



KIT, TRANSMISSION, 1999-2000
KIT PN 2202430 (All 1999, and 2000 SE)
KIT PN 2202431 (2000 Except SE)

THE NEW AMERICAN MOTORCYCLE™

Application

- 1999 V92C Standard Cruiser
- 2000 V92C Standard, Special Edition, and Sport Cruiser

Before you begin, it is very important that you read and understand these instructions. These instructions are to be used in conjunction with the appropriate Victory Service Manual. Make sure you follow them exactly. Make certain all parts and tools are accounted for. Please retain these installation instructions for future reference and parts ordering information.

This kit contains all parts required to change a model year 1999 or 2000 Victory motorcycle transmission to the latest transmission components and must be installed by a certified Victory technician. If components not contained in this kit are worn or damaged beyond specifications, it is the service technician's responsibility to identify and replace those parts during installation.

All 1999 models, and all 2000 Special Edition models require machining of an aluminum crankcase boss to provide clearance for the new gear set. Modification of the inner drive sprocket cover is also required to provide clearance for an external speed sensor. A new rear sprocket and drive belt (supplied in the kit) are also required for these models. All other 2000 model year engines do not require these modifications.

Kit Contents

<u>Qty.</u>	<u>Part Description</u>	<u>Part No.</u>
1	Clutch Shaft Assembly (5th Gear)	1341411
1	Main Shaft Assembly	1341451
1	Gear, Main Shaft 4th, Counter Shaft 3rd, 26T	6230262
1	Countershaft Assembly	1341452
1	Shifter Drum Assembly	1341415
1	Shift Star	5133118
2	Fork, Shift, Mainshaft	5133255
1	Fork, Shift, Countershaft	5133256
1	Detent Plunger	5132541
1	Lube Collar	5132784
1	Lube Body Jet	5132785
1	Banjo Bolt for Lube Jet	7517863
1	Speed Sensor Bracket	1013286
1	Speed Sensor,(External)	4010766
1	Hardened Washer (Countershaft)	7556139
1	Shift Drum Plate	5244506
2	Screw, M4x12	7517797
2	Washer, M8, Bracket Spacer	7556164
1	Speed Multiplier	4010540
2	Shaft, Shift Fork (Stepped 10mm to 12mm)	5132985
1	Neutral Switch Washer	7556154
1	Ratchet, Shifter	1341416
2	Oil Pump Relief Piston	2540015

1	Adaptor, Shift Ratchet	5132139
1	Neutral Indicator Switch	4110235
1	Dart Clip	5433140
1	Cable Tie	7080138
1	Bolt, M6 x 15mm	7517272
1	Gasket, Cam Drive Cover	5830118
1	Gasket, Rear valve Cover	5830142
1	Gasket, Front Valve Cover	5830124
2	Gasket, Cylinder Base	5244305
1	Gasket, Front Cylinder Head	5244306
1	Gasket, Rear Cylinder Head	5244307
3	Screw, M6 x 12 Torx	7517598
8	Screw, M5 x 12 Torx	7517255
2	Gasket, Tensioner	5830117
2	O-Ring	5411278
2	O-Ring	5411279
1	O-Ring	3610091
1	Pressure Relief Body Cooling	2540019
1	Pressure Relief Body, Lube	2540009
1	Sleeve, Seal	5133394
1	Double Row Bearing	3513524 or 3514433
1	Hex Nut, M36 x 1.5	7547209
1	Sprocket, Front, Drive	5133262
1	Drive Belt	3211085 (99 Models and 2000 SE Only)
5	Screw, M10 x 40	7518066 (99 Models and 2000 SE Only)
1	Sprocket, Rear, Driven	1341334 (99 Models and 2000 SE Only)
5	Flat washer	7556123 (99 Models and 2000 SE Only)
1	Instruction, Kit, Trans Update, 1999-2000	9918385

You will need to supply:

Primary Cover Gasket (P/N 5830119)

Appropriate Victory Service Manual (1999 PN 9916019) (2000 STD 9916250) (2000 SC 9916288)

Torque wrench, 0-150 ft. lb. (0-200 Nm)

Torque wrench, 0-50 in. lb. (0-6 Nm)

Loctite 598 Ultra Black® RTV Silicone Sealant

Loctite Clean 'N Prime Primer N® (P/N 2870585)

Loctite 262 Threadlocker® (P/N 2871952 6ml Tube)

Die Grinder

Tape (for masking crankcase)

and the Special Service Tools listed below:

TOOL	PART NUMBER (SPX Tool Co)
Clutch Shaft Holder	PV-45028
Output Shaft / Crankcase Installer	PV-46299
Spacer (For Press)	PV-45031
Crankshaft Protector	PV-43504
Mainshaft Press Tool	PV-45029
Engine Lock Tool	PV-43502-A

⚠ WARNING

The engine and exhaust system become very hot during operation and remains hot for a period of time after the engine is shut off. Wear insulated protection for hands and arms or wait until the engine and exhaust system have cooled before working on the machine.

