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Measuring Setback & Other Frame Dimensions with The TLT-12 Heavy Duty Laser Aligner

The TLT-12 is a very versatile tool that when used with some standard measuring devices such as tape measures and carpenter squares can measure frame dimensions and setback issues on the steering axle.

This document will describe how to measure setback with the TLT-12 and briefly describe frame dimensioning. This document will be used in conjunction with the TLT-12 Manual, Reading Toe Procedure on page 26 in the English manual & on page 23-24 in the Spanish manual.

Measuring Setback:

1.) Measure the toe of the vehicle as described in the TLT-12 Manual.
2.) Once the toe has been measured, set the toe dials on the TLT-36 & 37 Laser Guns to the measured toe, I.E. 1/16". Make sure the laser beam drops back into the hole for the cross toe & the laser beams are on the same numbers on the centering targets on the drive wheels, I.E. the number 7.
3.) Once this measurement has been confirmed, take a carpenter's square and place it at the grease fitting at the front mounting bracket of the leaf spring, where the leaf spring attaches to the frame for either the right or left side of the vehicle. If there is not a grease fitting there the center of the bolt that attaches the leaf spring to the frame may be substituted.
4.) Having established a straight line with the carpenter's square to the ground at the grease fitting pull a tape measure to the cross toe laser beam on the laser guns. **NOTE:** Be sure that the tape is being pulled straight and not at an angle or around any obstructions that would cause the tape to bend. Doing so would cause an error in the reading.
5.) Make note of the setback of the axle to the front attachment of the leaf spring. I.E 52 inches.
6.) Repeat this procedure for the other side of the vehicle. Make note of the two readings. If the readings are different then there is setback and the alignment must be compensated for the setback. I. E. if the right side reading is 52" and the left side reading is 54" then there is 1" of setback from side to side. The vehicle will have tendency to drift to the right.

Frame Dimensioning:

Taking the examples shown above, with the laser guns on the vehicle and the lasers making a “box” around the vehicle, the cross toe laser beam in front and laser beams down each side hitting the same number on the centering targets, and the drive axle making the other side of the “box”; it becomes very easy to measure points on the frame to verify squareness and centering along with other dimensions to show the complete measurement of the frame condition.

If you have any questions about this or any other procedure that can be done with the TLT-12 please feel free to contact us at:

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