

TRW Automotive
Commercial Steering Systems

Service Procedure # COL-163

Universal Joint End Play Measurement for SA, SB, SF, and 414500 Series Intermediate Columns

Revised June 2006

NOTE Take appropriate safety measures before beginning this procedure.

This TRW Commercial Steering Systems' service procedure has been written to help you repair commercial vehicles more efficiently. This procedure should not replace your manuals; you should use them together. These materials are intended for use by properly trained, professional mechanics, NOT "Do-it-yourselfers". You should not try to diagnose or repair steering problems unless you have been trained, and have the right equipment, tools and know-how to perform the work correctly and safely.

1. Stop vehicle on a level surface; turn off engine, set parking brake, and chock tires.
2. Verify universal joint snap rings are secure in yoke assembly. **See Figure 1.**
3. Locate the weld yoke of the universal joint assembly. The universal joint assembly consists of two yokes, a weld yoke and a clamp yoke. The clamp yoke utilizes a clamp bolt to secure the assembly to a spline shaft. The weld yoke is welded to the main body of the intermediate column. **See Figure 2.**
4. Apply a sufficient load by hand (approximately ± 10 lbs) to the weld yoke along the trunnion axis. **See Figure 3.**

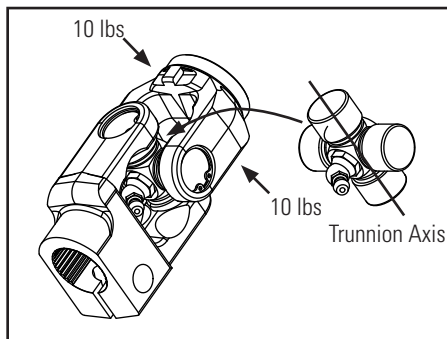


Figure 3 - Application of Load

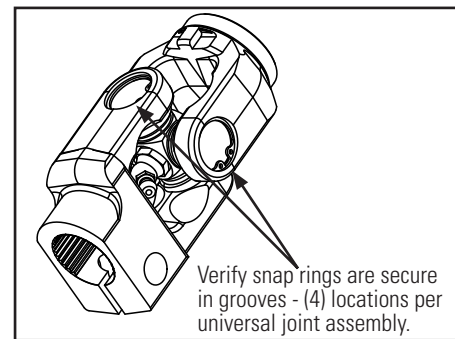


Figure 1 - Snap Ring Verification

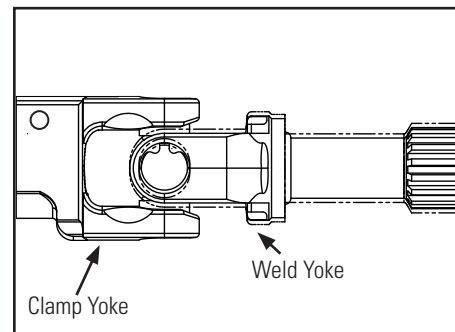


Figure 2 - Locating the weld yoke

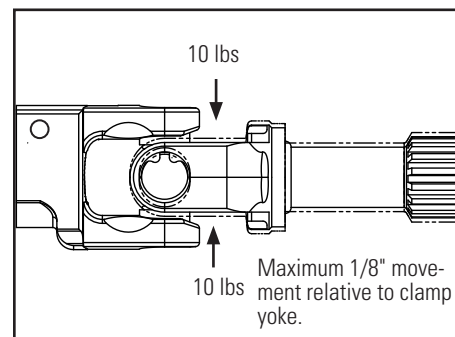


Figure 4 - Maximum Movement

5. Maximum allowable movement of the weld yoke relative to the clamp yoke is 0.125". If the yoke movement is greater than 0.125", either the cross shaft assembly should be replaced (see TRW Service Procedure #COL-151) with kit # SK000198 (non-greasable) or SK000275 (greasable), or intermediate column should be replaced. **See Figure 4.**

6. Apply a sufficient load by hand (approximately ± 10 lbs) to the weld yoke along the other trunnion axis. **See Figure 5.**
7. Maximum allowable movement of the weld yoke relative to the clamp yoke is 0.125". If the yoke movement is greater than 0.125", either the cross shaft assembly should be replaced (see TRW Service Procedure #COL-151) with kit # SK000198 (non-greasable) or SK000275 (greasable), or intermediate column should be replaced. **See Figure 6.**

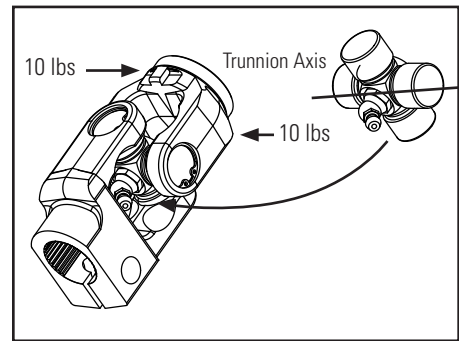


Figure 5 - Application of Load

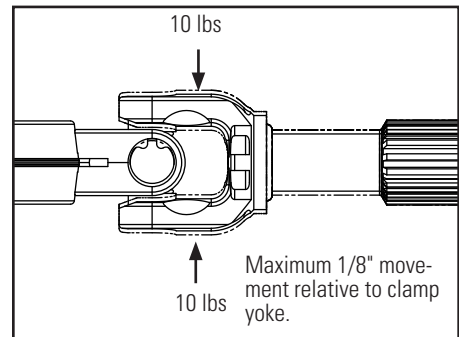


Figure 6 - Maximum Movement

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