

## Operating Instructions & FAQ's for the Mag-Zip

1. The **Mag-Zip** is designed to pull magnetite out of a falling film of dry sand that has been accurately screened to -8M (mesh). **NOTE:** Since the falling film “gap” is calibrated for this size, any larger particle/item processed will block flow and reduce throughput.
2. Using the battery as a backstop, place the two plastic tubs on a flat surface with the wooden block spacer between them along the long sides.
3. Clamp the tubs together along the common side rims with the spring clamp. (With experience, the clamping may be omitted.)
4. Lay the small aluminum frame (open angles up) across the tubs so that it fits over the back rim of the farthest tub and align the black mark on the frame squarely over the junction of the tubs. This assures the divider will span the tub rims.
5. Check to be sure that the divider (SS angle) inside the bottom of the **Mag-Zip** is hanging freely to rotate. (In case it has been turned on its side or upside down during shipping).
6. Place the **Mag-Zip** into the open angles of the frame so that it fits between the spacers and is all the way forward until it stops against the front end. This aligns the division of the two separated streams of sand to the correct tub.
7. Place the funnel into the top of the **Mag-Zip** and gently push downward to make sure the vertical footing fits into the feeder area. Most fit easily.
8. Plug the cables into the **12V** battery with the proper color coded wire for polarity (red to red -positive, and black to black-negative). **NOTE:** Reversed polarity will cause damage.
9. Turn the switch ON and check the lighted switch as well as the running motor. **NOTE:** This is only a 12V system. Be sure the battery is always charged for best operation. A low-charge battery will not provide optimum results. Use modern pulsed
10. While steadying the almost 1 gal funnel, carefully pour in screened **-8M** concentrates. **NOTE:** Never load the funnel before the **Mag-Zip** is turned on.
11. While processing sand, continuously observe the flow of “blond” sand. If there is a uniform stream from left to right it is working fine; any larger rock/item causing a bridge in the feeder will show a gap in the flowing sheet that is falling into the tub. Sometimes this occurs due to a piece of biological trash (leaf, twig, etc.) but tapping on the side to jar these loose usually removes the bridging and restores uniform flow.
12. Since these tubs hold about 1 gal, more material may be processed in the same manner if an empty tub is re-supplied before running another batch. Each gal of sand should run through in about 1 min. If it seems to take longer, check for bridging in the feeder. In a worst case with lots of trash, a long screwdriver can be used to stir along the teeth of the feeder (left to right) to induce alignment of the trash with the slot of the feeder. **NOTE:** Do not push down on the feeder because a faster flow will result in some blond sands getting into the magnetite tub.

13. The **Mag-Zip** is designed to remove selectively about 80% of the contained magnetite with each pass. So to further remove about 80% of the remaining magnetite, process the “blond” sand again. While two such passes typically gives a total of  $80 + 16 = 96\%$  removal, it is still recommended to make even a 3<sup>rd</sup> pass and thus obtain about  $80+16+3=99\%$  total. For example: 3% of 6 lb of magnetite is 82 g, or table spoons that are easily removed! Removing a large amount of magnetite lightens the load (both weight and volume) of the next step to recover gold from the much lighter “blond” sand. Uniquely, the **Mag-Zip** is purposely set to get less than complete removal of magnetite with each pass to achieve a HIGH SELECTIVITY for magnetite and where a non-magnetic particle like GOLD is not trapped within the magnetite. With **Mag-Zip’s very high flow rate** it doesn’t take much time to process concentrates 3 times!
14. To make **multiple (2<sup>nd</sup> and 3<sup>rd</sup>) passes** more convenient, start by not clamping the tubs together for the first pass and place the battery (or some weight) across the back of the aluminum frame to secure the balance of the Mag-Zip. Then the front tub containing the blonds sand concentrate from 1<sup>st</sup> pass can be slid out and dumped into another bucket. When the tub is placed back under the frame, be sure that there is no gap between the tub rims before running the next pass.
15. **Troubleshooting:** If there are any problems, contact the website for Frequently Asked Questions, or call Mike at 432-559-7421.

## Frequently Asked Questions (FAQs)

1. **Stuck rock problem:** If a larger sized rock stuck in the calibrated “gap” the only way to clean that is to unscrew and remove the feeder/flow regulator plate (with the notched teeth). Then turn the unit upside down and hold the otherwise loose SS divider angle out of the way from the gap. If the rock does not simply fall out with gravity, then a slender long screwdriver can be used to gently poke and dislodge the rock. Reassemble the feeder regulator plate and be sure that the divider plate is hanging freely again just under the bottom edge before any use. **NOTE:** Do not try to force a stuck rock through from the top side because the calibrated gap might be changed and the thin SS “shield” might be damaged, both of which will alter the flow and future results.
2. The unit is sealed to assure grit does not collect in the bearings and upon the magnet. Do not disassemble any other part or section, other than the feeder plate and the divider angle as discussed above, for any reason. Any broken seal or evidence of such further disassembly will void our **guarantee** and our responsibility for quality control.
3. The **Mag-Zip design** is to only remove the major load problem: magnetite. There will always be some smaller amount of magnetite and some **remaining “black sands”** which may be weakly magnetic hematite, garnet, etc.