

CHECK HEADLAMP ALIGNMENT

1. Check tire pressure.
2. Adjust rear shocks for the rider and intended load.
3. Fill fuel tank or add an equal amount of ballast.

NOTE

Choose a wall in minimum light.

4. See Figure 1-47. Park the motorcycle on a line (1) perpendicular to the wall.
5. Position motorcycle with the front axle 25 ft (7.6 m) from wall.
6. Draw a vertical centerline (2) on the wall aligned with line (1).

NOTE

The upper lens is low beam on LED headlamps.

7. With the motorcycle loaded, point the front wheel straight forward at wall. Measure the distance (4) from the floor to the bulb centerline:
 - a. **Quartz halogen:** Center of **high** beam bulb.
 - b. **LED, fork-mounted fairing:** Center of **low** beam bulb.
 - c. **LED, frame-mounted fairing:** Center of headlamp face.
8. Draw a horizontal line (5) through the vertical line:
 - a. **Quartz halogen:** See Figure 1-47. 2.1 in (53.3 mm) lower than the measured distance.
 - b. **LED, fork-mounted fairing:** See Figure 1-48. At the measured distance.
 - c. **LED, frame-mounted fairing:** See Figure 1-47. 2.1 in (53.3 mm) lower than the measured distance.
9. The headlamp is aligned when the light beam hot spot is located as shown.
 - a. **Quartz halogen:** See Figure 1-51. Hot spot centered on mark with headlamp set to **high beam**.
 - b. **LED, fork-mounted fairing:** See Figure 1-52. Top of hot spot at mark with headlamp set to **low beam**.
 - c. **LED, frame-mounted fairing:** See Figure 1-53. Center of hot spot at mark with headlamp set to **high beam**.

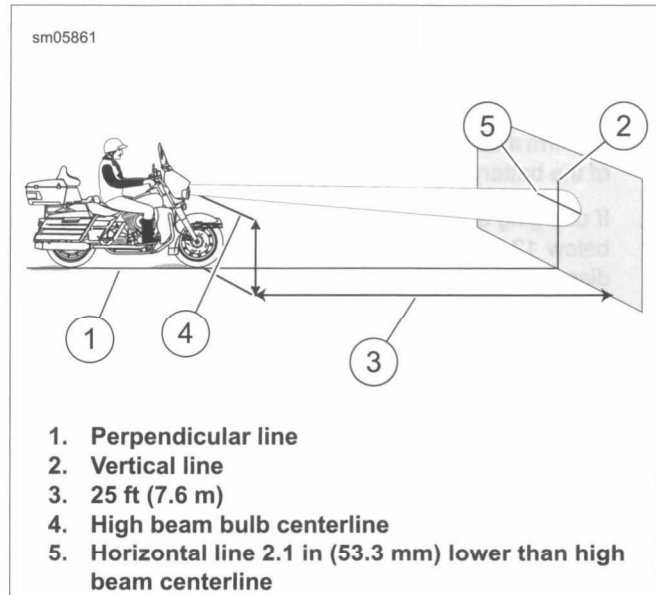


Figure 1-47. Headlamp Alignment: Quartz Halogen Type

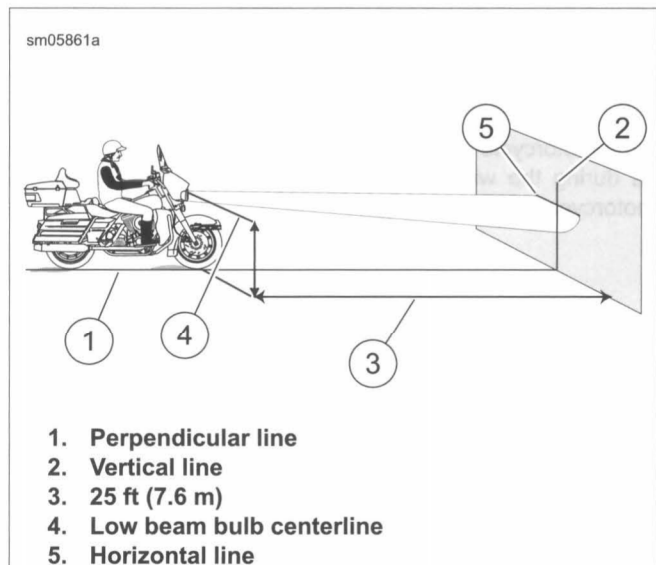


Figure 1-48. Headlamp Alignment: LED Type (typical)

ADJUST HEADLAMP

NOTE

Do not remove trim ring for headlamp adjustment.

