

Thrust Angle Correction

Adjustment

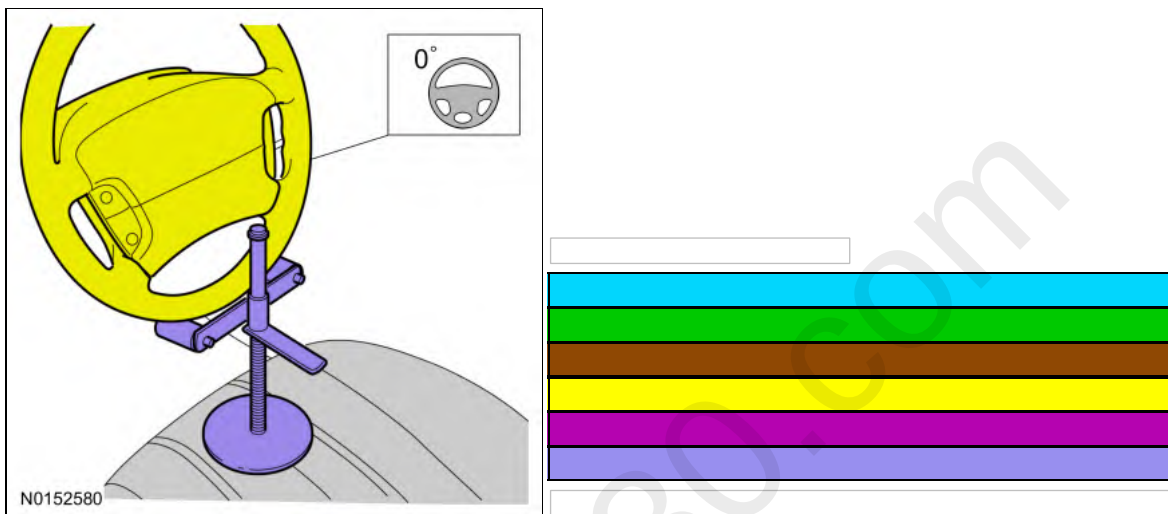
NOTICE: Attempting to use the following service procedure to reduce the appearance of dog-tracking on a vehicle that is not truly dog-tracking will lead to alignment and tire wear issues. Do not use this procedure unless a service procedure true dog-track condition is verified.

NOTE: Dog-track conditions that are the result of a collision are not to be addressed using this procedure. Dog-tracking that is the result of a collision must be repaired using generally accepted collision repair techniques.

NOTE: Appearance of dog-tracking could be attributed to an optical illusion since the front wheel track width is greater than the rear wheel track width. Heavily crowned roads can also contribute to an illusion of dog-tracking. A person traveling behind the vehicle will be able to see both the front wheel and the rear wheel. The rear wheel will appear to be further toward the center of the vehicle.

1. **NOTE:** Make sure that the vehicle is standing on a level surface.

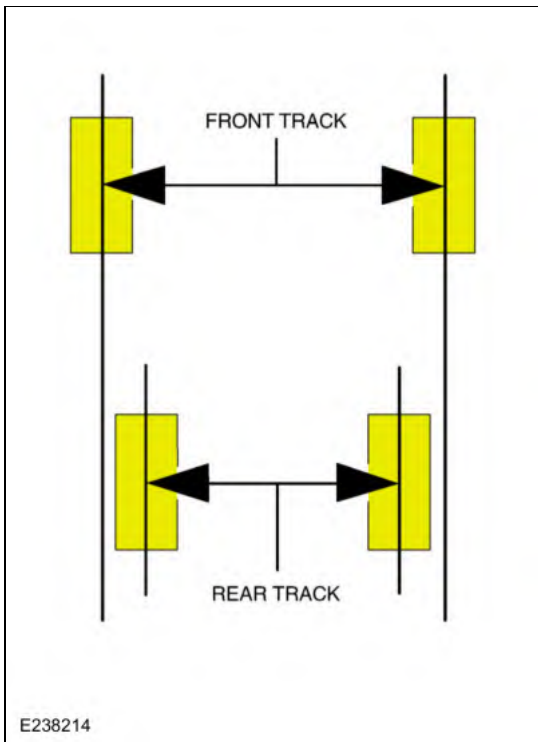
Steering wheel in straight ahead position.



2. **NOTE:** Some non-Ford aftermarket springs do not have a center bolt in the leaf spring, which can cause dog-tracking by not centering the axle on the leaf spring. Uneven loading of the vehicle (left to right) can also cause dog-tracking.

