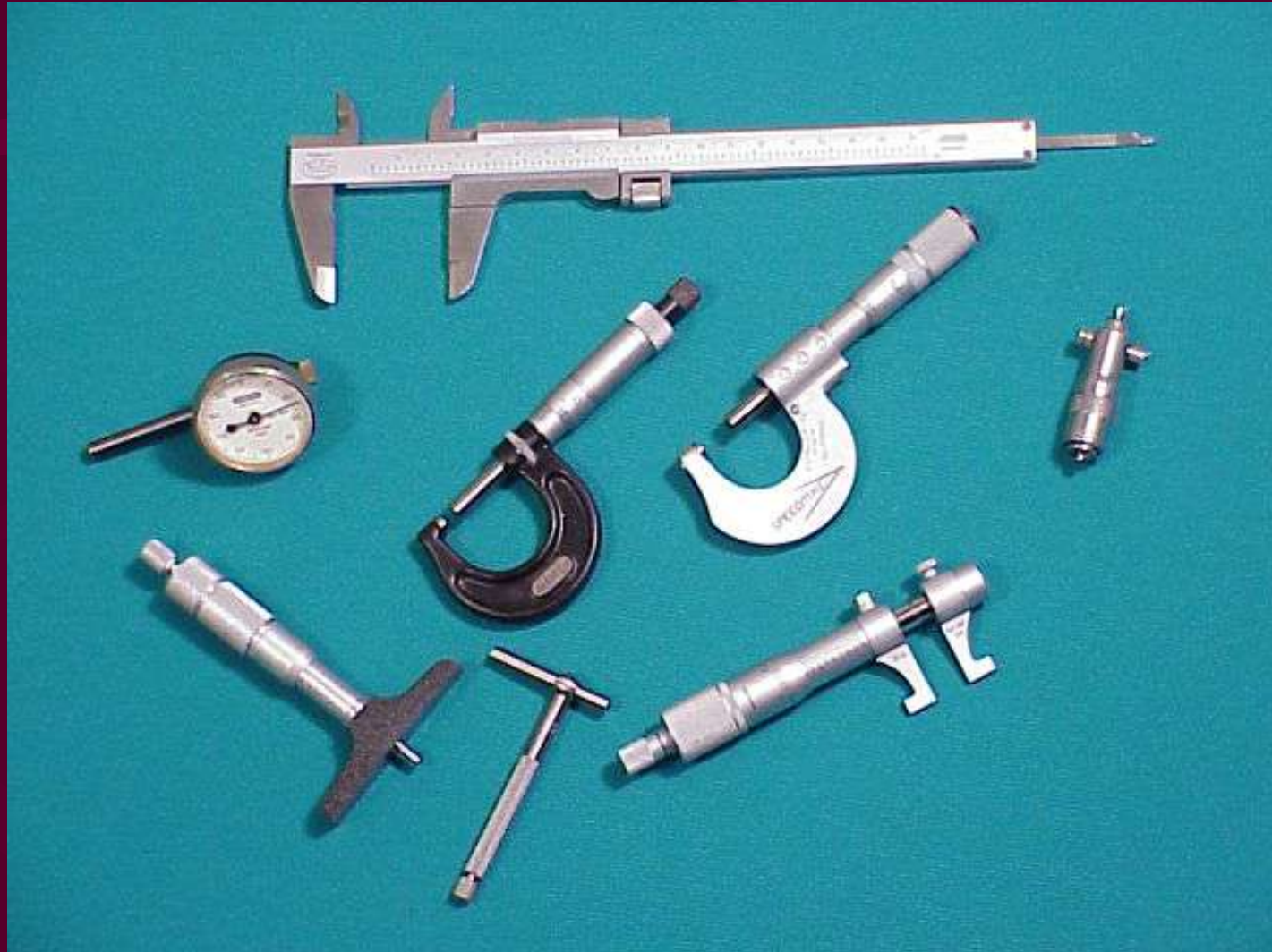


# Examples of tools



Why

# Why

- The manufacture of machines require close tolerances.

# Why

- The manufacture of machines require close tolerances.
- Interchangeability of parts require precision parts

How small is Precise?

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- Measurements are written as decimals.
- $1/1000 = .001$

# Outside Micrometers

# Outside Micrometer

- Accuracy to .001
- Range of one inch.



