

NOTE

Service wear limits are given as a guideline for measuring components that are not new. For measurement specifications not given under SERVICE WEAR LIMITS, see NEW COMPONENTS.

Table 6-1. Primary Drive (Engine-to-Transmission)

ITEM	NEW COMPONENTS (XB9R)	NEW COMPONENTS (XB12R)
Engine sprocket – number of teeth	34	38
Clutch sprocket – number of teeth	57	57

Table 6-2. Final Drive (Transmission-to-Rear Wheel)

ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
Transmission sprocket – number of teeth	27	Inspect at 25,000 mi (40,000 km)
Rear wheel sprocket – number of teeth	65	Inspect at 25,000 mi (40,000 km)
Secondary drive belt – number of teeth	155	Replace at 25,000 mi (40,000 km)

Table 6-3. Transmission

ITEM	NEW COMPONENTS (XB9R)	NEW COMPONENTS (XB12R)
Primary drive / transmission lubricant capacity (approximately)	Approximately 32 fl. oz. (946 ml)	
Overall gear ratios		
First gear (low)	10.85	9.71
Second gear	7.47	6.67
Third gear	5.78	5.17
Fourth gear	4.76	4.26
Fifth gear (high)	4.04	3.61

Table 6-4. Wet Clutch Multiple Disc-Clutch Plate Thickness

ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
Friction plate (fiber)	0.0866 + 0.0031 in. (2.200 + 0.079 mm)	N/A
Steel plate	0.0629 + 0.0020 in. (1.598 + 0.051 mm)	N/A
Clutch pack (in.)	N/A	0.661 in. (16.789 mm) (minimum)

Table 6-5. Wet Clutch Multiple Disc-maximum Allowable Warpage

ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
Friction plate (fiber)	N/A	0.0059 in. (0.150 mm)
Steel plate	N/A	0.0059 in. (0.150 mm)

TORQUE VALUES

ITEM	TORQUE		NOTES
Axle pinch fastener, rear	40-45 ft-lbs	54-61 Nm	page 6-53
Axle, rear	Special procedure		ANTI-SEIZE, page 6-24, 6-25, 6-26, 6-53
Chin fairing fasteners	36-48 in-lbs	4-5 Nm	page 6-26
Clutch inspection cover fasteners	84-108 in-lbs	9.5-12.2 Nm	Tighten in crosswise pattern, page 6-6, 6-8
Clutch mainshaft nut	70-80 ft-lbs	94.9-108.5 Nm	LOCTITE 262 (red), left hand threads, page 6-20
Crankcase 5/16 in. fasteners	15-19 ft-lbs	20.3-25 Nm	LOCTITE 262 (red), page 6-49
Engine sprocket nut	190-210 ft-lbs	257.6-284.7 Nm	page 6-19
Front sprocket cover fasteners	12-36 in-lbs	1.4-4.0 Nm	page 6-24
Front sprocket cover fasteners	12-36 in-lbs	1.4-4.0 Nm	page 6-25
Idler pulley wheel fastener	20-23 ft-lbs	27.1-31.2 Nm	page 6-26
Negative battery cable at battery terminal	72-96 in-lbs	8-11 Nm	page 6-6
Negative battery cable to battery terminal	72-96 in-lbs	8-11 Nm	page 6-8
Primary cover fasteners	80-110 in-lbs	9-12.4 Nm	Follow torque sequence, page 6-6
Primary cover magnetic drain plug	14-21 ft-lbs	19-28.5 Nm	LOCTITE 565 THREAD SEALANT, page 6-6
Retention collar screw	13-17 ft-lbs	18-23 Nm	LOCTITE 243 (blue), page 6-50
Shift lever pinch screw	48-60 in-lbs	5.4-6.8 Nm	LOCTITE 272 (red), Page 6-6
Transmission sprocket nut	Special procedure		LOCTITE 262 (red), left hand threads, special torque turn method, page 6-52
Transmission sprocket screws	90-110 in-lbs	10.2-12.4 Nm	Replace after 3 removals, page 6-52

REMOVAL

1. Remove seat. See [2.38 SEAT](#).

⚠ WARNING

To protect against shock and accidental start-up of vehicle, disconnect the negative battery cable before proceeding. Inadequate safety precautions could result in death or serious injury.

2. Disconnect negative battery cable from battery.
3. Remove chin fairing. See [2.33 CHIN FAIRING](#).

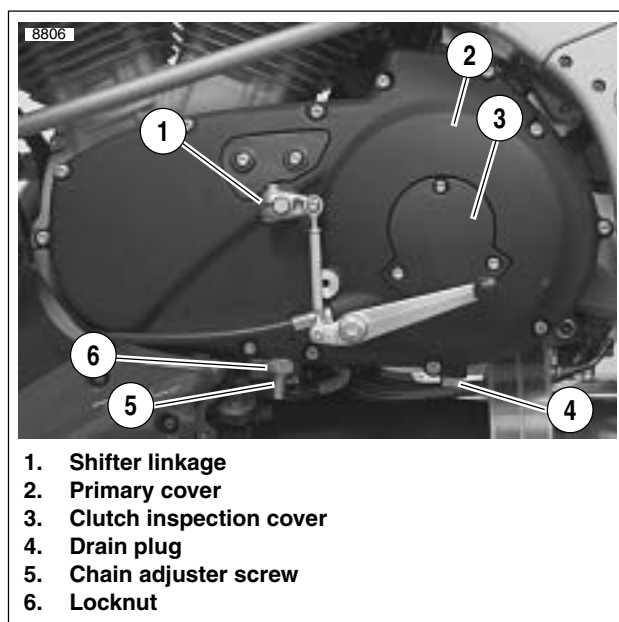


Figure 6-1. Removing Primary Cover

4. See [Figure 6-1](#). Place a drain pan under the engine/primary area. Remove drain plug (4) and drain lubricant from primary drive.
5. Remove shifter lever assembly and rubber washer. Do not scratch primary cover.

NOTE

It is recommended that the shifter shaft seal be replaced whenever the primary cover is removed.

6. Add free play to clutch cable. See [ADJUSTMENT](#) under [1.9 CLUTCH](#).
7. See [Figure 6-1](#). Loosen locknut (6). Turn chain adjuster screw (5) counterclockwise to remove tension on primary chain.
8. Remove three TORX screws with washers and clutch inspection cover.

