**Guarantee**

LEE 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.

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**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.

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**TROUBLESHOOTING**

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mold cold</td>
<td>Dip corner of mold in molten metal</td>
</tr>
<tr>
<td>Oil in mold</td>
<td>Wash blocks in white gas or any volatile solvent</td>
</tr>
<tr>
<td>Metal not hot enough</td>
<td>Increase heat</td>
</tr>
<tr>
<td>Alloy no good</td>
<td>Sometimes an alloy just won’t work easily. It’s best to start with a new batch and blend it to use it up</td>
</tr>
<tr>
<td>Metal needs fluxing</td>
<td>Flux the metal as per instructions</td>
</tr>
<tr>
<td>Mold not smoked</td>
<td>See Step #2</td>
</tr>
</tbody>
</table>

**TAKES LONG FOR METAL TO SOLIDIFY**

<table>
<thead>
<tr>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mold too hot</td>
<td>Touch mold to moistened cloth or sponge. <strong>Caution</strong> Don’t get water in the block or lead as it turns into steam instantly and the metal spatters with explosive force</td>
</tr>
</tbody>
</table>

**MOLD DOES NOT LINE UP OR CLOSES WITH DIFFICULTY**

| Needs lubrication            | Lubricate your mold as in Step #4 at left. Don’t get any in the cavity |
| Mold casts oversize bullets or out of round | • Nick or burr on mold face  
• Splash of lead on the mold face  
• No or insufficient lubrication on mold alignment pins. See step #4 |

**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. Place bullets in plastic container and dribble some Lee Liquid Alox onto the bullets.
2. Gently shake the bullets in an orbital motion to coat the bullets. If they do not coat completely, add a little more lube.
3. Spread bullets onto waxed paper; allow to dry overnight.
4. Load at least one bullet into a case checking to be sure it easily chambers in your gun. If it fits tightly, you must resize the bullets before loading.
5. Screw the sizing die into any standard reloading press. Exact depth is not important.
6. Place the red box on top of the sizing die, as shown.
7. Place bullet on the punch and push bullet through die.
8. When box is 3/4 full, lift the entire box off the die. Invert the box before opening.
9. For rifle and handgun loads, it is best to re-lube the bullets to insure the sized portion is recoated.

**WARNING**

Melting lead and casting lead objects will expose you and others in the area to lead, which is known to cause birth defects, other reproductive harm, and cancer.
**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.

**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 5/5 lead/tin alloy. Addition of tin to the alloy will improve the castability by lowering both the surface tension and viscosity.

Approximate hardnesses of various lead alloys and the maximum load pressures that should be used to prevent leading of the bore.

<table>
<thead>
<tr>
<th>Lead Type</th>
<th>Depth</th>
<th>Max Load Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure Lead</td>
<td>5 bhn</td>
<td>7,000</td>
</tr>
<tr>
<td>1-10 tin-lead</td>
<td>11 bhn</td>
<td>14,000</td>
</tr>
<tr>
<td>Wheel weights</td>
<td>12 bhn</td>
<td>17,000</td>
</tr>
<tr>
<td>Lyman #2</td>
<td>15 bhn</td>
<td>20,000</td>
</tr>
<tr>
<td>Linotype</td>
<td>22 bhn</td>
<td>30,000</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 .9. 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.

**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-seize 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 steel parts 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 top. Don’t remove this as it’s the tin that has separated from the lead. Flux the metal.

**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.

**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.

**BULLETS FOR MODERN CARTRIDGES** will be stated size to plus .003. Most bullets from Lee molds can be used as cast. Sizing should not be considered as an absolute necessity. However, all cast bullets must be lubricated.

WHEN USING A HARD ALLOY like linotype multiply the listed bullet weight by .93 to obtain your approximate bullet weight.