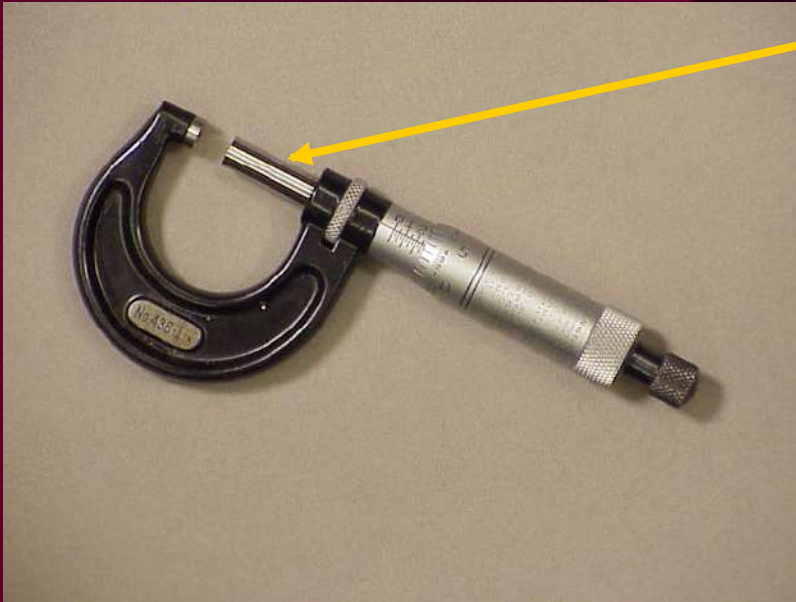
# Parts of the micrometer.

- Anvil



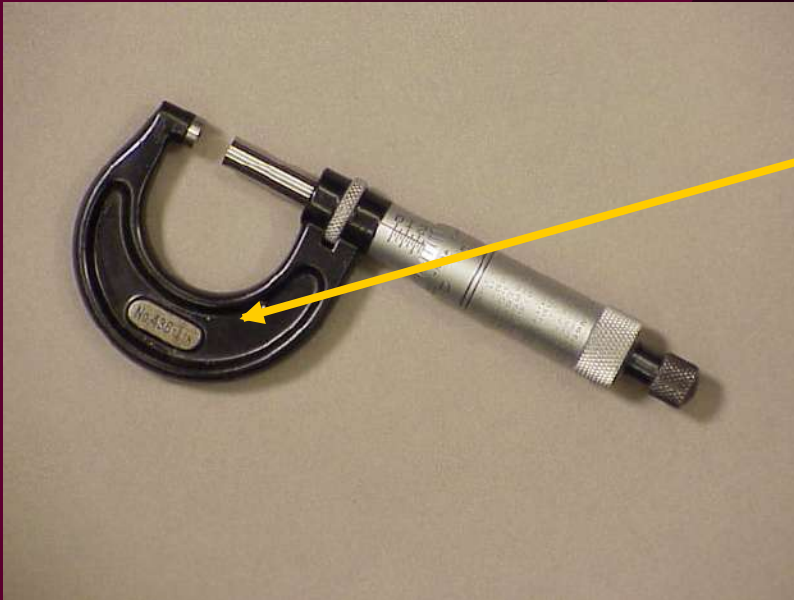
# Parts of the micrometer.

