



True Squares

True squares are designed for fast, precision indexing with angle gage blocks.

All faces of Webber True Squares are at precisely 90° to adjacent sides, with perfect optical flatness and parallelism to permit use with autocollimators.

Applications for fast precision indexing and setting of angular grinding fixtures are almost unlimited. For example: the work and the true square are mounted together on a revolving fixture. A notch is ground by two successive cuts, one at 90° with the true square, and the other at 2° with the addition of two angle blocks (+3° and -1°) mounted on square. An indicator reading is taken before each grind. This process is then repeated by turning the True Square to successive zero readings.

True Squares are designed for use as an accessory to our angle gage blocks to easily make angles greater than 45° and through 180°.

Webber True Squares also permit a fast, easy check of indexing tables. The gaging faces are at precise 90° angles with optical flatness and finishes that permit the use of autocollimators.

The catalog numbers and specifications of our true squares have been changed in response to updated requirements concerning the application of the uncertainty of measurement.

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True Square Specifications

Catalog No. Grade Material	TS 21.R Reference croblox®	TS 21.C Calibration Steel	TS 44.W Working Steel	TS 66.W Working Steel
Tolerances: Deviation From Nominal	±1.0 second	±2.0 second	±5.0 second	±5.0 second
Flatness of Gaging Surfaces	6μin. (0.15μm)	8μin. (0.20μm)	14μin. (0.35μm)**	14μin. (0.35μm)**
Flatness & Parallelism of Sides	8μin. (0.20μm)	8μin. (0.20μm)	16μin. (0.40μm)**	16μin. (0.40μm)**
Squareness of Sides to Gaging Surfaces	6 seconds	8 seconds	12 seconds	12 seconds
Area of Gaging Surfaces†	1" x 2" (25 x 50mm)	1" x 2" (25 x 50mm)	5/8" x 4" (16 x 100mm)	5/8" x 6" (16 x 150mm)
Surface Finish (Gage Surfaces Only)	0.4μin. AA (0.01μm AA)	0.6μin. AA (0.015μm AA)	1.0μin. AA (0.025μm AA)	1.0μin. AA (0.025μm AA)
Estimated Uncertainty of Measurement (K=2)	0.6 seconds	1.0 seconds	3.5 seconds	4.0 seconds

Flatness tolerances exclude 1.5mm from the edges on all angle blocks except where marked with **. Then, 3mm from the edge is excluded.

† Dimension of gaging surfaces in millimeters is approximate.