



# Miles Stair's Wick Shoppe

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## BUTTERFLY 828 PRESSURE LANTERN

**Be careful when unpacking.** Turn the large red knob to 6 o'clock position - see the little arrow! This prevents accidental damage to the needle on top of the generator tube when unpacking - leave the knob there for now.

To install the mantle, undo two screws on the handle. Remove the top and pull out the burner assembly. Lantern comes with three 350-candlepower mantles from factory; we recommend 500 candlepower mantles since they burn brighter. Be careful when stringing the mantle around the porcelain nozzle, cut the ends of string when done. Now make sure everything is hand tight on the burner assembly. If you have loose fittings the light is not going to be bright and it may not burn properly! Now reassemble the lantern. You might want to leave the top off until the mantle is lit.

Put some clean kerosene in the tank - swish it around and dump the fuel out. You can use this fuel later if you pour it through a clean cloth or paper first to get rid of any particles. Also check that the rubber seal inside the "pressure gauge/fuel cap" is ok. You have a spare in the package. [It is a good idea to clean the tank once a year. **And always use a filter funnel when pouring fuel into the tank!**]

### **LIGHTING YOUR LANTERN SHOULD BE DONE OUTSIDE.**

**Fill the tank 3/4 full with clean 1-K Kerosene** - you must leave some space for air! 1liter/quart bottle works well. Close the fuel cap hand tight. Now turn the red knob to 12 o'clock position (Closed).

**Close the pressure relief valve** - the little screw on the fuel cap.

**Turn wheel so that the arrow faces upwards, close filling cap/gauge.** After about 10-15 full pumps you should have enough air to light the lantern. The needle in the pressure gauge usually does not move until more air is pumped in. If the pump does not work correctly, unscrew cap of pump barrel, remove pump piston, grease and spread leather washer. Assemble pump pistol again. Maximum light output is attained if the pressure is pumped up to the red line on the gauge.

**Spirit cup:** fill the bottle with brass nozzle with isopropyl alcohol (Methyl Hydrate). Inside the lantern you see a brass cup with a pipe sticking up - fill it up all the way. There is a round hole on the bottom part of the lantern, which is bigger than others to give you access with butterfly stamp on top of it. Light the fuel in the cup and let it burn until it is almost gone. You can now turn the red knob to 6 o'clock position (Open) and watch the mantle getting brighter. If the mantle is new see note below. You can now fully pressurize the lantern up to red mark or until it gets hard to pump, meaning there is enough pressure.

**To turn the lantern off,** release the pressure in the tank by opening the screw on the fuel cap, you will hear hissing sound as the light dims. You will also smell kerosene. When no pressure turn the red knob to 12 o'clock position (Closed). Leave the pressure screw open if lantern not in use. This will prevent any pressure build-up in the tank.

## OPERATING INSTRUCTIONS

**Regulating the light intensity:** The light intensity can only be regulated by rising or decreasing the pressure. Never use hand wheel for this operation.

**Insufficient pressure:** In case of insufficient atmospheric pressure or too slow turning of wheel when lit, the flame may draw back into the mixing tube which can be observed by a loud gurgling roaring and low intensity of light. In this case, the wheel should be turned fast from left to right several times until the lantern burns normally. Otherwise the lantern should be extinguished completely and relit immediately. Air pressure in the tank must be increased.

**Cleaning the nipple:** In case the light intensity decreases despite sufficient pressure and sufficient filling, clean the nipple by turning the hand wheel fast up and downwards.

**Tight fit of nozzle and nipple:** In case a flame appears around the mantle and the mixing tube starts glowing, extinguish the lantern immediately by turning the hand wheel upwards. Cool down vaporizer upper part. Screw nipple tight with spanner (included) or replace it.

**Warning: Insufficient Preheating: The recommended preheating time is 90 seconds.** In case of insufficient preheating time, the kerosene will not be gasified and this results in flames on the upper part of the lantern. Remember to be always calm! Turn the hand wheel upwards and open the valve of the filling cap/gauge to decrease pressure. Wait until kerosene is burnt out completely and start the preheating process again. Rubbing alcohol is only 70%. Isopropyl alcohol of 91% to 99% (from a pharmacy) burns much hotter and the preheating more reliable.

**High Temperature:** While putting the lantern into operation, it develops high heat. Cool it down for at least 10 minutes before doing service or repairs.

**After Operation:** After operation the nipple, nozzle, as well as all other screws should to be checked and tightened if necessary. Cool down lantern first!

**Replacing the gas mantle:** Remove hood and inner casing as described above. Clear away all sediments of the old mantle. Fix mantle as described above.

**Burning down a new gas mantle.** The optimal stability of the mantle is reached by burning it down with a lighter or a match. When the mantel is new it is going to burn and turn black, eventually turning white and hang there like a wet sock. Do not worry! It is all part of the process! Once the pressure enters mantel, after opening the red knob, the mantel will inflate like a balloon. It is now fairly fragile and you should not touch it with anything.

**Replacing the leather washer:** Remove pump piston. Unscrew pump piston nut and remove old leather washer. Grease and spread new washer for optimal function.

**Replacing the nipple and needle:** Loosen screws on frame. Remove hood, inner casing and glass chimney. Set inner casing on glass chimney to protect the porous mantle. Hold ring of vaporizer with one hand and unscrew nipple with spanner. Remove needle with needle key. Replace nipple and needle and assemble again.

**Replacing the pump valve:** Drain the container. Remove pump piston. Unscrew valve with long screwdriver. Tip lantern sideways and let valve fall out. If necessary, remove valve washer from pump base. Assemble new valve with washer and screw it tight.

### **DO NOT STORE FUEL IN THE LANTERN FOR LONG PERIODS OF TIME.**

Different fuels have different break down periods. Kerosene usually varnishes within 4 to 6 months and that would make cleaning the tubing and jet a real chore.