

COMBINATION SET COMPONENTS

GRADUATED BLADES, SQUARE HEADS, CENTER HEADS AND PROTRACTOR HEADS

Equipment Used -

Levelled Surface plate
 Cat. # 20 3" - 24" Masters
 T Square on a Wooden Base
 Indicator Gaging Fixture
 Master Combination Square and Blade

Accuracy Requirements -

Scale Accuracy of the Blades - End grind to the first/last inch line, 1" (+/- .0025").

For metric, end grind to the first/last 25mm line, 25mm (+/- .065mm).

From the zero "0" end of the scale to graduations located in the range of:

First 6" (+.004"/-.0035") First 150mm (+.100mm/-.090mm)

6" - 12" (+.005"/-.0035") 150mm-300mm (+.150mm/-.090mm)

12" - 18" (+.006"/-.0035") 300mm-600mm (+.200mm/-.090mm)

18" - 36" (+.007"/-.0035")

Straightness: .001"/foot from mean plane, .025mm/300mm from mean plane

Parallelism: .002" per 2 feet, .05mm per 600mm

Squareness: 5 minutes or .0015"/inch (.038mm/25mm)

Square Heads - Squareness of head to blade (90 degrees)

2 1/2" (+/- .0005") 4", 6" (+/- .001")

12" (+/- .002") 18" (+/- .003")

24" (+/- .003") 150mm (+/- .02mm)

300mm (+/- .05mm) 600mm (+/- .1mm)

Lateral squareness - 1/2 width of blade maximum.

Miter (45 degrees) - +/- .004" per foot (12")

Center Heads -

Working edge shall bisect 90 degree angle within +/- .005" (+/- 3 minutes)

Protractor Heads -

Base to blade inspection within .004"

90 and 180 degree inspection within (15 minutes)

Base concavity tolerance .002" maximum

Procedure -

1. Check all heads that have levels by placing them on a leveled plate. The bubble shall be centered.
2. On all head types, when a blade is inserted it should slide freely and have a positive hold when locked. The width of the slot for the blade is an allowable .007" greater than the width of the blade.

Date: 5/06/2011

Approved by: *M/S*

Procedure (cont.)-

Square Blades ONLY-

3. Inspect square blades to ensure that they meet all criteria stated in the accuracy requirements.

Square Heads ONLY -

4. Inspection for Squareness of the square head to the blade is done by comparison to the Cat. # 20 3" - 24", depending on the size of the blade in the head.
Place the square and blade on the leveled plate, up against the master square, this should shut out light. If there is any visible light, measure the area using feeler stock. This area, if any, should not exceed the accuracy requirements for squareness.
5. Lateral Squareness - The maximum lateral squareness of the blade to the square head shall not be greater than 1/2 the width of the blade.

Center Heads ONLY -

6. Inspect for accuracy requirements by first setting the master and blade to the Indicator Gaging Fixture. Lay blade flat on leveled plate with groove side up. Slide centerhead forward until wings firmly engage pins and radius of stop. Set both indicators to zero.
Insert same blade into center head to be inspected, groove up. Repeat same procedure, as above, and then read indicators. The indicator "A" (nearest centerhead) shall read zero to minus .005". The indicator "B" shall not vary from the reading of the indicator by more than +/- .003".
7. Inspection of 45 degree angle - Place the center head astride the ground disc. Rotate to the right until the working edge of the blade and the gaging bar are in contact. The reading on the indicator shall be +/- .005" (+/- 3 minutes) from zero.

Protractor Head ONLY -

8. Turret lines - Place protractor head on the leveled plate, the zero lines of the frame and turret should not be out of alignment by more than .004".
9. Inspection of 90 degree angle - Use the T square for inspection of the 90 degree angle; misalignment of the lines should be no more than 15 minutes.
10. Inspection of 180 degree angle - With the blade in the slot, turn the turret so that the exposed blade edge is to the top of the protractor. The zero lines at this time shall not be out of alignment more than 15 minutes.
11. Inspect for base concavity - should be +/- .002".

Date: 5/06/2011

Approved by: *[Signature]*