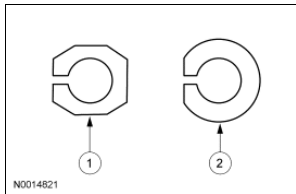
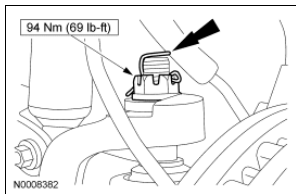


9. Using the special tool, remove the existing LH and RH adjuster sleeves. All vehicles are built by the assembly plant with a non-adjustable camber/caster sleeve.
 1. Service adjusters have an eight-sided flange with the camber/caster adjustment range stamped into the bottom (0 degree, 1/4 degree, 1/2 degree, 3/4 degree or 1 degree).
 2. Production adjusters have a round flange with a flattened edge. The amounts of pre-set camber and caster are stamped into the top of the adjuster.



10. Install interim 0 degree service adjusters to both sides of the vehicle.
11. Install the castellated nut to the upper ball joint.



12. Install the front wheel(s) and check caster and camber readings with the 0 degree service adjusters installed.
13. Calculate the maximum amount of camber and/or caster adjustment required to achieve the optimal settings, as provided in the Alignment Specifications table, by subtracting the measured values from the optimal target values.

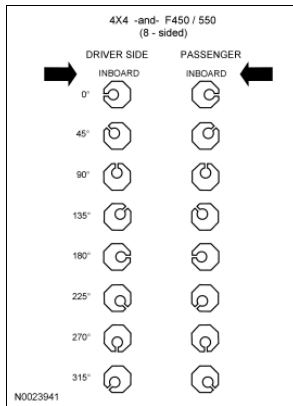
Example: For a 4x4 F350 P/U (pickup) with single rear wheels (SRW),

 - Optimal camber spec target = 0.15 ± 0.75 .
 - Optimal caster spec target = 2.5 ± 1.2 .
 - Measured camber = 1.2 (out-of-spec).
 - Measured caster = 2.0. (within spec).
 - Required camber adjustment = $0.15 - 1.2 = -0.9$.
 - Preferred caster adjustment = $2.5 - 2.0 = +0.5$, however not required.
14. Using the Camber/Caster Service Adjuster table, determine the appropriate replacement service adjuster needed to correct alignment. There is usually more than one combination of service adjuster and orientation that can be chosen to achieve alignment measurements within specifications. If a compromise is required, choose the adjuster and orientation which optimizes the camber value and

maximizes the caster value.

Example: continuing the above example,

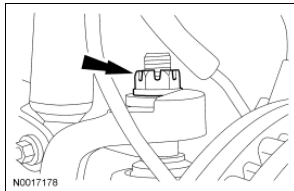
- Choose an adjuster with a 1 degree adjustment circle.
- Set the adjuster to the 180 degree position to achieve a -1 degree camber and 0 degree caster shift setting.



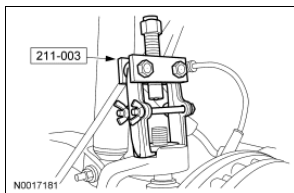
NOTE: When selecting a replacement service adjuster to achieve the desired amount of camber and caster offsets, caution is required to make sure that all other alignment characteristics (camber split, caster split and individual caster) are maintained to within their specified ranges. When in doubt which service adjuster to choose, make the selection which achieves measured results closest to the optimal targets in the following order of priority:

- ◆ caster split
- ◆ individual camber
- ◆ camber split
- ◆ individual caster

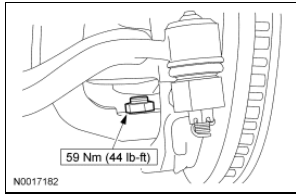
15. Remove the castellated nut from the upper ball joint.



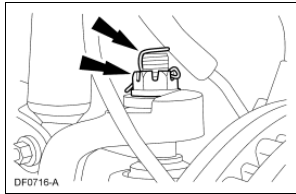
16. Using the special tool, remove the 0 degree service adjusters and install the appropriate replacement service adjusters to the correct rotational orientation specified in the Camber/Caster Service Adjuster table.



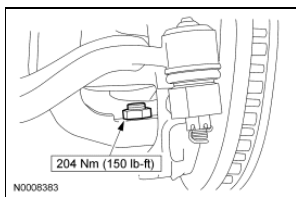
17. Tighten the lower ball joint nut to the interim torque.



18. Install the castellated nut and a new cotter pin.



19. Tighten the lower ball joint nut to final torque 204 Nm (150 lb-ft).




20. Install the front wheel(s). Final check the alignment. If not optimal caster/camber specification, alternate service adjuster selection or rotational orientation of the adjuster is required.