9. See [Figure 6-1](#). Remove clutch inspection cover (3).

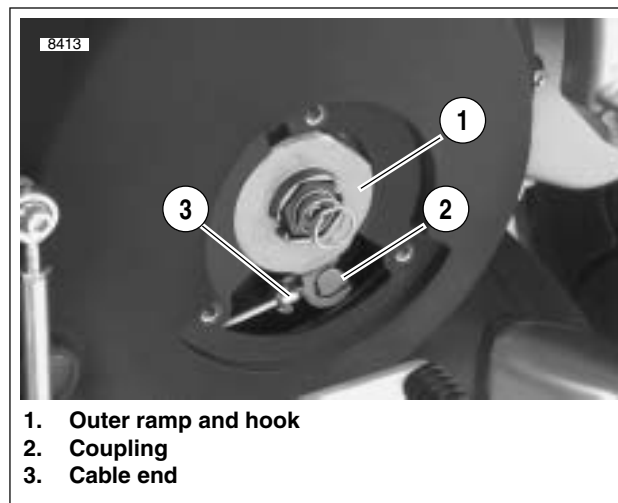


Figure 6-2. Clutch Release Mechanism

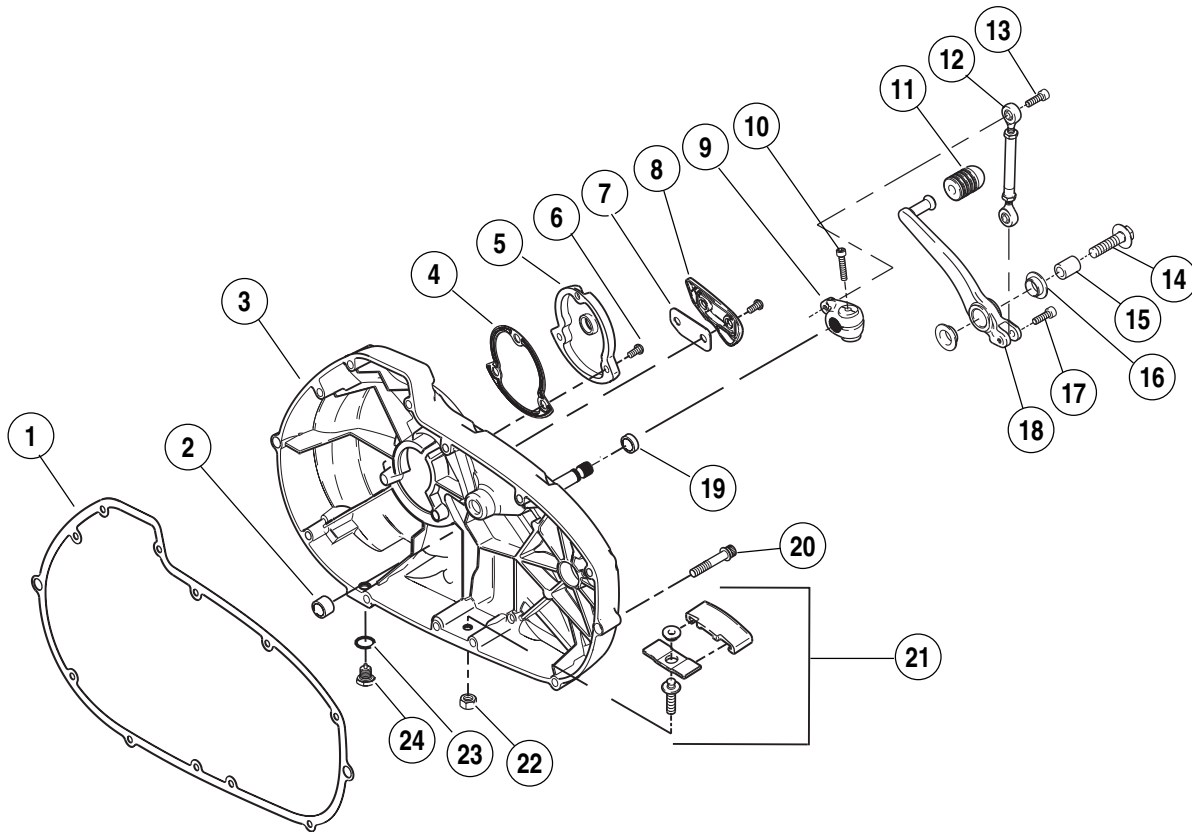
10. See [Figure 6-2](#). Remove the outer ramp and hook (1) from the cable end (3) and coupling (2). Remove cable end from slot in coupling. See [6.3 CLUTCH RELEASE MECHANISM](#)
11. Remove screws which secure primary cover. Remove cover and gasket.
12. Discard gasket.
13. Remove and discard shifter lever oil seal.
14. Clean all parts in a non-volatile cleaning solution or solvent.

⚠ WARNING

Low pressure compressed air can blow debris into your face and eyes. Always wear eye protection or a face shield when using pressurized air. Failure to take adequate safety precautions could result in death or serious injury.

15. Blow parts dry with low pressure compressed air.

b1050x6x



1. Gasket
2. Shifter bushing
3. Primary cover
4. Gasket
5. Clutch dove
6. Sems Screws (5)
7. Inspection cover gasket
8. Cover, inspection
9. Engine lever
10. Screw
11. Rubber shift lever pad
12. Shifter linkage assembly
13. Bolt
14. Flange bolt
15. Sleeve
16. Pedal bearing
17. Bolt
18. Shifter lever
19. Oil seal
20. Sems screw,
21. Adjuster assembly
22. Chain adjustment nut
23. O-ring
24. Drain plug

Figure 6-3. Primary Cover, Primary Chain Adjuster and Shifter Assembly

PRIMARY CHAIN ADJUSTER REPLACEMENT

1. See [Figure 6-4](#). Remove locknut (3) from adjuster screw (2). Turn adjuster screw out of threaded boss in primary cover (4).
2. Slide shoe (1) off plate (2) (shoe must be slid off plate toward closed or blind side of shoe).
3. See [Figure 6-4](#). Inspect primary chain adjuster shoe (1). If badly worn or damaged, it must be replaced.
4. Place plate (2) into slot at open end of shoe. Slide shoe over plate until plate is against closed (blind) side of shoe.
5. Position adjuster inside primary cover (4) with closed side of shoe against cover. Thread adjuster screw (2) all the way into tapped boss at bottom of primary cover.
6. At outside of cover, thread locknut (3) onto adjuster screw with nylon sealing surface toward cover. A 1/4-inch allen wrench may be inserted into end of adjuster screw to hold it while threading lock nut.

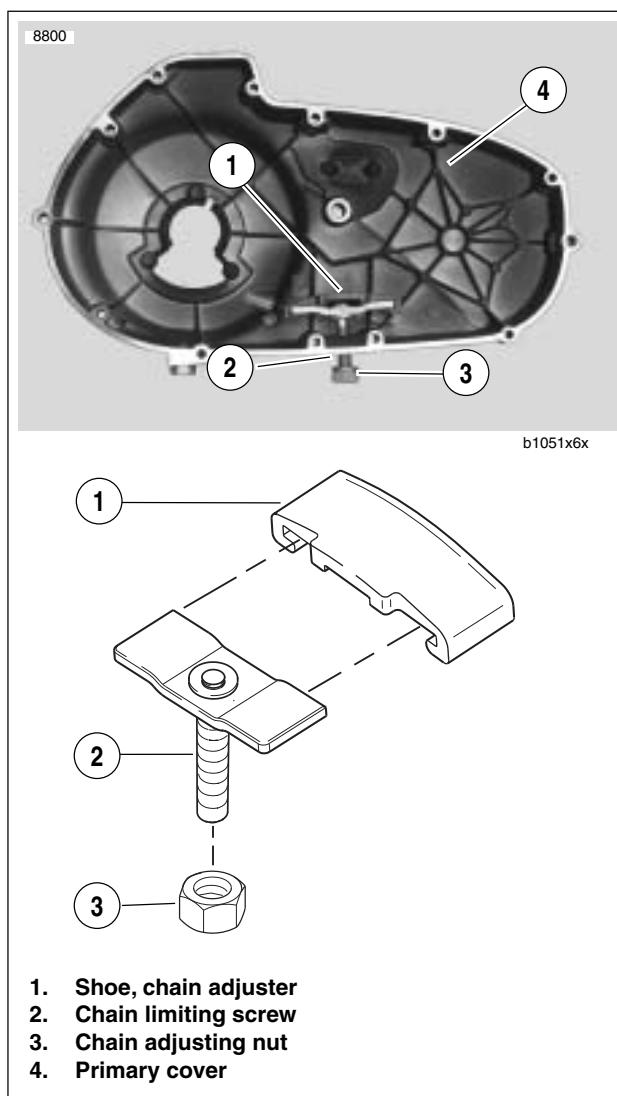


Figure 6-4. Primary Chain Adjuster

INSTALLATION

1. Remove foreign material from magnetic drain plug. Apply LOCTITE 565 thread sealant and install plug and tighten to 14-21 ft-lbs (19-28.5 Nm).
2. Wipe gasket surface clean. Install **new** gasket on primary cover.
3. Install primary cover and gasket onto left crankcase half using mounting bolts.

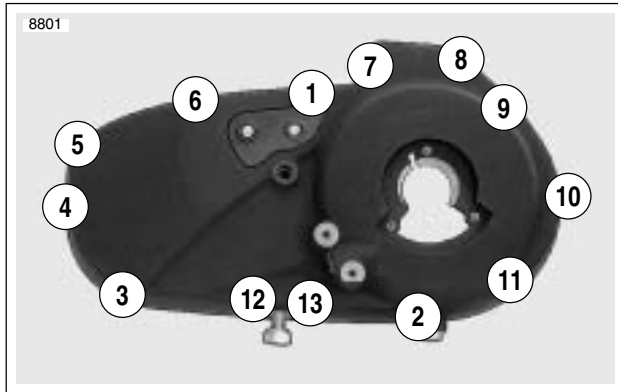


Figure 6-5. Primary Cover Tightening Sequence

4. See [Figure 6-5](#). Tighten fasteners to 80-110 **in-lbs** (9-12.4 Nm) in sequence shown.
5. See [Figure 6-3](#). Install **new** shifter lever oil seal.

