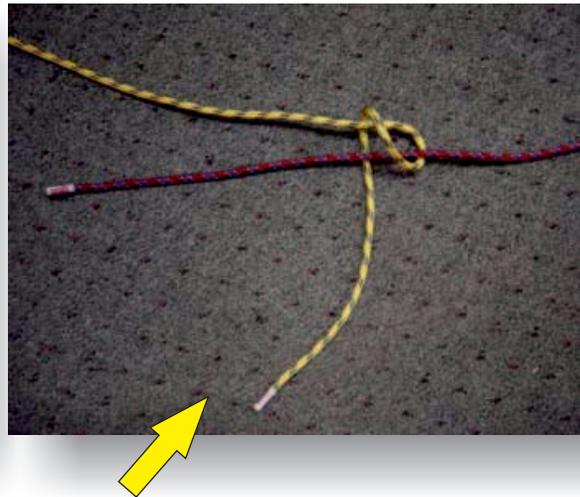


## How to tie your own weaklinks

The best knot to use for tying a weak-link together is commonly called a double grapevine or a double fishermans knot. It's impossible for written instructions to do justice, so we added some photos to help show you how to tie the appropriate knot. To help clarify the pictures we used two different colored lines. You will use a single 18" long piece of bulk weaklink line material to make your links. It's important that all your links are tied correctly and exactly the same way to ensure consistency.

In our example we are using 2 pieces of 6mm perlon (climbers static cord) to tie the know, whereas you will be using a single piece of precut weaklink material. Just follow along with the instructions and you should get it right. If not please feel free to stop by our facility or stop us at a clinic and we'll be happy to help you out.

Start by cutting an 18" long piece of cordage for your weak link.



Take about 8 inches of the yellow end of the line and pass it underneath the maroon line and back around, making a wrap as shown above.



Wrap the line an extra turn, making 2 complete wraps around the maroon cord. Pass the tail of the yellow line through both loops as shown above.

Snug the knot up tight, leaving about 3/4 inch of tail extending past the knot. We have shown the knot from both sides at the top of the next page, so you can see if you tied it correctly.

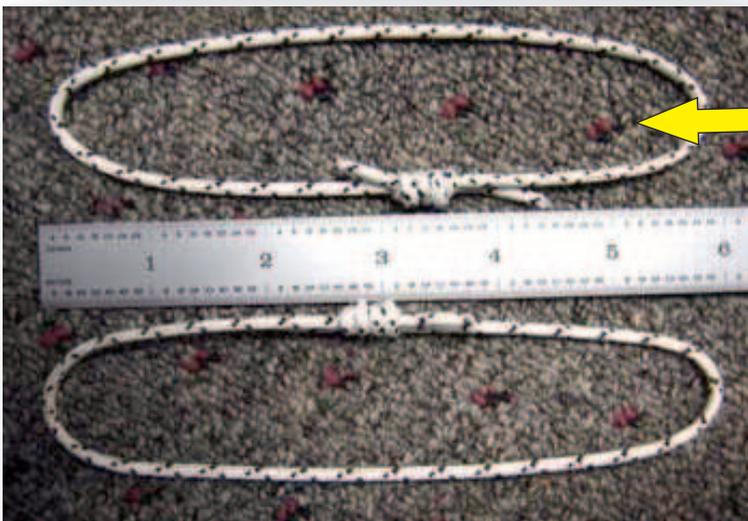
NOTE: For climbers who are using this page to learn to tie your runners, or prussics using 5mm, 6mm, or larger cordage you need to leave a tail at least 2" long to ensure the knot won't come untied. Paraglider and hang glider pilots are using 2mm or smaller line and don't need as long a tail since the loads exerted on the knot are far less.



Pull about 8" of the maroon cordage through your knot and repeat the above steps for the other side (Make the maroon cord look like the yellow cord from the pictures above). You should end up with 2 knots separated by 2 cords lying parallel to each other as shown below.



