CHAPTER 11

Front suspension and steering

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SPECIFICATIONS

Front fork specifications

Front fork installed height	8.635-8.755 inches (219.33-222.37 mm)
Fork oil capacity*	24 fl. oz./710 ml/25 imp. fl. oz.
Fork oil level	
Standard models	3.70 inches (94 mm)
Low models	3.54 inches (90 mm)
Fork oil type	Type E or equivalent
Fork tube runout limit	0.008 inch (0.2 mm)

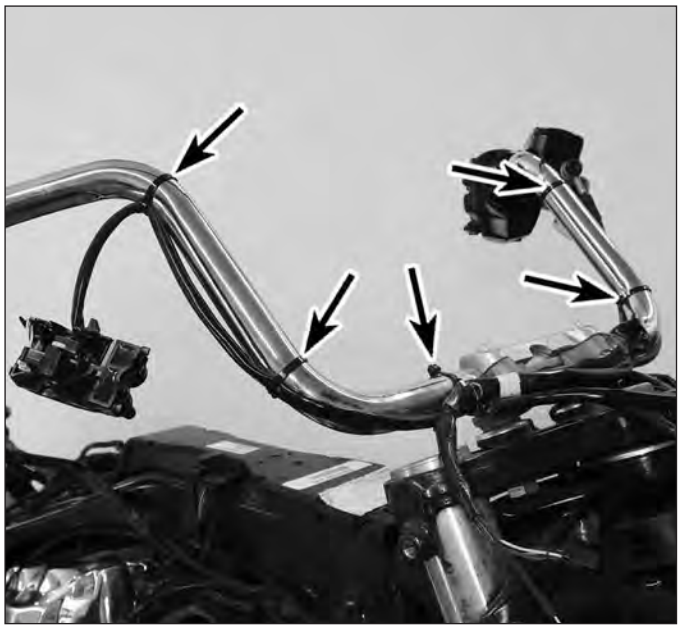
** Approximate capacity. The fork oil level determines the amount of oil to use in the fork tubes.*

Steering free play

Model Swing-back measurement	
FLHR and FLHRC	3.4-4.8 inches (9-12 cm)
FLHRXS	5.5-6.5 inches (14-17 cm)
FLHTCU, FLHTK, FLHTKL, FLHX and FLHXS	1.7-2.6 inches (4-7 cm)
FLTRU	2.7-3.3 inches (7-8 cm)
FLTRX and FLTRXS	5.2-5.7 inches (13-14 cm)

Torque specifications

	ft.-lb.	in.-lb.	Nm
Fork cap	22-59	--	30-80
Fork cover mounting screws	--	24-28	2.7-5.4
Fork tube damper rod Allen screw	30-37	--	40-50
Fork tube pinch screws	14-18	--	19.0-24.4
Handlebar upper clamp screws	16-20	--	21.7-27.1
Upper bridge pinch screw	22-26	--	29.8-35.2
Upper steering stem			
Initial torque	35	--	47.5
Final torque			
Road King	--	108	12.2
Fork mounted fairing models	--	63	7.1
Frame mounted fairing models	--	192	21.7



2.4a Before cutting and removing plastic-tie straps (arrows) used to secure hydraulic hose and wiring harnesses, identify them as described in the Step. The arrows shown here are typical of where plastic-tie straps are used. The number and position of the plastic-tie straps used on your model's handlebar may differ from what is shown here



2.4b Also note how the wiring harness assemblies exit the handlebar and where they are folded over and held in place with a plastic-tie strap (arrow). Typical example shown here as the wire harness routing used on your model may differ

1 GENERAL INFORMATION

1 This chapter covers the handlebar, steering head and front fork. Refer to Chapter 10 for wheel and tire service.

Warning: Replace all suspension and steering fasteners with parts of the same type. Do not substitute with a replacement type as it could compromise the steering and handling of the motorcycle.