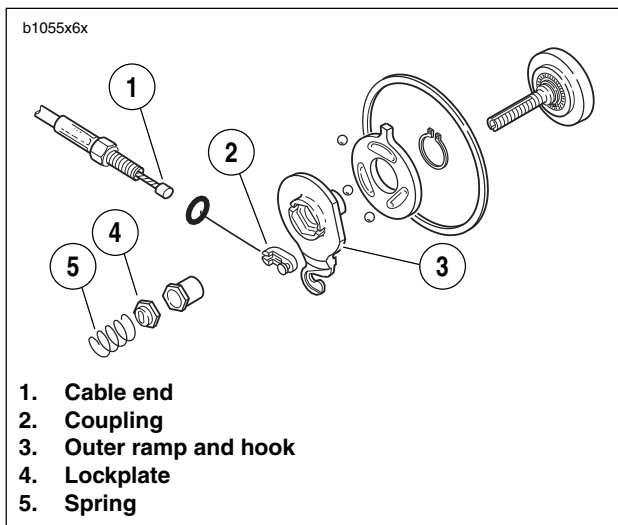
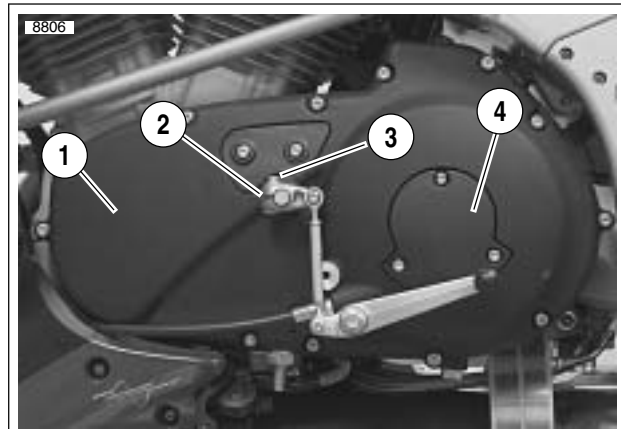


Figure 6-6. Clutch Release Mechanism

6. See [Figure 6-6](#). Fit coupling (2) over cable end (1) with rounded side inboard and the ramp connector button outboard. With retaining ring side of ramp assembly facing inward, place hook of ramp (3) around coupling button and rotate assembly counterclockwise until tang on inner ramp fits in slot of primary cover.
7. Thread nut on adjustment screw until slot of screw is accessible with a screwdriver. Fit nut hex into recess of outer ramp and turn adjustment screw counterclockwise.
8. Adjust clutch. See [ADJUSTMENT](#) under [1.9 CLUTCH](#).

9. Adjust primary chain tension. See [1.11 PRIMARY CHAIN](#).
10. Fill transmission to proper level with fresh lubricant. See [1.9 CLUTCH](#).



1. Primary cover
2. Lever, engine
3. Engine lever pinch screw
4. Clutch inspection cover

Figure 6-7. Installing Primary Cover

11. See [Figure 6-7](#). Install clutch inspection cover (4) with **new** gasket and three TORX screws with washers. Tighten screws in a crosswise pattern to 84-108 **in-lbs** (9.5-12.2 Nm).
12. Install rubber washer and shifter lever assembly (2).
13. After applying LOCTITE 272 (red), tighten engine lever pinch screw (3) to 48-60 **in-lbs** (5.4-6.8 Nm).
14. Install left footpeg support bracket. See [2.29 FOOTPEG, HEEL GUARD AND MOUNT](#).
15. Install chin fairing. See [2.33 CHIN FAIRING](#).

WARNING

Always connect positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion which could result in death or serious injury. (68)

16. Connect negative battery cable to battery terminal. Tighten fastener to 72-96 **in-lbs** (8-11 Nm)

WARNING

Pull up on seat to verify that it is properly secured, front and rear. A loose seat may shift during vehicle operation and startle the rider, possibly causing loss of vehicle control resulting in death or serious injury. (70)

17. Install seat. See [2.38 SEAT](#).

ASSEMBLY

1. See [Figure 6-9](#). Assemble inner and outer ramps.
 - a. Apply multi-purpose grease to balls and ramps.
 - b. Insert balls in sockets of outer ramp.
 - c. Install inner ramp on hub of outer ramp with tang 180° from hook of outer ramp.
 - d. Install **new** retaining ring in groove of outer ramp hub.
2. See [Figure 6-10](#). Install ramp assembly.
 - a. Fit coupling over cable end with rounded side inboard, the ramp connector button outboard.
 - b. With retaining ring side of ramp assembly facing inward, place hook of ramp around coupling button.
 - c. Rotate assembly counterclockwise until tang on inner ramp fits in slot of primary cover.
3. Secure assembly in place.
 - a. Thread nut on adjusting screw until slot of screw is accessible with a screwdriver.
 - b. Turn adjusting screw counterclockwise until resistance is felt.
 - c. Adjust clutch release mechanism. See [6.3 CLUTCH RELEASE MECHANISM](#).
 - d. Fit nut hex into recess of outer ramp.
 - e. Install clutch adjusting lockplate and spring.
4. Install clutch inspection cover and **new** gasket with three TORX screws with washers. Tighten in a crosswise pattern to 84-108 **in-lbs** (9.5-12.2 Nm).
5. Adjust clutch cable. See [1.9 CLUTCH](#).

WARNING

Always connect positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion which could result in death or serious injury. (70)

6. Connect negative battery cable to battery terminal. Tighten fastener to 72-96 **in-lbs** (8-11 Nm).
7. Install seat. See [2.38 SEAT](#).

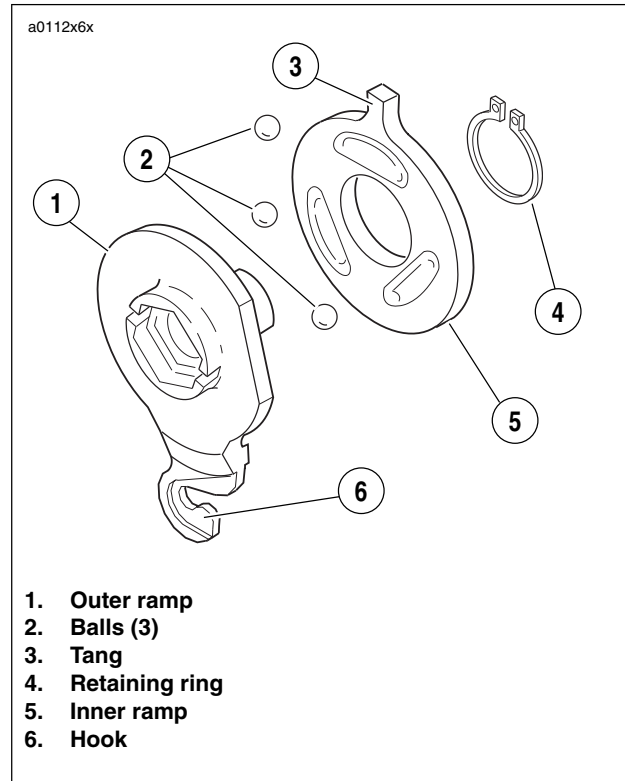


Figure 6-9. Inner & Outer Ramp

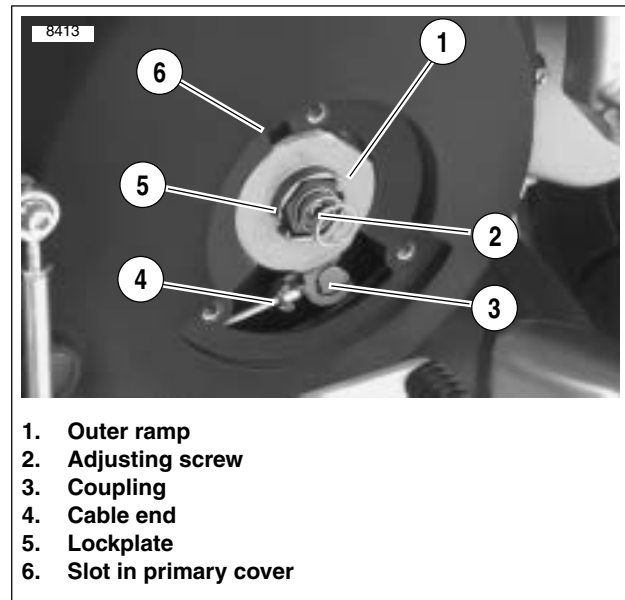


Figure 6-10. Nut and Outer Ramp

GENERAL

The purpose of the clutch is to smoothly disengage and engage the engine from the rear wheel for starting, stopping and shifting gears.

