

Service Bulletin #COL-104

Adjustment Procedure for Elimination of Torsional Free Play in TC34 Tilt Telescope Columns

Revised December, 1994
Electronic Version April, 1998

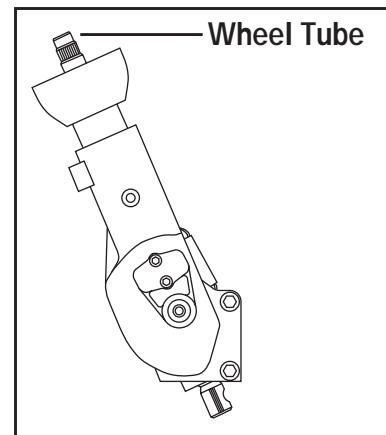
This TRW Commercial Steering Division service bulletin has been written to help you repair commercial vehicles more efficiently. This bulletin should not replace your manuals; you should use them together. These materials are intended for use by properly trained, professional mechanics, NOT "Do-it-yourselfers". 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.

Tools Required:

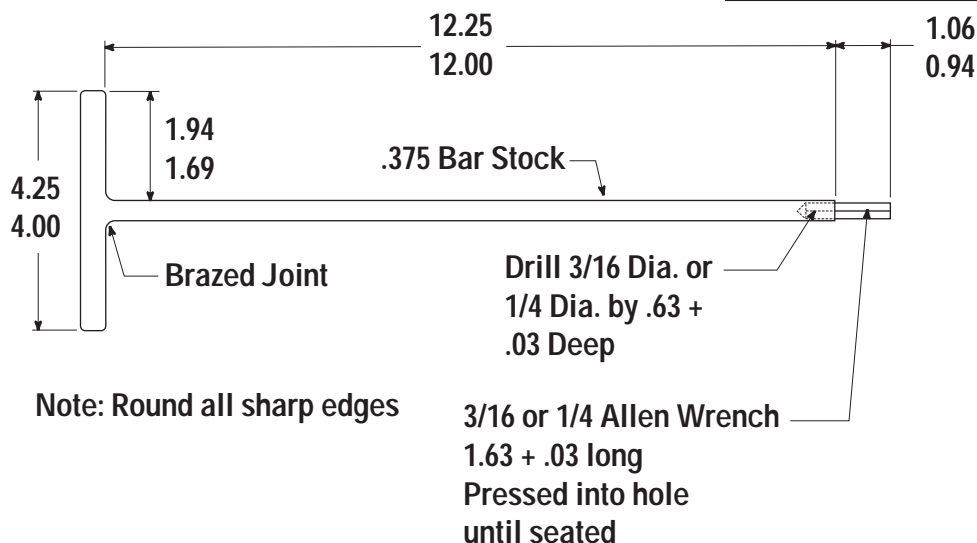
- Cotter pin puller (or other tool that can safely be used for pulling springs)*
- Various sockets*
- 3/16" hex wrench - at least 10 inches long and/or
- 1/4" hex wrench - at least 10 inches long
- Chassis grease

