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**Product: Concentricity Gauge**

**Product ID: 1600**

The 21<sup>st</sup> Century Concentricity Gauge is a completely new concept in the hand loading industry due to the use of a horizontal dial test indicator, 360 degree rotating gauge turret, and linear guide rails. Most conventional concentricity gauges of the day use what is called a height indicator. Although it offers an economical solution to the problem, this type of gauge was not intended for the purpose of measuring rotating diameters. They will lead to inaccuracies due to indicator rod flex and bounce.

The new concentricity gauge from 21<sup>st</sup> Century solves this problem and offers flexibility found in no other concentricity gauge. The horizontal dial test indicator was designed specifically for checking rotating diameters and in fact is exactly the type of gauge used in the machining industry for decades to measure run out – the very thing that we as hand loaders are striving to minimize or eliminate.

**Important**

- The stem has a full 180 degrees of travel (Fig. 1). It should be adjusted so the measuring portion of the stroke is roughly centered in the range of expected travel while measuring. You will feel added resistance when you reach the measuring limit, but the stem will move as shown in Figure 1. Position stem to suit the operation you are performing. If you fail to do this, you may exceed the travel limit of the measurement portion of the stroke and record incorrect results.
- It is recommended that you permanently fix the gauge to your bench using the pre-drilled/counter bored holes.
- Do not oil the rollers or any other portion of this gauge.

**Figure 1 – Stem Travel**



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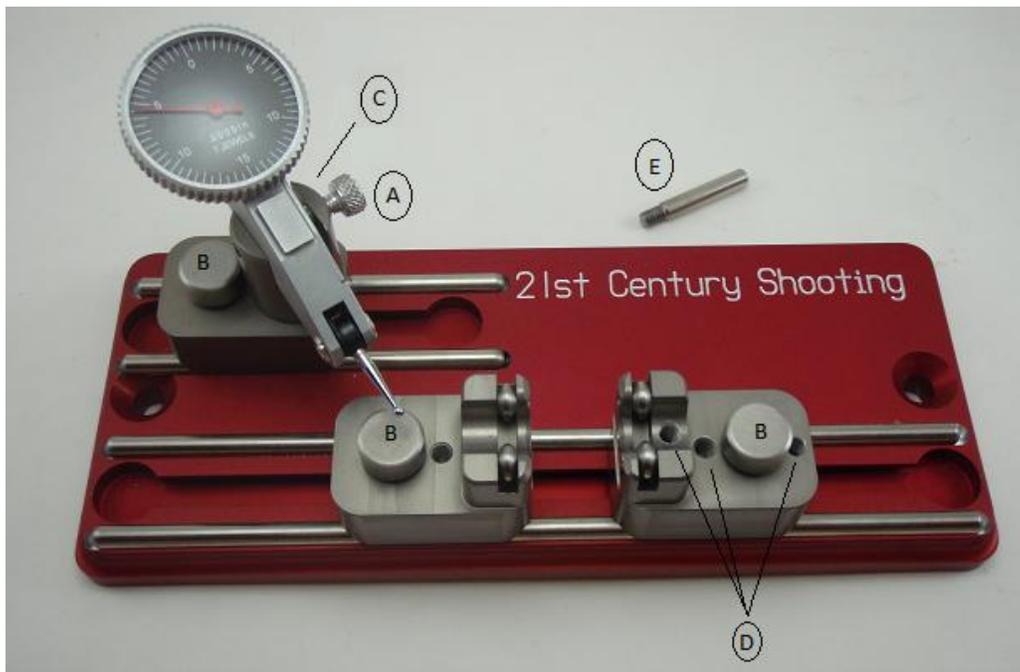
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**Adjustments/Setup**

- A. The main body of the gauge can be adjusted to help position the ball of the stem exactly where you wish to perform the check. The thumb screw (Figure 2 – A) should be finger tightened only.
- B. There are spring loaded buttons (Figure 2 – B) for positioning each of the three platforms (gauge turret platform, left/right roller platforms) on the rail system.
- C. The main body of the gauge sits on a turret and can be turned 360 degrees (Figure 2 – C).
- D. There are three threaded stops drilled into the right roller platform (Figure 2 – D). Screw the threaded post (Figure 2 – E) into the desired hole depending on the length of your measuring subject.

**Figure 2 – Adjustments/Setup**



**Operation**

- There must be no lateral movement of the measuring subject. Set the threaded stops on the right roller platform (Figure 2 – D) so the measuring subject can be held fast against it to prevent lateral movement. For example:
  - The right-most threaded hole for .50 cal
  - The center threaded hole for most calibers excluding .22/.17/.50
  - The left-most threaded hole for .22/.17 calibers
- The indicator stem need not be perpendicular to the rotation of the surface being checked. So long as the ball is in contact with the rotating surface being checked an accurate measurement will be achieved (Figure 3).

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**Figure 3 – OD Check Variations**



- Inside diameters may also be checked. As with OD checks, the indicator stem need not be perpendicular to the rotation of the subject. If you wish to check in-line, slide the gauge turret platform all the way to the left, removing it from the rear rail system. Insert on the front rail system and position so indicator stem can be placed in the case neck. (Figure 4)

**Figure 4 – ID Check Variations**



- Roll the subject smoothly with even pressure throughout a complete rotation. Note movement of the needle on the dial. Each increment on the dial is  $.0005''$ . The total travel of the needle in a single rotation of the subject equals the run out of the subject.