

## Skew-T Fillet Weld Gauge • Cat # 9c • Calculator Overview Usage Guide

This gauge is used to measure the **Acute, Dihedral Angle** for the vertical member of a skew-t joint as well as the **Inspection Dimension**. When coupled with the calculator, these measurements can be used to find the **Theoretical Throat, Leg of the Fillet Weld** and **Inspection Dimension**.

In accordance with A.W.S. Standards the acute angle for a skew-t joint can be no less than 30 degrees.

### Skew-T Gauge Scale For the Inspection Dimension

The scale starts at 0 and has a maximum measurement of 2 inches. Readings start at the bottom and progress toward the top of the gauge in increments of .050 or 50 thousandths.

Markers for measurements can be seen at every quarter of an inch (See Figure 1).

### Measuring the Inspection Dimension for Acute or Obtuse Welds

Unlock the pointer by turning the screw to the left. This will allow for movement. Set the bottom edge of the gauge on top of the horizontal member of the weld and keep in that position. Move the pointer until the tip is touching the top toe of the weld (See Figure 2). The **Inspection Dimension Reading** is just above the top edge of the pointer.

The Inspection Dimension can also be measured from the bottom toe of the weld by setting the bottom edge of the gauge on the vertical member and moving the pointer so that the tip touches the bottom toe of the weld.



Figure #1

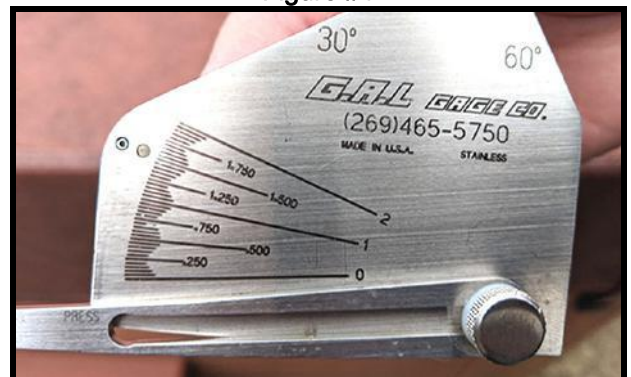


Figure #2



If the Inspection Dimension is known then you can set the pointer to the desired measurement and use this gauge as a Go / No-Go Gauge (See Figure 3).

The Inspection Dimension can also be measured for the obtuse weld.

## Measuring the Dihedral Angle for the Acute Member

Unlock the pointer by turning the screw to the left. Retract the pointer by sliding it to the right until the pointer tip is no longer extended past the body of the gauge (See Figure 4). Turn the screw to the right to lock the pointer back into place.

Turn the gauge over and turn the small screw to the left to unlock the fan. Extend the fan all the way above the top edge of the body (See Figure 5). The 90 degree mark should be visible just above the top edge. Turn the screw back to the right so that the fan stays above the edge but can easily be moved.

Set the bottom edge of the gauge on the horizontal member for the acute weld and slide until the top, left corner, of the gauge touches the vertical member. Fan will retract (See Figure 6). Degree measurement is just above the top, slanted edge of the gauge. The obtuse angle measurement can be determined by subtracting 180 degrees from the acute measurement.

Figure #3



Figure #4

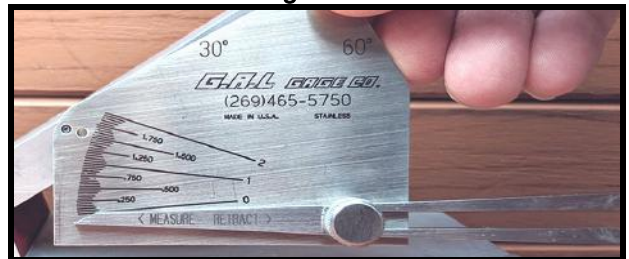


Figure #5

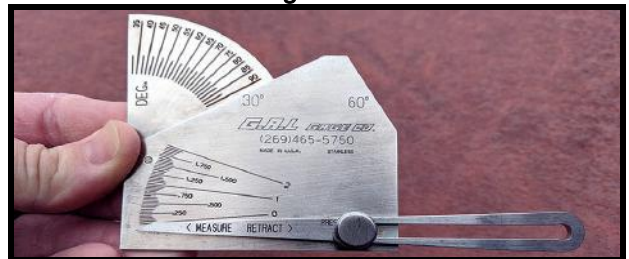
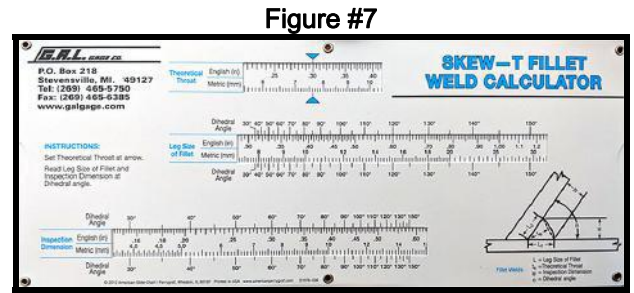


Figure #6



## Skew-T Gauge Calculator Overview

This calculator is divided into three, different sections. The **Top Window** is for calculating the **Theoretical Throat**. The **Middle Window** is for calculating the **Leg Size of the Fillet Weld** and the **Lower Window** is for calculating the **Inspection Dimension**. (See Figure 7)



## Calculating the Theoretical Throat Using the Inspection Dimension and Dihedral Angle

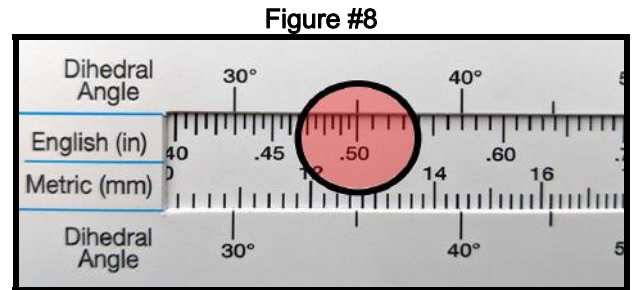
To find the **Theoretical Throat** the **Inspection Dimension** and the **Dihedral Angle** must be known.

See example below:

**Inspection Dimension: 1/2 inches**

**Dihedral Angle of: 35 degrees**

Start in the lower window. The angles will be listed above the window and the inspection dimension measurements are located inside the window. Slide the card to the left until the **Inspection Dimension** of 1/2" or .50 mark is directly under the **Dihedral Angle** of 35 degrees. (See Figure 8)



Once this window has been set, keep the card in place and you will find the **Theoretical Throat** in the top window. (See Figure 9) The **Theoretical Throat** is just over .83 and can be seen between the blue arrows. The **Leg of the Fillet** can be read from the middle window by locating the dihedral angle measurement and reading the marking below it. (See Figure 10) The **Leg** is .87.

