



INSTRUCTIONS

-J03479

REV. 10-13-2005

Kit Numbers 33044-03A, 33045-03A

SOFTAIL 6 SPEED TRANSMISSION - COMPLETE

General

These kits fit 2000 and later carbureted and 2001 and later EFI Softail model motorcycles. Requires separate purchase of cable Sidecover Release Kit or Hydraulic Sidecover Release Kit. See retail catalog for parts numbers. Refer to Instructions included in Sidecover Release Kits to complete installation of Screamin' Eagle 6-Speed Transmission or Gearset Kits.

Kit number 33044-03 is a complete 6 Speed Silver and Chrome transmission.

Kit number 33045-03 is a complete 6 Speed Black and Chrome transmission.

	STOCK 5 - SPEED	SE 6 - SPEED
1st	3.210	3.210
2 nd	2.209	2.209
3 rd	1.572	1.572
4 th	1.226	1.226
5 th	1.000	1.000
6 th	NA	0.885

Transmission Ratio Comparison

⚠ WARNING

The rider's safety depends upon the correct installation of this kit. If the procedure is not within your capabilities or you do not have the correct tools, have your Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00308a)

NOTE

A Service Manual for your model motorcycle is available from any Harley-Davidson dealer.

NOTE

Prior to starting this installation, it is recommended that the output shaft be rotated by hand and that the transmission be shifted through all six gears to verify proper operation. Input shaft may need to be rocked back and forth to get all gears to shift.

Removal of Original Transmission

1. Position motorcycle on a suitable lift.

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative (-) cable first) before proceeding. (00307a)

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

2. Refer to the Service Manual and follow the instructions given to remove the seat and disconnect the battery cables, negative cable first.
3. Refer to the TRANSMISSION CASE REMOVAL in the Service Manual and follow the instructions given to remove the components with the following steps.
4. Refer to PRIMARY CHAINCASE COVER REMOVAL in the Service Manual and follow the instructions given to remove the primary chaincase cover.

⚠ WARNING

Wear safety glasses or goggles when removing or installing retaining rings. Retaining rings can slip from the pliers and could be propelled with enough force to cause serious eye injury. (00312a)

5. See the PRIMARY CHAIN and COMPENSATING SPROCKET REMOVAL in the Service Manual and use the instructions given to remove the primary drive assembly.
6. Refer to the STARTER REMOVAL in the Service Manual and remove the the starter.
7. See the VEHICLE SPEED SENSOR section and unplug the vehicle speedometer sensor connection and remove the mounting bolt. Lift sensor from the transmission case and set aside for later re-installation.
8. Refer to NEUTRAL SWITCH and disconnect the connectors from the neutral switch.
9. Refer to PRIMARY CHAINCASE in the Service Manual and follow the instructions given to remove the primary chaincase housing.
10. Refer to EXHAUST SYSTEM in the Service Manual and remove the exhaust.
11. See the REAR WHEEL REMOVAL and loosen but, do not remove rear axle to relieve drive belt tension and remove the belt from the sprocket from the transmission.
12. Refer to OIL TANK REMOVAL in the Service Manual and follow the instructions given to drain, remove the oil tank and detach the vent, feed and return lines.
13. Refer to CLUTCH CONTROL in the Service Manual and follow the instructions given to remove the clutch cover and disconnect the clutch cable end from the cover. Set the cable aside for later re-installation.

NOTE

If vehicle is equipped with a shotgun style exhaust system (FLSTF/I, FXSTD/I, and FLSTN/I) or FLSTSC/I, re-use or install new Part Number 3300 longer screws for mounting exhaust bracket to transmission side door. Torque screws to 13-16 ft lbs (17.6-21.7 Nm).

14. Remove and discard top cover and pull the top cover out the right side of the motorcycle for added clearance.
15. Position a jack with a wooden block under the engine. Support the transmission and rear fork assembly with a series of jacks.
16. Refer to REAR FORK REMOVAL in the Service Manual and follow the instruction given to remove the pivot shaft freeing the transmission.
17. Remove the four bolts and washers connecting the transmission to the engine.
18. The transmission is now loose from the frame and engine and resting on a support. Tip up and slide the transmission toward the rear of the bike (to clear the dowel pins) and out the right side of the motorcycle

Installation of New Transmission

1. Refer to your Service Manual and install the new transmission into the motorcycle.
2. Slide the transmission from the right and align the four bolt holes on the transmission with the four holes on the engine.