⚠ WARNING

CARBON MONOXIDE Never run an engine in an enclosed area. Exhaust contains poisonous carbon monoxide gas that can cause loss of consciousness and may lead to death. If you must run the engine to do some repairs, do so in an open area or with an exhaust evacuation system connected and functioning properly.

⚠ WARNING

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

IMPORTANT: Refer to the appropriate Victory Service Manual and these instructions to install this kit.

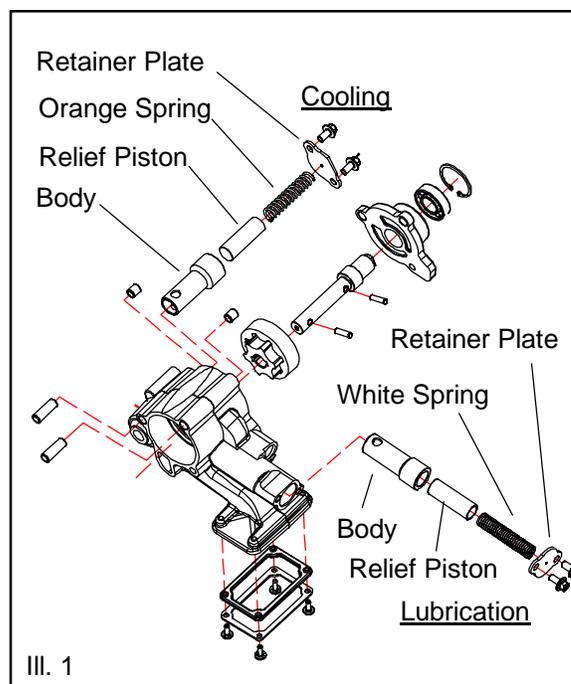
NOTE: Make certain motorcycle is secured properly for engine removal. Stabilize the motorcycle on a flat surface. The front wheel should be secured in a wheel clamp prior to removing engine. (Refer to Chapter 6)

IMPORTANT: ALWAYS clean and prime threads of screws and threads in crankcase with Primer N and allow to dry before applying threadlocking agent.

1. Drain engine oil and remove engine. (Chapter 6)
2. Disassemble engine to the extent required to access transmission, including removal of RH crankcase. (Chapter 7-10)
3. Remove oil pump from engine case.
4. Remove the oil pressure relief pistons and replace with the pistons supplied in the kit. (Chapter 4 and III. 1)

NOTE: Be sure pistons slide freely in bore. Pay close attention to spring color during reassembly.

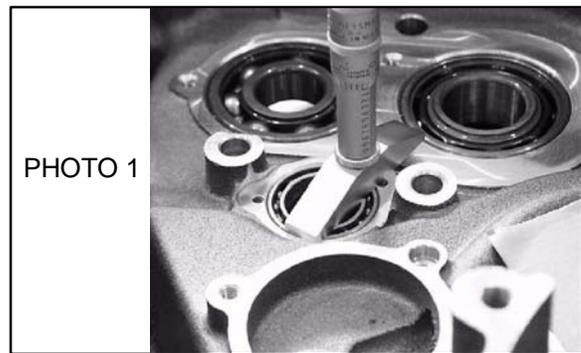
5. Remove shift rails, shift drum, shift forks, then remove the mainshaft and countershaft assemblies (Chapter 10). Remove the output sprocket shaft using an arbor press or a plastic mallet. Set these parts aside; they will not be used with the new transmission.
6. Remove the (2) shift drum bearing retaining screws from the LH crankcase. Inspect the screws for bent heads relative to the threaded shank. Bent heads are an indication of axial movement/displacement of the shift drum toward the right side of the crankcase. Discard the screws.



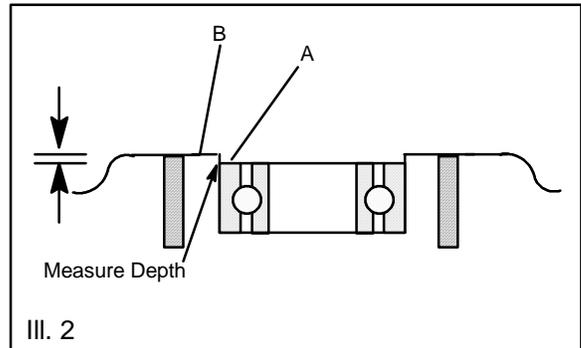
7. Using a suitable arbor or socket, tap the shift drum bearing into the LH crankcase until fully seated against shoulder of left crankcase half. The bearing must fit tightly in case. No side movement is allowed.

