FOUR-ON-THE-SNOW Newsletter

A publication of Tucker Sno-Cat® Corporation Made in the USA since 1942

NO SNOW TOO DEEP *NO ROAD TOO STEEP*

February 2010 Volume 2 Issue 2

Steering and Alignment Procedures

The following illustration shows the procedure for aligning the steering on a Tucker Sno-Cat® vehicle. One of the main reasons for keeping the steering aligned is to keep excessive side loads from stressing or damaging the tie rod ends. It is best to have the steering system balanced. What you are attempting to do is make sure the steering cylinder is in the center of its stroke with the tie rod bosses on the swing 90 degrees to the bottom of the frame as shown in the illustration. This ensures that the swing will push and pull the same amount each direction. With the cylinder and swing centered you then loosen the tie rod clamps so the tie rods can be rotated. The tie rod and tie rod ends have opposite threads, the right hand thread tie rod is connected to the swing and the left hand thread tie rod is connected to the fifth wheel plate. When you rotate the tie rod you make it longer or shorter depending on which way you rotate the rod. By rotating the rod properly the fifth wheel plate will align, you want the fifth wheel plates to be parallel to the frame. Some fifth wheel plates are of a tapered forward shape, so you need to pull your measurement from fixed positions on the cat. Example: The spring eye on the fixed hangers to the corners of the frame sides are good places to pull these measurements.

What we are trying to achieve is to have the steering cylinder centered, the swing centered, and the fifth wheel plates parallel to the frame. To check that the system is turning the same both directions you will have to turn the vehicle full to the right and measure from a fixed spot on the frame (we use the back corner of the frame) to the back right hand corner of the front fifth wheel plate spring hanger. Then turn the vehicle full to the left and measure from the same points on the left side of the vehicle. The measurements should be within 1/8" of each other. If not you will have to rotate the tie rod to get the fifth wheel aligned. Then straighten the fifth wheel out by the same method. The only difference is this measurement has no tolerance.

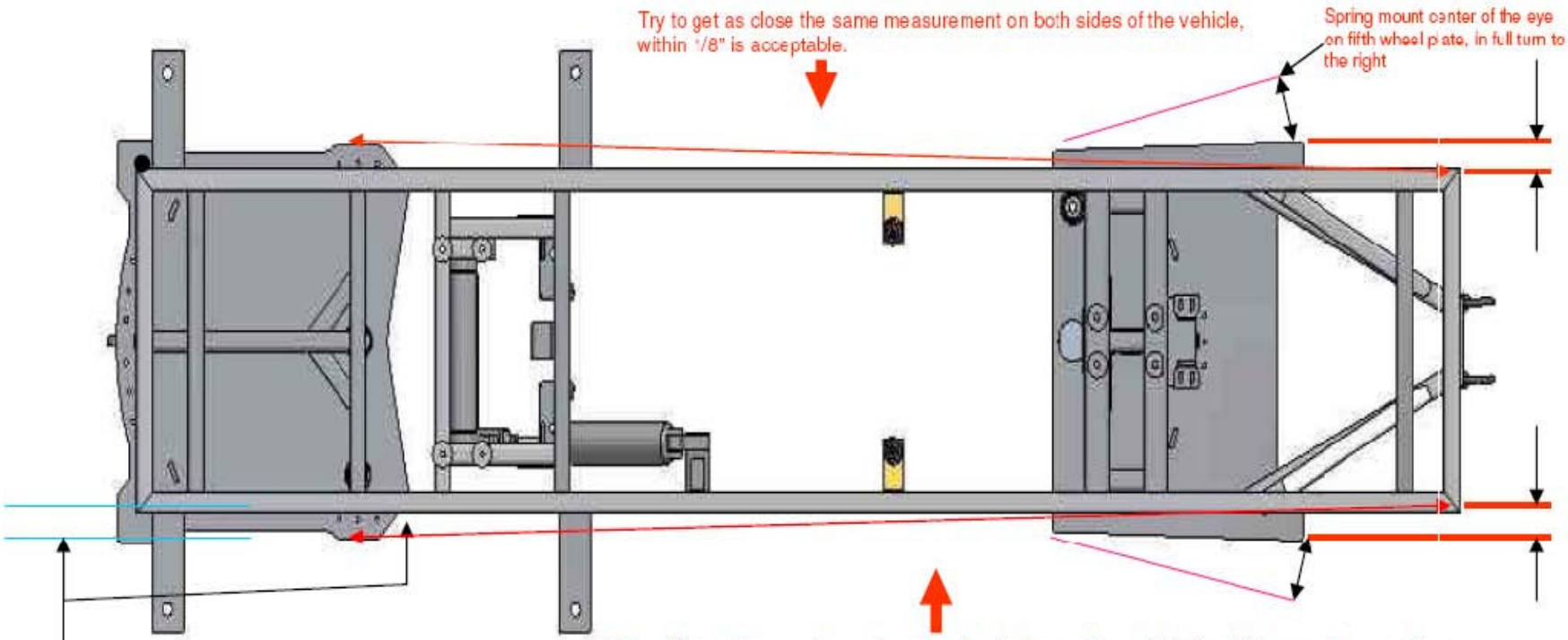
You use the same procedure to check out the rear fifth wheel for alignment with the front. At the factory, we are able to jack the vehicle up enough to take the load off the tracks so the vehicle can turn in a stationary position. We use two floor jacks under the differential housing centers and lift the vehicle enough so it may be turned. You may have to use blocks between the frame and rear fifth wheel plate to keep it from tilting on its trunion pin. After you have set the alignment, you can verify the tracks are running true by driving the vehicle forward in a straight line and check to see that the rear tracks are following exactly in the path of the front tracks. Also after driving forward and running the vehicle in a straight line, stop the vehicle and recheck the distance from fifth wheel to fifth wheel at stationary points, like the center of the fixed hangers spring eye on the front fifth wheel to center of the spring eye on the rear fifth wheel.