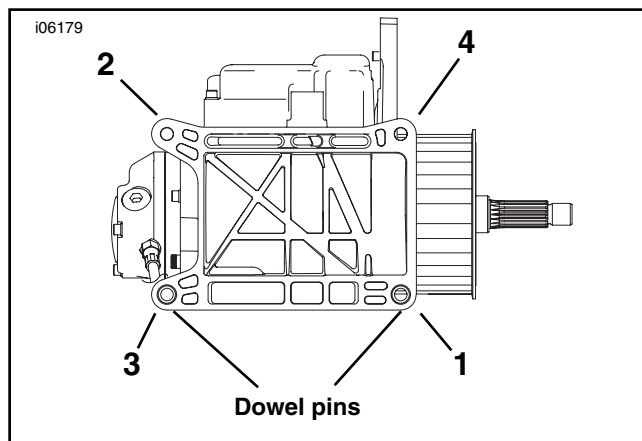


Figure 1. Transmission Housing to Crankcase Torque Sequence

3. Install the four bolts and washers removed in step 17.
4. See Figure 1. Tighten the four transmission mounting bolts in a cross pattern sequence as follows:
 - a. First tighten all four bolts finger tight.
 - b. Torque all four bolts in turn to 15 ft-lbs (20.3 Nm).
 - c. Then torque all four bolts in turn to 30-35 ft-lbs (40,7-47.5 Nm).

NOTE

Proper pivot shaft tightening is important to maintain rear fork alignment.

5. Refer to REAR FORK installation and slide the fork assembly into position aligning with mounting boss of transmission case and install the pivot shaft.

- a. Apply LOCTITE® ANTI-SEIZE to pivot shaft.
 - b. From the right side, install pivot shaft and two spacers with spacer collars facing transmission case.
 - c. Apply LOCTITE THREADLOCKER 262 (red) to the threads of the pivot shaft nut.
 - d. Tighten pivot shaft nut to 90-110 ft-lbs (122-149.1 Nm).
6. Install belt over rear wheel sprocket and transmission sprocket. Refer to REAR BELT DEFLECTION in the Service Manual and follow the instructions given to correctly install the belt to the proper deflection.
 7. Refer to the PRIMARY CHAINCASE HOUSING in the Service Manual to install the chaincase housing.
 8. Refer to NEUTRAL SWITCH in the Service Manual and follow the instructions given to install these connections.
 9. Refer to VEHICLE SPEED SENSOR in the Service Manual and follow the instruction given to install the speedometer speed sensor and use the new o-ring (64) provided in the kit.
 10. Refer to the STARTER INSTALLATION in the Service Manual and follow instruction to install starter from the right side.
 11. Refer to the DRIVE COMPONENTS in the Service Manual and install the clutch assembly, primary chain and compensating sprocket as a single assembly.

NOTE

Do not install the Derby Cover until the Side Cover Release Kit is installed.

12. Refer to PRIMARY CHAINCASE INSTALLATION in the Service Manual and follow the instructions given to install the primary chaincase cover.
13. Refer to PRIMARY CHAINCASE INSTALLATION in the Service Manual and follow the instructions given to add primary chaincase lubricant to proper level.

WARNING

Wear safety glasses or goggles when removing or installing retaining rings. Retaining rings can slip from the pliers and could be propelled with enough force to cause serious eye injury. (00312a)

14. Install the side cover.

For **Cable Actuated Clutch**: Follow the instructions in the SE 6-Speed Cable Clutch Side Cover and Release Pushrod Kit (Part Number 38752-04).

For **Hydraulic Clutch**: Follow the instructions in the Hydraulic Clutch Side Cover and Release Pushrod Kit (Part Number 38753-04), and in the Hydraulic Clutch Kit (Part Number 45033-03, Black or 45383-03, Chrome).