2 HANDLEBAR

Removal and installation

1 If replacing the original handlebar with an aftermarket handlebar, make sure the replacement has the same outside diameter. If the replacement handlebar has a different width, height and/or sweep, make sure it has enough room to mount the controls without crowding and feels comfortable when turned from side-to-side and does not contact the fuel tank. If the new bar is higher or wider than the original, turn the handlebar from side-to-side and to make sure the brake and clutch hoses and wiring harnesses do not restrict movement. In some cases it may be necessary to lengthen or install longer wiring harnesses as well as longer brake and clutch hoses.

2 Support the motorcycle securely on its jiffy stand or on a workstand (see Chapter 10).

3 Before disconnecting and relocating any of the wiring harnesses, note the following:

- Label and identify the connectors and their wire colors to avoid confusion when reconnecting the wiring. Refer to the wiring diagrams at the back of this manual.
- Trace the wiring harnesses from the handlebar, around the steering and/or fairing to where they plug into the main wiring harnesses. It is also helpful to take several digital photographs of the individual wire harness routings and connectors.

4 Before cutting the plastic-tie straps that are used to secure hydraulic hoses and wiring harnesses in place, wrap a piece of tape around the hose or wiring harness where plastic-tie straps are used, both on the part itself and handlebar. When installing the hydraulic hoses and wiring harnesses, use the tape as a reference on where to position and tighten the new plastic-tie straps. If aftermarket equipment is mounted on the handlebar, note the installed position and wire harness routing **(see illustrations)**.

5 Cover the fuel tank with a blanket or suitable cover.

6 Disconnect the main fuse (see Chapter 9).

Note: *The handlebar can be removed with the wiring harnesses routed through the handlebar and the LHCM and RHCM mounted on the handlebar. It is only necessary to disconnect the sensor and switch wiring harness connectors as described in the appropriate procedure for your model.*

Models without an OEM fairing

7 On FLHRXS models, remove the mirror and turn signal housing from each side of the handlebar (see Chapter 9). Support the turn signal housings to prevent damaging their wiring harness assemblies.

8 Remove the front brake master cylinder (see Chapter 13).

9 Remove the clutch master cylinder (see Chapter 6).

10 Disconnect the LHCM and the twist grip sensor wiring harness connectors from the left side of the steering head **(see illustration)**.

11 Disconnect the two RHCM connectors from the right side of the steering head **(see illustration)**.

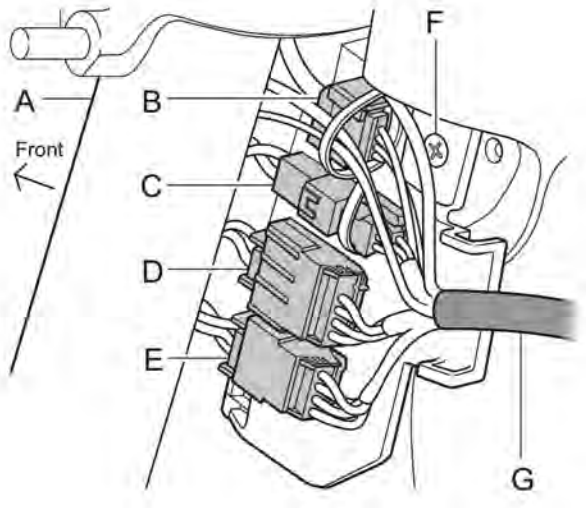
12 Remove the handlebar clamp cover as described in Chapter 9. The handlebar clamp cover is part of the headlight nacelle assembly and located directly over the handlebar mounting screws.

