Lead Testers

By ST Machining, LLC

Tester Directions (for lead and lead alloys ONLY)

Tester set up for testing a bullet.

Testing an ingot.

Install the dial indicator on the holding rod and center its plunger on the spring bolt head. Adjust this using the nuts and washers on the rod. When properly set up, the dial indicator plunger should be slightly compressed (1/4”), centered and in line with the bolt. The indicator will be at an angle for easier reading and less glare. Rotate the dial face to “O” (it may have a set screw on the side of the dial face that locks its movement). The small brass rod is the reference point for the screw markings.

TESTING: Run the screw point until it just touches the sample. For a bullet, this should be centered and preferably on a flat (if there isn’t one, file a ¼” flat for a better test). After the

point just touches the sample, note the EXACT pointer mark, rotate the screw EXACTLY ONE TURN, and read the indicator. You have just made a test and it probably took less time than reading this.

NOTE: On pure lead, read the dial quickly as the spring is strong and the point will continue in changing the reading. This isn't a problem on harder alloys.

NOTE: IF you use exactly the same procedure each time your results will be consistent. Varying the "first touch" will cause the most errors. Concentrate on that first touch. On hard bullets, they can literally be held in place by that touch, BUT on pure lead just a hint of a touch is correct. On pure lead any touch is penetration and it will give you high readings.

SUGGESTION: For new users, run several tests on the same bullets until you get the "feel" for it. This should be fairly easy and when you start seeing the same reading, within a point or two, you are ready to start testing.

BHN: If you want to read Brinell directly, simply mark the dial face with a "wipe off" felt pen.

POINTS to consider: If you are trying to duplicate some old bullets, have they age hardened (or softened)?? Ingots will not read exactly the same as bullets. I have had the best luck on ingots by sectioning them and testing along the edge. Ingot surfaces are usually not smooth and throw off readings as well as the fact that they cool slower and density can be different due to varying shrinkage. Testing the same bullet will only work if you file off the old mark and this can still throw the reading off. Hammering a bullet to retest it will NOT work.

The tester point is NOT hardened, DO NOT test anything but lead alloys.

For help or information contact:

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Tester Hardness Cross Reference

Dial Reading	Brinell
.030-.035	5*
.043-.048	6
.051-.056	7
.057-.060	8
.068-.072	10
.072-.075	11
.084-.088	13
.089-.092	17-19
.093+	30+

Subject to updates as we get more data.

Small samples can “spread” giving distorted reading. On bullets, a ¼” flat filed on the nose works best.

* When checking pure lead, start the reading as soon as the point touches. On pure lead, the reading must be taken very quickly.

Be extremely careful of the “point” (the part that touches the lead). This point has been calibrated and if it gets distorted or changed in any way, the reading will no long agree with this chart.

If you have any issues, please contact ST Machining, LLC – (866) 428-5538 or e-mail us at sales@stmachining.us