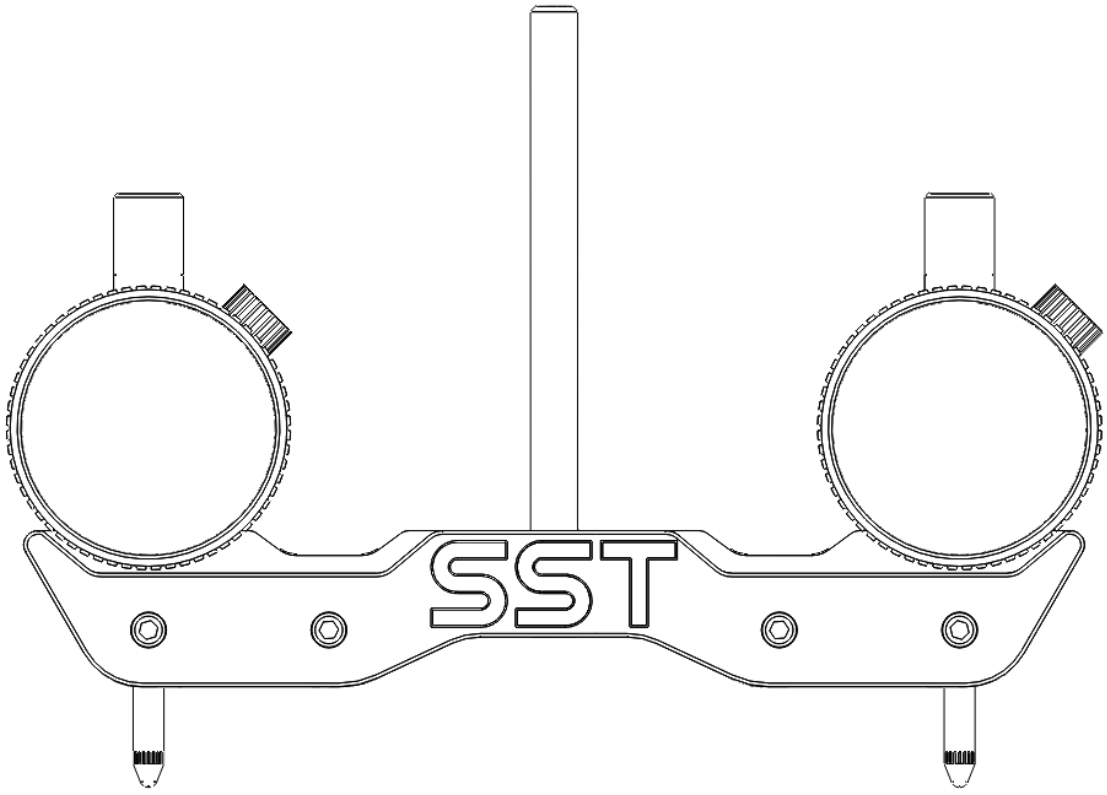
SST

STUPID SIMPLE TOOLS



MINI TRAM + SQUARE SYSTEM

GETTING STARTED

LOADING THE TOOL

1. Making sure the set screws are sufficiently backed out, insert a 0.5" dial indicator into a hole for the selected diameter [2.5", 4.5"]
    a. If the indicator doesn't insert smoothly, further back out the set screw – do not force it!
2. Pressing down firmly on the indicator so that its bottom sits flush with the tram tool, lightly tighten the set screw to lock into place
3. Repeat steps [1] + [2] for the second dial indicator on the tool's opposite arm
4. Holding the tram tool to ensure it doesn't fall out, tighten the unit into your machine using a 1/4" precision collet

CALIBRATING INDICATORS

1. ! No two dial indicators are ever identical, so it is important to reference each to a common point before each use !
2. Select a single indicator to calibrate first, henceforth referred to as indicator #1
3. Lower the machine spindle onto an arbitrary flat point, until indicator #1 is depressed ~0.100", then lock the machine's spindle and table
4. Turn indicator #1's face bezel until the needle reads 0.000"
5. Rotate the tram tool 180° so that indicator #2 now measures the same point indicator 1 was previously reading
6. Turn indicator #2's face bezel until the needle reads 0.000"
7. Both indicators should now be zeroed to a single point, and thus calibrated to each other

TRAMMING + SQUARING

1. Rotate the tram tool so that the body is parallel to the length of the table, or parallel to the X-axis
2. Lower the spindle until the both indicators are depressed by ~0.100"
3. Make note of the discrepancy between the two indicators readings, and adjust the machine's head until both indicators display the same value
4. Rotate the tram tool so that the body is perpendicular to the length of the table, or parallel to the Y-axis
5. Repeat steps [2] & [3] for the Y-axis