Service Kit #SK 036289-X1 includes

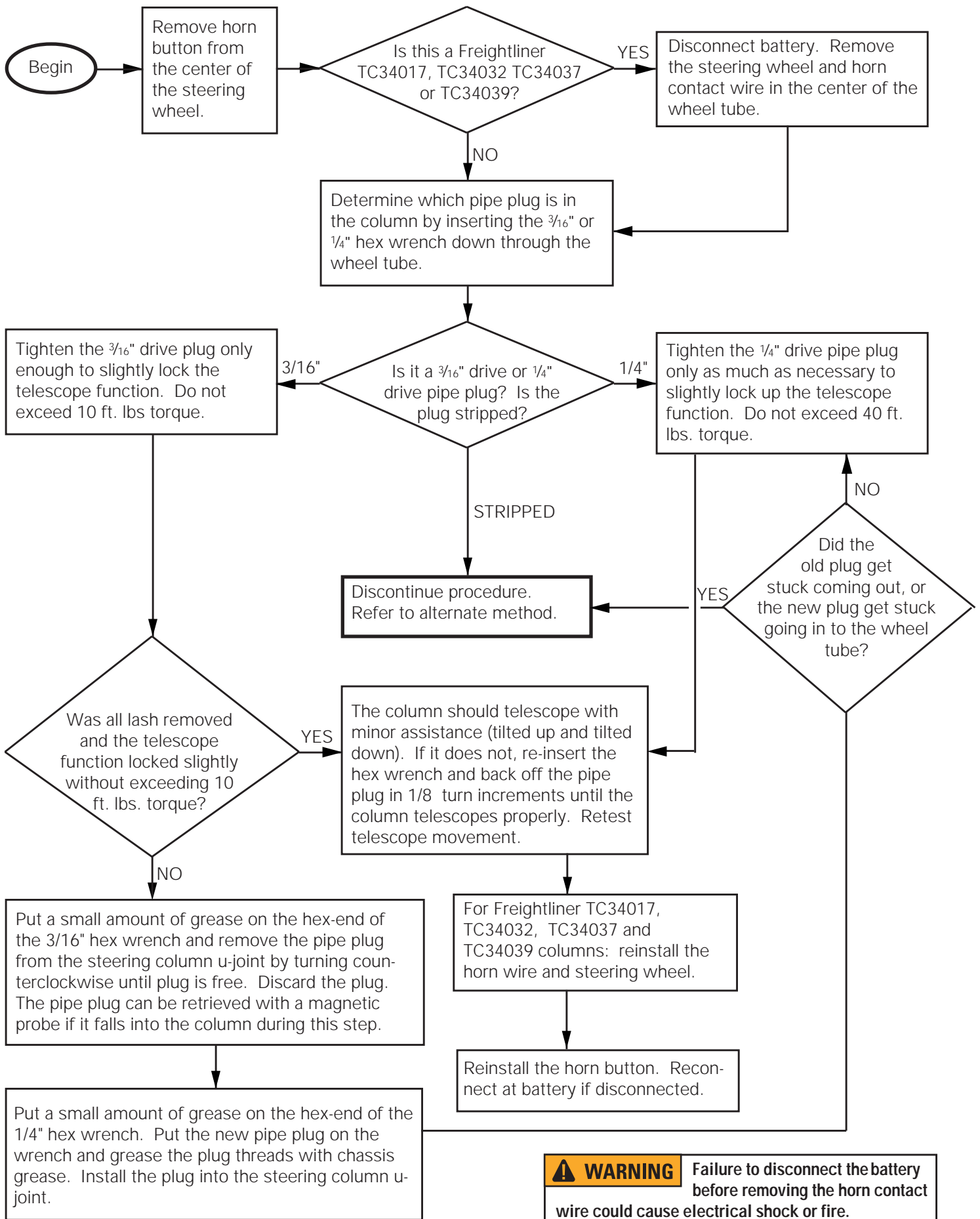
- Plug 036289
- Bulletin COL-104



*Necessary only if using the alternate method



Preferred Method

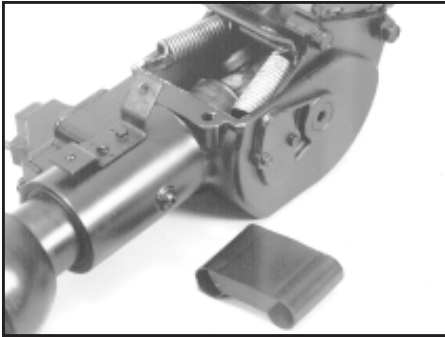


⚠ WARNING Failure to disconnect the battery before removing the horn contact wire could cause electrical shock or fire.

Alternate Method

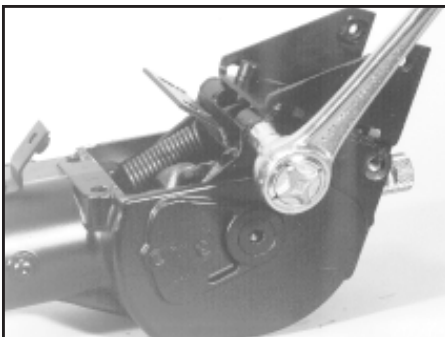
- Park the vehicle with wheels straight ahead to make steering wheel alignment easier for reinstallation.
- Disconnect Power
- Remove column from truck (see vehicle manufacturer's service manual for details)

⚠ WARNING Disconnect the battery, or unplug the ignition switch prior to removing any ignition assembly and cables from the column. Failure to do this could cause electrical shock or fire when ignition assembly is removed from column.