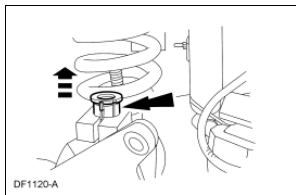
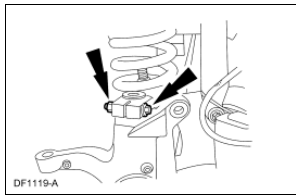
- Once the optimal caster/camber has been achieved, reset the total toe and clear vision to specification, if required. For additional information, refer to Toe Adjustment F-250, F-350, 4x4 and F-450, F-550.

Camber and Caster Adjustment F-250 and F-350, 4x2  [Printable View \(110 KB\)](#)

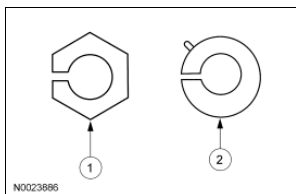
Special Tool(s)

 ST1283-A	Steering Arm Remover 211-003 (T64P-3590-F)
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1. Using an alignment rack and manufacturer's instructions, measure the caster and camber.
 - Refer to Alignment Specifications in the Specifications portion of this section for optimal alignment settings.
 - If the caster and camber values are not within specification, go to the next step.
2. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to [Section 100-02](#).
3. Remove the front wheel(s). For additional information, refer to [Section 204-04](#).
4. Remove the pinch bolt and discard the nut.



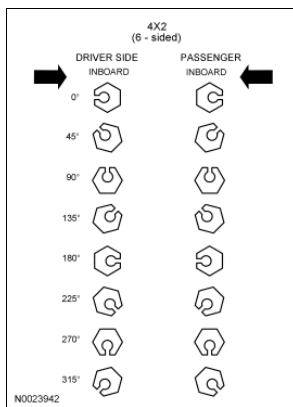
5. Remove the existing adjuster sleeves. All vehicles are built by the assembly plant with a non-adjustable camber/caster sleeve.
 1. Service adjusters have a six-sided flange with the camber/caster adjustment range stamped into the bottom (0 degree, 1/4 degree, 1/2 degree, 3/4 degree or 1 degree, 1 1/4 degree and 1 1/2 degree).
 2. Production adjusters have a round flange with a side tab. The amounts of pre-set camber and caster are stamped into the top of the adjuster.
6. Install interim 0 degree service adjusters to both sides of the vehicle.



7. Install the front wheel(s) and check caster and camber readings with the 0 degree service adjusters installed.
8. Calculate the maximum amount of camber and/or caster adjustment required to achieve the optimal settings, as provided in the Alignment Specifications table, by subtracting the measured values from the optimal target values.

Example: For a 4x2 F350 P/U (pickup),

- Optimal camber spec target = 0.62 ± 0.75 .
- Optimal caster spec target = 3.8 ± 1.2 .
- Measured camber = 1.77 (out-of-spec).
- Measured caster = 3.0 (within spec).
- Required camber adjustment = $0.62 - 1.77 = -1.15$.
- Preferred caster adjustment = $3.8 - 3.0 = +0.8$, however not required.



9. Using the Camber/Caster Service Adjuster table, determine the appropriate replacement service adjuster needed to correct alignment. There is usually more than one combination of service adjuster and orientation that can be chosen to achieve alignment measurements within specifications. If a compromise is required, choose the adjuster and orientation which optimizes the camber value and maximizes the caster value.

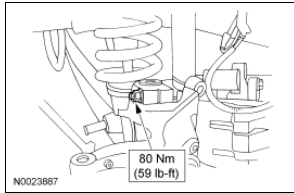
Example: continuing the above example,

- Choose an adjuster with a 1 degree adjustment circle.
- Set the adjuster to the 180 degree position to achieve a -1 degree camber and 0 degree caster shift setting.


NOTE: When selecting a replacement service adjuster to achieve the desired amount of camber and caster offsets, caution is required to make sure that all other alignment characteristics (camber split, caster split and individual caster) are maintained to within their specified ranges. When in doubt which service adjuster to choose, make the selection which achieves measured results closest to the optimal targets in the following order of priority:

- ◆ caster split
- ◆ individual camber
- ◆ camber split
- ◆ individual caster

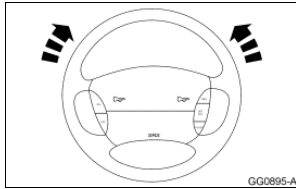
10. Remove the 0 degree service adjusters and install the appropriate replacement service adjusters to the correct rotational orientation specified in the Camber/Caster Service Adjuster table.
11. Install the pinch bolt with a new nut and tighten to 80 Nm (60 lb-ft).



