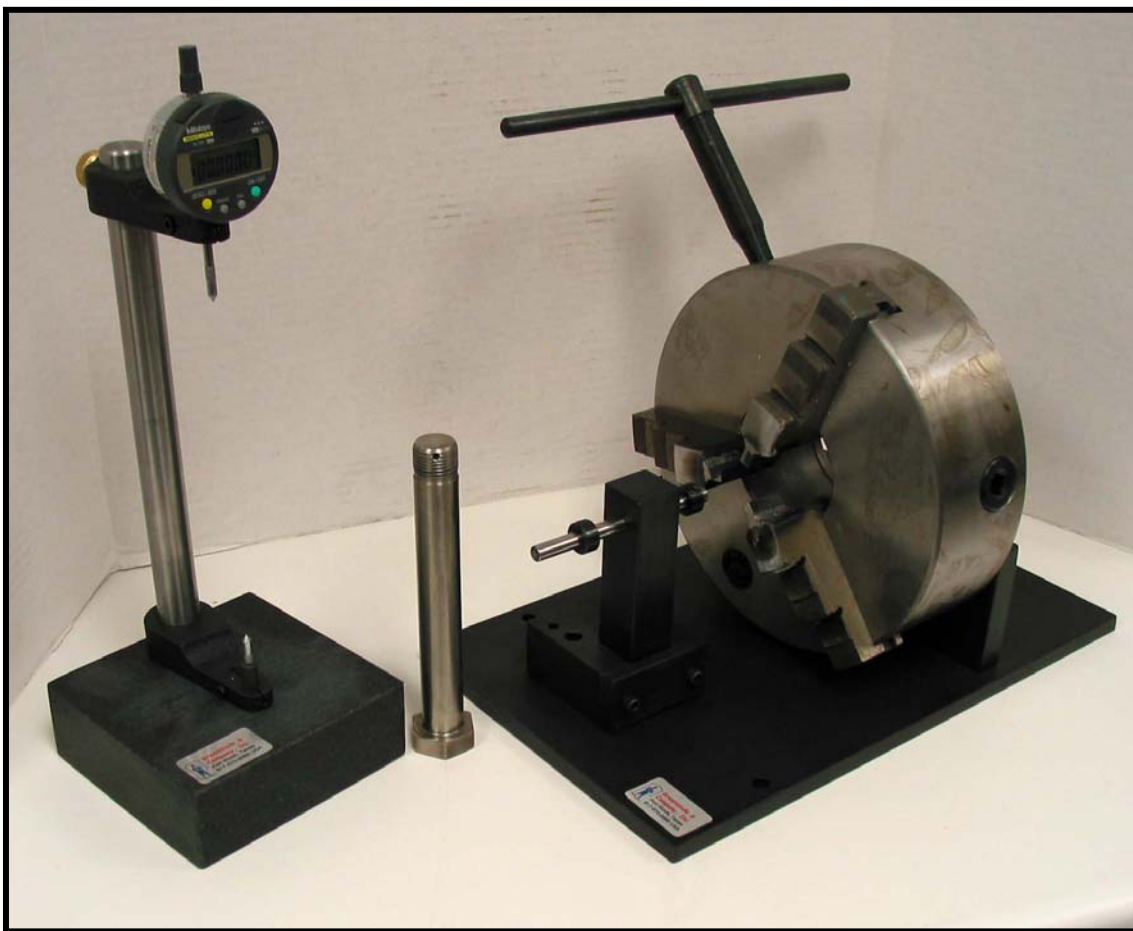




# Bolt Tru-Cntr™ and Elongation Gage Operation Manual



The Tru-Cntr™ fixture is designed to facilitate the indenting of both ends of test bolts at the centerline of the bolt to provide precise length measuring locations. The Elongation Gage precisely measures the bolt elongation associated with the testing of bolts for their proof load strength.