13 Check for and remove any aftermarket equipment mounted on the handlebar.

14 Remove the screws, handlebar clamp and handlebar **(see illustration)**.

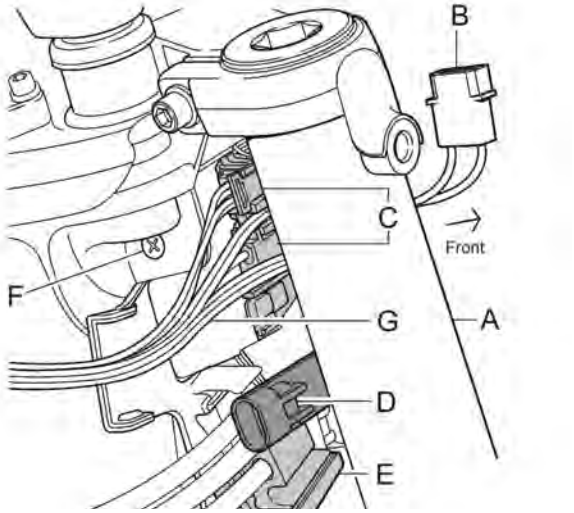
15 Clean and inspect the handlebar as described in Step 44 and Step 45.

16 Center and position the handlebar in the risers and install the upper clamp. Install the screws finger-tight to hold the handlebar in place. While sitting on the seat, adjust the handlebar position. On FLHRXS models, adjust the handlebar height as described in Section 3 **(see illustration 2.14)**.



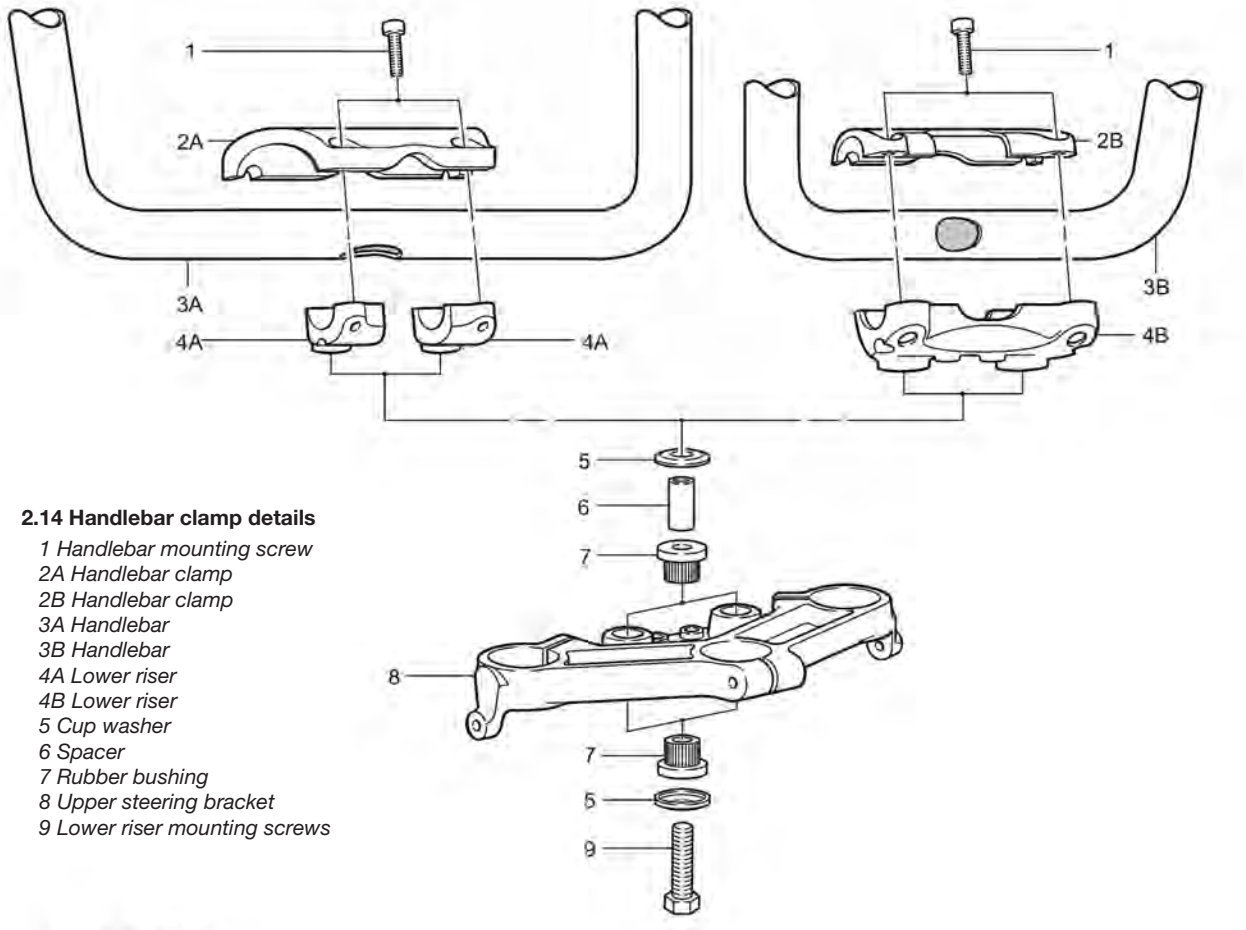
2.10 Left side wiring harness connector details