CAUTION

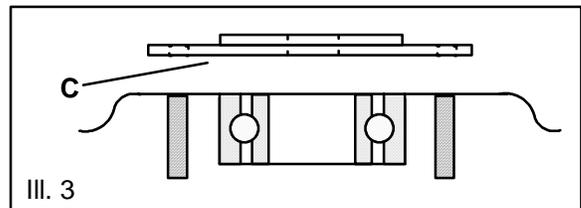
Do not press or tap on inner race or bearing damage will occur.



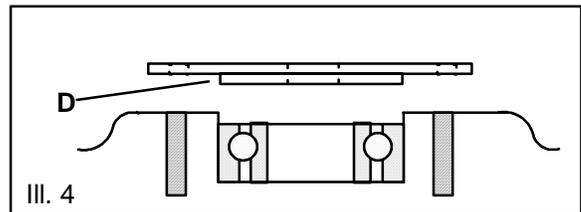
8. Once shift drum bearing is fully seated, use a depth gauge (Photo 1) to measure the relative height difference between the outer race of the shift drum bearing (A), and the crankcase surface (B) adjacent to the each tapped hole for the retainer plate as shown in Ill. 2.



If bearing is found to be flush or protrude slightly above the adjacent case surface (be sure it is fully seated) install bearing retainer plate (P/N 5244506) with the flat side (C) against bearing race. (Ill. 3)



If the bearing is found to be below the adjacent surface, install bearing plate (P/N 5244506) with stepped surface (D) against the bearing race. (Ill. 4)



Apply Loctite 262 to threads of (2) new 4mm socket head screws P/N 7517797 from kit. Install and torque to 25 in. lbs. (3 Nm).

9. Remove large bearing plates from both halves of the crankcase and inspect for warpage.
 - ***Straighten or replace plates bent by bearing side load.**
 - ***Make sure bearings are fully seated in the bore by tapping on outer bearing race.**
 - ***Reinstall bearing plates with new Torx screws P/N 7517598 and (1) P/N 7517255 from kit.**
 - ***Apply Loctite 262 to each of the (3) 6mm screws and torque to 115 in. lbs. (13 Nm).**
 - ***Apply Loctite 262 to each of the (8) 5mm screws and torque to 65 in. lbs. (7.5 Nm).**
10. Remove neutral switch from RH crankcase half and discard. Place copper sealing washer (P/N 7556154) on neutral switch (P/N 4110235) from kit and install. Torque to 85-115 in. lbs. (10-13 Nm).

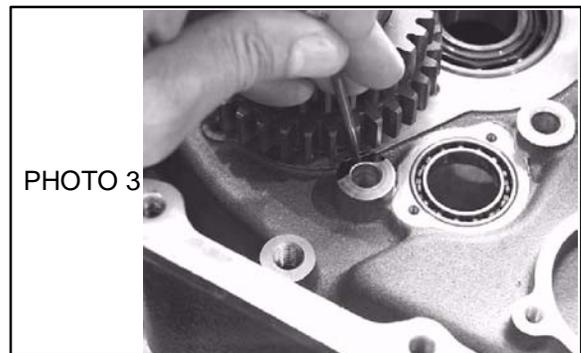
1999 Model / 2000 SE Model CRANKCASE MODIFICATION - This procedure is required before installing this kit on 1999 models and 2000 SE only. For 2000 models (except SE), proceed to REASSEMBLY PROCEDURE Page 6.

11. Apply die or dark marker to the lower shift rail boss and install new countershaft gear set from kit to determine clearance required (Photo 2).

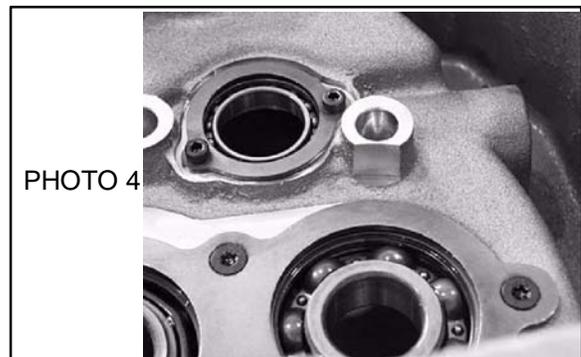


Scribe a line on boss, using gear as a template (Photo 3).

