

## SOLID AXLE SHAFT DRIVE LADDER BAR/SUSPENSION CHECK/ADJUSTMENT PROCEDURE

**ALL FINAL SUSPENSION ADJUSTMENTS NEED TO BE DONE WITH WEIGHT ON SUSPENSION (TIRES ON GROUND OR JACK STANDS UNDER AXLE WITH NO CENTER STAND, ETC) AND THE TRIKE ON A FLAT LEVEL SURFACE WITH FRONT WHEEL POINTING STRAIGHT AHEAD (IF THE FRONT WHEEL IS TURNED, IT WILL "TILT" THE SUSPENSION AND ALL MEASUREMENTS/CHECKS WILL NOT BE ACCURATE)**

Check air suspension pressure & adjust to 10-15 psi (this will simulate normal ride height and allow for correct check/adjustment).

Using a 2 foot level or similar straight edge, measure between the tire & outside edge of fender on left and right side of the trike (straight edge needs to touch the side wall bulge at 12 & 6 o'clock to be accurate, see below picture).



If side to side is not the same and needs to be adjusted, loosen the jam nuts on the diagonal bar and disconnect diagonal bar from right rear ladder bar connection point (see below).



If jam nuts on panhard bar (pictured below) have been locked down, back off jam nuts & turn adjusting bar until side to side adjustment is even between left and right tires (DO NOT TIGHTEN JAM NUTS YET). The panhard bar can be accessed by reaching up between the rear end and the trunk.

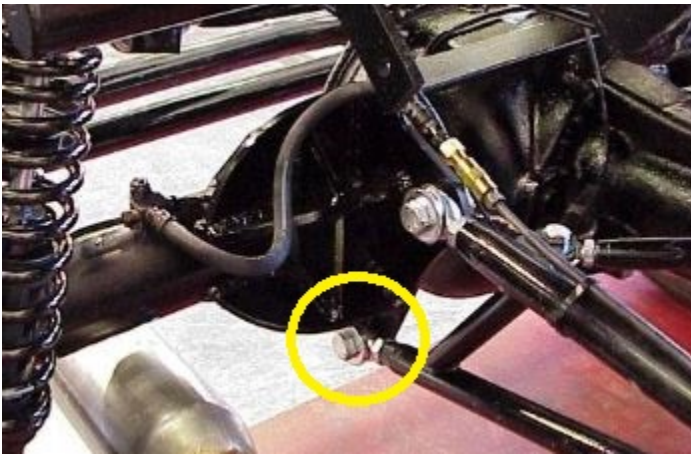


Check to be sure front wheel is pointing straight forward. Stand behind motorcycle to see if trike is setting level. If you notice that the top part of the trike body is not level with the rest of the motorcycle (If body is level to rest of motorcycle proceed to next step), this means that the trike body needs to be shimmed up on the low side so that it is even to the rest of the motorcycle. ( $\frac{1}{2}$ " fender washers work well as you can adjust in increments). The body **MUST** be level to the rest of the motorcycle before proceeding.

Check to see if the trike is "leaning" to one side or the other (one fender is lower than the other in relation to the tire (tread showing is a good overall gauge). Ideally, the right side should be about  $\frac{1}{8}$ " higher than the left side (this helps compensate for the crown in the road so the bike doesn't have the illusion of being uneven from behind when riding).



If the bike is more than  $\frac{1}{2}$ " out of level, compare clearance between the top of tire & fender on both sides. If one side is setting excessively low, you would adjust to raise that side, if one side is setting too high, you would adjust to lower that side (this is dependent upon each bike and is not a consistent for "every" unit). Once you decide which side to adjust, loosen the jam nut on the LOWER ladder bar connection point on the side you are going to adjust (clearance between bolt & surrounding components may play a factor in deciding this as well, so make sure you can remove bolt, if you can't, you will have to adjust the other side). Remove the  $\frac{1}{2}$ " bolt that secures the jam nut to the differential (see below picture). To raise the adjusting side, you will turn the heim joint out, to lower the adjusting side, you will turn the heim joint in. Every full turn of the heim joint will make a difference of approximately  $\frac{3}{8}$ " (example: if right side is  $\frac{1}{2}$ " lower than the left, you would turn the lower heim joint out 1-1/2 to 2 full turns, remember you want the right side of the trike slightly higher than the left). Once you make the adjustment, reinstall the  $\frac{1}{2}$ " bolt & fully tighten the nut that secures it to the differential (as you tighten the  $\frac{1}{2}$ " bolt, you will notice the suspension "shift" slightly as it tightens). Make sure the front wheel did not turn any & stand behind bike to see if any further adjustment is needed to level unit.



Once unit is level, double check side to side adjustment and adjust if shifted (side to side may change if you have to make large adjustments to suspension). Once you have verified & finalized adjustments, apply Loctite to the jam nuts on the panhard bar (above rear end) & lock nuts against adjuster rod (be sure it doesn't rotate when locking down) & ladder bar heim joint at rear end. At this point adjust the diagonal bar so that the bolt will drop into place through tabs on ladder bar & tighten bolt holding joint to tabs. Verify diagonal bar rotates freely in your hand & apply Loctite to threads & seat jam nuts against adjuster bar (be sure it does not turn or bind up when locking down). With the suspension even, level, & adjusted properly, the panhard bar and diagonal bar should rotate freely between your fingers. (If the bars do not rotate freely, the suspension is in a bind & needs to be freed by up adjusting the bars to relieve the tension (failure to do so will result in suspension component failure)).