**Elongation Gage**

**Tru-Cntr™ Fixture**

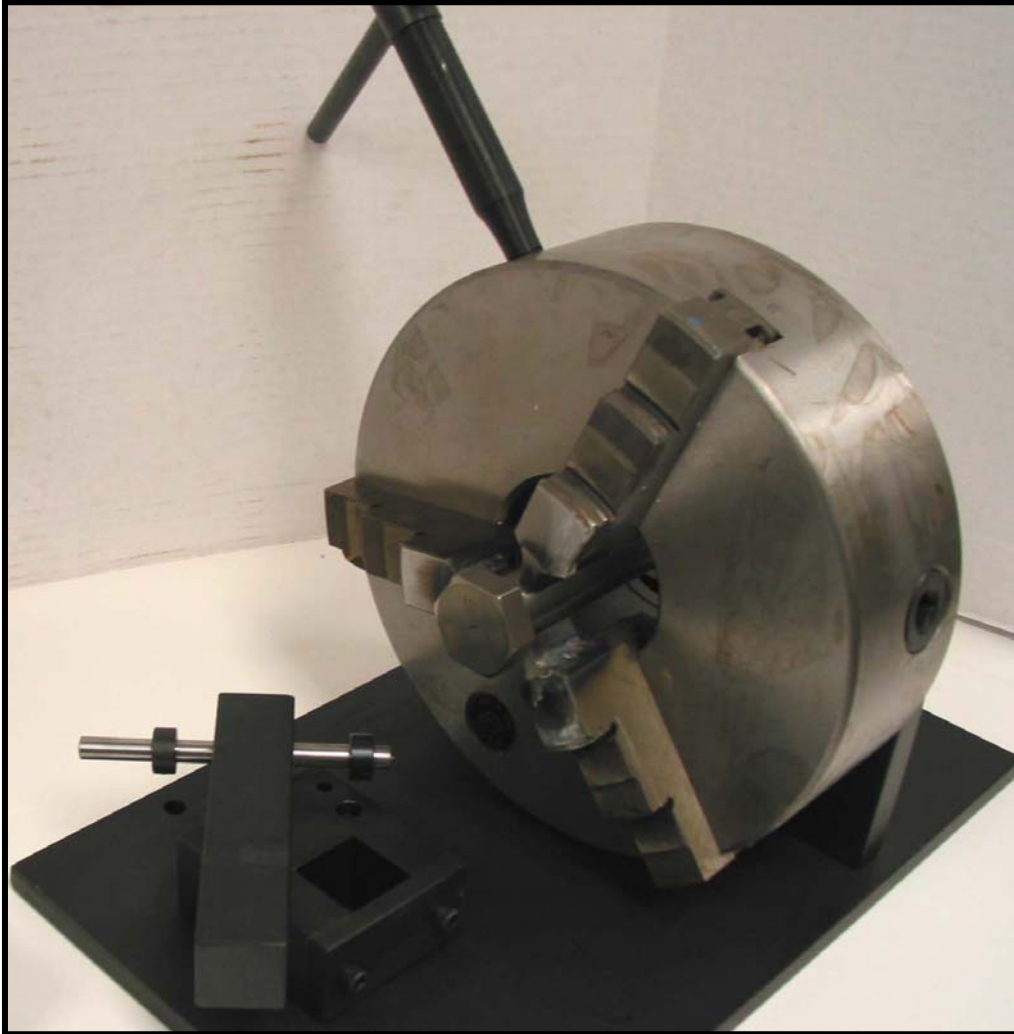
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## Measuring Bolt Proof Load Elongation:

1. Remove the indenter assembly from its pocket. Open the chuck jaws wide enough to accept the test bolt. Insert the bolt into the chuck so the underside of the bolt head is near the chuck jaws and tighten the jaws on the bolt using the chuck key.



