comments: Most cordelettes are about 20 feet in length. Doubling the cordelette makes a shorter and more manageable anchor when using two bolts. The cordelette is closed with a flat overhand knot with 6” to 8” tails or double fisherman’s knot used to create a loop of 7mm nylon accessory cord.

Three-point anchor: Bolts or Pieces

Cordelette (closed)
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally between anchors.
Extension: None.
Comments: The closed cordelette provides a "shelf" made by clipping a biner into each of the independent loops above the figure-8 knot. The three strands must include one from each bight that extends up to a piece. In order to use the shelf, you must place a biner in the master point of the cordelette.



Cordelette (open)
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally between anchors.
Extension: None.
Comments: Create a loop in each end of the open cordelette with an overhand knot. The open cordelette does **not** provide a shelf as an extra clip-in point.

Equalette
Redundant: Yes.
Equalized: Yes.
Extension: Limited to a portion of the distance between the overhand limiter knots.
Comments: Clip a biner into each of the clip-in loops. The equalette does not provide a shelf as an extra clip-in point.

Four-point anchor: pieces

Cordelette (closed)
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally between anchors.
Extension: None.
Comments: The closed cordelette provides a "shelf" made by clipping a biner into four strands above the figure-8 knot. The four strands must include one from each bight that extends up to a piece. In order to use the shelf, you must place a biner in the master point of the cordelette.

Cordelette (open)
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally between anchors.
Extension: None.
Comments: The open cordelette does **not** provide a shelf as an extra clip-in point.

Equalette
Redundant: Yes.
Equalized: Yes.
Extension: Limited to a portion of the distance between the overhand limiter knots.
Comments: The equalette does **not** provide a shelf as an extra clip-in point.