

# Operating Instructions for AD502 Micrometer Key Gauge

## 1 Cut the calibration key

- 1 Load a key blank into the key carriage. See Figure 1.

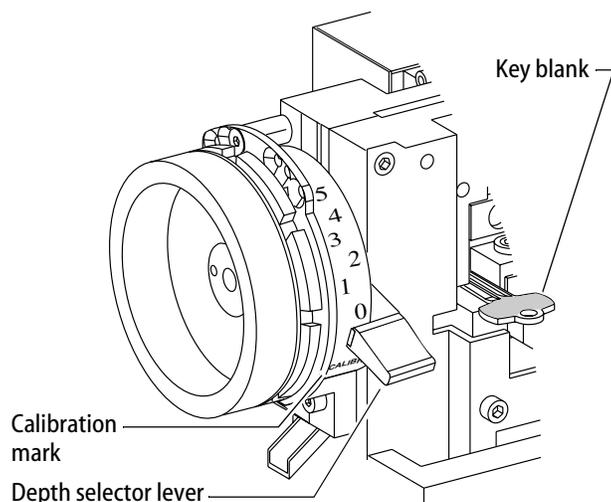


Figure 1

- 2 Move the depth selector lever on the key combinator to the "calibration" mark (the mark below zero).
- 3 Make seven cuts on the key, all at the calibration depth. Remove the key from the key carriage.

For more information about cutting keys, see the *Key Combinator Service Manual*.

## 2 Place the key in the key gauge

- 1 Hold the key gauge with the thimble pointing up. See Figure 2.

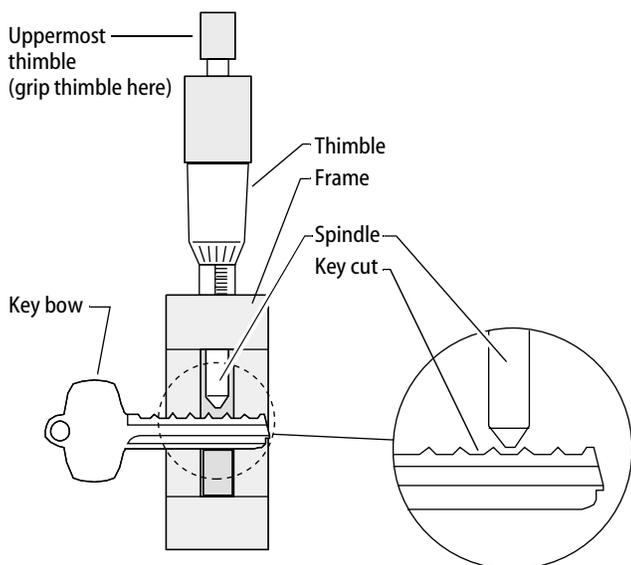


Figure 2

- 2 Put the blade of the key into the frame as shown in Figure 2. The key cuts should be on the top and the bow of the key to the left. Make sure the key is flat against the back of the frame and the bottom of the key is against the base of the frame.

**Note:** For left-handed patented keys, position the bow to the right.

- 3 Center the third or fourth key cut under the point of the spindle as shown in figure 2.
- 4 Grip the uppermost thimble and slowly turn it clockwise to lower the spindle. Stop turning the thimble when the spindle bottoms out on the key cut. You should hear a "clicking" sound.

## 3 Read the gauge

**Note:** If you have a digital key gauge (AD502D), simply read the measurement from the display and skip to step 4.

To understand how to read the gauge, follow the example below. Figure 3 shows a measurement of 0.2495".

