

# ROD BUILDING 107C

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## Rod Building 107 C — Guides—General

This is the third of four articles covering guide sizing and spacing on a blank. Discussed below are some of the specifics a rod builder may want to consider when choosing guide spacing and sizes.

### Bottom stripping guide location and size:

When casting a line with a fly rod, the fly line is typically fed with the left hand for a right-handed caster, or the right hand for a left-handed caster. The line is essentially “shot” from the rod from loose line that lies on the water, bank, boat deck, or stripping basket. During this process the line has to pass through the bottom stripping guide (the guide closest to the butt of the rod) at an angle. The angle between the line and the rod decreases when the bottom stripping guide is placed closer to the tip of the rod. Conversely, if the lower stripping guide is placed closer to the reel, the line angle in relation to the rod passing through the bottom stripping guide increases. To minimize friction and increase the casting distance, the guide should be placed closer towards the tip. However, if the stripping guide is placed too far towards the tip, the caster will experience line slap, which instead increases friction and decreases casting distance. In addition, severe line slap can also cause blank damage. It is important that the rod builder consider placing the bottom stripping guide close enough to the butt end of the rod to eliminate line slap.

Another technique to reduce line slap is to change the rotation angle of the guide from the other guides (from bottom being 0 degrees to an angle of 20 to 45 degrees) towards the hand feeding the line. This will help reduce friction. Another technique to reduce line slap is to increase the size of the lower stripping guide to keep the line away from the blank. A high profile guide (built with the loop further away from the foot) will also position the line further from the blank and will help prevent line slap. For optimal performance, the rod builder should consider placing the first stripping guide about 1/3 of the total length of the rod from the butt of the reel seat. This distance will vary based on the length of the rod and may be from 24 to 37 inches.

Tip top guide: In terms of tip top guides there are two choices. These include: (1) a regular loop; and (2) a large loop. Typically fly rods of weights through 6 weight use a regular loop sized guide. Fly rods of 7 weight through 15 weight use the large loop size. If minimal friction is desired for 5 or 6 weight rods, use a large loop. It works great although it might look rather odd.

Remaining guides: For a “traditional” fly rod, the first guide below the tip top is usually placed between 3 ½ to 5 inches away. The remaining guides should then be proportionally spaced (assuming straight taper of blank) through the remaining distance from the first guide to the bottom stripper guide. This provides an even force distribution on the blank

under stress, thus causing less breakage. If the blank has a compound taper, with the action mostly tip oriented, more guides should be placed in the tip length, and fewer guides placed on the stiffer lower portion of the blank.

For proportional guide spacing, simple mathematical formulas have been developed. However, it is beyond the scope of this article to discuss the mathematical formulas and their derivation. If you are interested in learning about them in more detail, feel free to contact myself or refer to "[The New Advanced Custom Rod Building](#)" by Dale P. Clemens, page 194. If you are only interested in using a calculator (given length, number of guides, and length of first guide to tip top), try the following web link: <http://www.uwm.edu/~stetzer/guideN.html>. This web link provides a couple of good methods.

The number of guides needed for the rest of the rod varies based on length. There should be enough guides so that no flat spots occur when bending the rod. The following procedure will show flat spots. You may want to engage someone's help for this procedure. Support the fly rod to a 45 degree angle, with the guides located below the rod in their normal position. Lock the line and then pull down on the line past the tip. This places the rod in a bend similar to fighting a fish. Make sure the line follows the arc of the rod. There should be no excessive line angles (or flat spots) with the line following the bended rod. Rules of thumb for guides needed are; (1) an 8 ft. rod needs about 9 guides (excluding tip top); (2) a 9 ft. rod needs about 10 guides (excluding tip top); and (3) a 10 ft. rod needs about 11 guides (excluding tip top).

For the guide sizes that should be used, guide size will vary based on the rod weight. A typical fly line has different taper designs (different diameters at different distances), and different densities. These considerations will be discussed in more detail in the upcoming article, so that you can choose the proper size of guides for your custom rod.

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