

# VULCAN DRIFTER RIDERS



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## Torque Your Steering Stem Nut

Gus Gustafson, Michel Massé, Gadget

The steering on your motorcycle is very dependent on a single set of bearings inside the frame stem. If those bearings are adjusted too tight they can wear prematurely and your steering can be stiffer than it should be. Too loose is worse. In an extreme case you might feel a 'clunk' in the steering when you hit a bump which is punishing the bearings as much as it's punishing you. With these bearings, as with the fabled three bears there is a 'just right' adjustment that lets your steering and suspension do their job smoothly and easily. Adjusting the torque on the steering nut is pretty straight forward except you are supposed to use a special socket or wrench similar to the one shown to actually turn the nut.



You have options here. You can purchase the special tool shown above for around \$40, you can do as so many do (but not recommended), use the edge of a screwdriver to tap the edge of the serrated nut until it submits to your will or you can make your own tool using a 36 mm socket from Sears, about \$8. Better? Ok, here's how you make it. (with special thanks to Hans (Ghost) von Sallwurk for the photos)

With the stem nut as a guide mark tabs on the edge of the socket then use a Dremel tool and/or grinder to cut away material from the socket so you're left with four tabs that fit into the slots in the nut.

Don't put the Dremel away just yet. You'll need a grinding attachment to remove some metal from the inside of the socket (see photo lower left) to clear the steering stem shaft. This is one of those 'trial and error' things so grind a little, see if there's interference and if so grind a little more until each of the four 'posts' is fitting snugly into the nut slots.

This is actually the most accurate way to adjust the nut because you can get a direct and accurate torque reading (33 ft lbs). Using the special (hook type) tool you need a scale to pull on the arm and banging away with the edge of a screwdriver...well, all bets are off there.



Here's yet another idea from Michel Massé. Michel drilled two holes in the ears of a 12" adjustable wrench (see figure at left) and added two M4 bolts. The nice thing about this tool is it is adjustable for any other application. It makes removing and installing the steering flanged nut a breeze. To torque to 14 ft-lb, Michel uses a fish scale and pulls 15.6 lbs (12" perpendicular length from steering shaft center to wrench eye center in inches x 14).



### Assuming you have your tool of choice at hand here's How To Do It

1. Remove the windshield and any aftermarket parts that might get in your way.
2. Place blankets over the tank, light bucket and front fender.

3. Remove the top (chrome) steering stem nut (36 mm) along with the washer and plastic spacer you'll find between the tree and steering stem. Also remove the pinch bolts on each side of the top triple tree. Pop the fork stem top caps out with a fingernail or very thin screwdriver.
4. If you have risers your cables and hoses may be kind of tight for this step so at your option either leave the handlebars and risers attached to the top tree or remove them. The triple tree is loose and ready to come off with a little persuasion. Use a soft mallet or hammer and a piece of soft wood a strike the top tree on the bottom of the outboard edges until you can just lift the tree assembly off (along with your bars and risers if still attached). Once off place the assembly upside down on the headlight bucket and let it dangle.
5. Now you can see the exposed the claw washer and steering stem nut (note the similar terminology to the shiny stem head nut). Take the claw washer off and tighten the nut using whatever method you have the tools for.

NOTE: if it's been two years or longer since the steering head bearings were lubed you may as well do it now. You'll need a helper (especially if the front tire is still attached to the forks).

- o Remove the stem nut and carefully slide the fork assembly downward away from the bike. The lower ball bearing will probably come with it the top will stay inside the stem on the bike.
- o Clean and lube the bearings thoroughly with name brand high quality Moly grease.
- o Check the bearings for wear and inspect the races (inside the frame stem) for any signs of pitting or wear. If there is 'any' wear at all replace the bearings and races as a set. You can not just toss a new set of rollers in and expect them to work with the old races. Old races can be tapped out of the frame using a drift, new ones can be tapped into place using a socket the exact size of the race.

6. Assembly is the reverse with the following notes: don't forget to put the claw washer back on, be very careful of the wires and hydraulic lines as you slide the handlebar/tree assembly back on. You will need to move them out of the way at least once while you are sliding the assembly back on or you will pinch them. Use a soft mallet to seat the assembly...use some finesse here. If you notice that the fork caps are not flush but above 1/8" or more above the tree look around for parts you may have forgotten to re-install like the claw washer.
7. Once re-assembled if the bike won't start, check the interlock switch under the clutch hydraulic reservoir that came off when you were moving everything around. Even if it appears to be plugged in, pull it off and put it back on again.

**Tightening specs: - Verify torque setting they may differ from these for different models.**

Steering Stem Nut:	Steering Stem Head Nut	Pinch Bolts
14 ft/lbs with Socket for the VN1500, 43 in/lbs for the VN1600	40 ft/lbs	25 ft/lbs
49 lb Pull with Kaw tool (1500 Only)		
'No slam' with hammer/screwdriver method		

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