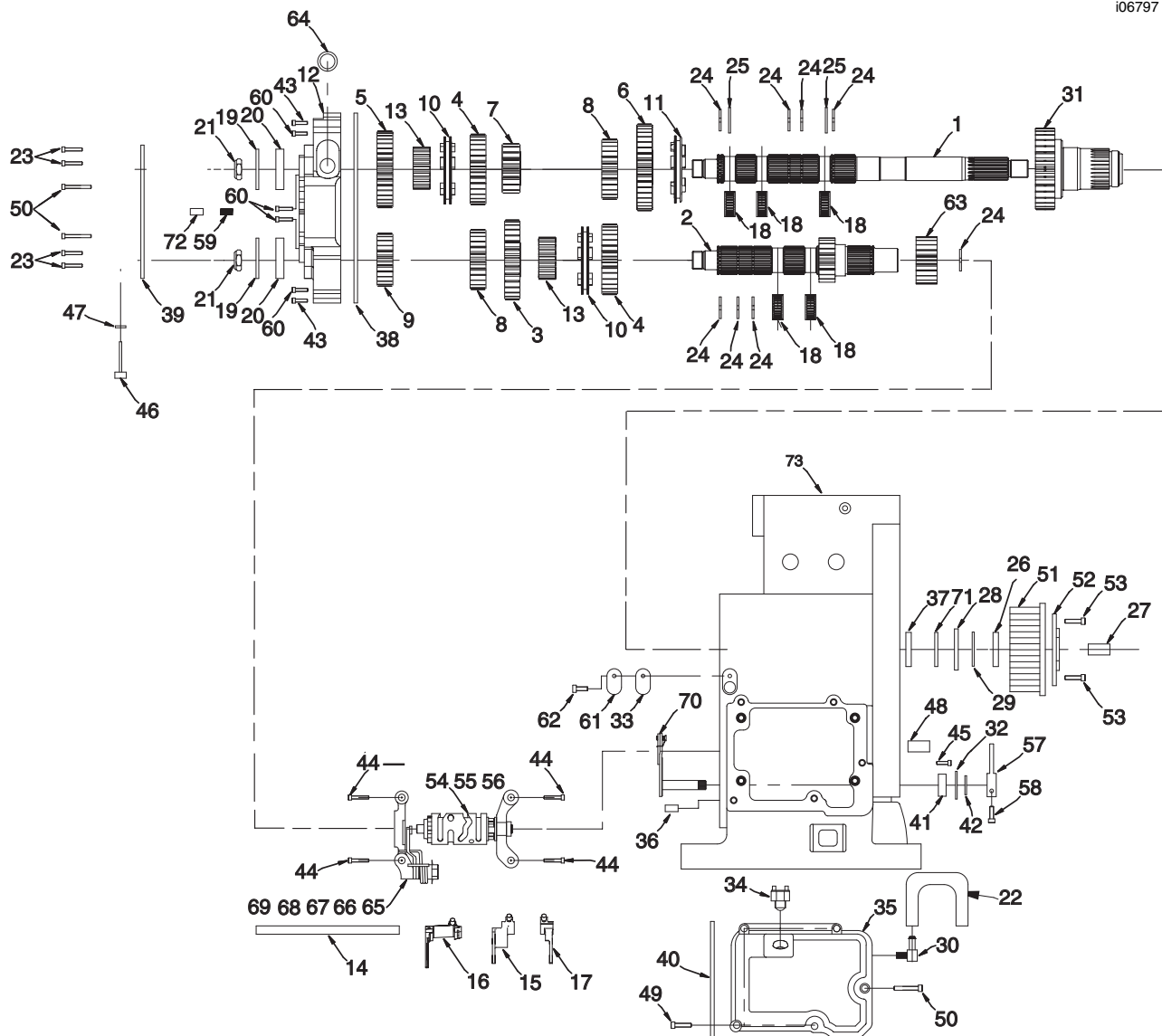
Service Parts

Part No. 33044-03A

Date 10/2005

Softail 6 Speed Transmission, Silver and Chrome

i06797



Item	Description (Qty)	Part No.	Item	Description (Qty)	Part No.
1	Mainshaft	35058-03	19	Door Retaining Ring (2)	35087-99A
2	Countershaft	35059-03	20	Trapdoor Bearing (2)	8992A
3	Countershaft 1st Gear	35080-03	21	Mainshaft/Countershaft Locknut (2)	35078-79
4	Mainshaft 3rd Gear/ Countershaft 2nd Gear (2)	35083-03	22	Top Lid Vent Hose	42533-91A
5	Mainshaft 4th Gear	35104-03	23	Clutch Release Cover Lower Screw (4)	4718A
6	Mainshaft 6th Gear	35131-03	24	Mainshaft/Countershaft Retaining Ring (8)	11067
7	Mainshaft 1st Gear	35134-03	25	Mainshaft Thrust Washer (2)	6003
8	Countershaft 3rd Gear/ Mainshaft 2nd Gear (2)	35135-03	26	Sprocket Spacer	33344-94
9	Countershaft 4th Gear	35136-03	27	Mainshaft Race	34091-85A
10	Shift Ring, 1-2, 3-4 (2)	35137-03	28	Main Case Seal	12067B
11	Shift Ring, 5-6	35138-03	29	Quad Seal	11165
12	Chrome Trapdoor, No Ear	35158-03	30	Top Lid Vent Fitting	62375-57A
13	Splined Sleeve (2)	35140-03	31	Mainshaft 5th Gear	35237-03
14	Shifter Fork Shaft	34088-87A	32	Shifter Seal Washer	6497HW
15	Shifter Fork, 1-2, Assembly	35143-03	33	Speed Sensor Plate Gasket	35152-03
16	Shifter Fork, 3-4, Assembly	35144-03	34	Neutral Switch	33904-00A
17	Shifter Fork, 5-6, Assembly	35145-03	35	Top Lid, Chrome	34541-00