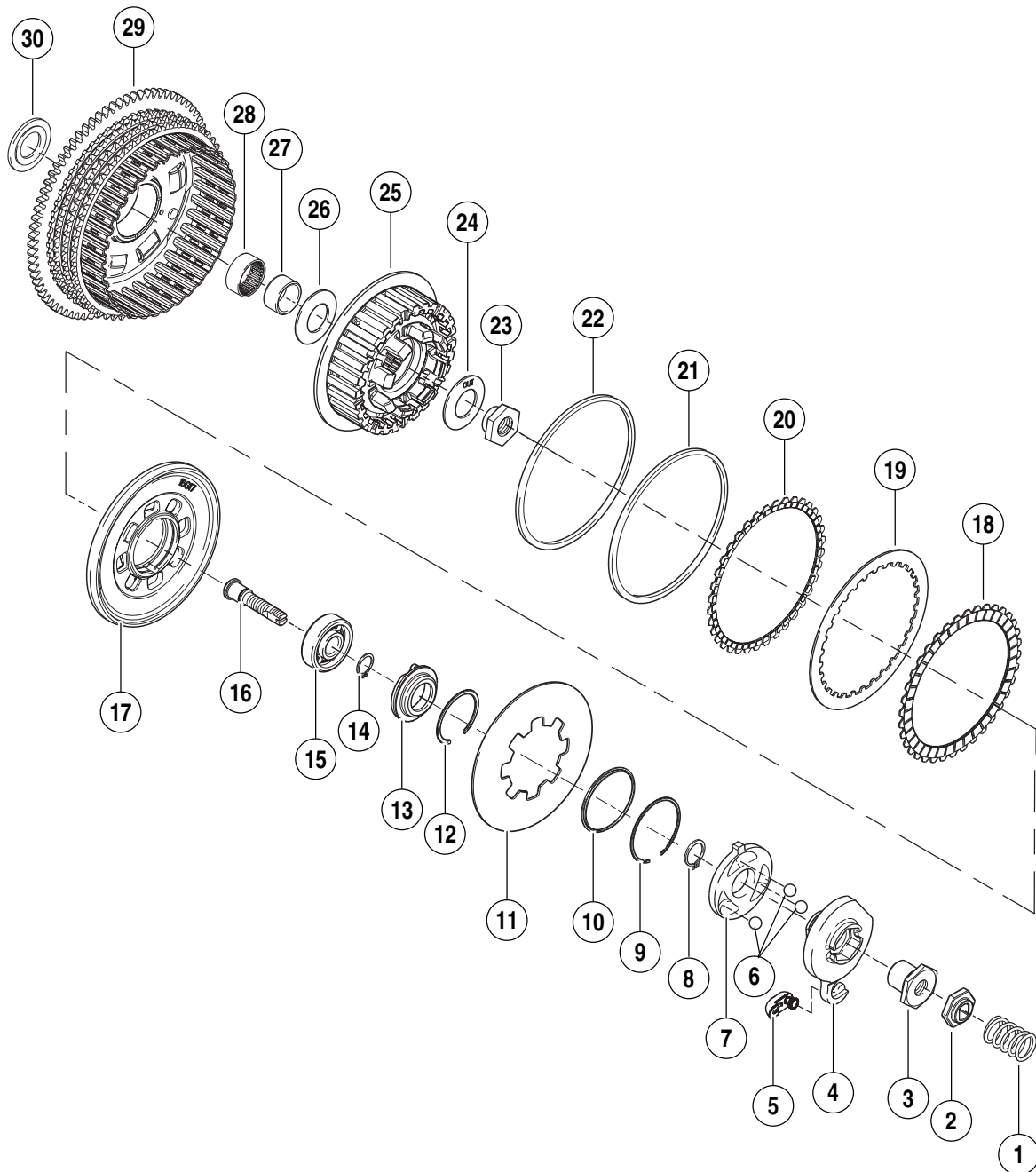
See [Figure 6-11](#). The clutch is a wet, multiple-disc clutch with steel plates and fiber (friction) plates stacked alternately in the clutch shell. The pack consists of seven fiber plates, seven steel plates, one narrow fiber plate, one damper spring and one damper spring seat. The fiber plates (clutch driving plates) are keyed to the clutch shell, which is driven by the engine through the primary chain. The steel plates (clutch driven plates) are keyed to the clutch hub, which drives the rear wheel through the transmission and secondary drive belt.

When the clutch is engaged (clutch lever released), the diaphragm spring applies strong force against the pressure plate. The pressure plate then presses the clutch plates together causing the plates to turn as a single unit. The result is that the rotational force of the clutch shell is transmitted through the clutch plates to the clutch hub. As long as the transmission is set in a forward gear, power from the engine will be transmitted to the rear wheel.

When the clutch is disengaged (clutch lever pulled to left handlebar grip), the pressure plate is pulled outward (by clutch cable action) against the diaphragm spring, thereby compressing the diaphragm spring. With the pressure plate retracted, strong inward force no longer squeezes the clutch plates together. The fiber plates are now free to rotate at a different relative speed than that of the steel plates (i.e. Slip-page between the clutch plates occurs). The result is that the rotational force of the clutch shell is no longer fully transmitted through the “unlocked” clutch plates to the clutch hub. The engine is free to rotate at a different speed than the rear wheel.

Table 6-6. Troubleshooting

SYMPTOM	CHECK ORDER	CAUSE	REMEDY
Clutch slips.	1	Incorrect clutch release adjustment.	Check and adjust clutch release mechanism.
	2	Worn clutch plates.	Check service wear limits. Replace plates.
Clutch drags.	1	Incorrect clutch release adjustment.	Check and adjust clutch release mechanism.
	2	Worn clutch release ramps or balls	Replace release ramps and/or balls.
	3	Warped clutch steel plates.	Replace clutch steel plates.
	4	Blade worn or damaged clutch gear splines.	Replace clutch gear or hub as required.
	5	Overfilled primary.	Drain lubricant to correct level.



- | | | |
|-------------------|--|-------------------------------|
| 1. Spring | 11. Diaphragm spring
(separate spring for XB9R & XB12R) | 20. Friction plate, narrow |
| 2. Lockplate | 12. Retaining ring | 21. Damper spring |
| 3. Nut | 13. Release plate | 22. Damper spring seat |
| 4. Outer ramp | 14. Retaining ring | 23. Mainshaft nut |
| 5. Coupling | 15. Bearing | 24. Washer |
| 6. Ball (3) | 16. Adjusting screw | 25. Clutch hub |
| 7. Inner ramp | 17. Pressure plate | 26. Inner thrust washer |
| 8. Retaining ring | 18. Friction plate, paper (7) | 27. Needle bearing Inner race |
| 9. Retaining ring | 19. Steel plate (7) | 28. Needle bearing |
| 10. Spring seat | | 29. Clutch shell and sprocket |
| | | 30. Outer thrust washer |

Figure 6-11. Clutch Assembly

REMOVAL

⚠ WARNING

To protect against shock and accidental start-up of vehicle, disconnect the negative battery cable before proceeding. Inadequate safety precautions could result in death or serious injury.

1. Remove negative battery cable from battery.
2. Drain the transmission fluid. See [TRANSMISSION FLUID](#) under [1.9 CLUTCH](#).
3. Remove primary cover. See [6.2 PRIMARY COVER](#).

⚠ WARNING

Do not attempt to disassemble the clutch without **SPRING COMPRESSING TOOL** (Part No. HD-38515-A), **CLUTCH SPRING FORCING SCREW** (Part No. HD-38515-91) and proper eye protection. Otherwise, the highly compressed diaphragm spring could fly out with great force which could result in death or serious injury.

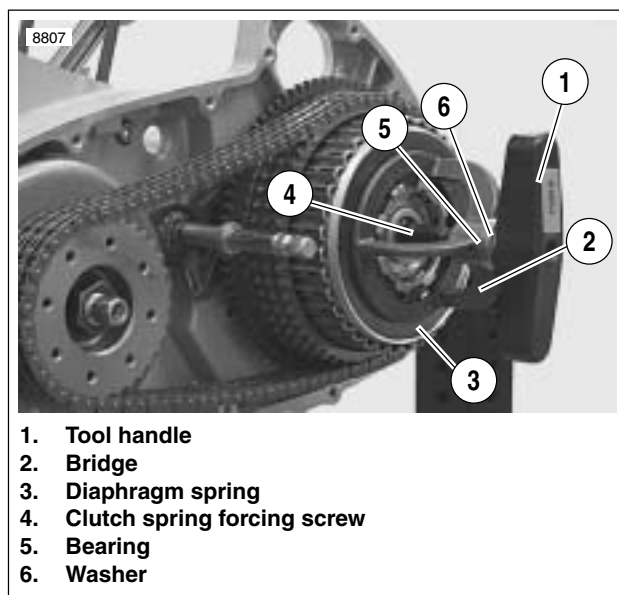


Figure 6-12. Compressing Clutch Diagram Spring

4. See [Figure 6-12](#). Attach tools to compress clutch diaphragm spring.
 - a. Thread the **CLUTCH SPRING FORCING SCREW** (Part No. HD-38515-91) onto the clutch adjusting screw.
 - b. Place the bridge of **SPRING COMPRESSING TOOL** (Part No. HD-38515-A) against diaphragm spring.
 - c. Install bearing and washer.
 - d. Thread the tool handle onto end of forcing screw.

CAUTION

See [Figure 6-13](#). Turn compressing tool handle only the amount required to release spring seat and remove snap ring. Excessive compression of diaphragm spring could damage clutch pressure plate.



Figure 6-13. Pressure Plate Assembly

5. See [Figure 6-13](#). Remove pressure plate assembly.
 - a. Place a wrench on the clutch spring forcing screw flats to prevent the forcing screw from turning.
 - b. Turn compressing tool handle clockwise until tool relieves pressure on retaining ring and spring seat. Remove and discard retaining ring.
 - c. Unseat spring seat from the groove in clutch hub prongs.
 - d. Remove pressure plate assembly.
6. Remove the clutch pack from the shell/hub assembly.