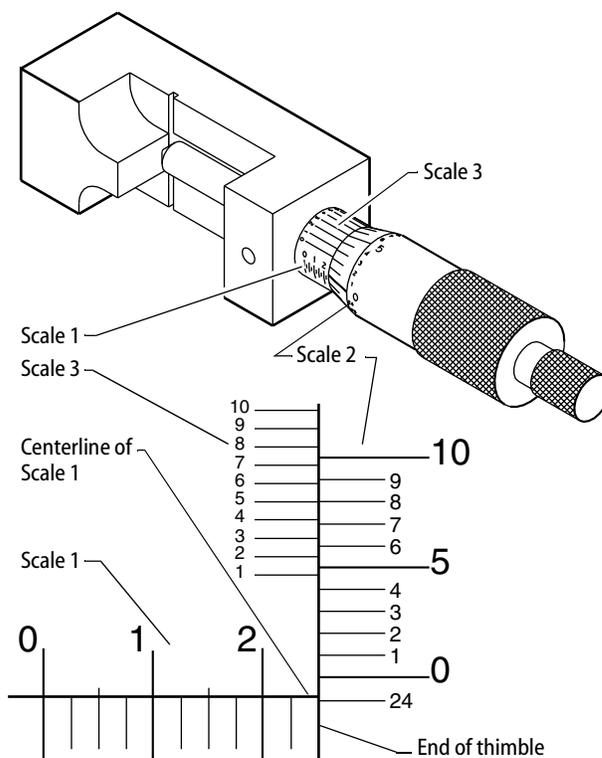


Figure 3

- 1 On scale 1 read the largest, visible number. (In Figure 3 the number is 2.) Each number on scale 1 stands for 0.100" (one hundred thousandths of an inch). Each line on scale 1 stands for 0.025" (twenty-five thousandths of an inch).
- 2 On scale 1 count the number of lines between the largest number and the end of the thimble. (In Figure 3 there is one line.)
- 3 On scale 2 read the largest number that is even with or just below the centerline of scale 1. (In Figure 3 the number is 24.) Each line on scale 2 stands for 0.001" (one thousandth of an inch).

4 On scale 3 read which line best aligns with a line on scale 2. In Figure 3 the number is 5 (it aligns with 8 on scale 2). Each line on scale 3 stands for 0.0001" (one ten-thousandth of an inch).

Below is a summary and total from the example in Figure 3. To find the depth of the key cut, add the values from the three scales as follows:

Step #	Scale(s)	Reading	Number	Value
1	1	Largest number visible.	2	<b>0.2000</b>
2	1	Number of visible lines between largest number and thimble.	1	<b>0.0250</b>
3	1 & 2	Largest number on 2 even with or below centerline of scale 1	24	<b>0.0240</b>
4	2 & 3	Line on scale 3 that best aligns with line on scale 2.	5	<b>0.0005</b>
<b>Total:</b>				<b>0.2495"</b>

#### 4 Compare measurement to calibration range of 0.2490" – 0.2510"

For A2, A3, and A4 keying systems, the target calibration value is 0.2500". Since this is only a target value, your actual measurement can vary slightly and still be acceptable — you can expect it to vary some.

If your measurement is no more than 0.001" (one thousandth of an inch) greater or less than 0.2500", the key combinator is within the calibration range. In other words, the key cut depth that you measure must be greater than 0.2490" but less than 0.2510". If the key cut measurement falls within this range, the key combinator does not need adjustment. Proceed to the following step only if your measurement falls outside the range of 0.2490" and 0.2510".

#### 5 Optional: Adjust the key combinator

1 With a lead or grease pencil, make a mark across the depth selector housing.

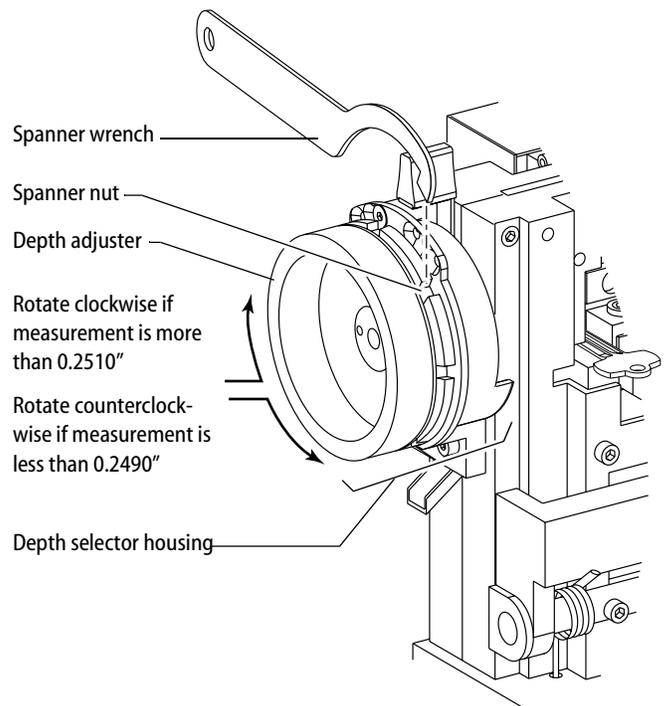


Figure 4

- 2 Use the spanner wrench to loosen the spanner nut behind the depth adjuster as shown above.
- 3 Depending on the key cut measurement, do one of the following:

##### For a key cut measuring less than 0.2490"

- Turn the depth adjuster counterclockwise. Turning the depth adjuster 1/4 inch along its circumference will change the depth of the cut by 0.0010" (one thousandth of an inch). Use the lead or grease mark as a reference.

##### For a key cut measuring more than 0.2510"

- Turn the depth adjust clockwise. Turning the depth adjuster 1/4 inch along its circumference will change the depth of the cut by 0.0010" (one thousandth of an inch). Use the lead or grease mark as a reference.
- 4 Hold the depth adjuster in place while tightening the spanner nut.
 

**Note:** If the depth adjuster moves while you are tightening the spanner nut, loosen the nut again and turn the depth adjuster back the same distance that it turned accidentally. Use the lead or grease mark as a reference.
  - 5 Make sure the new key cut depth is within the calibration range by repeating step 1 (on the front side) through step 4.