18	Split Cage Bearing (5)	8876A	36	Door Roll Pin	634



Service Parts

Part No. 33044-03A

Date 10/2005

Softail 6 Speed Transmission - Silver and Chrome

Item	Description (Qty)	Part No.	Item	Description (Qty)	Part No.
37	Main Case Bearing	8996A	55	Left Pillow Block Assembly	33301-00A
39	Trapdoor Gasket	35147-03	56	Shift Drum Retainer	11342
39	Clutch Release Cover Gasket	35148-03	57	Shifter Lever	33849-97
40	Top Lid Gasket	34904-86D	58	Shifter Lever Screw	856A
41	Shifter Seal	12045	59	Plug, Shifter Fork Shaft Set Screw	3784
42	Shifter Retaining Ring	11150	60	Lower Trapdoor Screw (4)	3249
43	Trapdoor Upper Screw (2)	4814A	61	Speed Sensor Plate	35153-03
44	Pillow Block Screw (4)	3909	62	Speed Sensor Plate Screw	4705
45	Shifter Centering Screw	34978-00A	63	Countershaft 5th Gear	Not sold
46	Chrome Dipstick	37075-87	64	Speedo Sensor O-Ring	11289A
47	Dipstick O-Ring	11132	65	Detent Arm Spring	33374-00
48	Countershaft Bearing	8977	66	Right Pillow Block	33304-00
49	Top Lid Screw (4)	4740A	67	Detent Arm Screw	33376-00
50	Clutch Release Cover and Top Lid Upper Screw (3)	4717A	68	Detent Sleeve	33375-00A
51	Transmission Pulley	40250-94C	69	Detent Follower	33364-00A
52	Mega Nut	Not sold	70	Shifter Shaft Assembly	35146-03
53	Mega Nut Screw (2)	4069A	71	Case Bearing Retaining Ring	11161
54	Shift Drum Assembly	35142-03	72	Trapdoor Plug	45830-48
			73	Transmission Case (Silver)	Not sold