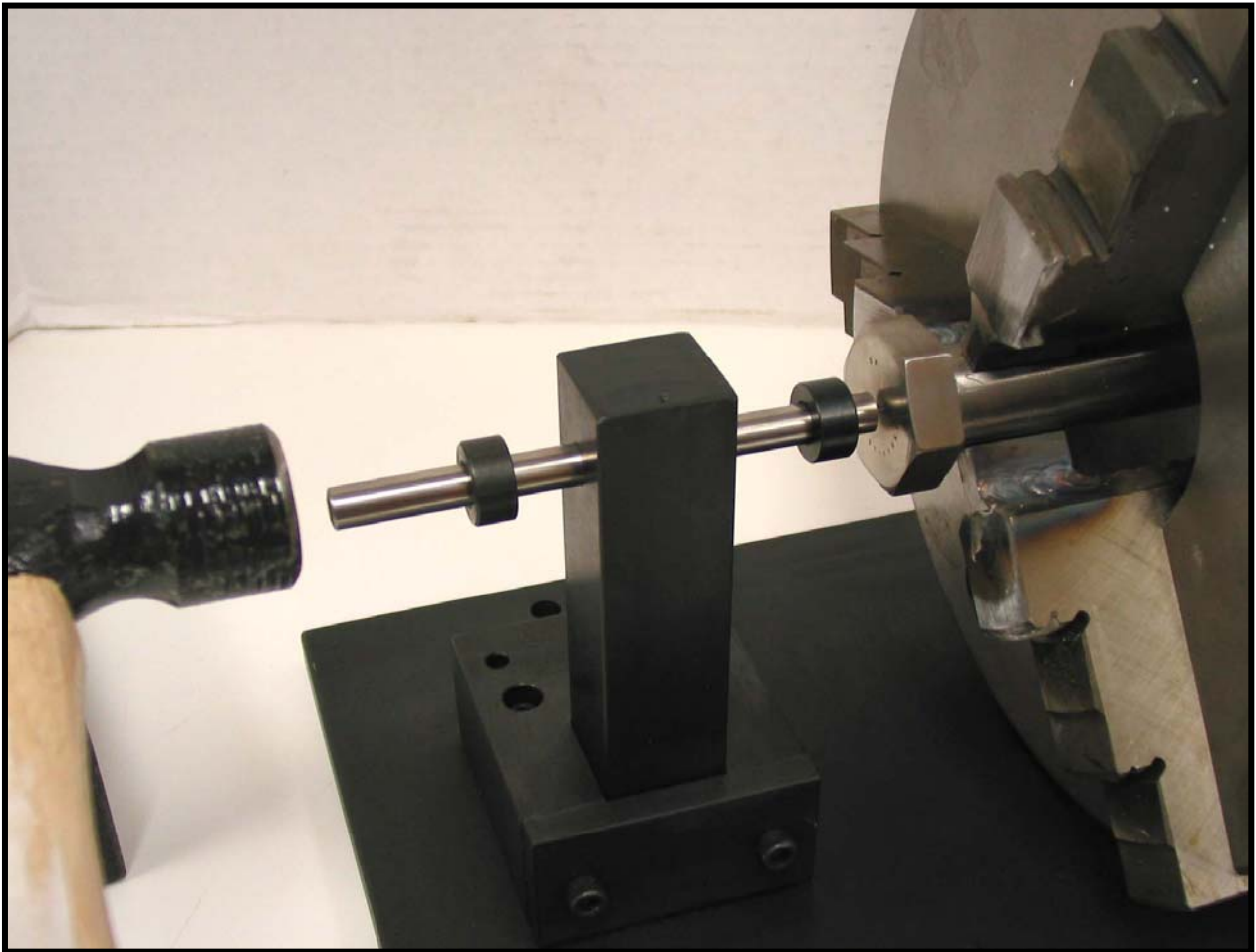
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2. Insert the indent assembly into its nest on the fixture base. Make sure the post goes all of the way to the fixture base. Slide the indenting punch toward the bolt head until the point of the indenter pin is in contact with the bolt head. Strike the indenting pin firmly with a hammer to create the indent in the bolt's head.

**WARNING! Always wear safety glasses when striking the indenting pin to protect the operator's eyes if the pin chips or fractures.**