12. Tape all bearings and oil passages to prevent metal shavings from entering. Before applying tape, clean all surfaces to ensure tape adhesion.

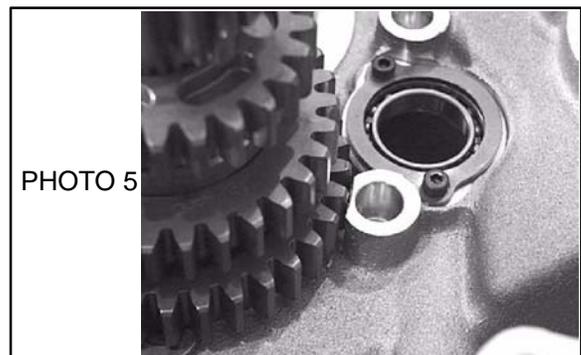


13. Using a die grinder, mill, or similar tool, grind the boss material until you reach the scribed line. **DO NOT REMOVE TOO MUCH MATERIAL.** The shift rail must be supported by the boss.



Gear clearance of .008 - .040" is acceptable (Photo 5).

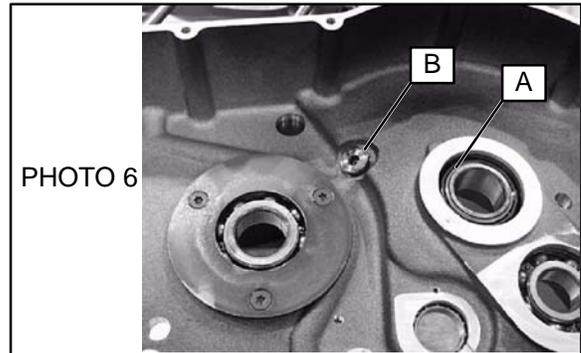
14. Clean all aluminum debris and machining chips from crankcase.
15. Remove masking tape.



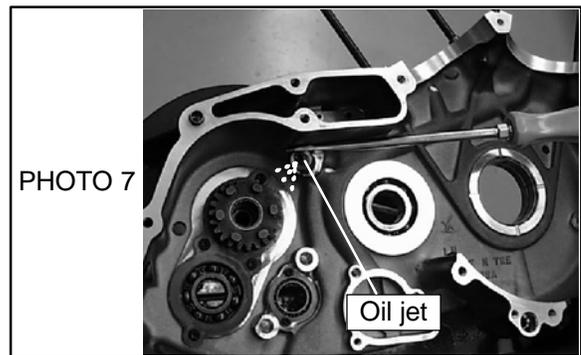
TRANSMISSION REASSEMBLY (Refer to Chapter 10)

NOTE: Be sure all parts are clean prior to assembly.

1. Install the new double row clutch shaft bearing PN 3513524 (A, Photo 6) from kit in the left crankcase.
2. Support the crankcase on the clutch side with spacer tool PV-45031.
3. Install the new clutch shaft from kit in the left crankcase. (Chapter 10)
4. Press clutch shaft into bearing until fully seated using an arbor press and the shaft installation tool (PV-45029).
5. Remove oil jet (B, Photo 6) from the left crankcase and discard. Install the new lube jet body (PN 5132785) supplied with the kit into the crankcase and torque to 20 ft. lbs. (27 Nm).



6. Install new lubrication jet, collar, and banjo bolt.
 - *Photo 7 shows a screwdriver used to align the flat side of the jet collar to the top crankcase surface during jet installation.
 - *The recessed end of the jet goes toward the case.
 - *The hole in the jet must be positioned to spray oil on the transmission shafts.
 - *Add 1-2 drops of Loctite 262 to the end of the 6mm banjo bolt (7517863). Install and torque to 85 in. lbs.



7. Install the mainshaft and countershaft from kit. Ensure the shafts are fully seated in the bearings and that they rotate freely after installation.

NOTE: All 1999 models & 2000 SE use stepped shift rails supplied in kit. Other 2000 models use the existing shift rails.

8. Install the two longer shift forks onto the main shaft (top shaft) gears. Install the shorter fork on the countershaft.
9. Install the shift fork rails into the shift forks and pivot the fork/shaft out of the way to allow for shift drum installation.
10. Install the shift drum and move the shift forks into position, engaging the pins on the forks with the proper groove in the drum. Push the rails into the crankcase rail bores until seated.