A Left fork tube
B LHCM connector
C Twist grip sensor (TGS) connector
D Right auxiliary/fog/turn signal light connector
E Left auxiliary/fog/turn signal light connector
F Caddy mounting screw
G Main wiring harness



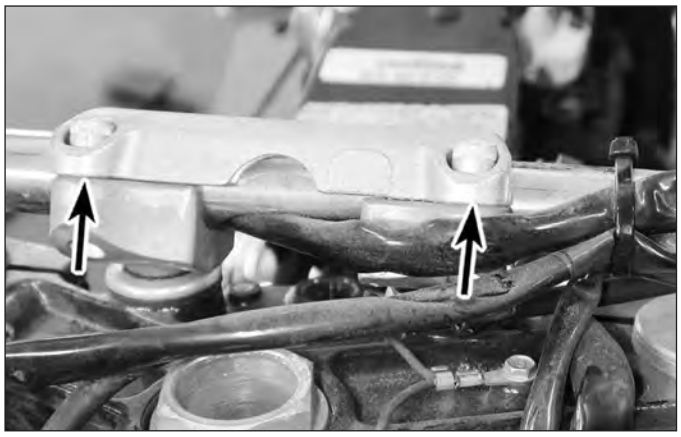
2.11 Right side wiring harness connector details

A Right fork tube
B Nacelle switch connector
C RHCM connectors
D Front wheel speed sensor connector (ABS models)
E Brake line retainer
F Caddy mounting screw
G Main wiring harness



2.14 Handlebar clamp details

1 Handlebar mounting screw
2A Handlebar clamp
2B Handlebar clamp
3A Handlebar
3B Handlebar
4A Lower riser
4B Lower riser
5 Cup washer
6 Spacer
7 Rubber bushing
8 Upper steering bracket
9 Lower riser mounting screws



2.17a Initially tighten the handlebar mounting screws so the upper clamp bottoms against the risers (arrows)



2.17b After tightening the handlebar mounting screws, make sure there is a small gap (arrow) at the rear between the clamp and risers

17 Turn the handlebar fully from side-to-side to make sure it doesn't hit the fuel tank. If it does, loosen the mounting screws and reposition the handlebar. When you can turn the handlebar from side-to-side without it hitting the tank and it is adjusted for height, tighten the front screws until the clamp contacts the risers **(see illustration)**. Then tighten the rear screws and front screws in this order to the torque listed in *this Chapter's Specifications*. There will be a gap between the clamp and risers at the backside when the screws are properly tightened **(see illustration)**.

Caution: Do not try to close the gap by overtightening the screws.