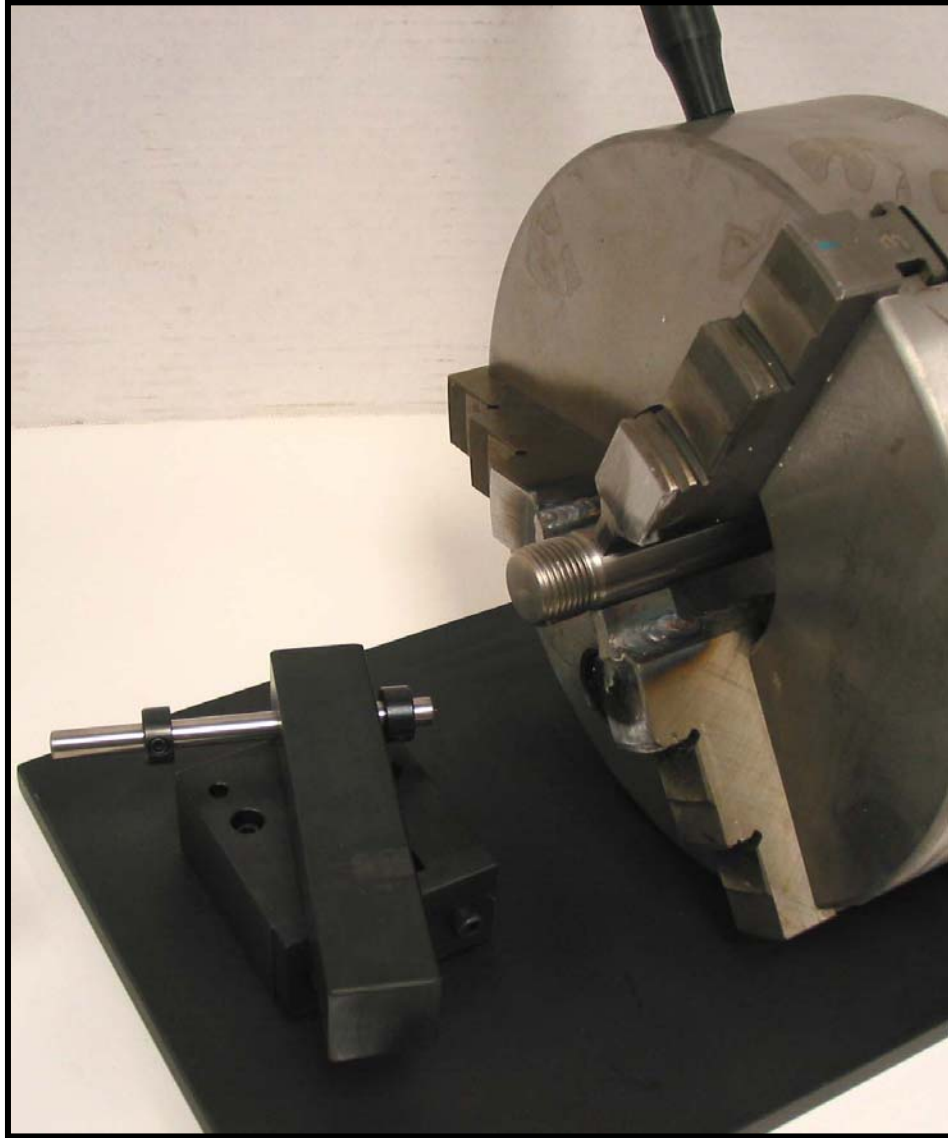


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3. Remove the indenter assembly from its nest. Loosen the chuck with the chuck key. Insert the point end of the bolt in the chuck from the back side of the chuck and tighten the chuck using the chuck key.



