

Using the Saxon Tool

Mount the case on the ramming base.

Depending on which kit you have purchased (1 lb. or 2 lb.) the amount of clay will vary, so some experimentation will be required to achieve a clay plug thick enough to prevent blowout. Figure 1 on page 4 shows the proper thickness of the clay plug by the machined grooves in the first rammer. The upper groove labeled “do not pass” is there to prevent running the rammer into the base and ruining the machined tip.

Choose the desired propellant, either gold or silver. Using the 2" rammer (the one with the flat end), load the case about one increment at a time. (One increment equals the internal diameter (I.D.) of the case.) Trying to load too much at one time leaves a portion of the propellant loosely compacted and may cause the Saxon to explode. Either ram with a mallet or press till you feel the case just begin to expand slightly. Over ramming or pressing may cause the case to crack and fail. If you use a press a case support might be a good investment.

Ram in just enough composition to leave a remaining space of about 1½" to finish off with a clay plug. There should still be a 1" space above the clay plug. A wood spoke will later be glued into this space (see Figure 2, page 5).

Prepare the 2 case as you did the first one. A variation would be to use a silver formula in the second driver to vary the “charcoal to silver” effect.

The finished drivers now have to be drilled for the fuse. This cannot be done before adding the clay or composition, as this would collapse the clay nozzle.

Figure 2 shows the correct vent positions. The one driver will require two holes. One is for the visco fuse located in the clay nozzle, the second is near the clay plug on the opposite end of the case. This hole will transfer the fire to the second driver as shown in Figure 2. This will continue the spin in the same direction.

After the holes have been drilled the drivers should be glued to the predrilled wood spoke. Keep in mind the vent placement as you assemble the unit: the spin should always go in one direction.

After the glue is dried, the fuse should be as shown in Figure 2. A piece of visco dipped in N C lacquer and prime is inserted into the one clay nozzle. A piece of quick match connects the end stage of the first driver to the clay nozzle of the second driver. Tape down the quick match to the drivers to keep them in place while the Saxon is spinning.

When mounting to a post before firing, place a short section of dowel behind the wood spoke and the post to make sure the whole unit will turn freely without striking the post.

Miscellaneous Tips

1. The machined grooves on the rammers are there for a reason—to help make the vent hole placement fool proof. By using these grooves as a guide and marking the outside of the case after loading, you can get an exact vent location for maximum performance.
2. When drilling the vents proceed slowly so as not to shatter the clay nozzle by pushing too hard on the drill.
3. Drill just deep enough to reach the composition.
4. What's a proper vent hole size? Hmmm, that's a good gone. There's a lot of variables here, such as how well your composition has been mixed, oxidizer, particle size, etc. I would suggest 1/4" for a start. The #2 set may need a $\frac{5}{16}$ " diameter hole. This is just a starting point; as long as they don't blow up you might experiment with a smaller vent hole.
5. At first I would suggest ramming just one driver, drilling it, and doing a test firing to make sure it functions properly. There is no sense in making a complete unit and then having the drivers blow up.
6. I've listed below several formulas suitable for loading the drivers. You may have to adjust the formulas to slow them down if need be, since granular size, ball milling, etc. will affect burn rates.

Formulas

Gold (very fast)

50%	Meal powder
30%	Potassium nitrate
10%	Coarse charcoal 10/40 mesh
10%	Sulfur

Gold (best bet)

57%	Potassium nitrate
10%	Sulfur
10%	Charcoal dust
5%	Charcoal coarse
18%	Steel fillings (coat with paraffin)

Gold (slower)

- 75% Potassium nitrate
- 10% Sulfur
- 10% Charcoal willow dust
- 5% Charcoal coarse

If needed, add meal powder to increase burn rate.

Silver (best bet)

- 57% Potassium nitrate
- 10% Sulfur
- 10% Charcoal mixed fine and 100 mesh
- 23% Titanium

If needed add meal powder to increase burn rate.

Silver (a little faster)

- 60% Potassium nitrate
- 10% Sulfur
- 10% Charcoal dust
- 20% Titanium

If needed add meal powder to increase burn rate.