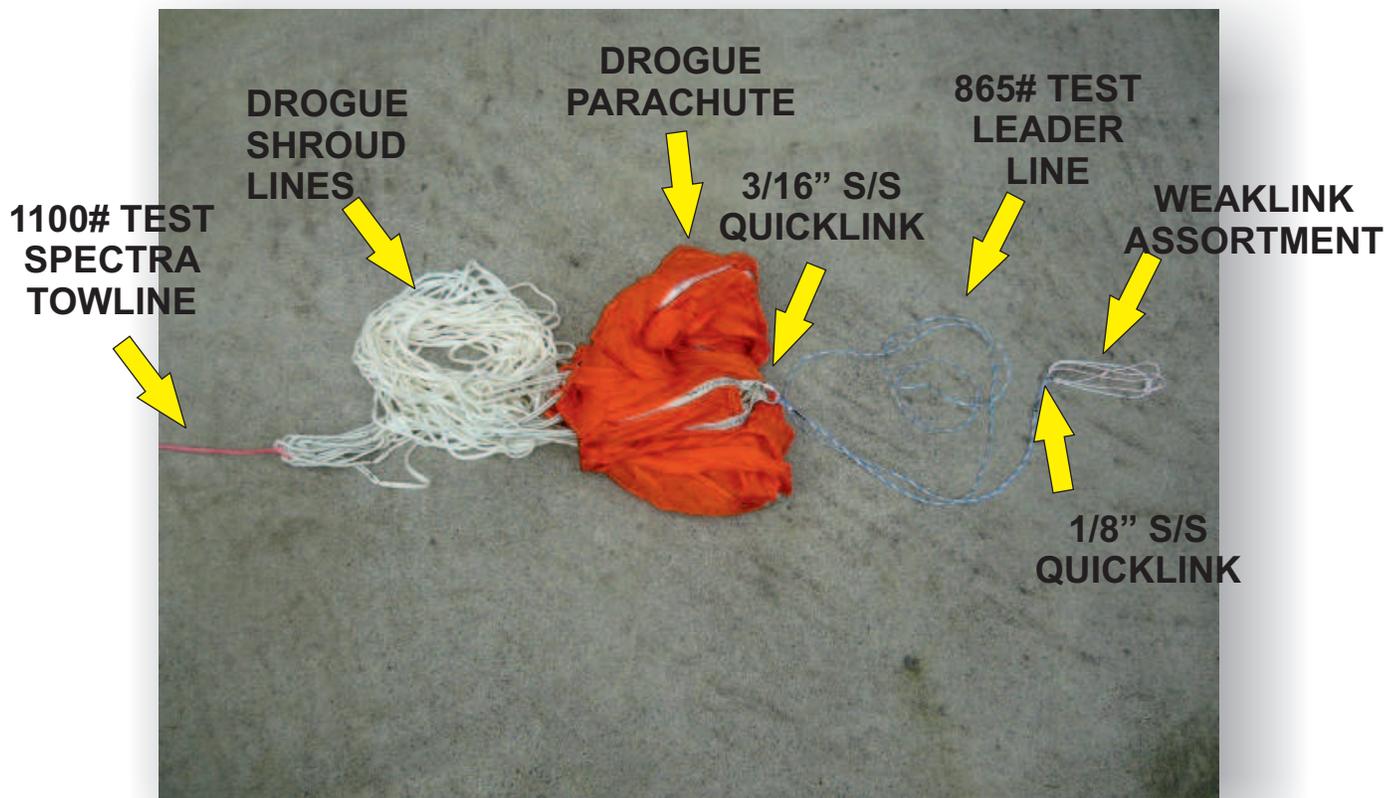
Pull the 2 knots together and snug everything up tight. We have shown the knot from both sides below so you can make sure you tied it correctly.



If you started with an 18" piece, and left a 3/4 tail you should have a link that looks like the one shown to the left. The sample shown was tied from a piece of weaklink line material rated at 300 pounds. If it was a sewn link, it would break at that value. Since it is tied in a loop, the link should break at double that (there are 2 parallel load paths) less the amount that the knot reduces the strength of the line. When pulled to test the link; the link should always fail at the knot. The example shown above failed at 384 pounds. You can calibrate your knotted weak links by building your own weak-link.

If you are joining the ends of Spectra line and using a knot (You should never use this a knot on a towline, please see our splicing page for splicing instructions) you should use a triple grapevine to ensure the knot doesn't slip free. It is tied like the knot above, but you make 3 wraps around the other cord before passing the tail through rather than 2 wraps.

Once you're done, you'll want to hook your weaklink into your tow system. Here's how we do it at TowMeUp.com. This is an illustration of what you will typically find at the end of our towlines.



To the left, you can see a closeup of the end of one of Nightmares towlines. We always have a tandem and a pair of solo weaklinks attached to our 1/8" quicklink.

They are there so we can accommodate either solo or tandem pilots. There is a good reason for the pair of solo links though. When a weaklink is overloaded, it fails by first stretching elastically. If the overload is reduced in the elastic range, the weaklink rebounds to it's normal size. Load it a little more though and the link stretches plastically... it stretches and won't go back... before it breaks. If you are setting up for a tow, and one of the links is appreciably longer than the others, it has been overloaded and should be replaced. please cut off the stretched link with your hook knife and tow up on the remaining one. The boat operator will replace it when they rewind the line (but it doesn't hurt to give them a heads up).

Now Go Tow High... Safely.