UniqueTek "Tips" File #4:
Adjustable Low Powder Sensor
By Lee Love

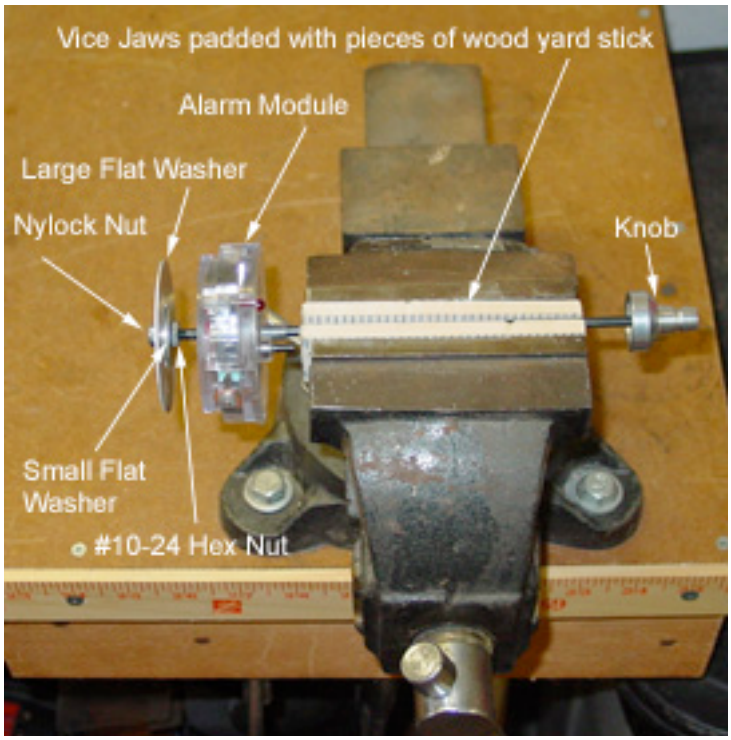
The Dillon Low Powder Sensor is a handy accessory. But it only alarms when the powder level is near empty. Depending on the metering characteristics of the gunpowder, you may want to keep the powder hopper filled to a higher minimum level to ensure consistent charge weights. Wouldn't it be nice if the Low Powder Sensor could be adjusted to alarm at any powder level desired?

Modifying your Dillon Low Powder Sensor is an easy and inexpensive task. Once modified you can easily adjust the level at which the alarm sounds. If you are using the UniqueTek 2X Powder Hopper Tube™, these instructions also describe how to extend the follower rod to accommodate the 14" powder hopper tube (or the 11" powder hopper tube for the Super 1050 press).

It is recommended that you read these instructions completely at least once before starting.

Disassembly

1. Slide the alarm module (the part with the alarm, switch and batteries) to the bottom of the follower rod so that it is against the large flat washer.
2. Clamp the follower rod of the Low Powder Sensor in a vice. Pad the vice jaws first using pieces of a cheap wood yardstick, wood lath, tongue depressors, Popsicle sticks or similar material. Place the rod horizontally in the jaws and you'll be able to clamp onto it tightly enough to unscrew the Nylock nut and aluminum knob without the rod turning and without damaging the rod.
3. Remove the Nylock nut, small flat washer, large flat washer and hex nut from the bottom end of the shaft then remove the alarm module. Save all parts, as they will be reinstalled later.
4. Pad the aluminum knob with layers of dense cardboard or leather (matt board, like photographers mount photographs on, works well). Clamp onto the knob with ViceGrip pliers and unscrew.



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Modifying The Parts

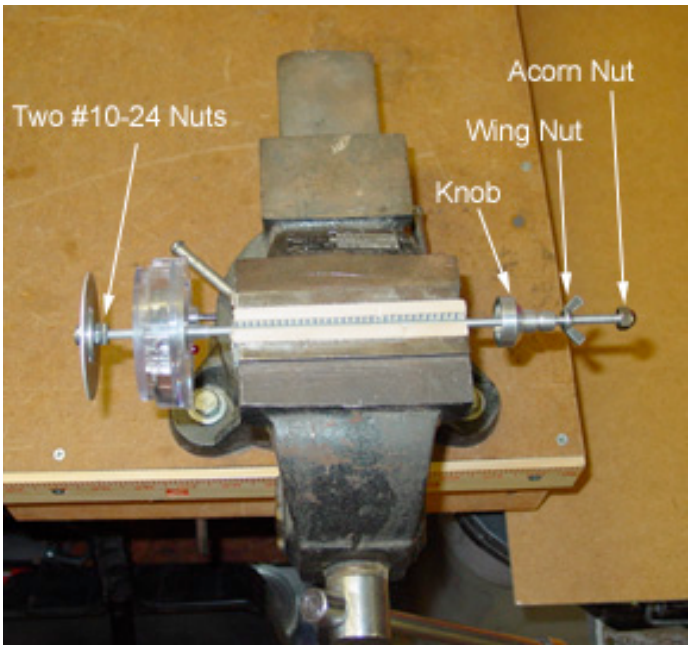
1. Go to any good hardware store and buy the following items. You can also find all these parts at Home Depot but you can't buy individual pieces there like you can at a hardware store.
   - A 2ft length of #10-24 threaded rod*
     * Choose one that is nice and straight!
   - One #10-24 hex nut
   - One #10-24 wing nut
   - One #10-24 acorn nut