- Anvil
- Spindle



# Parts of the micrometer.

- Anvil
- Spindle
- Frame



# Parts of the micrometer.

- Anvil
- Spindle
- Frame
- Barrel



# Parts of the micrometer.

- Anvil
- Spindle
- Frame
- Barrel
- Thimble





# Parts of the micrometer.

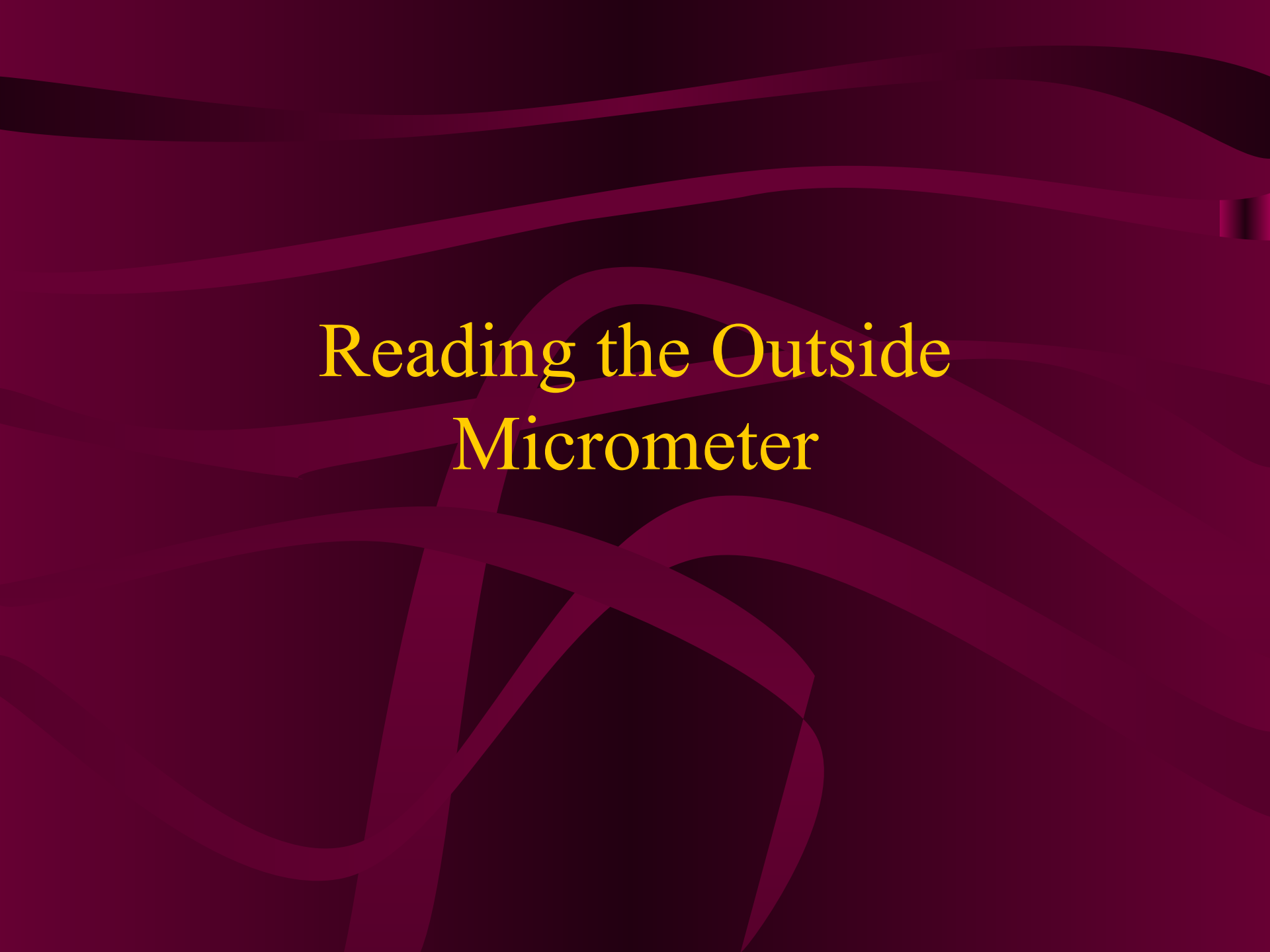


- Anvil
- Spindle
- Frame
- Barrel
- Thimble
- Ratchet

# Parts of the micrometer.



- Anvil
- Spindle
- Frame
- Barrel
- Thimble
- Ratchet
- Lock



# Reading the Outside Micrometer

# Reading the Micrometer.



- Determine the range of the tool.
  - 0 - 1"
  - 1" - 2"
  - 2" - 3"
  - 3" - 4"

- Start by writing 3. This represents the smallest size this micrometer can measure.



3.

- Read the largest numbered line showing on the barrel.



3.



- Read the largest numbered line showing on the barrel.
- Write this down to the right of the decimal.



3.6

- Count the small lines between the long 6 line, and the edge of the thimble.



3.6





- Find the line closest to the base line on the barrel.
- Each line represents .001 of an inch.
- Add this reading to the size we currently have.



3.675

+ .016

3.691

- The reading of this micrometer is
- 3.691
- Read as
  - Three inches, six hundred ninety one thousands.



3.675

+ .016

3.691

# Practice A

Read the micrometer.





# Practice A

.261



# Practice B

Read the micrometer.



# Practice B

.399



# QUIZ

- Take out a sheet of lined paper. Put your name, date, and period number on the top.
- Number from 1 to 5.



# Quiz

#1



# Quiz

#2



# Quiz

#3



# Quiz

#4





# Quiz

#5





The End