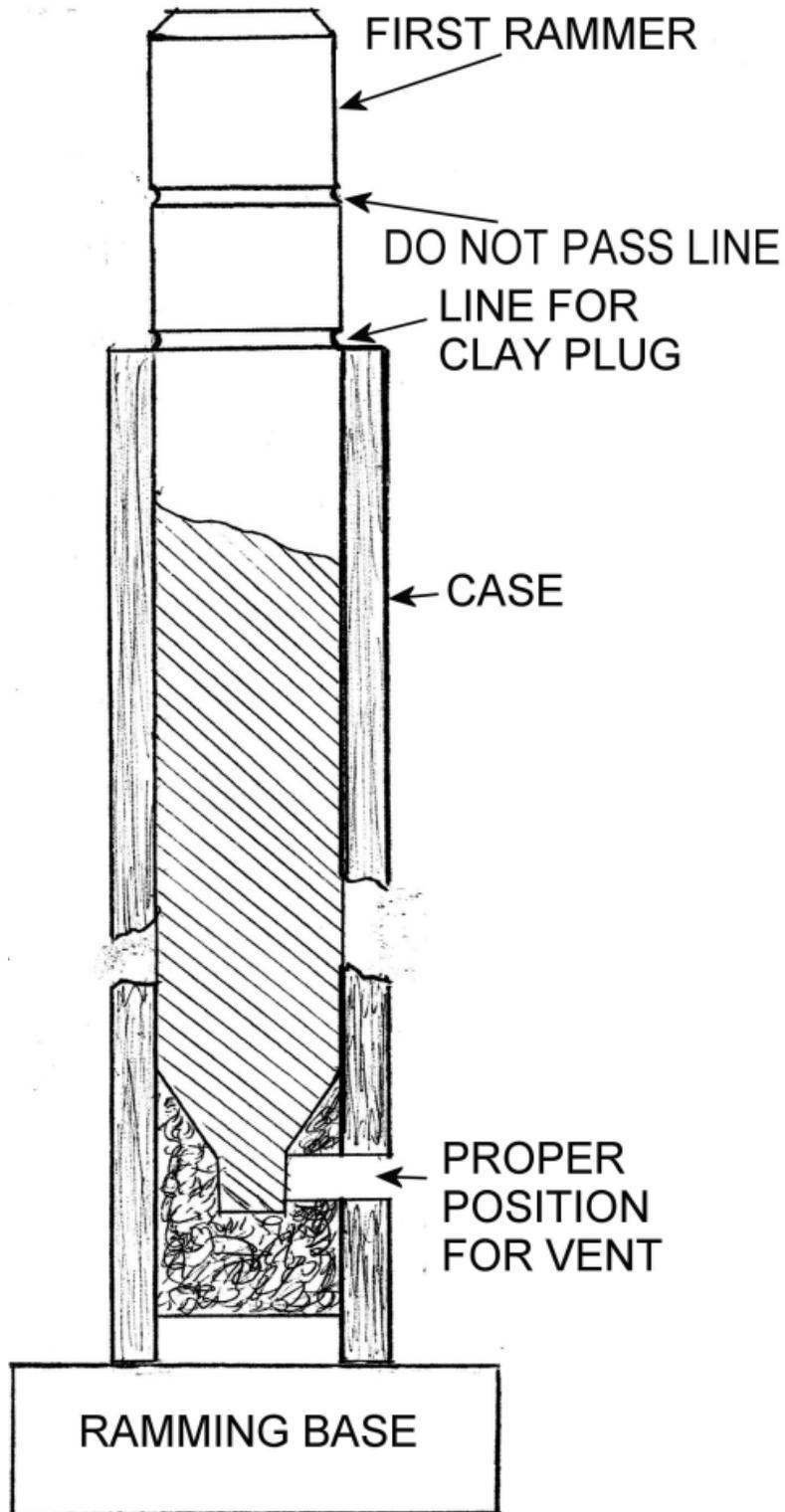


Figure 1: Enlarged View

