

CHECKING SWING-BACK

| FASTENER | TORQUE VALUE | |
|---------------------------------|--------------|--------------|
| Upper steering stem pinch screw | 22-26 ft-lbs | 29.8-35.2 Nm |

NOTICE

When lifting a motorcycle using a jack, be sure jack contacts both lower frame tubes where down tubes and lower frame tubes converge. Never lift by jacking on cross-members, oil pan, mounting brackets, components or housings. Failure to comply can cause serious damage resulting in the need to perform major repair work. (00586d)

WARNING

Properly adjust fork stem bearings. Improper adjustments can adversely affect stability and handling, which could result in death or serious injury. (00301c)

NOTES

- A steering head that is too tight can interfere with the vehicle's ability to absorb a weave. A steering head that is too loose can interfere with the vehicle's ability to absorb a wobble.
- This procedure is for 2-wheel vehicles only. Trike does not require this check due to the use of a steering damper.

Measure Swing-Back

1. Vehicle must be in original equipment configuration. Remove all accessory weight, such as a windshield bag and contents or handlebar mounted navigation unit, that could influence the way the front fork swings.
2. **Models with cable clutch:** Disconnect clutch cable from hand control. Secure out of the way.
3. **Models with hydraulic clutch:** Leave fully assembled.

NOTE

Lower frame rails **MUST** be level for a valid check.

4. Lift entire vehicle until tires are off the ground. Using a level, verify that the lower frame rails are level front to rear and left to right.
5. Swing the front end from stop-to-stop to check for smooth movement.
6. Verify that there is no clunk:
 - a. Grasp both forks near the front axle.
 - b. Shake front to rear checking for a clunk. A clunk indicates loose fork stem. Disassemble and inspect before performing swing-back check. See 1.20 STEERING HEAD BEARINGS, Inspection and Lubrication.
7. Tape a lightweight piece of cardboard 8-10 in (20-25 cm) wide across the tip of the front fender. Install centered and even with fender tip.

8. Place a pointer on the floor with the tip near the cardboard. With the front wheel straight forward, center the pointer on the cardboard.

NOTE

To avoid confusion, use three different colors to make the following marks.

9. See Figure 1-39. Lightly tap the front tire to the left until it just begins to swing back toward center. Mark the point (1) where it began to swing back.
10. Repeat by lightly tapping the front tire to the right. Mark the point (1) where it began to swing back.
11. Repeat two more times in each direction to validate marks.
12. Measure outboard 1 in (25.4 mm) from each mark (1). Mark these points (2).
13. Turn the front end until the pointer is at the left mark (2) and release. Mark where the swing stops (3).
14. Turn the front end until the pointer is at the right mark (2) and release. Mark where the swing stops (3).

NOTE

Marks (3) must fall between marks (1) and (2). If marks (3) are between marks (1), steering is too loose. Proceed to Adjusting Swing-Back later in this section.

15. Repeat two more times to validate final swing-back marks in each direction.
16. Measure the distance (4) between final swing-back marks (3). The readings must be within the values specified in Table 1-20.
17. A measurement greater than specification indicates that the steering stem is too tight. A measurement less than specification indicates that the steering stem is too loose. To adjust, see Adjusting Swing-Back below.

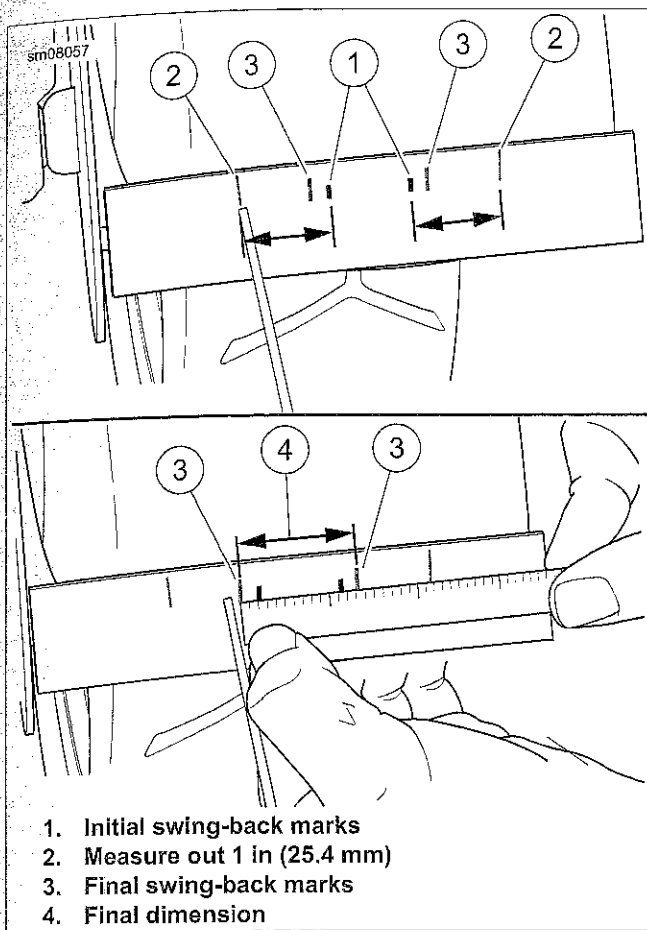


Figure 1-39. Marking and Measuring Swing Points

Table 1-20. Steering Swing-Back

| MODEL | SPECIFICATION |
|----------------|--------------------------|
| Fairing models | 1.7-2.6 in (4.3-6.6 cm) |
| Road King | 3.4-4.8 in (8.6-12.2 cm) |
| Trike | N/A (N/A) |

Adjusting Swing-Back

1. Disassemble motorcycle:
 - a. **Road King models:** Remove headlamp. See 7.9 HEADLAMP.
 - b. **Fairing models:** Remove outer fairing. See 2.37 UPPER FAIRING AND WINDSHIELD, Outer Fairing and Windshield.
2. See Figure 1-40. Loosen upper steering stem pinch screw (1).

