Care of the CM-4a Core Mould

Your CM-4a core mold will produce a high volume of cores per hour with good reliability if you follow these steps:

1. Use lead that does not contain tin. Tin-lead alloys are, basically, solder. The pistons and cylinders within the mold may stick together if you use a solder-like alloy.

2. Use only CLEAN lead. Skim, flux, and remove dross, dust, sand and debris from any scrap lead that you melt before attempting to pour it into the mold. The ejecting piston/cylinder assembly can be destroyed by the abrasive action of road dust, sand, and other hard abrasive materials mixed in with "wheel weight" lead or recovered range lead.

3. If the pistons stick in the cylinders, do NOT beat, strike, pound, or otherwise use impact force to try to free them. This will not work, and it will destroy the piston and possibly ruin the mold. Instead, do this:

(a) Remove the "rest plate" from the bottom of the mold by unscrewing the nuts, on the two long threaded rods, and sliding the plate off the mold bottom.

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(b) Turn the mold upside down and mount it so you can heat it with a propane torch (no other kind! *Not* acetylene under any circumstances!). Move the sprue cutter out of the way (open).

(c) Warm up the mold with a broad flame from a propane torch until the lead melts. The mold should not be heated "red" but only enough to melt the lead, 450-650 deg.F maximum. Red heat is nearly 900-1000 degrees, and will ruin the mold.

(d) With gloves protecting your hands, pull out the (hot) pistons.

(e) Use extra fine steel wool on a cleaning rod to wipe the cylinders clean of lead.

(f) When the mold cools, swab the ID of the cylinders with Loc-Tite "Anti-Seize" silver-bearing lubricant (used in muffler shops to keep bolts from freezing up).

(g) Insert the pistons and use the mold again. But make SURE the lead is clean, and is not a tin-bearing alloy!

4. When using the mold, make SURE that the pistons are DOWN below the top of the mold block BEFORE swinging the sprue plate closed! Striking the side of the pistons with the sprue plate will bend, ding, and otherwise destroy the pistons and make them stick in the mold. If you do this, remove the piston by pulling and twisting it, and get a replacement.

5. Note that hardened pistons will not be effective as the heat from melted lead will simply anneal them and make them soft again. The pistons and cylinders work very well, if you use them properly. If not, there is no "fix" other than to use proper procedure. The molds have been in use for decades with excellent results and do not need "improving" as seems to be the first reaction when a new user misuses the mold for the first time.