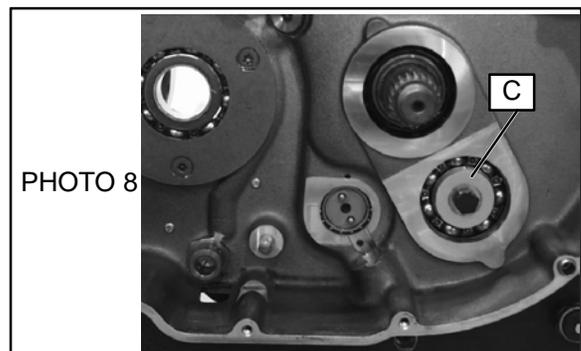
NOTE: Before proceeding with crankcase assembly, complete the following steps and refer to Chapter 10:

*Replace the existing countershaft retention washer (C, Photo 8) with the new, hardened retention washer (P/N 7556139) from kit. Apply Loctite 262 to the threads of bolt. Install and torque to 18 ft. lbs.

Replace the shift plunger with new, spherical-nose plunger (P/N 5132541) from kit.

Replace shift ratchet assembly with new assembly (P/N 1341416) from kit (after crankcase assembly).

NOTE: New shift ratchet must be used in conjunction with new shift shaft adapter PN 5132139 from kit. Apply Loctite 262 to adaptor threads and torque to 25 ft. lbs. (34 Nm).

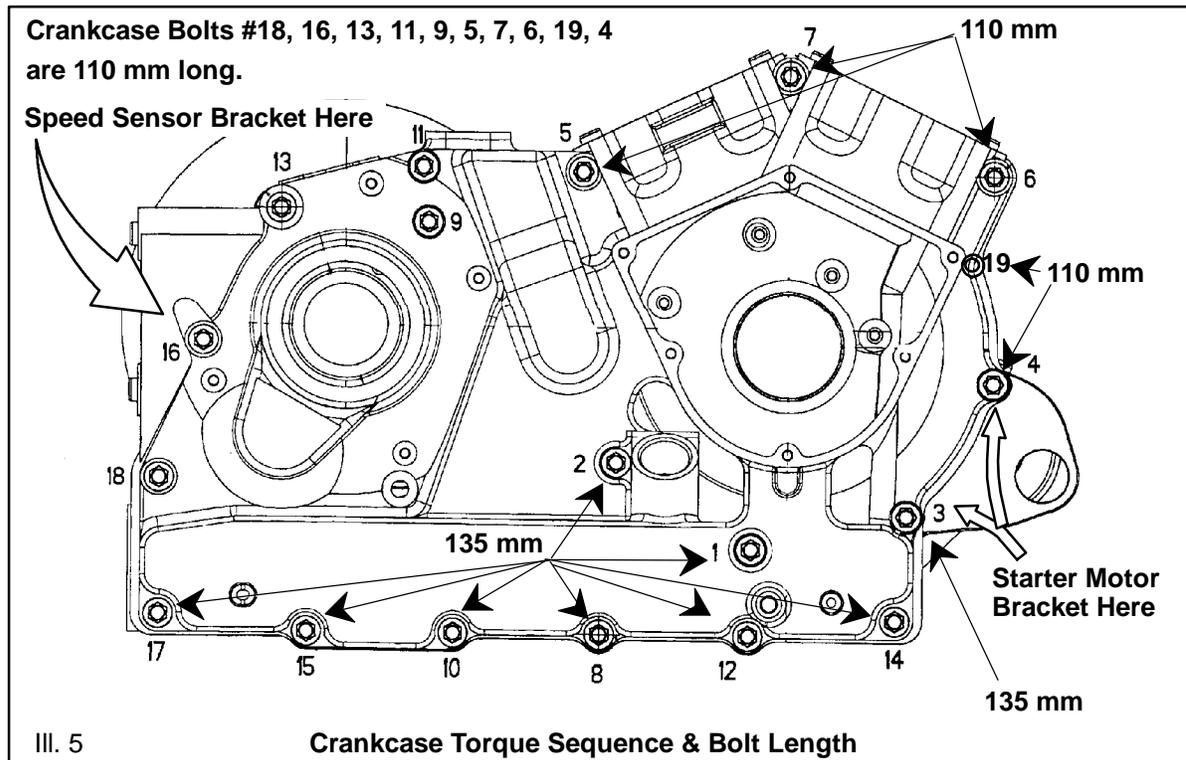


TRANSMISSION REASSEMBLY (cont.)

11. TEST the transmission by shifting through the gears while spinning the shafts. Test the operation of each gear.
12. Shift the transmission into **5th gear** for crankcase reassembly.

CRANKCASE REASSEMBLY

1. Install and fully seat the new mainshaft seal sleeve O-ring on mainshaft. This O-ring can be installed after crankcase halves are sealed and assembled, but it is easier to do at this point.