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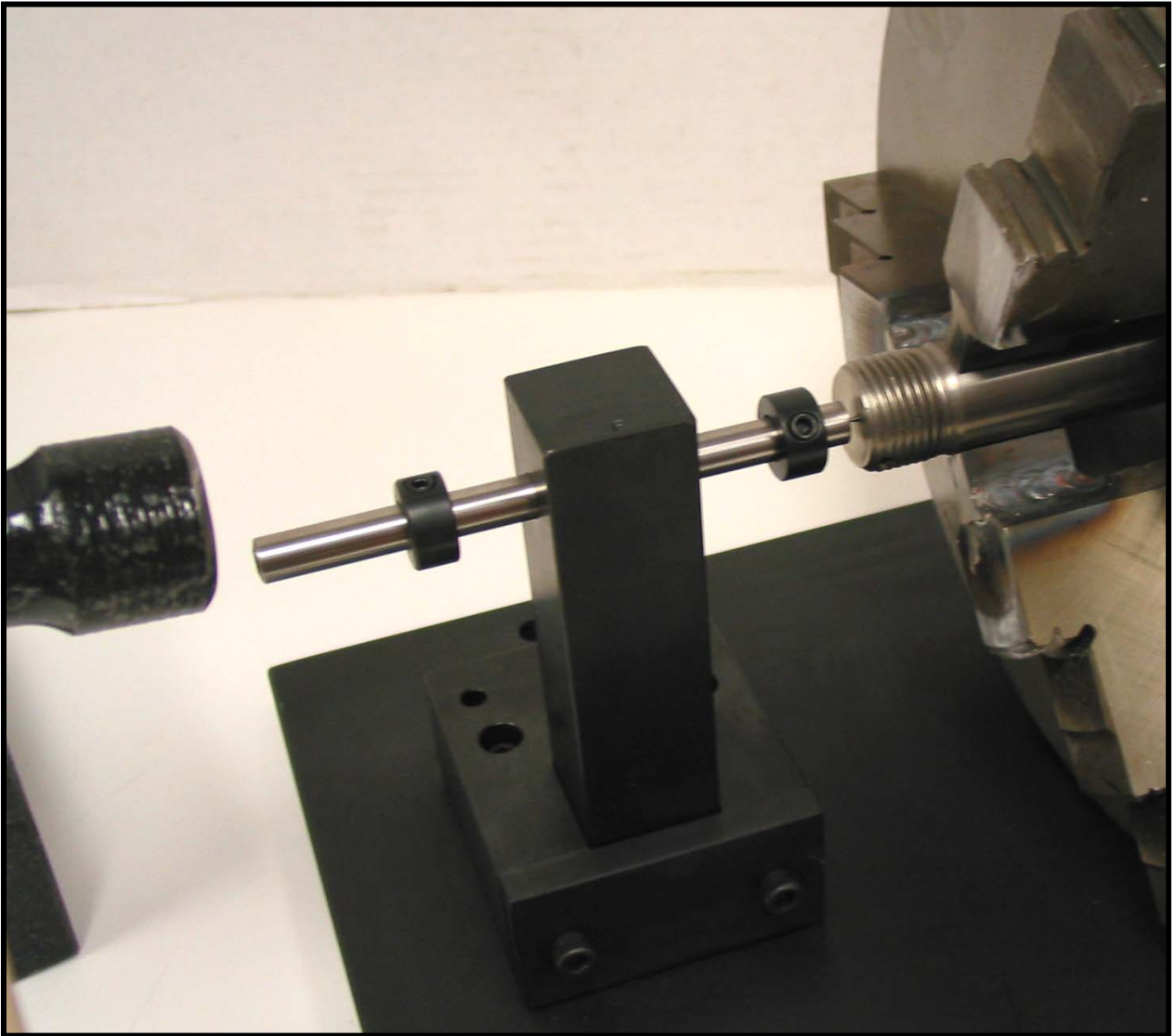
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4. Insert the indenting assembly into its nest on the fixture base. Be sure the post firmly contacts the top of the fixture base. Slide the indenter toward the bolt's end until the indenter point contacts the bolt's end.

Strike the exposed end of the indenter firmly to indent the bolt point.

**WARNING! Always wear safety glasses when striking the indenting pin to protect the operator's eyes if the pin chips or fractures.**



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5. Loosen the thumbscrew in the back of the upper gage arm and position the upper arm in a location that will allow the bolt to sit between the lower and upper gage points so that the indicator stem can be lifted off the bolt far enough to install and remove the bolt from the fixture. Tighten the upper arm thumbscrew tightly.

Turn the indicator ON. Lift the indicator stem. Engage the indent in the bolt's head or point with the lower gage point.. Lower the indicator point into the indent in the opposite end of the bolt. Rotate the bolt to make sure both points are still engaged in the indents. Press ZERO on the indicator.

Lift the indicator stem and remove the bolt. Perform the proof load test. Install the bolt in the elongation fixture again as was done previously, but DONOT press any buttons on the indicator. Read the indicator display and determine if the bolt elongation is within the specified limits (usually  $+.0005/-0.0000$ ).



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