This chapter covers procedures for the transmission and shift mechanism for all models. Specifications are in Tables 1-5 at the end of this chapter. Required tools are listed in the procedures and in Table 11 of Chapter One.

All models are equipped with a six-speed transmission, which is separate from the engine. The transmission shaft assemblies and the shift assemblies can be serviced with the transmission case mounted in the frame.

NOTE
On models with a security system, disarm the system before disconnecting the battery or pulling the main fuse so the siren will not sound. Refer to Security System in Chapter Nine.

SHIFT ASSEMBLY

The shift assembly (Figure 1 and Figure 2) consists of the external shift linkage, internal shift cam and shift arm components.

If a shift problem is encountered, refer to the troubleshooting procedures in Chapter Two and eliminate all clutch and shift mechanism possibilities before considering transmission repairs. Improper clutch adjustment (Chapter Three) is often a cause of poor shifting.

Shift Linkage Adjustment

The shift linkage assembly connects the rear shift lever (at the transmission) to the foot-operated forward shift lever. The shift linkage does not require adjustment unless linkage is replaced or the transmission gears do not engage properly.

1. Pull the Main-Fuse as described in Chapter Nine.
2. Loosen the two shift rod locknuts (A, Figure 3).
3. Remove the acorn nut (B, Figure 3), lockwasher and washer securing the shift rod to the forward shift lever.
4. Turn the shift rod (C, Figure 3) as necessary to change the linkage adjustment.
5. Reconnect the shift rod to the forward shift lever. Tighten the acorn nut (B, Figure 3) securely.
6. Tighten the shift rod locknuts (A, Figure 3) to 80-120 in.-lb. (9-13.6 N•m), and recheck the shifting. Readjust if necessary.
7. If this adjustment does not correct the shifting problem, check shift linkage assembly for interference. Also check the shift linkage assembly for worn or damaged parts.
8. Install the Main-Fuse (Chapter Nine).

EXTERNAL SHIFT MECHANISM

Removal/Installation

Refer to Figure 1 or Figure 2.

1. Pull the Main-Fuse as described in Chapter Nine.
2. On models so equipped, remove the front left footboard (Chapter Fifteen).
3A. On models with a heel-toe shifter, perform the following:
   a. Make an indexing mark on the heel shift pedal and a corresponding mark on the shaft of the forward shift lever.
1. Shift peg
2. Heel shift pedal (all models except FXCWC, FXSB, FXST and FXS)
3. Clamp bolt
4. Toe shift pedal (all models except FXCWC, FXSB, FXST and FXS)
5. Clamp bolt
6. Lockwasher
7. Shift pedal (FXCWC, FXSB, FXST and FXS models)
8. Shift lever, forward
9. O-ring
10. Bearing sleeve
11. Nylon washer
12. Washer
13. Acorn nut
14. Shift rod
15. Shift lever, rear
16. Sleeve
17. Oil seal
18. Washer
19. Snap ring
20. Centering screw
21. Transmission case
22. Spring
23. Sleeve
24. Detent arm
25. Detent arm bolt
26. Long shift fork shaft
27. 5th/6th gear shift fork
28. Shift cam lockplate
29. Lockplate bolt
30. Retaining ring
31. Shift cam
32. Retaining ring
33. 1st/2nd gear shift fork
34. Short shift fork shaft
35. 3rd/4th gear shift fork
36. Shift shaft/pawl assembly
37. Shift pawl spring
38. Shift shaft spring
1. Bolt
2. Rod end
3. Locknut
4. Shift rod
5. Acorn nut
6. Shift lever, forward
7. O-ring
8. Bearing sleeve
9. Washer
10. Shift pedal
11. Clamp bolt
12. Washer
13. Shaft cover
14. Set screw
15. Lockwasher
16. Spacer
17. Peg cover (FLSTSE2 and FLSTSE3 models)
18. Shift peg
19. Bolt
20. Shift peg (FLSTNSE models)
21. Toe shift pedal (FLSTNSE models)
22. Heel shift pedal (FLSTNSE models)
23. Transmission case
24. Spring
25. Sleeve
26. Detent arm
27. Detent arm bolt
28. Long shift fork shaft
29. 5th/6th gear shift fork
30. Shift cam lockplate
31. Lockplate bolt
32. Retaining ring
33. Shift cam
34. Retaining ring
35. 1st/2nd gear shift fork
36. Short shift fork shaft
37. 3rd/4th gear shift fork
38. Shift shaft/pawl assembly
39. Shift shaft spring
40. Shift pawl spring
41. Centering pin
42. Sleeve
43. Washer
44. Oil seal
45. Snap ring
46. Shift lever, rear
47. Shift cover spacer
48. Shift cover
b. Loosen the clamp bolt, and remove the heel shift pedal from the forward shift lever.
c. Make an indexing mark on the toe shift pedal that corresponds to the mark made on the forward shift-lever shaft.
d. Loosen the clamp bolt and remove the toe shift pedal.

3B. On models with a single shift pedal, perform the following:
   a. Make an indexing mark on the shift pedal (A, Figure 4) and a corresponding mark on the shaft (B) of the forward shift lever.
   b. Loosen the clamp bolt (C, Figure 4), and remove the shift pedal from the forward shift lever.

4. Remove the nylon washer from the shaft of the forward shift lever.
5. Remove the acorn nut (Figure 5), lockwasher and washer securing the shift linkage rod to the forward shift lever.
6. Remove the jiffy stand and mounting bracket assembly (Chapter Fifteen).
7. Remove the primary chaincase assembly (Chapter Six).
8. Make an indexing mark on the rear shift lever (A, Figure 6) and a corresponding mark on the shift shaft (B).
9. Remove the clamp bolt (C, Figure 6) from the rear shift lever.
10. Remove the forward shift lever (D, Figure 4), shift rod (E), and rear shift lever (A, Figure 6) as an assembly.
11. Install by reversing the removal steps. Note the following:
   a. Align the indexing marks made during removal.
   b. Tighten the rear shift lever clamp bolt to 18-22 ft.-lb. (24.4-29.4 N•m) on all models except 2012-on FSX, FXSB and FXST. Tighten the bolt to 13-16 ft.-lb. (17.6-21.7 N•m) on 2012-on FXS, FXSB and FXST models.
   c. Tighten the shift rod-to-shift lever locknut to specification:
      1) 2011 models: 80-120 in.-lb. (9.0-13.6 N•m),
      2) 2012 models: 96-144 in.-lb. (10.8-16.9 N•m),
      3) 2013-on models: 70-90 in.-lb. (7.9-10.2 N•m).

TRANSMISSION TOP COVER

The transmission top cover assembly can be serviced with the transmission installed in the frame.
Refer to Figure 7.

Removal/Installation
1. Pull the Main-Fuse as described in Chapter Nine.
2. Remove the exhaust system as described in Chapter Four.
3. Remove the oil tank and oil lines (Chapter Five).
4. Disconnect the vent hose (Figure 8) from the top cover.