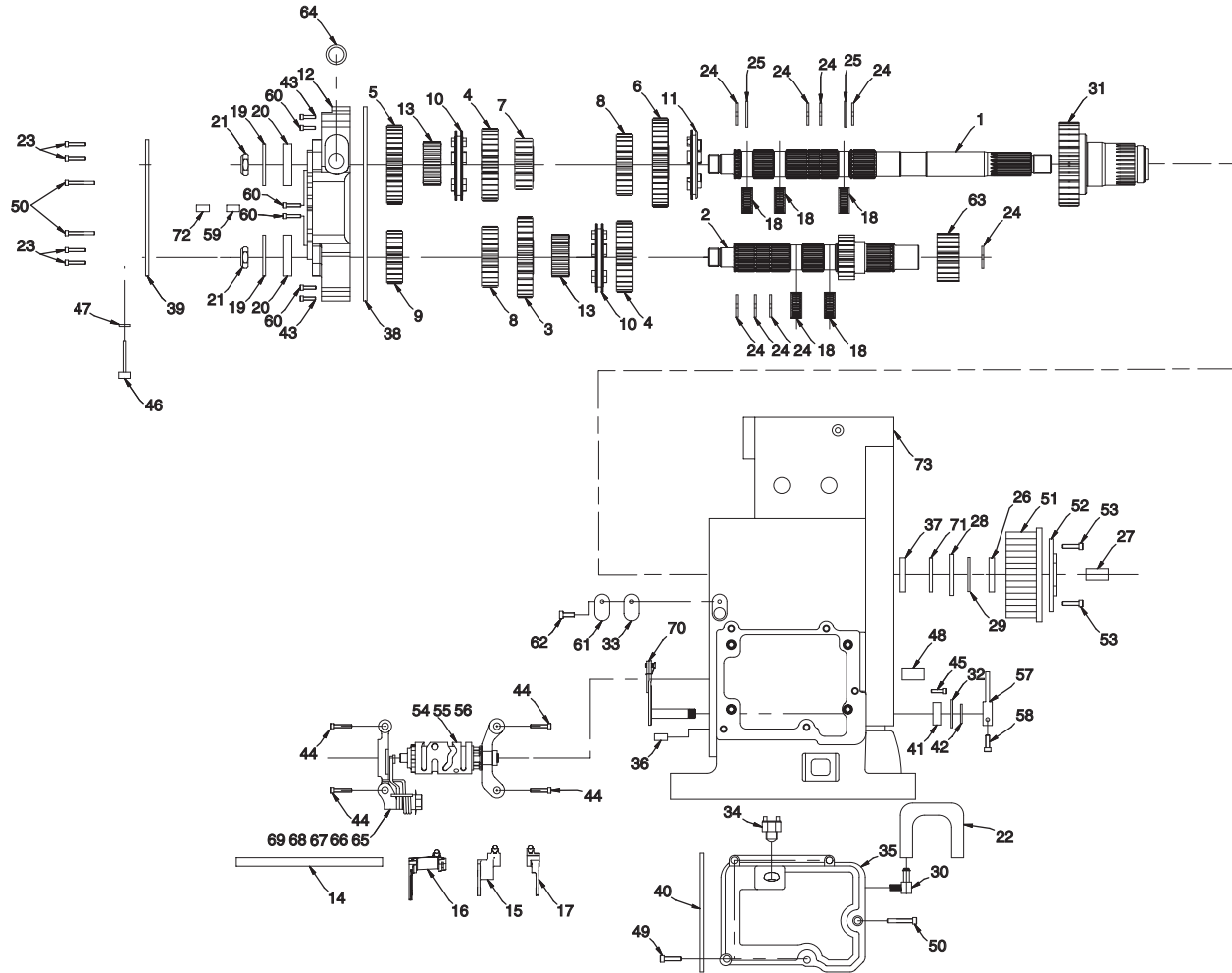
Service Parts

Part No. 33045-03A

Date 10/2005

Softail 6 Speed Transmission - Black and Chrome

i06783



Item	Description (Qty)	Part No.	Item	Description (Qty)	Part No.
1	Mainshaft	35058-03	19	Door Retaining Ring (2)	35087-99
2	Countershaft	35059-03	20	Trapdoor Bearing (2)	8992A
3	Countershaft 1st Gear	35080-03	21	Mainshaft/Countershaft Locknut (2)	35078-79
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53	Mega Nut Screw (2)	Not sold	71	Case Bearing Retaining Ring	11161
54	Shift Drum Assembly	35142-03	72	Trapdoor Plug	45830-48
			73	Transmission Case (Black)	Not sold