

## **Crossette Pump Instructions**

*(version 3)*

By eliminating the slot-pin feature from these new pumps, the operation is simplified as there is no pin-slot alignment to maintain during the pressing of the star.

Wet the star comp as little as possible. The moist star comp should have a crumbly texture. A starting point would be 7–8% water. Too much moisture and the stars are difficult to remove from the pump. With the star comp in a shallow pan, repeat pressing the crossette pump into the comp until the cross pin in the plunger rises about  $\frac{1}{4}$ – $\frac{3}{8}$ " above the sleeve. Press or ram comp until solid. (Cross pin should still be above the top of the sleeve). Press down on the plunger until the cross pin contacts the top of the sleeve. Any excess star comp can then be trimmed off. Using this method will ensure all stars are the same length and will break at the same time. After the star has been trimmed off, remove the pin and push plunger into the sleeve, then gently remove the star from the end of the plunger. Note: It is sometimes helpful to move the plunger back and forth in the sleeve several times as this helps to loosen the star. **DO NOT TWIST THE PLUNGER** while doing this as it may twist the inner cross shape loose from the body of the star.

After the stars are dry, inspect the fuse hole formed by the pump to make sure it is unobstructed. If it's not, clean up any irregularities with a small drill. Wrap the outside diameter with a couple turns of Kraft paper. The paper should cover the length of the star and extend beyond the cavity end by approximately  $\frac{1}{4}$ " to  $\frac{3}{4}$ " depending on the star diameter. Fill the cavity with break charge (see list below) anywhere from  $\frac{1}{2}$ " to  $\frac{3}{4}$ " full. Close off the cavity end with a chipboard disc and pleat the paper over the disc with glue.

A “sure fire” tip is to tape a piece of black match over the exposed end of the star and let this extend into the break charge. You will have a sure fire every time.

Note: I have now enclosed 2 different pins. The long one is the removable one, and the short roll pin is for people who like the permanent style.

### **Break Charges**

#### **$\frac{3}{8}$ "– $\frac{1}{2}$ " Diameter Stars**

- 50% Potassium Perchlorate
- 50% 200-micron Magnesium

#### **$\frac{3}{4}$ " Diameter Stars and Up**

- 50% Potassium Chlorate
- 20% Antimony Sulphide
- 30% Dark German Aluminum

Micron magnesium can be purchased at [Skylighter](#).