ADJUSTING SCREW DISASSEMBLY/ASSEMBLY

1. See [Figure 6-14](#). Remove adjusting screw assembly.
 - a. Remove large retaining ring.
 - b. Remove adjusting screw assembly from pressure plate.
2. If necessary, disassemble adjusting screw assembly.
 - a. Remove and discard small retaining ring (6).
 - b. Separate the adjusting screw (8) from the bearing (7) and release plate (5).
 - c. Remove bearing (7) from release plate (5).

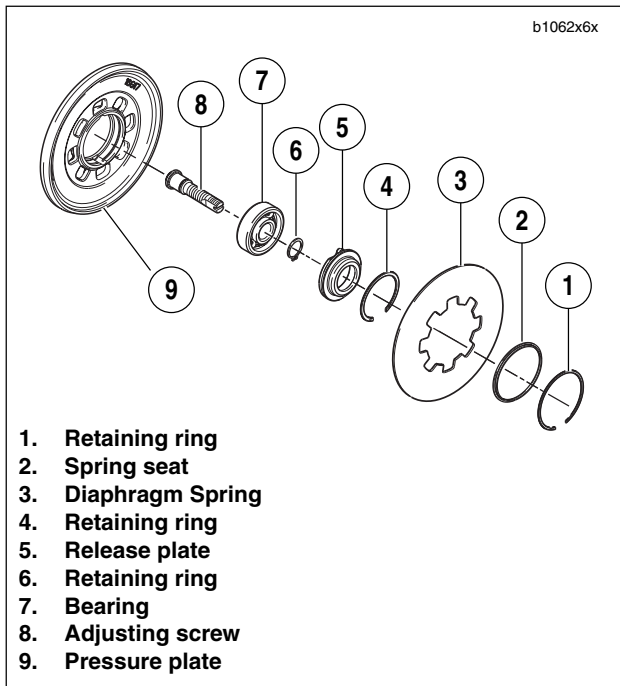


Figure 6-14. Adjusting Screw Assembly

3. Replace components as required and reassemble adjusting screw assembly in reverse order.
4. Install adjusting screw assembly into pressure plate.
 - a. See [Figure 6-36](#). Align two tabs on perimeter of release plate with corresponding recesses (3) in pressure plate.
 - b. Secure the adjusting screw assembly with **new** retaining ring.

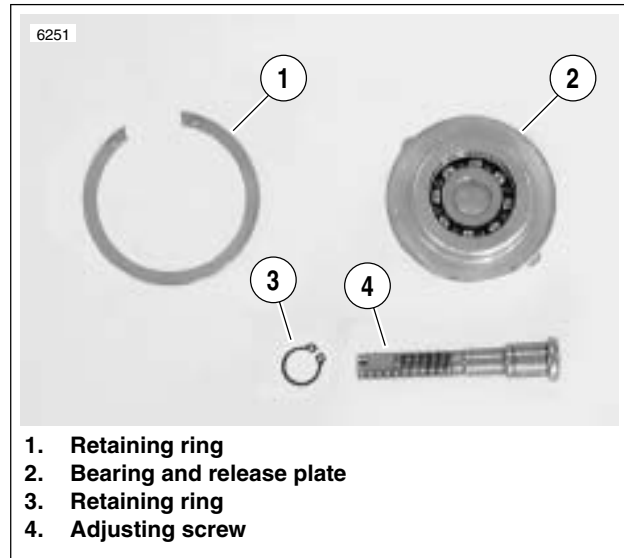


Figure 6-15. Adjusting Screw Assembly

CLUTCH PACK CLEANING AND INSPECTION

WARNING

Low pressure compressed air can blow debris into your face and eyes. Always wear eye protection or a face shield when using pressurized air. Failure to take adequate safety precautions could result in death or serious injury.

1. Separate the pack in to the following components:
 - a. Seven fiber plates.
 - b. Seven steel plates.
 - c. One narrow fiber plate.
 - d. One damper spring.
 - e. One damper spring seat
2. Wash all parts, except fiber (friction) plates and bearing in the clutch hub/shell, in cleaning solvent. Blow dry with compressed air.
3. Examine the clutch components as follows:
 - a. Check all clutch plates for wear and discoloration.
 - b. Inspect each steel (drive) plate for grooves.
 - c. Place each steel plate on a flat surface. Using a feeler gauge, check for flatness in several places. Replace any plates that are damaged or are warped more than 0.006 in. (0.15 mm).
4. Inspect the damper spring for cracks or distortion. Install a **new** spring if either condition exists.
5. See [Figure 6-16](#). Check fiber plates for thickness.
 - a. Wipe the lubricant from the eight fiber plates (7 regular and 1 narrow) and stack them on top of each other.
 - b. Measure the thickness of the eight stacked fiber plates with a dial caliper or micrometer. The minimum thickness must be 0.661 in. (16.789 mm).
 - c. If the thickness is less than specified, discard the fiber plates and steel plates. Install a **new** set of both friction and steel plates.

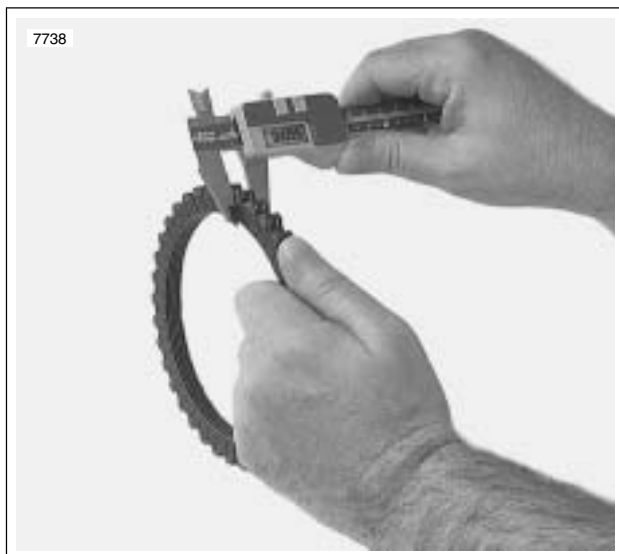


Figure 6-16. Measuring Friction Plates

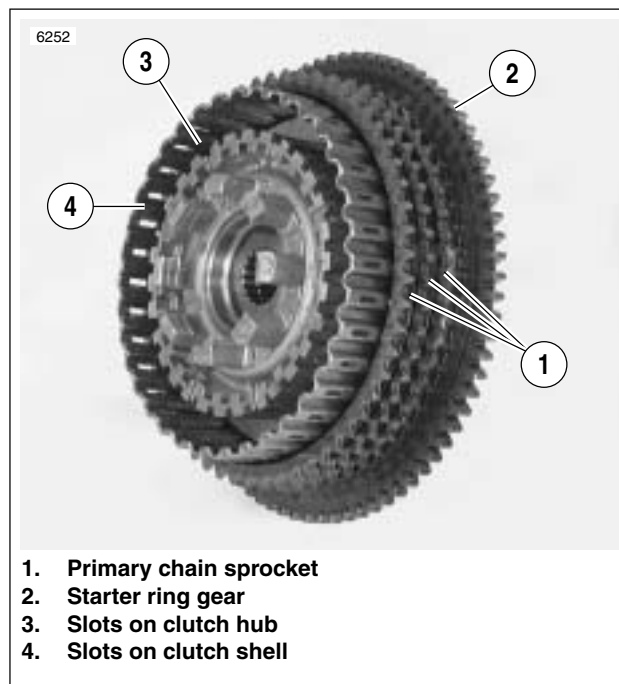


Figure 6-17. Checking Clutch Shell
(Shell Removed from Primary Shaft)

6. See [Figure 6-17](#). Inspect primary chain sprocket and the starter ring gear on the clutch shell. If either sprocket or ring gear are badly worn or damaged, replace the clutch shell. See [6.5 PRIMARY CHAIN](#).
7. Inspect slots that mate with the clutch plates on both clutch shell and hub. If slots are worn or damaged, replace shell and/or hub. See [6.5 PRIMARY CHAIN](#).

ASSEMBLY AND INSTALLATION

1. Submerge and soak all friction and steel plates in SPORT-TRANS FLUID for at least five minutes.
2. See [Figure 6-18](#). Install narrow friction plate on the clutch hub engaging tabs on plate with slots in clutch shell.
3. See [Figure 6-19](#). Install damper spring seat (5) on clutch hub so that it seats inboard of narrow friction plate (4).
4. Install damper spring (1) on clutch hub with the concave side up (facing opposite damper spring seat).
5. Install a steel plate and then a friction plate on the clutch hub. Install six remaining sets in the same manner, alternating between steel plates and friction plates.

