

### 649 Spindle Square

#### Precise and Accurate

The Starrett 649 Spindle Square offers accuracy, convenience and significant time saving with the task of trammung the head of a vertical milling machine. This must be done regularly to ensure squareness and perpendicularity between the spindle and work surface.

The spindle square is easier to use and more precise than the traditional method of trammung with a dial test indicator.

#### Features & Specifications

- Fully assembled with two AGD Group 2 dial indicators
- Patented design
- Solid steel body construction with durable black oxide finish
- Ground gaging surface
- Approximately 4 lbs with custom case
- 3/8" inch shank diameter
- 4" (100mm) between contact points
- Approximately 6-3/4" (172mm) wide and 5-1/2" (140mm) from the top of shank to the end of the contact points

#### Using the Spindle Square

After setting the spindle square indicators to "0" on a surface plate, place the Spindle Square into the collet of the milling machine and bring the head down to the table until both indicator needles have rotated approximately one full rotation.

The needles do not need to point in the same direction. Identical numerical readings, not the needle positions, indicate squareness.

To tram the milling machine, adjust the machine per normal procedures until both indicators read the same numerical value. After setting the X-axis, repeat the same procedure with the Y-axis.



649 Spindle Square				
Cat. No.	EDP	Range	Graduation	Dial Reading
649-1	52080	.025"	.001"	0-50-0
649-5	52081	.125"	.0005"	0-25-0
649-1M	52082	2.5mm	0.01"	0-50-0

