SIZING BULLETS

Suggested sizing diameter is .001 over the standard jacketed bullet diameter. All lead bullets must be lubricated, but it is not absolutely necessary to size all cast bullets. Bullets must be sized if they are so large that they expand the case too much to freely enter the gun's chamber. Sizing sometimes helps accuracy by making the bullet uniform in diameter. This insures uniform start pressure and better accuracy.

LUBRICATING BULLETS

Traditional bullet lubricating methods of placing lube only in the grooves are inferior to the modern method of coating the entire bullet with Lee Liquid Alox. This places the lube where needed, on the surfaces that rub against the bore. "Lead bullets must be lubricated or your gun will be fouled with lead and accuracy will be poor."

1. Screw the sizing die into any standard reloading press. Exact depth is not important.
2. Install the bullet seating punch into the ram. This fits all rams that use standard shell holders.
3. Place the red box on top of the sizing die, as shown.
4. Place bullet on the punch and push bullet through die.
5. When box is 3/4 full, lift the entire box off the die. Invert the box before opening.
6. For rifle and handgun loads, it is best to re-lube the bullets to insure the sized portion is recoated.

Guarantee

LLE RELOADING PRODUCTS are guaranteed not to wear out or break from normal use for two full years or they will be repaired or replaced at no charge if returned to the factory. Any LEE product of current manufacture, regardless of age or condition, will be reconditioned to new—including a new guarantee—if returned to the factory with payment equal to half the current retail price.
**REDUCING EXPOSURE**

Lead contamination in the air, in dust and on your skin is invisible. Keep children and pregnant women away during use and until cleanup is complete.

Risk can be reduced—but not eliminated—with strong ventilation; washing hands immediately after use of these products before eating or smoking; and careful cleaning of surfaces and floors with disposable wipes, after lead dust has a chance to settle. Use a lead-specific cleaner with EDTA or a high-phosphate detergent (like most sold for electric dishwashers) and bag wipes for disposal.

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**BULLET METAL**

Pure lead is too soft to make good bullets for all but very light loads or black powder guns. Our bullet weights are based on a 95.5 lead/tin alloy. Addition of tin to the alloy will improve the castability by lowering both the surface tension and viscosity.

Approximate hardness’s of various lead alloys and the minimum / maximum load pressures that they should be used to prevent leading of the bore.

<table>
<thead>
<tr>
<th>Lead Alloy</th>
<th>Min Load</th>
<th>Max Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Lead</td>
<td>5 bhn</td>
<td>7200</td>
</tr>
<tr>
<td>1-10 tin/lead</td>
<td>11 bhn</td>
<td>15840</td>
</tr>
<tr>
<td>Wheel weights</td>
<td>12 bhn</td>
<td>23000</td>
</tr>
<tr>
<td>Lyman 82</td>
<td>15 bhn</td>
<td>21600</td>
</tr>
<tr>
<td>Linotype</td>
<td>22 bhn</td>
<td>31680</td>
</tr>
</tbody>
</table>

To harden your alloy, add tin and / or antimony.

**A RULE OF THUMB FOR HARDENING LEAD ALLOYS**

For every 1% of tin added to your lead you will increase the brinell hardness by .3, and for every 1% antimony you add, you will increase the brinell hardness by .5. Once you get above 40% tin, no additional hardness is obtained.

If you do not own a LEE LEAD HARDNESS TEST KIT you can check the relative hardness by taking a bullet of known hardness. Place it base to base with one of unknown hardness and squeeze them in a vise. The softer bullet will compress a greater amount. Adjust alloy to suit.

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**CASTING BULLETS**

If you’re an experienced bullet caster, forget most of what was true when using the difficult to use cast iron blocks. The Lee Bullet Mold makes casting bullets easy and fast. No need to cast .50 to 100 before you start getting good bullets. Many times the first one you pour will be good, provided you follow the simple instructions. Because the aluminum mold blocks conduct heat fast, the metal must be extra hot for good bullets.

**TAKE CARE OF YOUR MOLD**

Your bullet mold is a precision-made tool. To preserve this built-in accuracy, it’s necessary to lubricate it properly. Beeswax or an anti-sieze lubricant must be applied to the locating pin and sprue pivot point. Lack of lubrication will cause the sprue plate to gall and damage could be irreparable. When storing for long periods, lightly oil the mold to prevent rust. Never wire brush or contact the mold with anything hard like steel.

**PREPARING YOUR METAL**

Wear safety glasses and gloves. After the metal has melted, it will have a grey scum on the top. Don’t remove this as it’s the tin that has separated from the lead. Flux the metal. Do this by placing a small piece (the size of a pea) of beeswax or paraffin into the molten metal and stir with the ladle until there is nothing but a dark grey powder floating on the metal. This should be removed with a small ladle. Always flux the metal after adding to the pot or if it needs it. The smoke cause by fluxing your metal can be ignited with a match. The wax may burn into flame so be cautious to prevent a burn.

**HELPFUL HINTS**

NEVER DROP BULLETS DIRECTLY FROM the mold into the lead pot. Metal will splash onto the mold faces and prevent complete closure. BE EXTREMELY CAREFUL not to get any water into the molten lead. Even a small drop will explode into steam and violently spatter hot lead a surprising distance.

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**GLASSES AND GLOVES ARE MANDATORY when handling molten metal.**

LOADS SHOULD NOT EXCEED 34000 PSI with plain base bullets. This means most pistol loads can be loaded without gas checks.

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**BULLETS FOR MODERN CARTRIDGES**

This condition is always due to the mold not being closed. Check your mold faces for a lead splash or raised nick. A tiny burr or lead splash as small as .001 will cause out of round oversize bullets. [See TROUBLESHOOTING next page]