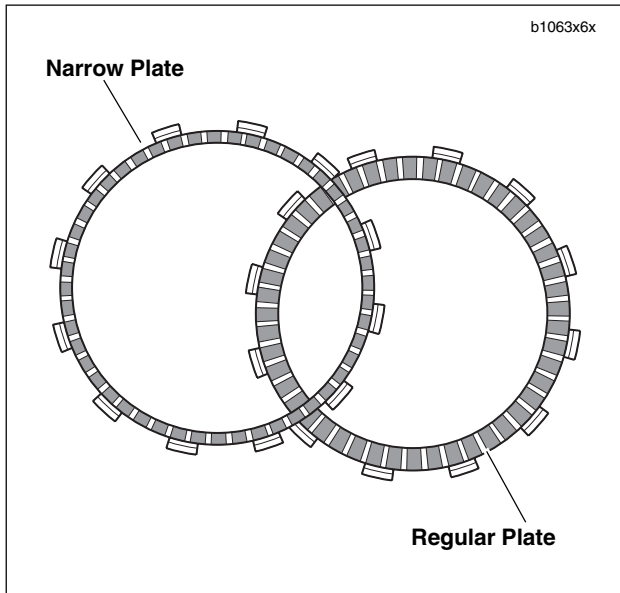


Figure 6-18. Friction Plates

6. Place pressure plate, diaphragm spring, adjusting screw assembly with **new** retaining ring and spring seat onto clutch pack.
 - a. See [Figure 6-20](#). Align square openings of pressure plate and diaphragm spring so that the assembly can be installed over prongs on clutch hub.

CAUTION

Position spring seat with its larger outer diameter side toward diaphragm spring. See [Figure 6-13](#). Turn compressing tool handle **only** the amount required to install spring seat and snap ring. Excessive compression of diaphragm spring could damage clutch pressure plate.

- b. See [Figure 6-21](#). Install SPRING COMPRESSING TOOL (Part No. HD-38515-A) onto clutch hub against diaphragm spring.
- c. Place a wrench on the clutch spring forcing screw flats to prevent the forcing screw from turning.
- d. Turn compressing tool handle clockwise until diaphragm spring compresses just enough to install **new** retaining ring into the groove in clutch hub prongs.
- e. With retaining ring fully seated in groove of clutch hub, carefully loosen and remove compression tool.

NOTE

When the compressing tool is removed, the diaphragm spring will move outward forcing the spring seat up into the inside of the retaining ring. The spring seat provides an operating surface for the diaphragm spring at the same time preventing the retaining ring from coming out during operation.

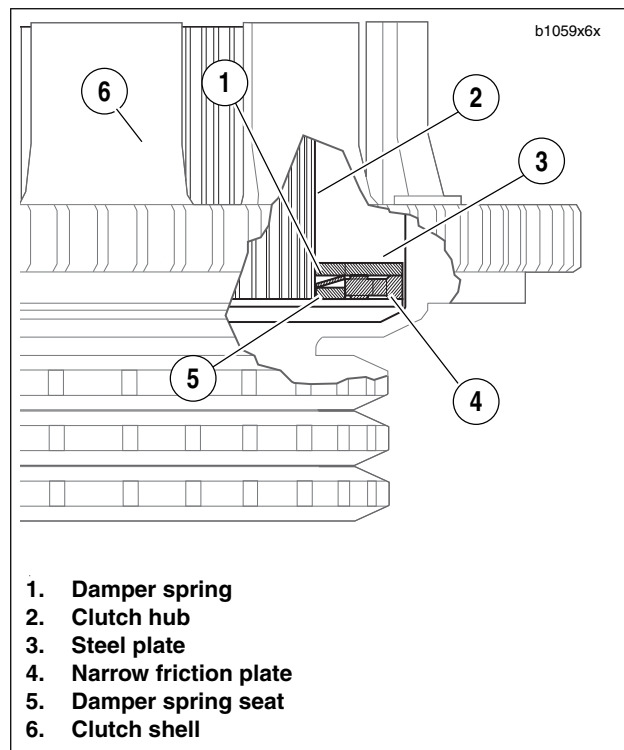


Figure 6-19. Clutch Pack Stack-Up (Cut-Away View)

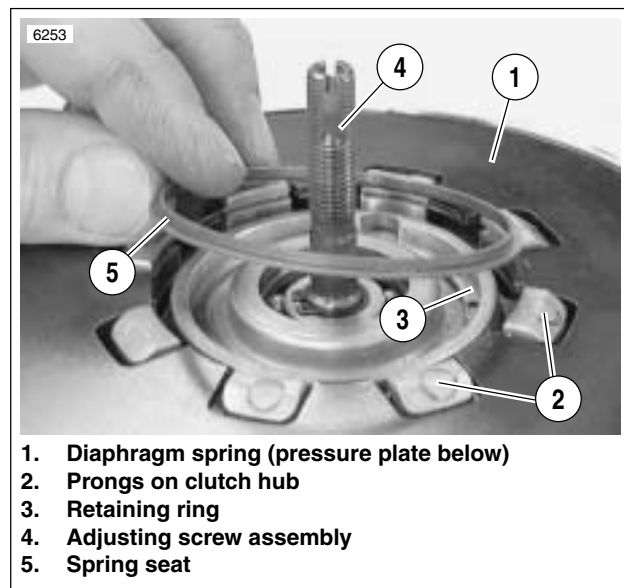


Figure 6-20. Spring Seat Installation

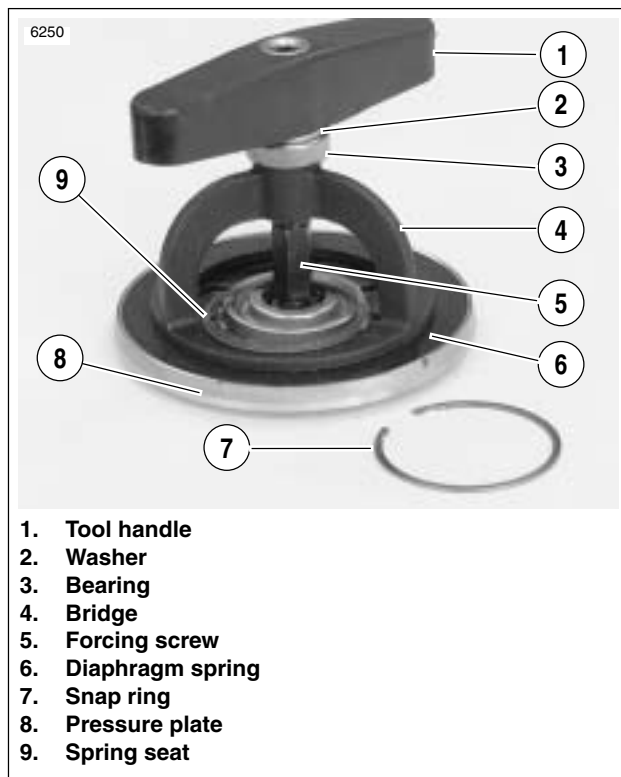


Figure 6-21. Pressure Plate Assembly

7. Install primary cover. See [6.2 PRIMARY COVER](#).
8. Adjust Clutch. See [1.9 CLUTCH](#).
9. Fill with SPORT-TRANS FLUID. See [1.9 CLUTCH](#).

⚠ WARNING

Always connect positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion which could result in death or serious injury.

10. Connect negative battery cable to battery terminal. Tighten fastener to 76-96 **in-lbs** (8.6-10.9 Nm).

⚠ WARNING

Pull up on seat to verify that it is properly secured, front and rear. A loose seat may shift during vehicle operation and startle the rider, possibly causing loss of vehicle control resulting in death or serious injury.

11. Install seat. See [2.38 SEAT](#).

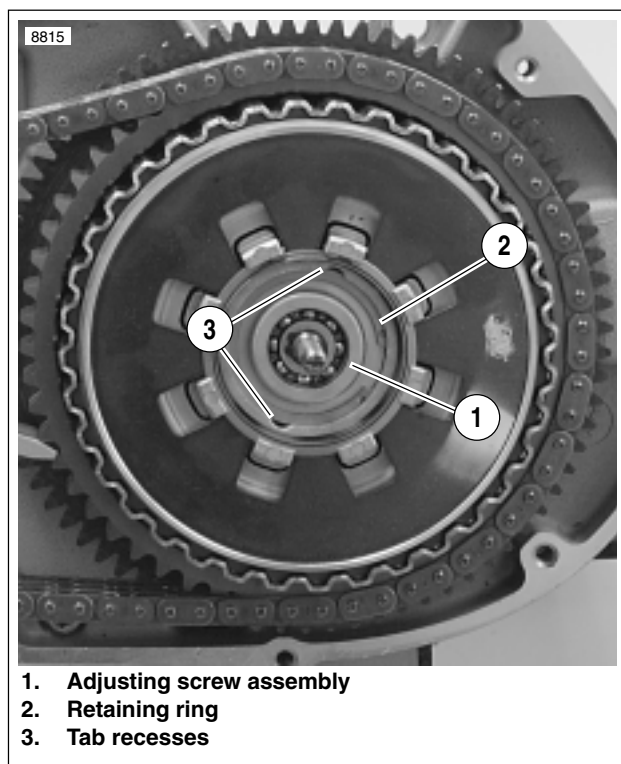


Figure 6-22. Clutch Adjusting Screw Assembly and Retaining Ring

GENERAL

Since the primary chain runs in lubricant, little service will be required other than checking lubricant level and chain tension. If, through hard usage, the primary chain does become worn and cannot be adjusted to within specifications, it must be replaced. See [1.11 PRIMARY CHAIN](#).

