Introduction

Thank you for purchasing the Range Miner tumbling system. We set our sights on making a practical and durable unit that we consider the best reloading tumbler ever conceived.

Prior proper planning

Be aware of vibration, however slight, when the machine is running. If you are using a common work surface for other operations while the machine is operating this can be an annoyance.

With a 24”x 16” footprint, the ultimate work surface is big enough to support the machine, separator, the cylinders and your accessories. With space limitations most likely being the deciding factor, a 24”x 24” surface on a rigid base will do nicely.

Although the outer drum mitigates the rattling noises associated with tumbling brass casings, the operating machine is not noiseless. Ball bearings were chosen over sleeve type bearings, because while sleeve type bearings are typically quieter, ball bearings have considerably better durability. Commercial grade split phase motors hum and belts driven by pulleys will churn. This sound should not be distracting or intrusive, but it will be present.

Initial setup

The Range Miner ideal grade was designed to be mounted at a work bench or counter-height, typically 30” to 37” off the floor, RIGID and STURDY. Make sure this surface is able to support the weight the machine LOADED and your anticipated accessories. The surface of the countertop/workbench should be smooth and level. The machine has leveling pads to make up any discrepancies. Use these to fine tune, level, and tighten the nuts. A dedicated electrical supply is nice but not mandatory. Typical 15 AMP household outlets work fine. The closer the machine can be to the outlet the better. Turn the machine on and check that is operating properly.

Mounting the outer drum

Remove the cover and the cylinders from the outer drum. Take a look inside, taking notice of the built in cant to get an idea how the cylinders are installed and removed.

The outer drum is placed between the thrust bearing on the idler shaft, with the open end of the drum at timer end of machine, ensuring correct drum placement. The thrust bearing tolerances were set at our factory and should NOT be altered.
The cylinders

By loosening the knobs, the friction plugs are released. You only have to loosen the knob to free the plug from the cylinder. If you should over loosen, they can come apart or misalign. You might want to take them apart in the future for cleaning, just take note of correct positions of the parts so you can re-assemble them correctly. When installing the plugs in the cylinders, be sure to use sufficient force applied to the knob to keep the cylinders leak free. The numbered cylinder holders prevent the cylinders from rotating in the outer drum. When installing the cylinders in the outer drum the required torque is enough to hold them in place.

Timer

The timer is a solid-state motor control with the ability to countdown run-time from 1 second to 999 hours. You can stop the run any time, continue the run time later, or reset the run time.

Best practices

The purposes for cleaning cartridge brass casings vary from one individual to the other; however clean brass possesses these common characteristics: the removal of oxidation, dirt and foreign debris, increased flaw detection, prolonging the life of reloading dies and restoration of the brass back to its natural patina or shine.

Cleaning brass with differing media can cause different results. Separating and grading the brass you have or obtain is practiced by prudent re-loaders to make suitable loads for the purpose they have in mind. Range Miner brass tumblers allow you to take full advantages of this practice. Whether you’re cleaning 45 ACP brass casings for Thursday night pistol league or putting the final shine on the 45/70 brass casings for your parade bandolier, you can achieve the results you want in the same drum cycle.

The nature of the arrangement of the cylinders when installed is a matter of balance; the more evenly the weight is distributed, the smoother it will run. That said, some variation is expected and has no ill effects on the results. Extreme variation between cylinders (3-4 pound discrepancies) causes excessive vibrations. It will still work; however, it is hard on the machinery. It is better to load all four cylinders as evenly as possible.

If you load wet cylinders and dry cylinders and you’re running them in the same cycle, alternate the positions in the drum by installing wet-dry, wet-dry. This practice will improve the balance in the drum reducing vibration. Always tailor loading of cylinders by weight. Dry loading is typically lighter than wet.

Each of the 4 cylinders has 150 cubic inches of usable space. This translates to approximately 2.23 U.S. dry quarts, 2.6 U.S. liquid quarts, or 2.46 liters.

Experimental development of recipes is greatly encouraged. That said, deviations in the media material are not recommended. Ammonia weakens brass, citric acid while used to clean and shine brass has the opposite effect when the brass suffers prolonged exposure.

**DO NOT TUMBLE LIVE ROUNDS IN THIS MACHINE.** If you have loaded live rounds that require cleaning it is simply best to do it the old fashion way, by hand. Enough said.
Recommended Media

**Dry Media** - crushed walnut shells, ground corn cob

**Dry media additives** - Flitz, Dillon Rapid Polish, or other similar products. It's worth checking out.

Walnut shells are good for initial cleaning and restoring shine. Follow up with corn cob to achieve final finish. It will make a showy cartridge belt for Sunday’s cowboy shoot.

**Wet media** - Stainless Steel pins .048 Diameter .255 Length

**Tumble Time** - Typically 1-3 hours

**Recipe Guidelines**

These guidelines are intentionally broad, simply to give an idea of capability and a starting point. Quantities and process time are relative to the condition of the brass and personal preference.

3 ½ lbs. Brass, fill within 2” of the top with dry, about 3 ½ cups. Or fill cylinder half way with brass and add dry 2” from the top. 3 hour tumble time.

**Wet tumble** - stainless steel pins, water, dish detergent

3 ½ lbs. Brass, 2 lbs. stainless steel pins, 1 tbsp. dish detergent, fill with water 2” from the top. 3 hr. tumble time

**Weight vs. Volume Measure** - It really does not matter. In fact, you can argue it’s the same thing. Precise measure is not needed. Tested consistent measure insures desired results.

The brass you want to clean tells a story, both prior to and after cleaning. Range brass pickups that are badly oxidized and the new brass from your rifle sight in session demand differing degrees of restoration, which acts as a good example of prior grading. Grading of results and recording gives a reference on future expectations. Proven experimentation with proportion, combined with a grading standard gives consistent results time and time again.

Remember you can stop anytime in the cleaning cycle. If a wet cylinder contains really dirty brass, you can easily change water and soap solution without affecting the other cylinders and continue the cycle. You can change contents. Your possibilities are endless.

**Maintenance**

The Range Miner tumbling machine requires little service. The flange mount ball bearings have grease fittings to relube when necessary. Other than keeping it clean and performing an occasional visual check on the drive adjustment, not much other regular maintenance should be required. Be sure to unplug the power before poking around and keep hands and anything else at a safe distance when it is running.

The running gear was adjusted at the factory and checked for optimum performance. Over time the belt will wear, and the bearings will need grease, which are both easy to address. Adjust the belt at motor mounting bolts (making sure the belt is not too tight) and apply automotive grease to the bearing when they need it. As with any other machine, if it does not sound right or it develops an intense shake, stop and perform an inspection.

Mistakes happen. When they do, shut down the machine, unplug the power cord and correct it.
Conclusion

Here at Range Miner we *love* the shooting sports. The founder bought his first reloading press at age 13, a MEC 600 JR. In the following 49 years he has participated in a myriad of various disciplines reloading his own ammunition for the rifle, handgun and shotgun. Experience is where we excel.

We stand behind everything we make, period. We welcome questions and will address any problems or concerns.