   Note: Super 1050 press users who are adding the 2X Powder Hopper Tube need the following additional parts.
   - One 1/4"x1" fender washer
   - One #10-24 coupling nut
2. Cut the threaded rod so it is 8-3/4" long (1" longer than the original follower rod). Clean up the sharp end with a file. If you spin one of the #10-24 nuts onto the threaded rod before you cut it, you can use the nut to help clean up the threads. **Note:** If you are modifying the Low Powder Sensor for use with the UniqueTek 2X Powder Hopper Tube™, cut the threaded rod 15-1/2" long (12-1/2" long for the 11" Powder Hopper Tube used with the Super 1050 press).
3. Modify the aluminum knob so that the threaded rod can be screwed completely through and extend out the top of the knob. Using a 13/64" drill bit, drill 1/4" deep into the top of the aluminum knob. You must drill from the top of the knob and drill no more than 1/4" deep. **DO NOT DRILL ALL THE WAY THROUGH THE KNOB!** You want to drill just deep enough to meet up with the #10-24 threaded hole but not so deep as to damage the threads inside the knob. Take care to center the hole on the top of the knob so that it is aligned with the existing threaded hole. The 13/64" hole will be just large enough for the threaded rod to pass through without needing to tap any threads. If you don't have a 13/64" drill bit, you can substitute a 7/32" drill bit, but don't go any larger. To clean up any burrs that drilling left on the end of the threads inside the knob, screw the remaining piece of threaded rod through the knob, starting from the bottom.

   Note: Super 1050 press users who are installing the 2X Powder Hopper Tube can skip this step. The aluminum knob interferes with the rim of the casefeed bowl and will not be used. Instead, use the coupling nut and fender washer listed in Step 1 above.

Assembly

1. Clamp the threaded rod in a vice with padded jaws as described earlier. Padding the jaws is especially important, as you must not damage the threads on the rod.
2. Slide the alarm module onto one end of the threaded rod.
3. Thread a pair of #10-24 nuts onto the same end of the threaded rod, leaving 3/8" of threaded rod below the second nut. Cinch the nuts together to lock them in place.
4. Place the large flat washer on the 3/8" of exposed threaded rod, then the small flat washer, and then the Nylock nut. Tighten the Nylock nut just enough so that the washers are still free to slide but not so loose that they are floppy. Leaving them loose will help them guide more easily down the center of the powder hopper.
   Note: This is essential if you are using the 2X Powder Hopper Tube™, which has a slightly smaller internal diameter than the original Dillon powder hopper tube.



5. Screw the aluminum knob onto the other end of the threaded rod so that approximately 1 inch of the threaded rod is visible above the top of the knob.
   Note: Super 1050 press uses who are installing the 2X Powder Hopper Tube™ must install the fender washer and then the #10-24 coupling nut instead of the knob.
6. Screw the #10-24 wing nut down onto the threaded rod and cinch it against the tip of the aluminum knob (or coupling nut if used).
7. Screw the #10-24 acorn nut onto the tip of the threaded rod and tighten. This is not only for decorative purposes but also covers the sharp end of the threaded rod.

Setting the Alarm Trigger Level

To set the level at which the Low Powder Sensor will alarm:

1. Loosen the wing nut.
2. Screw the aluminum knob up or down the threaded rod to set the alarm level.
   • Do not set the alarm to trigger at such a low powder level that the end of the rod touches the powder baffle. A gap of no less than 1/8" is recommended
   • It is usually easier to make adjustments with the powder hopper empty.
3. Tighten the wing nut down against the top of the knob to secure the setting.