An opening between the primary drive and transmission compartments allows the same lubricant supply to lubricate moving parts in both areas.

REMOVAL

WARNING

To protect against shock and accidental start-up of vehicle, disconnect the negative battery cable before proceeding. Inadequate safety precautions could result in death or serious injury.

1. Remove negative battery cable from battery.
2. Drain the transmission fluid. See [TRANSMISSION FLUID](#) under [1.9 CLUTCH](#).
3. Remove primary cover. See [6.2 PRIMARY COVER](#).

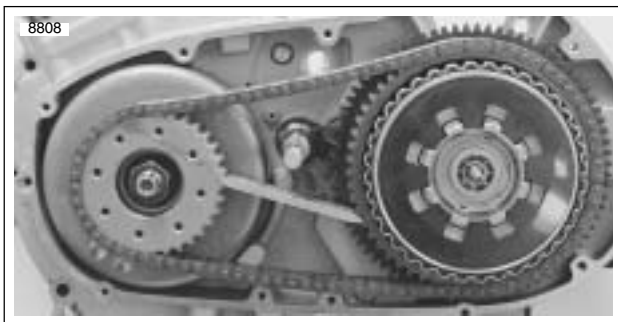


Figure 6-23. Sprocket Locking Link Tool (Part No. HD-38362) for XB9R models and (Part No. HD-46283) for XB12R models.

4. Loosen engine sprocket.
 - a. See [Figure 6-23](#). Install SPROCKET LOCKING LINK (Part No. HD-38362).
 - b. Remove the engine sprocket nut.
 - c. Loosen but do not remove engine sprocket. If necessary, use the slotted portion of TWO CLAW PULLER (Part No. HD-97292-61) and two bolts to loosen the engine sprocket.
5. See [Figure 6-15](#). Remove adjusting screw assembly.
 - a. Remove large retaining ring.
 - b. Remove adjusting screw assembly from pressure plate.

CAUTION

See [Figure 6-24](#). Mainshaft nut has left-hand threads. To prevent damage, turn nut clockwise to loosen and remove from mainshaft.

6. See [Figure 6-24](#). Remove mainshaft nut and washer.
7. Remove the clutch, clutch shell/hub, primary chain and engine sprocket as a unit.

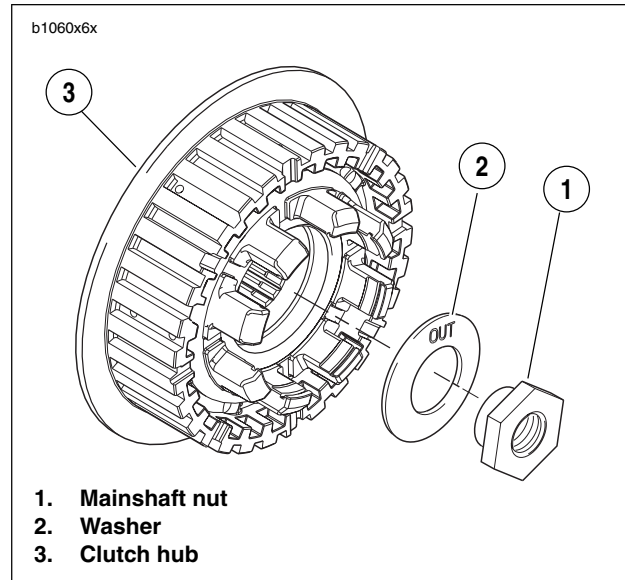


Figure 6-24. Mainshaft Nut and Washer

CLUTCH SHELL/HUB INSPECTION

1. Separate primary chain, engine sprocket and clutch shell/hub assembly.

CLUTCH SHELL BEARING REPLACEMENT

NOTE

INSTALLATION

NOTE

6. See [Figure 6-34](#). Install mainshaft washer (2) and nut (1).
<

DRIVE BELT REMOVAL

1. Place a scissor jack under jacking point and raise rear wheel off ground. For location of jacking point see [2.28 EXHAUST SYSTEM](#).
2. Remove right side rider footpeg support bracket. See [2.29 FOOTPEG, HEEL GUARD AND MOUNT](#).

NOTE

The right rear chin fairing fasteners must be removed to access the front sprocket cover.

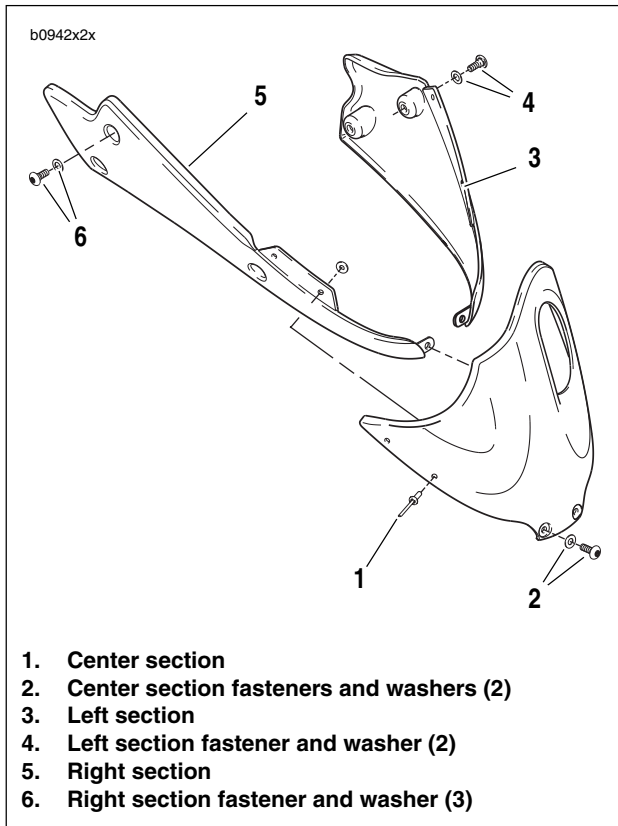


Figure 6-38. Chin Fairing Assembly

3. Remove right rear chin fairing fasteners. See [2.33 CHIN FAIRING](#).

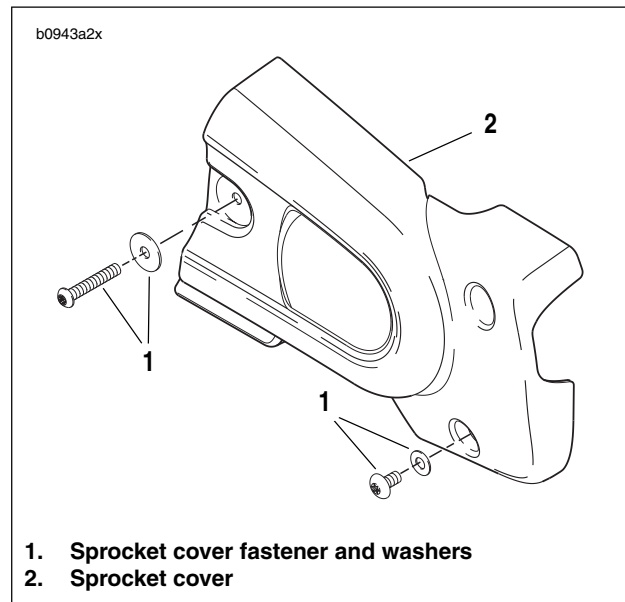


Figure 6-39. Sprocket Cover

4. See Figure 6-39. Remove sprocket cover. See [2.30](#).

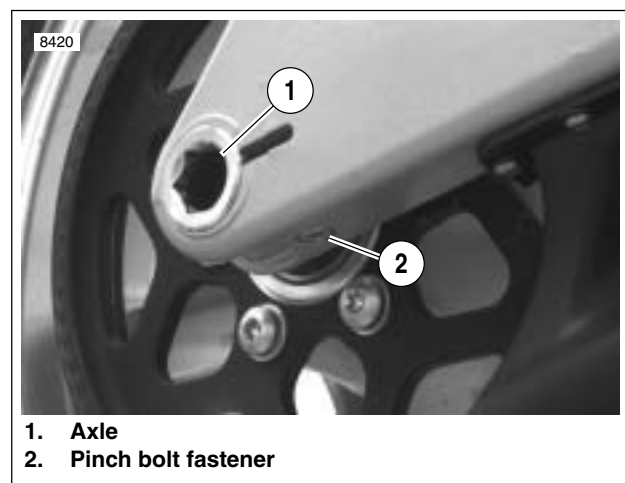


Figure 6-40. Rear Wheel Mounting, Right Side

5. See [Figure 6-40](#). Loosen rear axle pinch fastener (2).
6. Loosen rear axle (1) approximately 15 rotations to allow partial tension to be removed from rear drive system.
7. Remove idler pulley assembly by removing nuts and washers. See [IDLER PULLEY REMOVAL](#) in [6.6 DRIVE BELT SYSTEM](#).
8. Remove swingarm brace. See [2.19 SWINGARM AND BRACE](#).