Ensure no aftermarket components are in the vehicle and/or the vehicle is unloaded. Return the vehicle back to factory equipment and an unloaded condition.

3. Confirm true dog-tracking condition.
 - Check for visual misalignment of body cab to box, bumpers to body, running boards to body, aftermarket equipment or modification, etc. that could contribute to appearance of dog-tracking. Make corrections as required.
 - If no issues, proceed to next step.



4. Measure the rear axle thrust angle using a calibrated 4-wheel alignment machine.
 1. Record the reading and follow repair instructions based on reading:
 - Thrust angle of 0 to ± 0.5 degrees.

Action

Thrust angle less than 0.5 degrees is in within specification. No suspension repair action to be taken. Inspect for body to frame misalignment.
Refer to: Frame Repair and Reinforcement (502-02 Full Frame and Body Mounting, General Procedures).

- Thrust angle greater than 0.5 degrees.

Actions

Check for bent or damaged rear axle. Refer to Section Refer to: Rear Drive Axle and Differential (205-02A Rear Drive Axle/Differential - Vehicles With: Dana M275, Diagnosis and Testing). or Refer to: Rear Drive Axle and Differential (205-02B Rear Drive Axle/Differential - Vehicles With: Dana M300, Diagnosis and Testing). or Refer to: Rear Drive Axle and Differential (205-02D Rear Drive Axle/Differential - Vehicles With: Ford 10.5 Inch Ring Gear, Diagnosis and Testing). If no damage present, proceed to next step.
Position the vehicle on a hoist to unload the leaf spring assembly. Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).
Loosen the U-bolt nuts on left and right side of the axle.
Loosen the spring-to-front bracket nut.
If the thrust angle reading is positive, push the right side of the axle, spacer (if equipped), spring in the forward direction and the left side in the rearward direction. If the thrust angle reading is negative push the left side of the axle, spacer (if equipped), spring in the forward direction and the right side in the rearward direction.
Tighten the loosened nuts until snug holding the axle in place.
With the suspension at curb height, tighten the new spring-to-front bracket bolt to 515 Nm (340 lb-ft).

With the suspension at curb height, tighten the U-bolt nuts evenly in a cross-type pattern in 4 stages.

- SRW Vehicles

Torque:

Stage 1: 48 lb.ft (65 Nm)

Stage 2: 96 lb.ft (130 Nm)

Stage 3: 148 lb.ft (200 Nm)

Stage 4: 195 lb.ft (265 Nm)

- DRW Vehicles

Torque:

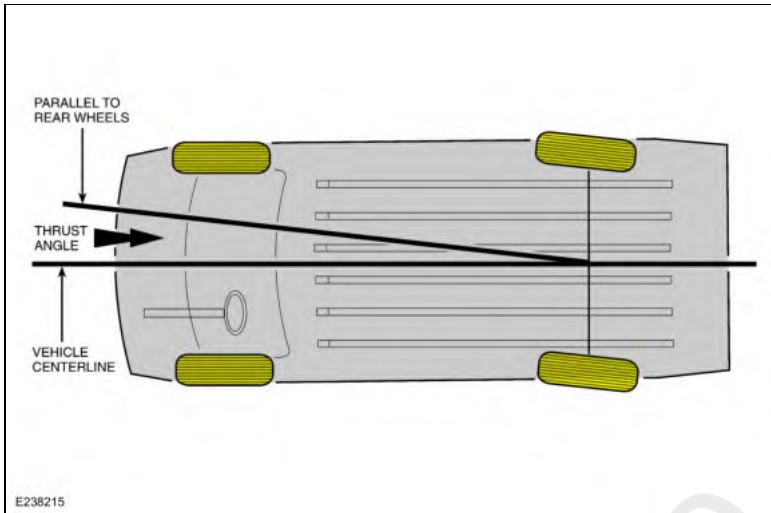
Stage 1: 74 lb.ft (100 Nm)

Stage 2: 148 lb.ft (200 Nm)

Stage 3: 221 lb.ft (300 Nm)

Stage 4: 295 lb.ft (400 Nm)

5. Re-measure the thrust angle and record before-after readings.

A horizontal bar chart consisting of six equally sized rectangular segments stacked vertically. From top to bottom, the colors are: blue, green, brown, yellow, purple, and light blue. Each segment has a thin black border. The chart is set against a white background with a faint, large, light-gray watermark of the number '3' in the center.