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## Cannondale Motorsports Technical Bulletin

BULLETIN : TB02-003

MODELS : All 2001, 2002 Motorcycles

ISSUED : 2/22/02

SUBJECT : Steering head (headtube adjustment)

CONDITION : Riders have expressed concerns that the motorcycle steering action or "feel" can seem "stiff" or "hard." Although, we have had only a few informal reports, there are two possible causes.

(1) Individual rider preference and experience with other motorcycles can explain much. It may just be a difference between our motorcycles and other models. The handlebars on new motorcycles will seem a little stiffer until the headtube seals are afforded the chance to "break-in." This may take several hours of riding to accomplish.

(2) If an adjustment to the headtube has been attempted, the headtube assembly installation may have been performed incorrectly. Incorrect preload on the steering stem slotted nut can result in the steering stem being installed very "loose" or "very "tight." This would account for a few reports of tight handlebars. Also, our chassis test technicians report that if greasing the seal lips of either the upper or lower headtube seals is overlooked during assembly, it may contribute to a harder feel. It may be necessary to disassemble the steering headtube and reassemble to specification. Use a water proof grease on the seal lips. Steering headtube seals are manufactured with tight-fitting double lip seals to prevent dirt or water from entering the inside of the steering head. In the assembly process, the steering stem is installed into the headtube, and the slotted nut is first tightened to 9.0 lbf•ft (12.2 N•m) to set the seals, then the nut is loosened and torqued again to 4.0 lbf•ft (5.4 N•m). The fork legs are positioned in the lower triple clamp and the upper triple clamp is positioned. The pinch bolts are only tightened until snug so that when the stem nut is torqued the relative position of the clamps is maintained. The steering stem washer and nut are installed. Tighten the steering stem nut to 72.0 lbf•ft (98.0 N•m). Special sockets have been developed to tighten the steering head slotted nut and steering stem nut. Finally, the lower triple clamp pinch bolts are tightened to 14.0 lbf•ft (19.0 N•m), upper triple clamp pinch bolts are tightened to 17.0 lbf•ft (23.0 N•m). Be sure to consult the photos on page 2.

### CAUTION

**Loosening the steering stem slotted nut to decrease steering resistance can result in "headshake" and damage the bearings and the frame head tube.**

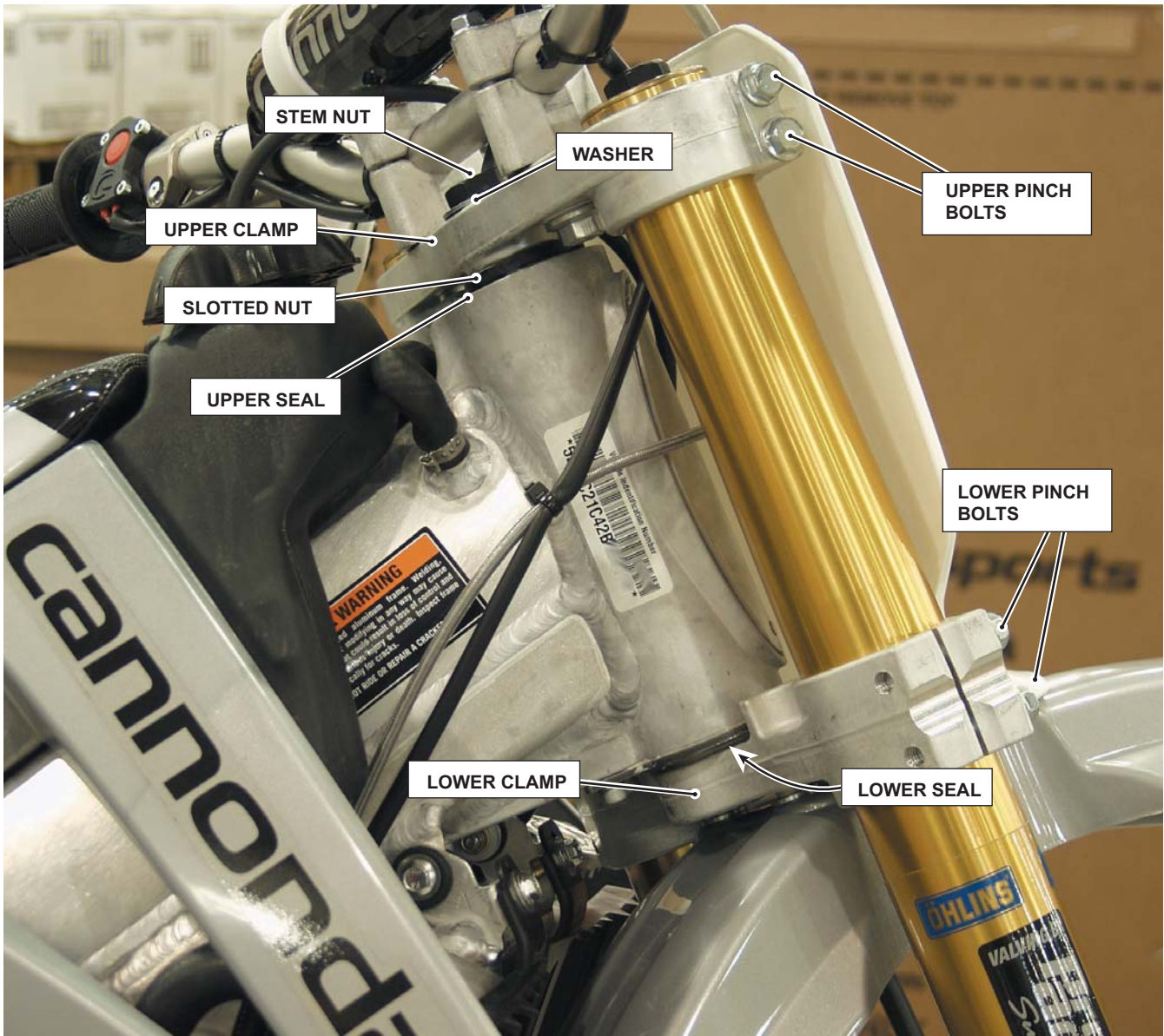
**Do not tighten the upper triple clamp pinch bolts before the steering stem nut is torqued. Allow the upper triple clamp to be drawn against the slotted nut when steering stem nut is torqued. If the upper triple clamp bolts are tightened first the steering stem slotted nut can vibrate loose. This may result in severe damage to the steering head and bearings.**

*Information is subject to change without notice.*

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**SLOTTED NUT SOCKET  
CM-502456**



**STEM NUT SOCKET  
CM-503871**