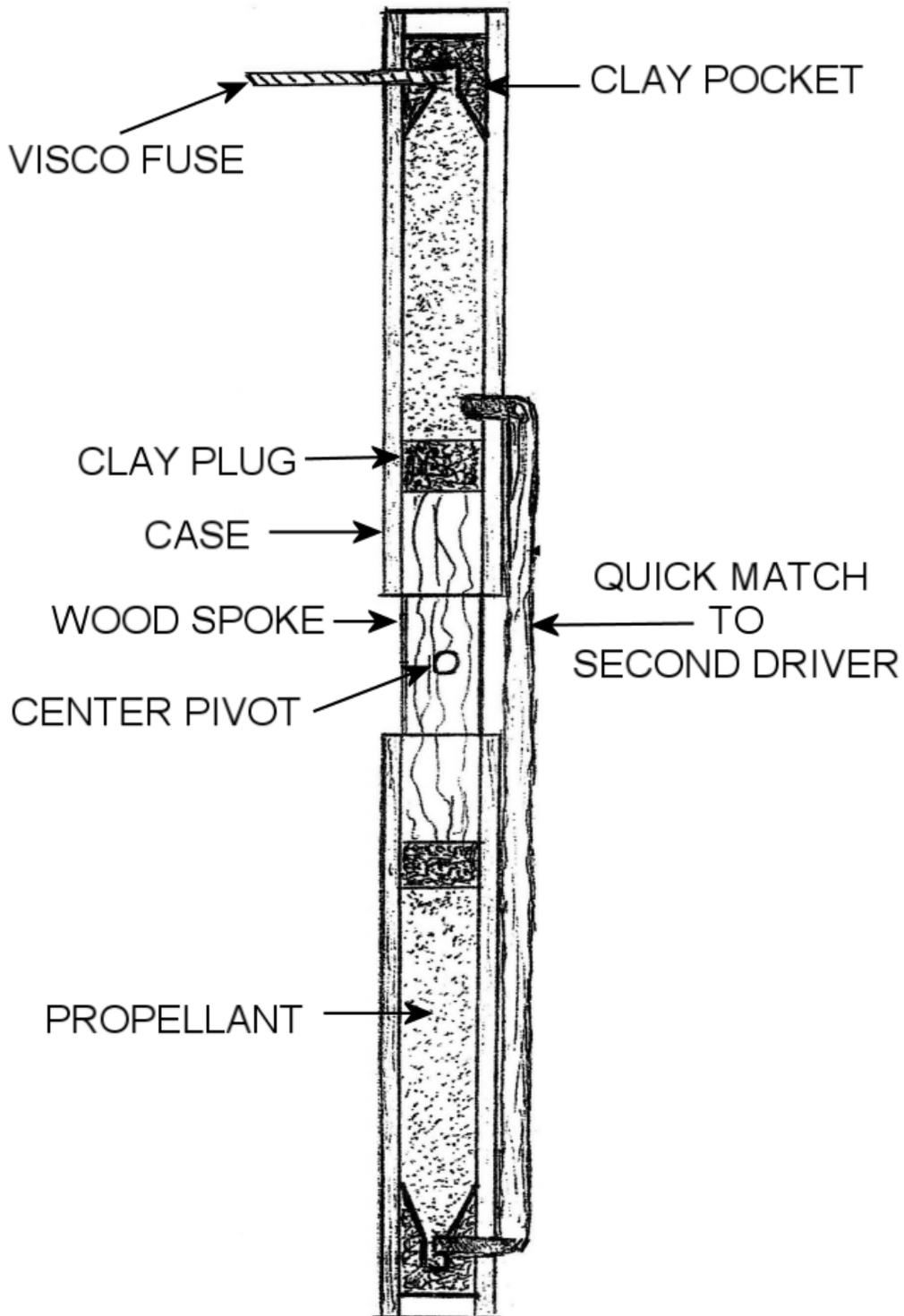


Figure 2: Cross Section