1. Set headlamp beam:
 - a. **Quartz halogen:** Set headlamp to **high beam**.
 - b. **LED, fork-mounted fairing:** Set headlamp to **low beam**.
 - c. **LED, frame-mounted fairing:** Set headlamp to **high beam**.

2. **All except frame-mounted fairing:** See Figure 1-49. Insert a 5/32 in ball end hex wrench through adjuster slots in trim ring.
 - a. **Horizontal:** Turn the horizontal adjusting screw (1) to adjust light beam left and right.
 - b. **Vertical:** Turn the vertical adjusting screw (2) to adjust light beam up and down.
 - c. See Figure 1-51 or Figure 1-52. Adjust headlamp light beam.

NOTES

- *Frame-mounted fairing models allow only vertical adjustment.*
 - *Any of three tools can be used: 9 mm socket, 6 mm hex or T15 Torx.*
3. **Frame-mounted fairing models:** See Figure 1-50.
 - a. Turn the adjuster to adjust light beam up and down.
 - b. See Figure 1-53. Adjust headlamp light beam.

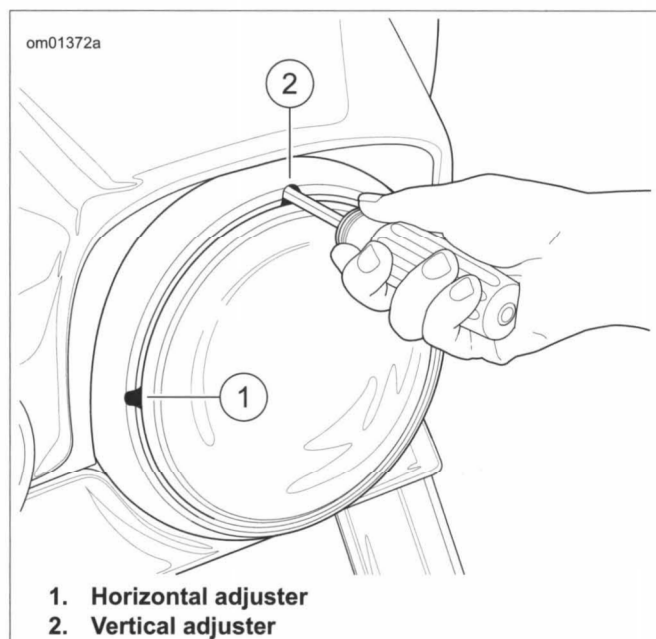


Figure 1-49. Headlamp Adjusters: All except Frame-Mounted Fairing (typical)