Disconnect tilt springs

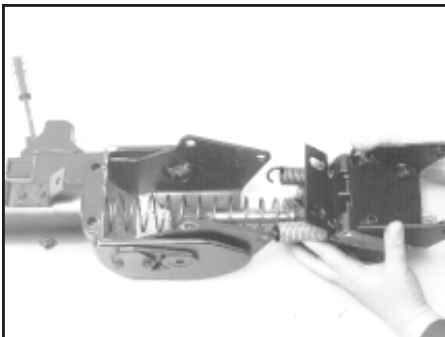
1. Place the column in a vice by clamping on one support bracket flange. Make sure the column is in the full up position (tilted up). Unhook the tilt springs from the housing without damaging the springs. Remove upper spring cover.



Remove support bracket bolts

⚠ CAUTION The lower bearing housing and universal joint assembly may eject under spring tension during this step. Hold the lower bearing housing firmly while releasing the last bolt.

2. Make sure the column is in the full extend (telescoped out) position. Remove the bolts from the support bracket and the lower housing. On reinstallation the bolts must go back in the same locations.



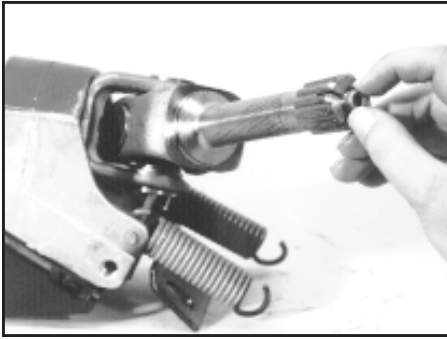
Remove u-joint/subassembly

3. Remove the lower bearing housing, universal joint assembly and spring from the main housing.



Remove pipe plug

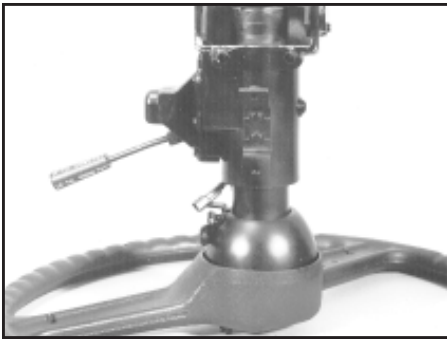
4. Remove pipe plug from slotted end of the universal joint using a 3/16" Allen wrench if possible. If the pipe plug is stripped, remove with Ezy-Out. Discard the pipe plug.



Install new pipe plug

5. Place the new 1/4" drive pipe plug in tapped hole in the slotted end of the universal joint. Screw in to ensure threads are engaged. Adjustment will be made later.

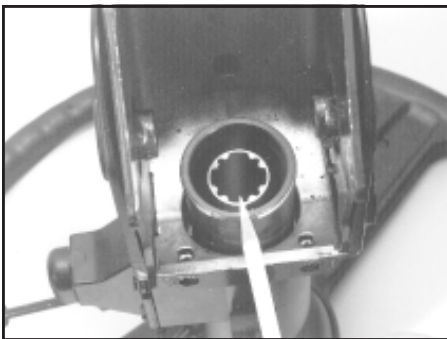
NOTE	If the pipe plug is tightened so the end of the universal joint is spread open, the shaft may not assemble into the splined sleeve correctly.
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Put main housing in holding fixture

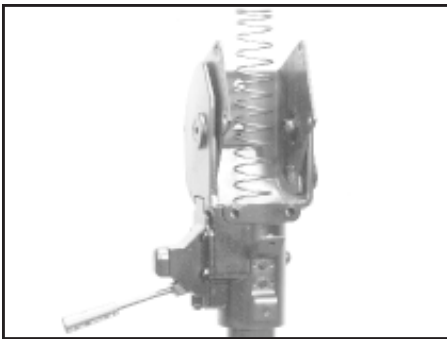
6. Using a steering wheel as a holding fixture, place the main housing assembly (wheel tube end down) vertically into the steering wheel.