2. Thoroughly clean the crankcase sealing surfaces and then apply a thin, even film of crankcase sealant (Loctite 598 Ultra Black) to BOTH mating surfaces. Be sure all surfaces are covered. Take your time. Thorough cleaning and precise sealant application is important to prevent leaks. Be sure everything is ready for crankcase assembly prior to applying sealant so it does not start to cure before cases are seated.
3. Install the clutch shaft holding tool (PV-45028) on clutch shaft and secure it to LH crankcase.
4. Install bearing protector on end RH end of crankshaft, and RH set crankcase onto transmission shafts and crankshaft. Install the crankcase tool (PV-46299) onto mainshaft and tighten the nut while tapping on the case as shown in the service manual.

NOTE: The case will seat before mainshaft is fully drawn into RH mainshaft bearing. Tighten puller to 75-100 ft. lbs. (102-136 Nm) to be sure shaft is seated in bearing.

5. Remove the clutch shaft holding tool.
6. Place the starter motor bracket in positions 3 and 4 (see III. 5 above) and speed sensor bracket in position 16 shown in III. 5.

NOTE: You must install the (2) 8mm washers from kit (P/N 7556164) under the old speed sensor bracket to fill the counter-bore on the crankcase.

7. Place the longer crankcase bolts in the lower half of the case and the shorter bolts in the upper half as indicated in III. 5.
8. Torque the crankcase bolts in 3 steps to 22 ft. lbs., following the sequence shown in III. 5. Rotate the output shaft frequently to make certain it moves freely.

NOTE: If the mainshaft binds during assembly, check for an assembly error. The mainshaft must be fully drawn into the RH mainshaft bearing, and the mainshaft and clutch shaft bearings must be fully seated in crankcase or the shaft may seize when case bolts are tightened.

IMPORTANT: To reduce transmission noise, minor dimensional changes have been made on some of the new transmission components. Although it is highly unlikely, there may be a clearance issue when these components are installed in earlier transmission case. Check assembly to verify that the transmission rotates freely in all gears. If you are certain assembly is correct and bearings seated fully but the transmission still binds, contact Victory Service for assistance.

PRIMARY DRIVE AND PRIMARY COVER REASSEMBLY (Refer to Chapter 9 in Service Manual)

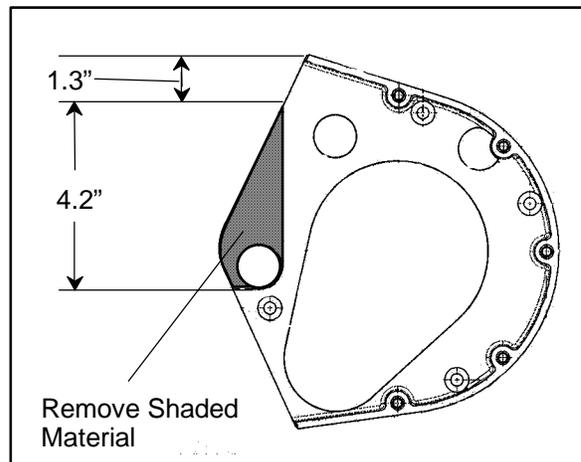
1. Push detent plunger down and install new shift star. Align pins in the star with the holes in the drum. Torque shift star bolt to 115 in. lbs. (13 Nm).
2. Using the service manual for reference, assemble the clutch and primary gears.
3. Install primary cover.

IMPORTANT: After primary cover is installed, check shift ratchet for proper end play (axial clearance). Check by grasping end of shift shaft and pulling out until it stops against cover. Push in to determine the amount of axial clearance. It should be between .008" - .050".

4. Prior to installing engine, verify proper operation of transmission by shifting through all gears and neutral position.
5. Install engine and complete vehicle assembly, but leave body side covers off. Leave exhaust mufflers off on all 1999 models and 2000 SE, until rear sprocket and drive belt from kit are installed.

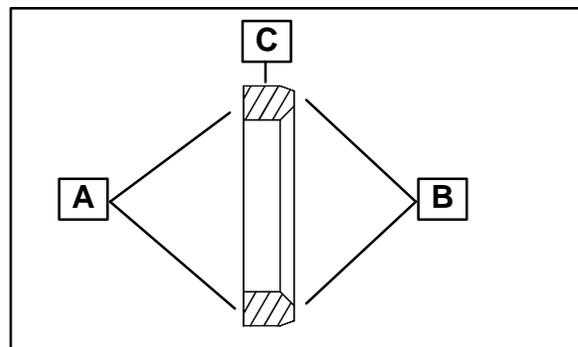
REAR SPROCKET INSTALLATION and INNER SPROCKET COVER MODIFICATION for 1999 Models / 2000 SE Models ONLY (Step 6 and 7 not required on other 2000 models. Proceed to step 8)

6. Use a band saw, hack saw, or grinder to remove material in area shown in illustration. Use a file to round and de-burr rough or sharp edges. Black touch-up paint can be applied after cleaning all grease, oil, or filings from the cover. Install the inner cover.
7. Install new rear sprocket and drive belt following special instructions provided on page 11.