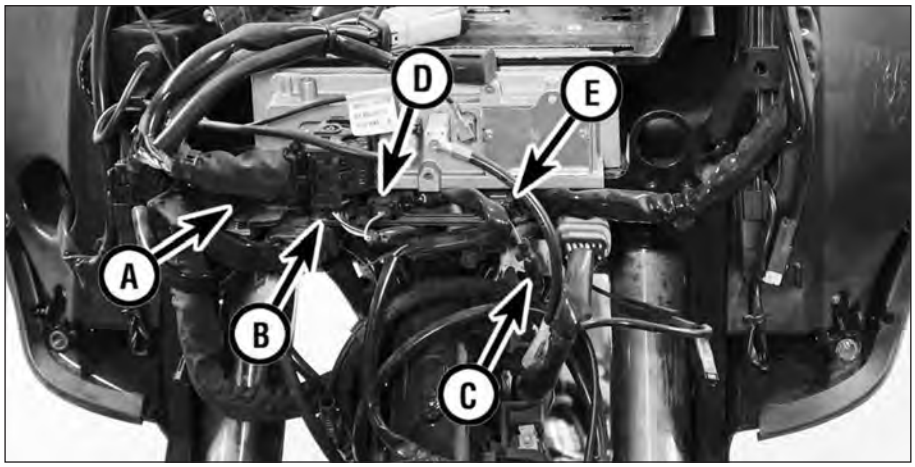
18 The remainder of installation is the reverse of removal, noting the following:

- Install new wiring harness plastic-tie straps where originally used.
- Turn the ignition switch ON and check the operation of all switches and the horn. Apply the front and rear brakes (separately) while making sure the brake light works correctly.
- Apply the front brake and make sure the lever does not feel soft or spongy. If so, air has entered the brake lines and the brakes must be bled (see Chapter 13).
- Apply the clutch lever and make sure the lever does not feel soft or spongy. If so, air has entered the clutch line and the clutch must be bled (see Chapter 6).
- Check and adjust the mirrors.
- Operate the throttle by opening and then releasing it several times. The throttle should snap back when released.

Models with fork mounted fairing

19 Perform Steps 1 through 6.

20 Remove the front brake master cylinder (see Chapter 13).



2.23 Inner fairing wiring harness connector details

A Twist grip sensor (TGS) (approximate position)
B Right handlebar switch connector
C Heated hand grip power connector, if so equipped (approximate position)
D Run/stop switch connector
E Left handlebar switch connector (approximate position)

21 Remove the clutch master cylinder (see Chapter 6).

22 Remove the outer fairing from the inner fairing (see Chapter 15).

23 Disconnect the following wiring harness connectors located inside the inner fairing **(see illustration)**. Trace the wiring harness from the handlebar to where the individual connectors plug into the wiring harnesses in the fairing.

24 If the motorcycle is equipped with heated grips, trace the wiring harnesses from the handlebar and disconnect the wiring harness connectors.

25 Rotate the inner fairing forward to access the handlebar and fasteners (see Chapter 15).

26 Check for and remove any aftermarket equipment mounted on the handlebar.

27 Remove the screws, handlebar clamp and handlebar **(see illustration 2.14)**.

28 Clean and inspect the handlebar as described in Steps 44 and Step 45.

29 Center and position the handlebar in the risers and install the upper clamp. Install the screws finger-tight to hold the handlebar in place. While sitting on the seat, adjust the handlebar position **(see illustration 2.14)**.

30 Turn the handlebar fully from side-to-side to make sure it doesn't hit the fuel tank. If it does, loosen the mounting screws and reposition the handlebar. When you can turn the handlebar from side-to-side without it hitting the tank and it is adjusted for height, tighten the front screws until the upper clamp contacts the risers **(see illustration 2.17a)**. Then tighten the rear screws and front screws in this order to the torque listed in *this Chapter's Specifications*. There will be a gap between the clamp and risers at the backside when the screws are properly tightened **(see illustration 2.17b)**.

31 Perform Step 18 to complete the procedure.

Models with frame mounted fairing

32 Perform Steps 1 through 6.

33 Remove the front brake master cylinder (see Chapter 13).