NOTE

Protect front fender from damage.

3. Adjust steering stem:
 - a. Engage a 1/4 inch drive extension (3) six inches long into the bottom of upper steering stem (2).
 - b. Based on swing-back dimension, tighten (4) (to increase dimension) or loosen (5) (to decrease dimension) the upper steering stem a few degrees.
 - c. Tighten steering stem pinch screw to 22-26 ft-lbs (29.8-35.2 Nm).
4. Install headlamp, outer fairing and auxiliary/fog lamps. Do not tighten fasteners.
5. Check swing-back. Repeat until swing-back is within specification.
6. Assemble motorcycle:
 - a. **Road King models:** Install headlamp. See 7.9 HEADLAMP.
 - b. **Fairing models:** Install outer fairing and auxiliary/fog lamps. See 2.37 UPPER FAIRING AND WINDSHIELD, Outer Fairing and Windshield.
7. Install any accessories removed earlier.

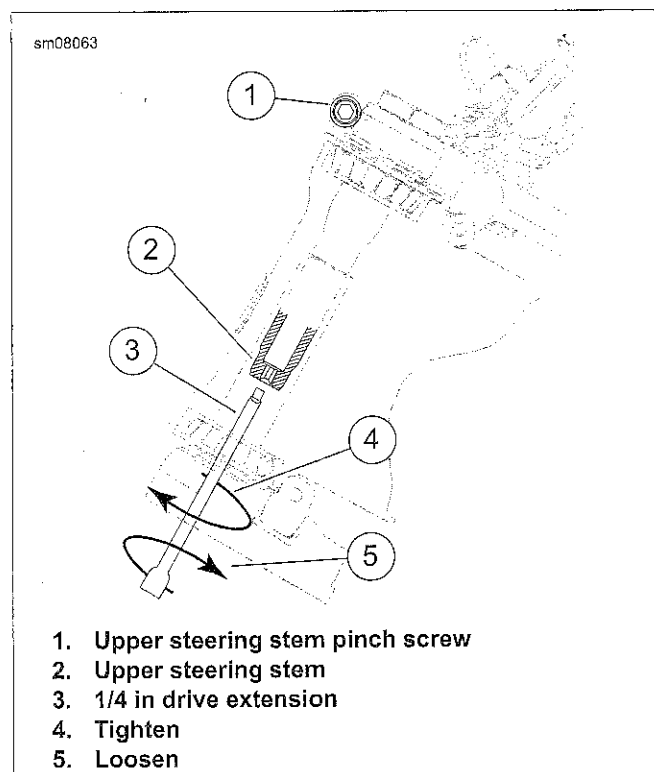


Figure 1-40. Adjust Steering Stem Bearings

INSPECTION AND LUBRICATION

NOTE

Remove grease with a clean cloth or finger. Do not use solvent.

| FASTENER | TORQUE VALUE | |
|---|----------------|--------------|
| | | |
| Upper steering stem, 1st torque | 35 ft-lbs | 47.5 Nm |
| Upper steering stem, final torque: Fairing models | 60-65 in-lbs | 6.8-7.3 Nm |
| Upper steering stem, final torque: Road King models | 110-115 in-lbs | 12.4-13.0 Nm |
| Upper steering stem, final torque: Trike models | 110-115 in-lbs | 12.4-13.0 Nm |

1. Disassemble motorcycle:
 - a. **Road King models:** Remove headlamp nacelle. See 2.42 HEADLAMP NACELLE: ROAD KING MODELS.
 - b. **Fairing models:** Remove inner fairing. See 2.39 INNER FAIRING, Inner Fairing Assembly Removal and Installation.
2. Remove upper fork bracket and handlebar as an assembly. Support out of the way. See 2.20 STEERING HEAD BEARINGS, Upper Fork Bracket.
3. Raise front end until tire is just touching surface.

NOTE

The upper fork bracket acts as a fork stop. Place wooden block between lower fork bracket and frame to avoid damage.

4. Remove upper steering stem. See 2.20 STEERING HEAD BEARINGS.
5. Raise motorcycle until lower stem bearing has exited far enough to clean grease from bearing cup and cone.

6. Wipe grease from upper and lower bearing cups and cones. Inspect parts for wear or damage.
7. Pack bearings with SPECIAL PURPOSE GREASE.
8. Lower motorcycle until lower bearing just is seated. Do not place entire weight of vehicle on bearing.
9. Apply SPECIAL PURPOSE GREASE to the threads of the upper and lower steering stems.
10. Install upper steering stem (3). Tighten to 35 ft-lbs (47.5 Nm).
11. Lower vehicle until forks begin to compress.
12. Loosen upper steering stem 90-100 degrees. Tighten to specification. Refer to Table 1-21.
13. Install upper fork bracket and handlebar. Assemble motorcycle. See 2.20 STEERING HEAD BEARINGS.
14. Check swing-back. Adjust if necessary. See 1.20 STEERING HEAD BEARINGS, Checking Swing-Back.

Table 1-21. Steering Stem Torque

| MODEL | TORQUE |
|----------------|-------------------------------|
| Fairing models | 60-65 in-lbs (6.8-7.3 Nm) |
| Road King | 110-115 in-lbs (12.4-13.0 Nm) |
| Trike | 110-115 in-lbs (12.4-13.0 Nm) |