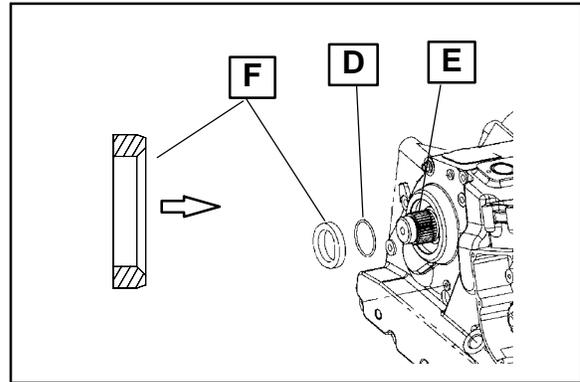
ALL MODELS

8. Install the inner sprocket cover.
9. Inspect outer surface (A), inner surface (B), and sealing surface (C) of seal sleeve. Surfaces must be flat without wear or galling. Replace the sleeve if worn, or if the surface appears rough or chafed. The O-ring sealing surface of chamfered edge must be smooth to seal the shaft.

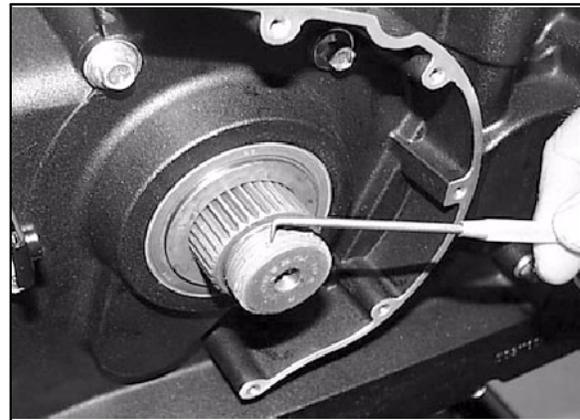


DRIVE SPROCKET INSTALLATION

10. Apply grease to a new O-ring (D) (if it was not previously installed) and install on mainshaft (E).
11. Install seal sleeve (F) with chamfer facing in, toward O-ring.
12. Clean the shaft threads and sprocket nut of old thread locking agent and apply Loctite Primer N™. Allow 5 minutes drying time for the Primer N.
13. Place belt onto the front sprocket and place sprocket over splines of output shaft.



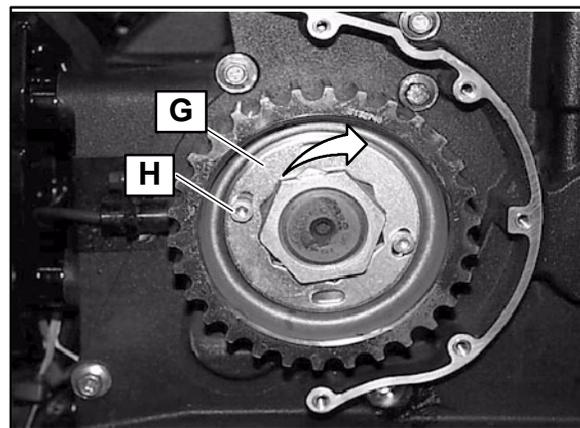
14. Tighten rear axle then back it off about 1 turn.
15. Adjust belt tension visually to provide enough tension to keep belt from jumping the teeth of sprocket while torquing sprocket nut.
16. Apply Loctite 262 to threads of output shaft and nut.
17. Install drive sprocket nut.
18. Apply rear brake and torque drive sprocket nut to 125 ft-lbs.



19. Install lock plate (G).

NOTE: The lock plate can be installed in many positions and either side of the plate can be used. If you cannot find a position that will work, flip the plate over and again try to install it. If the plate still does not align, tighten the sprocket nut slightly and try to fit the lock plate again.

20. Install lock plate screws (H).
21. Rotate the plate **CLOCKWISE** until it stops and hold it firmly against the nut.
22. Tighten lock plate screws to 85 in-lbs (10 Nm)
23. Adjust drive belt tension and wheel alignment. Refer to Service Manual for procedure.