We recommend this procedure be done at the beginning of each season or after any repairs to the steering system. It may seem a little complex at first but once you have done the alignment and get the idea of what to do it should go quickly for any future alignments.

(Continued)

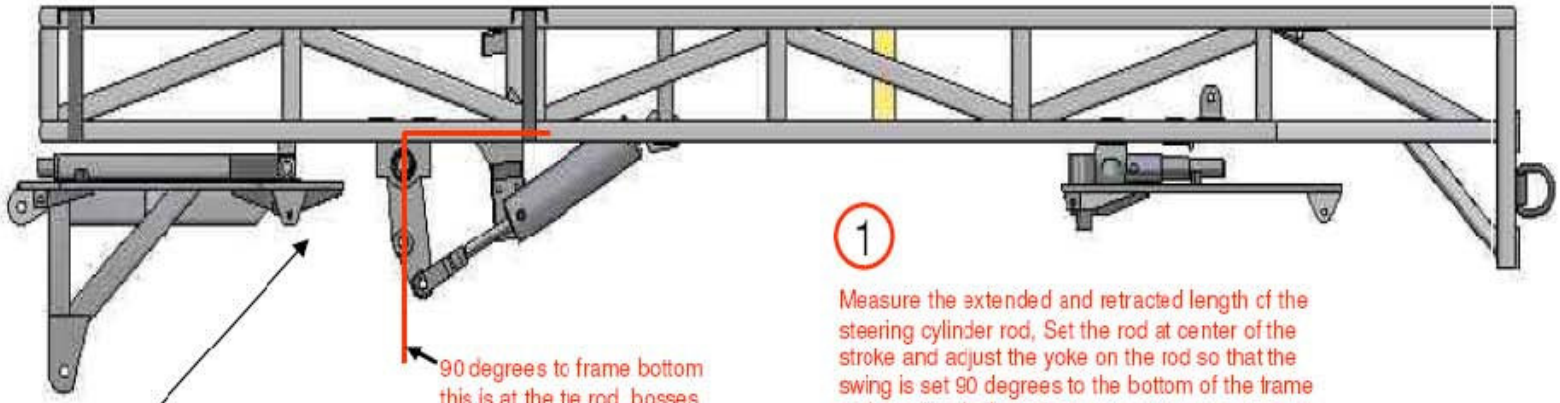
Tucker Sno-Cat® Corporation
2872 S. Pacific Hwy
Medford, OR 97501

www.sno-cat.com
(541) 779-3731
Toll Free (866) 766-2281



3 After setting up alignment as described below, put the vehicle in a full turn and measure from a fixed point on the frame to the center eye of the front fifth wheel plate spring mount. Turn the vehicle the other way and take the same measurement from the same points on the other side of the vehicle. The two measurements should be within 1/8" of each other. If not you can continue to adjust the tie rod until you get the proper setting.

STEERING ALIGNMENT



1 Measure the extended and retracted length of the steering cylinder rod, Set the rod at center of the stroke and adjust the yoke on the rod so that the swing is set 90 degrees to the bottom of the frame at the points indicated.

2 Loosen the clamps on the front tie rod and rotate it clockwise or counter clockwise to adjust the front fifth wheel plate parallel with the sides of the frame.

(Continued)

This illustration will help you check the alignment