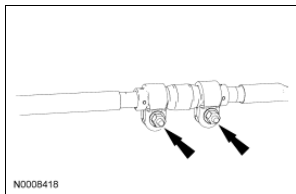
12. Install the front wheel(s). Final check the alignment. If not optimal caster/camber specification, alternate service adjuster selection or rotational orientation of the adjuster is required.
 13. Once the optimal caster/camber has been achieved, reset the total toe and clear vision to specification, if required. For additional information, refer to Toe Adjustment F-250 and F-350, 4x2 .
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Toe Adjustment F-250 and F-350, 4x2  [Printable View \(71 KB\)](#)

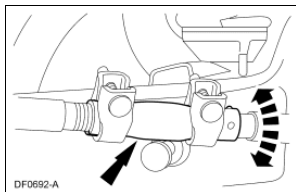
1. Start the engine and center the steering wheel.



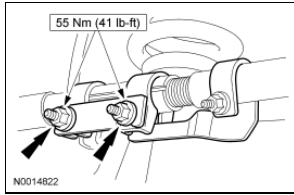
2. Turn the engine off, and hold the steering wheel in the straight-forward position by attaching a rigid link from the steering wheel to the brake pedal.
3. Check the toe settings. Follow the manufacturer's instructions.
4. Loosen the tie-rod adjuster sleeve nuts.
 - Clean and lubricate the steering linkage and tie-rod end threads.



5. Rotate the tie-rod adjusting sleeves (3281) to obtain the correct toe setting.

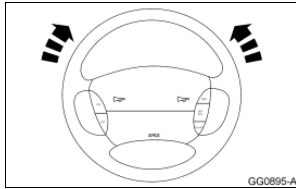


6. Position the RH adjusting sleeve clamp opening downward within 45 degrees of vertical. Tighten the nuts.
7. Position the LH adjusting sleeve clamp opening upward within 45 degrees of vertical. Tighten the nuts to 55 Nm (41 lb-ft).
8. Recheck the toe settings. Follow the manufacturer's instructions.
9. If necessary, adjust the steering wheel angle.
 - Turn the steering wheel to position the wheels in the straight-ahead position.
 - Loosen the nuts on the drag link adjuster.
 - Rotate the adjuster sleeve to correct the steering wheel angle.
 - Tighten the nuts.

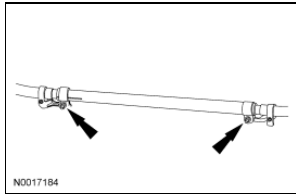


Toe Adjustment F-250, F-350, 4x4 and F-450, F-550 [Printable View \(56 KB\)](#)

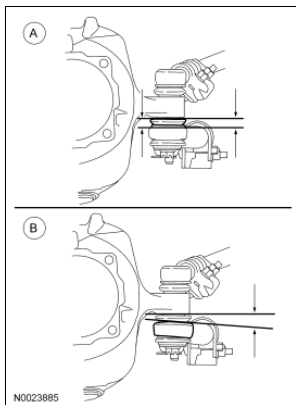
1. Start the engine. Center the steering wheel.



2. Turn the engine off and hold the steering wheel in the straight-forward position by attaching a rigid link from the steering wheel to the brake pedal.
3. Loosen the nuts.
 - Clean and lubricate the steering linkage and tie-rod end threads.



4. Rotate the center link to the correct toe setting.
5. Make sure that the RH tie-rod end is not misaligned, as shown in image B. Adjust the position as necessary as shown in image A.



6. Tighten the nuts to 55 Nm (41 lb-ft).
7. Recheck the toe settings. Follow the manufacturer's instructions.
8. If necessary, adjust the steering wheel angle.
 - Turn the steering wheel to position the wheels in the straight-ahead position.
 - Loosen the nuts on the drag link adjuster.
 - Rotate the adjuster sleeve to correct the steering wheel angle.
 - Tighten the nuts.

Lean Correction Front  [Printable View \(8 KB\)](#)

1. If lean correction is required, remove the high side front coil spring (5310). For additional information, refer to [Section 204-01A](#) .
 2. Compare the height of the original front coil spring with a new one with the same part number. Note the difference.
 3. If the original front coil spring exceeds the height of the new one by 13 mm (1/2 in), install the new front coil spring in the vehicle. For additional information, refer to [Section 204-01A](#) .
 4. If the original front coil spring is shorter than the new one by at least 13 mm (1/2 in), remove the low side front coil spring from the vehicle. For additional information, refer to [Section 204-01A](#) .
 5. Compare all three front coil springs and select the two most evenly matched for installation.
 6. From the two most evenly matched coil springs, select the tallest and install it on the lower side of the vehicle. Install the shorter of the two on the higher side of the vehicle. For additional information, refer to [Section 204-01A](#) .
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