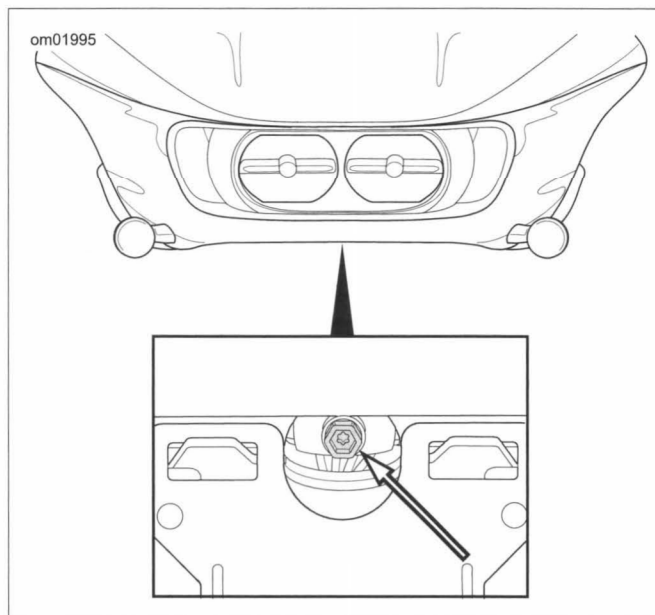


Figure 1-50. Headlamp Adjuster: FLTRU, FLTRX, FLTRXS

ADJUST AUXILIARY/FOG LAMPS

PART NUMBER	TOOL NAME
SNAP-ON® FRX181	FLARE NUT SOCKET

FASTENER	TORQUE VALUE	
Auxiliary/fog lamp flange nut: Models with flat lens turn signal lamps	15-18 ft-lbs	20.3-24.4 Nm
Auxiliary/fog lamp flange nut: Models with bullet style turn signal lamps	20-24 ft-lbs	27.1-32.5 Nm
Turn signal lamp to auxiliary/fog lamp bracket screws: Flat lens turn signal lamps	36-60 in-lbs	4.1-6.8 Nm
Turn signal lamp to auxiliary/fog lamp bracket screw: Bullet style turn signal lamps	96-120 in-lbs	10.9-13.5 Nm

1. Place the vehicle facing a target wall as described in 1.22 HEADLAMP ALIGNMENT, Check Headlamp Alignment.

NOTE

Have a person weighing roughly the same as the principal rider sit on the motorcycle.

2. With the vehicle upright and a rider seated on the motorcycle, measure the distance from the floor to the centerline of each auxiliary/fog lamp.
3. Measure the horizontal distance from the headlamp vertical centerline to the vertical centerline of each auxiliary/fog lamp.
4. See Figure 1-51 or Figure 1-52. Mark the auxiliary/fog lamp horizontal and vertical centerlines (2, 3) on the wall.
5. Remove the turn signal lamp from the mounting bracket.

6. Using FLARE NUT SOCKET (Part No. Snap-on® FRX181), loosen the auxiliary/fog lamp flange nut only enough to allow movement of the lamp.
7. Turn on the headlamp low beam and cover both the headlamp and the right auxiliary/fog lamp.
 - a. **Quartz halogen:** Adjust the left auxiliary/fog lamp so the entire high intensity zone (4) is below and to the right of the left auxiliary/fog lamp centerlines as shown in Figure 1-51.
 - b. **LED:** Adjust the left auxiliary/fog lamp so the entire high intensity zone (4) is below the centerline as shown in Figure 1-52.
8. Repeat procedure with right lamp.
9. Tighten auxiliary/fog lamp nut:
 - a. **Models with flat lens turn signal lamps:** 15-18 ft-lbs (20.3-24.4 Nm).
 - b. **Models with bullet style turn signal lamps:** 20-24 ft-lbs (27.1-32.5 Nm).
10. Install turn signal:
 - a. **Models with flat lens turn signal lamps:** Start two screws to secure turn signal lamp to mounting bracket. Verify that conduit fits in slot at back of bracket and is not pinched. Tighten to 36-60 **in-lbs** (4.1-6.8 Nm).
 - b. **Models with bullet style turn signal lamps:** Secure turn signal lamp to mounting bracket. Tighten to 96-120 **in-lbs** (10.9-13.5 Nm).

