

## TRW Automotive

Steering & Suspension Systems

### Service Bulletin #COL-119

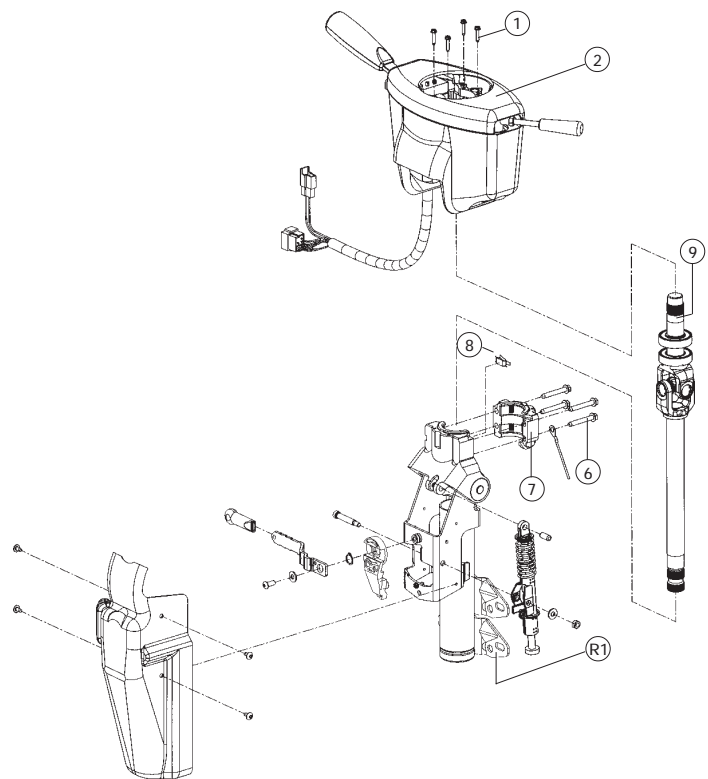
#### CA & CT Series Rotating Group Replacement Instructions. Service Kit #403915-J3, 403915-J5 and 403917-J5.

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*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.*

#### Tilt Only (CT) Procedure

1. Remove the column from the vehicle. Remove the upper shroud (2) by removing four mounting screws (1), and twisting the shroud off over the input shaft.
2. Place the column in a vice, clamping on the mounting bracket flange.
3. Remove four bolts (6) from the base unit and bearing cap.
4. Remove the bearing cap (7).
5. Tilt away from the mounting bracket and remove the rotating group (9) by lifting the bearings out of their grooves, and pulling on the input shaft. Discard.
6. Insert the new rotating group (9) in the jacket tube.
7. Make sure the ground terminal (8) is in place in the housing. Seat the bearings in the tilt housing grooves. Make sure the bearing gaskets are straight and seated properly.
8. Install the bearing cap (7) with the pilot up, so it matches with the pilot lip on the housing. Install four bolts (6), placing the ground wire over one bolt. Torque to **75-80 lbf·in.**
9. Reinstall the upper shroud (2), and torque the mounting screws (1) to **25-30 lbf·in.** Reinstall the column in the vehicle. Torque mounting bolts to manufacturer's specifications.



No.	Description
①	Mounting screws (4)
②	Upper shroud
⑥	Bolts (4)
⑦	Bearing cap
⑧	Ground terminal
⑨	Rotating group

## Tilt Telescope (CA) Procedure

1. Remove the column from the vehicle. Remove the upper shroud (2) by removing four mounting screws (1), and twisting the shroud off over the input shaft.
2. Place the column in a vice, clamping on the mounting bracket flange.
3. Telescope the column up fully to partially unload the telescope spring.
4. Remove four bolts (6) from the base unit and bearing cap.
5. Remove the bearing cap (7).

**WARNING** Wear eye protection during this step, the upper rotating tube is under spring tension, if the column has not been telescoped fully, this assembly will spring upward.

6. Tilt away from the bracket and remove the upper rotating tube (10) by lifting the bearings out of their grooves, and pulling on the input shaft. Discard.

**WARNING** Wear eye protection during this step, and hold the input shaft firmly while removing. The upper rotating tube is under spring tension, if the column has not been telescoped fully, this assembly will spring upward.

7. Remove the retaining ring (9) holding the lower rotating tube.
8. Remove the lower rotating tube (11) from the base unit and discard.
9. Make sure the dust cover (R3) is still in place on the lower bearing, and the telescope spring (R2) is still in place in the jacket tube.

No.	Description	No.	Description
①	Mounting screws (4)	⑩	Upper rotating tube
②	Upper shroud	⑪	Lower rotating tube
⑥	Bolts (4)	(R1)	Mounting brackets
⑦	Bearing cap	(R2)	Telescope spring
⑧	Ground terminal	(R3)	Dust cover
⑨	Retaining Ring		

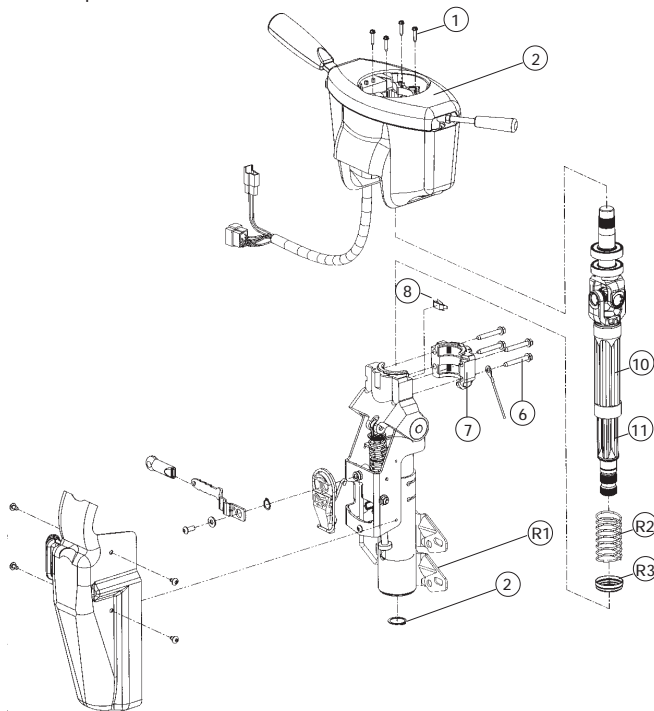
10. Note the position of the alignment arrows on the rotating tubes. Alignment arrows must line up for the tubes to fit together and function properly. Mark if necessary to align parts during installation, but not on the formed surfaces.

Separate the upper and lower rotating tubes, and insert the new lower rotating (11) tube in the jacket tube, inside the spring. Telescoping the column down may make this procedure easier.

11. Install the lower retaining ring (9). Make sure it is seated properly in its groove.
12. Align arrows or marks on upper and lower rotating tubes and install the upper rotating tube (10) assembly onto the lower rotating tube.

**NOTE** Telescoping the unit up will facilitate the installation

13. Make sure the ground terminal (8) is in place in the housing. Seat the bearings in the tilt housing grooves. Make sure the bearing gaskets are straight and seated properly.
14. Replace the bearing cap (7) with the pilot up, so it matches with the pilot lip on the housing. Install four bolts (6), placing the ground wire over one bolt. Torque to **75-80 lbf·in.**
15. Reinstall the upper shroud (2), torque mounting screws (1) to **25-30 lbf·in.** Reinstall the column in the vehicle. Torque mounting bolts to manufacturer's specifications.



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