BELT DEFLECTION:

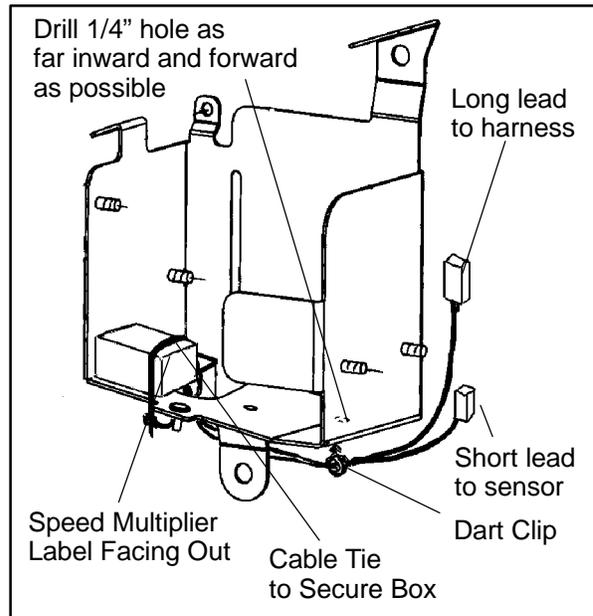
ALL MODELS: 8mm w/ 10 lb. load

24. Install drive sprocket outer cover.

SPEED SENSOR / MULTIPLIER BOX

In order for the speedometer to function properly, the speed multiplier (P/N 4010540) from kit must be installed between the speed sensor and the main wire harness. Proceed as follows:

25. Remove right and left side covers (if installed).
26. Remove tool kit and install the speed multiplier in the left corner of the (right side) box and secure in place with a cable tie.
27. Route both leads through the hole in the bottom of the box and plug the shorter (11 inch) lead into the new speed sensor (P/N 4010361).
28. Use the small harness dart clip (P/N 5433140) to hold both wires away from the drive belt. Plug the harness dart clip into the 1/4 inch hole under the battery box. On some 1999 models, you may need to drill a 1/4 inch hole for the clip.
29. Connect the longer (17 inch) lead to the wire harness. Check routing to ensure belt clearance, shock absorber clearance, or any other potential routing hazard.



1999 Models The connection is located under the left side cover.

2000 Models The connection is located under the right side cover.

Secure any loose wiring with a cable tie.

30. Re-install tool kit and side covers.
31. Verify proper oil level and that all fasteners are properly tightened.
32. Install exhaust mufflers.
33. Test ride motorcycle and check for proper operation.

SPECIAL INSTRUCTIONS FOR REAR SPROCKET AND WHEEL HUB INSPECTION. THIS PAGE APPLIES TO ALL 1999 MODELS and 2000 SE models ONLY.

1. Refer to the appropriate Service Manual to remove rear wheel.
2. Remove sprocket bolts and rear sprocket from wheel.
3. Inspect mating surfaces of wheel for excessive wear. Replace wheel if:
 - a. Fretting is present on 50% of the wheel mating surface.
 - b. Sprocket bolt clearance holes are elongated.
 - c. Sprocket bolt wheel hub threads are damaged.
4. Remove thread-locking compound in the sprocket bolt threads of the wheel using clean, dry compressed air, contact cleaner, and a thread chaser or slotted M10 bolt. Clean threads thoroughly until an M10 bolt (without pre-applied locking agent) can be screwed freely by hand into the hole to a minimum depth of 25mm.
5. Remove any protruding nicks or burrs on sprocket mounting surface of wheel with fine grit emery paper.
6. Clean mounting surfaces of sprocket and wheel with isopropyl alcohol or warm soap and water and allow to dry thoroughly before assembly.
7. Assemble the sprocket onto the wheel. The sprocket must freely drop over the lip on the wheel and sit square on the wheel mating surface. If a tight fit up exists or if any rocking is noticed, remove sprocket and rework as required.
8. Assemble the washers (P/N 7556123) onto the sprocket bolts (P/N 7518066) found in the kit. **DO NOT RE-INSTALL OLD SPROCKET BOLTS.** The new bolts from kit have a pre-applied locking agent and must be installed.
9. Insert the five (5) new sprocket bolts and washers into the sprocket and wheel assembly. Screw each sprocket bolt into the wheel and onto the sprocket.
10. Tighten the sprocket bolts in a star shaped pattern and torque to 20 ft-lbs. (27 Nm). Immediately after all bolts are tightened, torque the bolts again to 55 ft-lbs. (75 Nm).
11. Reassemble wheel and new belt from kit onto the vehicle. Refer to Victory Service Manual for procedure.
12. Assemble new front drive sprocket and nut following instruction steps 9 through 22 beginning on page 8.
13. Proceed to Step 23 on page 9.

PN 9918385 Rev 03 8/03
Printed in U.S.A.