CAUTION	Do not damage the serrations, threads or taper on the end of the wheel shaft.
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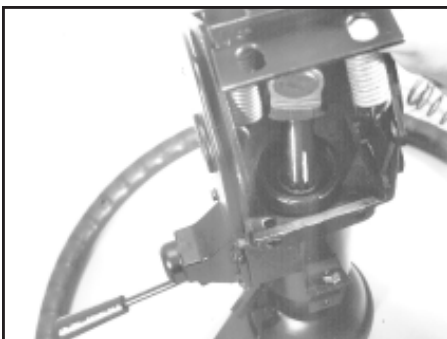
Mark u-joint and splined sleeve

7. Note the design of the splined sleeve. Use a marker to highlight two separate places: 1) one of the large spaces in the sleeve, 2) the shaft of the u-joint assembly beginning at one of the slots in the splined-end and continuing 2" up the shaft. This will make installation easier.



Install telescope spring

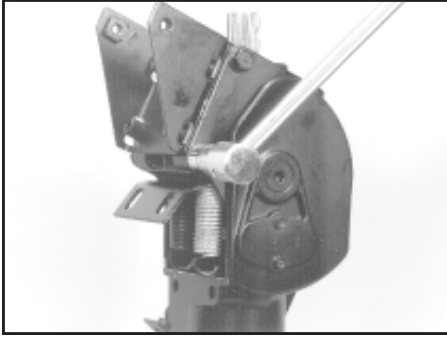
8. Place the telescope spring inside the jacket tube in main housing.



Assemble u-joint to main housing

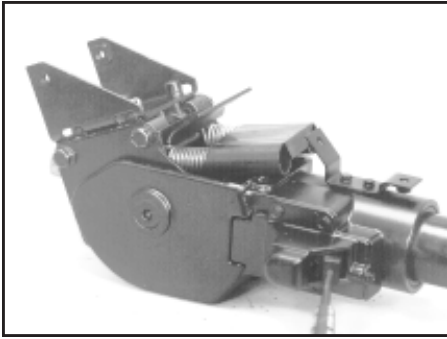
9. Put clean grease on u-joint splines. Hold the lower bearing housing while feeding the splined end of the u-joint into the splined sleeve with marks aligned. Compress the telescope spring by pushing the lower bearing housing into position. (Do not trap the tilt springs). Align the bolt holes in the support bracket with holes in the main housing assembly.

NOTE	Photo has telescope spring
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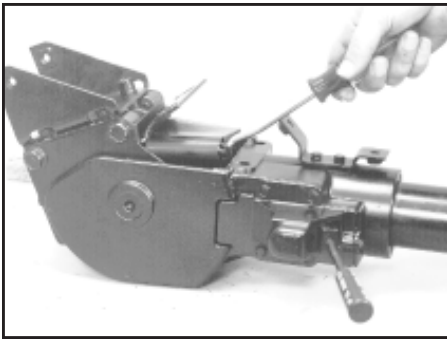
Install support bracket bolts

10. Tighten the support bracket bolts while holding the u-joint and lower housing assembly in place. Torque to 25-35 ft. lbs.



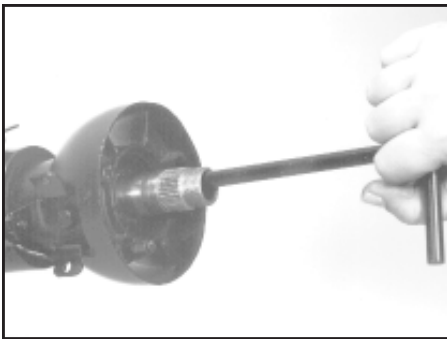
Assemble upper spring cover

11. Assemble the upper spring cover over the two tilt springs.



Hook springs onto housing

12. Hook the loose ends of the springs in the holes in the main housing.



Tighten pipe plug

13. Push the column to the full forward position (telescoped in). Use the hex wrench to screw in the pipe plug until it is as tight as possible by hand. Final adjustments will be made after installation in the vehicle.

Final Adjustments

- Use torque values noted throughout this bulletin for proper column installation.
- The pinch bolt must pass through the whistle notch on the serrated end of the u-joint for proper alignment.

Pipe plug adjustment

- Tighten plug only enough to lock the telescope function then back off plug 1/8 of a turn and retest telescope function. Telescope should function with minor assistance; if not, back off plug 1/8 of a turn again to regain telescope function.

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