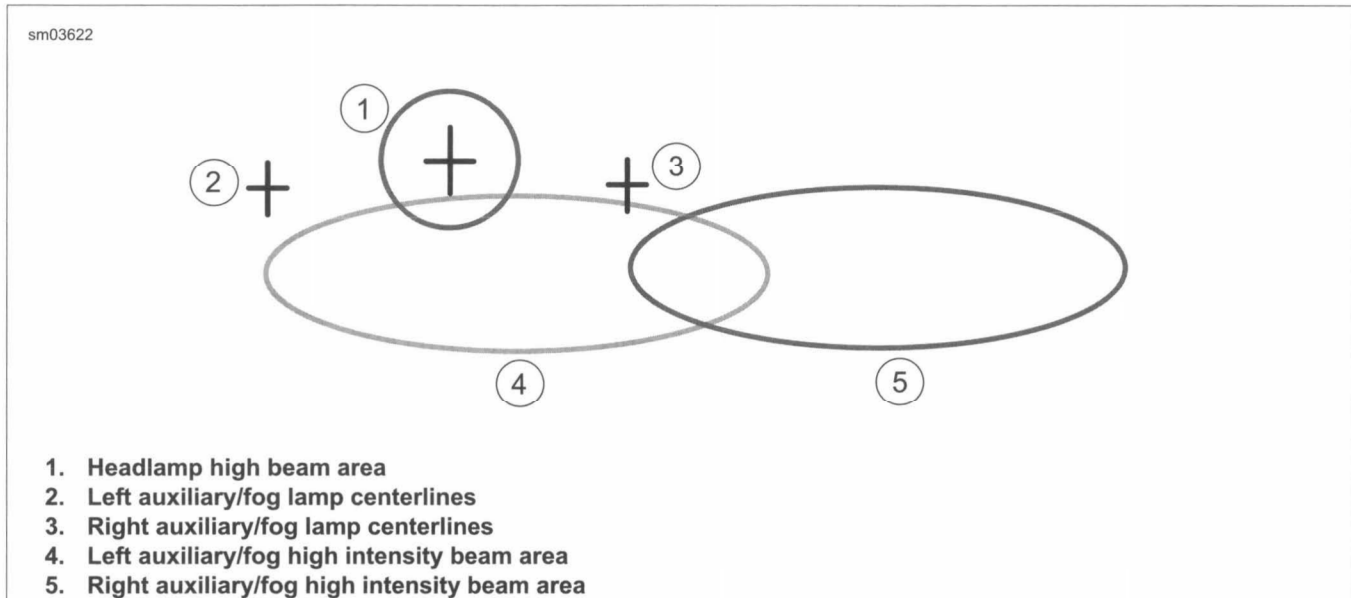


Figure 1-51. Properly Aim Lamps: Quartz Halogen Type

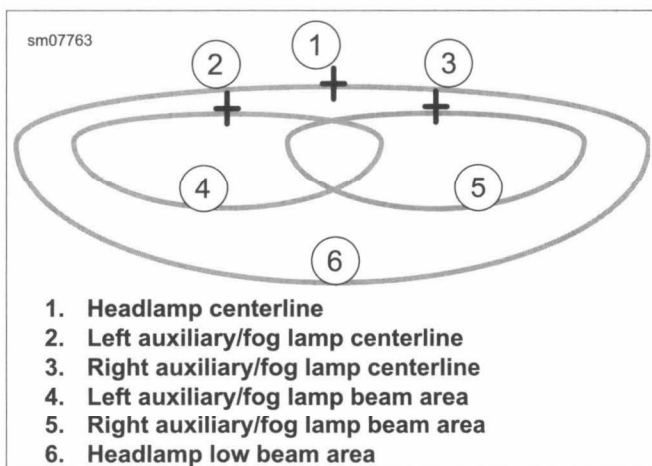


Figure 1-52. Headlamp Pattern: LED Type with Auxiliary/Fog Lamps

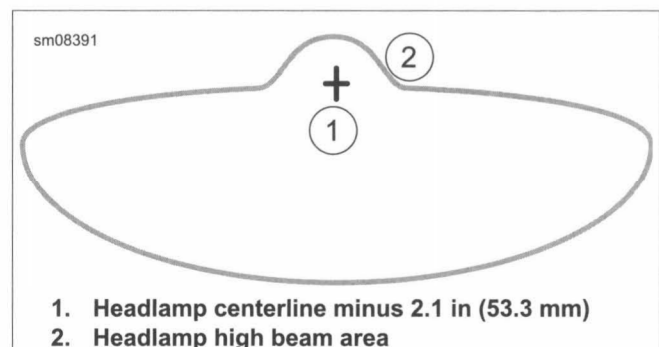


Figure 1-53. Headlamp Pattern: Frame-Mounted Fairing Models