CAUTION

When removing or installing belt, do not bend or twist belt, partially slide belt onto sprocket and “roll” wheel or belt damage will occur.

9. Slide belt from sprocket and remove.
10. Remove rear axle.

DRIVE BELT INSTALLATION

CAUTION

When removing or installing belt, do not bend or twist belt, partially slide belt onto sprocket and "roll" wheel or belt damage will occur.

1. Slide belt onto sprocket.
2. Install swingarm brace and tighten fasteners to 25-27 ft-lbs (34-37 Nm). See [2.19 SWINGARM AND BRACE](#).
3. Apply ANTI-SEIZE LUBRICANT to hole in right side of swingarm where rear axle slides through.

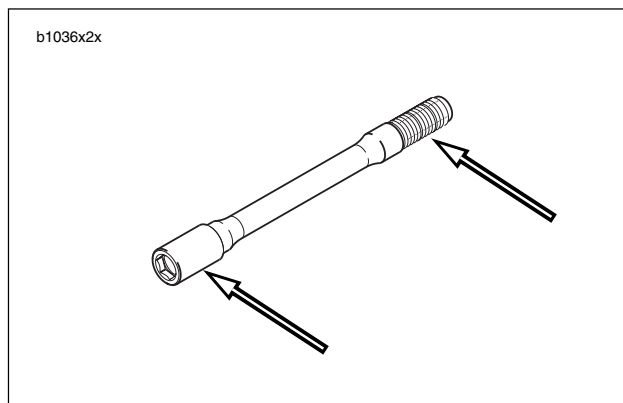


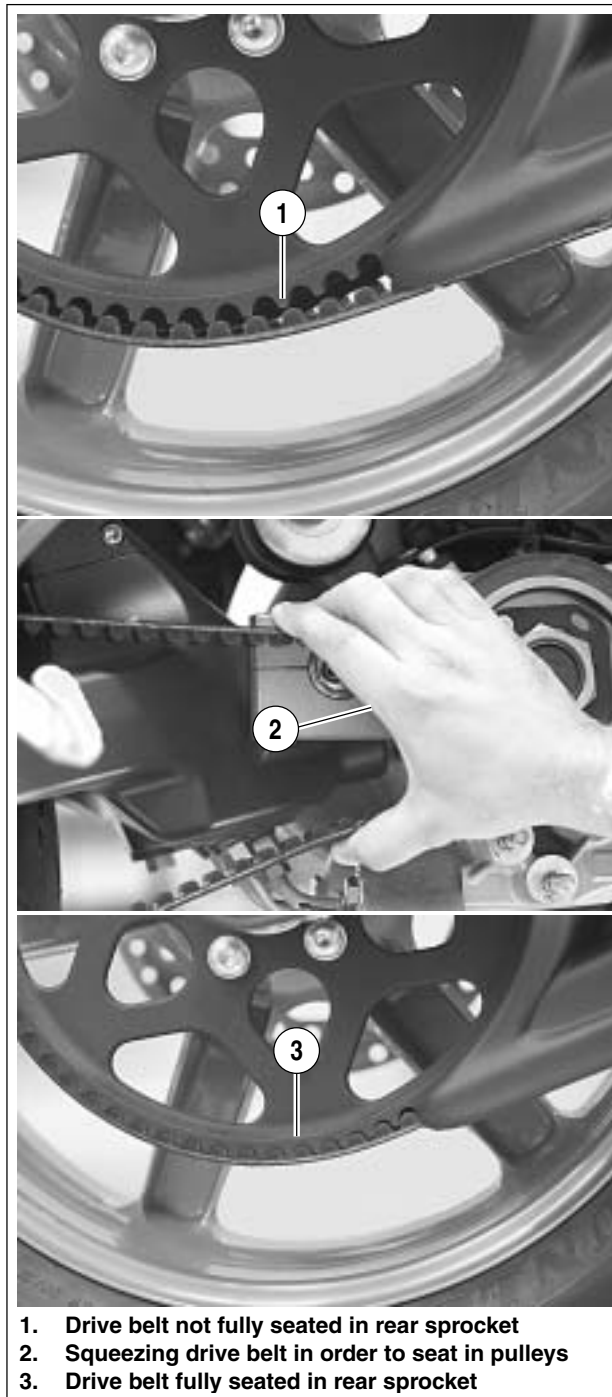
Figure 6-41. Anti-Seize Lubricant Location

4. See [Figure 6-41](#). Coat rear axle with ANTI-SEIZE LUBRICANT.
5. Slide axle through right side of swing arm and wheel hub and thread partially into swingarm on left side.

NOTE

See [Figure 6-42](#). Occasionally the drive belt is not fully seated in rear sprocket making it difficult to install the idler pulley. It will be necessary to follow the outlined procedure in order to easily install idler pulley.

6. See [Figure 6-42](#). Grasp top and bottom of drive belt and squeeze together until belt teeth are fully seated in rear sprocket.
7. While keeping tension on lower belt, install idler pulley assembly tightening washers and nuts to 33-35 ft-lbs (45-47 Nm). See [IDLER PULLEY REMOVAL](#) in [6.6 DRIVE BELT SYSTEM](#).
8. See [Figure 6-40](#). Tighten rear axle (1) to 23-27 ft-lbs (31.2-36.6 Nm), back off two full turns and then retighten to 48-52 ft-lbs (65.1-70.5 Nm).
9. Tighten rear axle pinch fastener (2) to 40-45 ft-lbs (54-61 Nm).
10. See [Figure 6-39](#). Install front sprocket cover (2) by tightening fasteners to 12-36 in-lbs (1-4 Nm). See [2.30 SPROCKET COVER](#).
11. Install chin fairing fasteners and tighten to 36-48 in-lbs (4-5 Nm). See [2.33 CHIN FAIRING](#).
12. Install right side rider footpeg mount and tighten fasteners to 108-132 in-lbs (12-15 Nm). See [2.29 FOOTPEG, HEEL GUARD AND MOUNT](#).
13. Remove scissor jack from motorcycle.



1. Drive belt not fully seated in rear sprocket
2. Squeezing drive belt in order to seat in pulleys
3. Drive belt fully seated in rear sprocket

Figure 6-42. Seating Drive Belt Into Pulley Teeth

IDLER PULLEY REMOVAL

1. See [Figure 6-43](#). Loosen rear axle pinch fastener (2).
2. Unthread axle approximately 15 rotations to release tension from drive belt.
3. Remove chin fairing fasteners. See [2.33 CHIN FAIRING](#).
4. Remove front sprocket cover. See [2.30 SPROCKET COVER](#).
5. See [Figure 6-44](#). Remove idler pulley bracket nuts and washers (5) from studs (3).
6. Slide idler pulley bracket (4) off studs (3).
7. See [Figure 6-44](#). Inspect pulley by spinning wheel (1) and checking for wheel bearing wear. See [INSPECTION](#) under [1.10 DRIVE BELT](#).
8. If pulley wheel needs replacement, remove fastener (6), washer and nut (2) from idler pulley bracket (4) and discard wheel. Replace with **new** pulley wheel (1).

NOTE

The pulley wheel bearings can not be replaced separately.

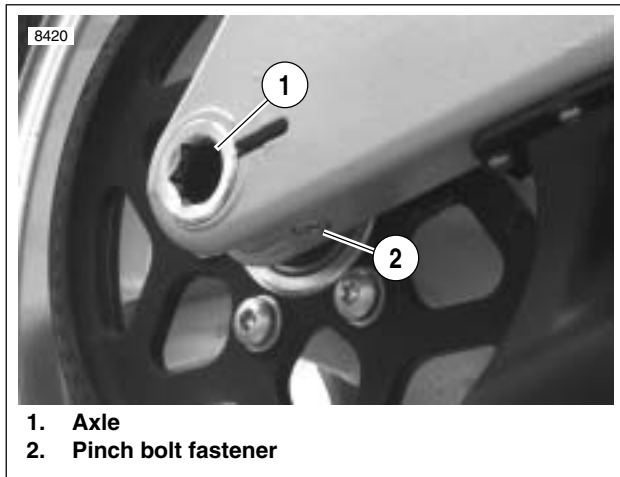


Figure 6-43. Rear Wheel Mounting, Right Side

IDLER PULLEY INSTALLATION

1. See [Figure 6-44](#). Install new or existing pulley wheel (1), if removed, and tighten washer and nut (2) wheel fastener (6) to 20-23 ft-lbs (27.1-31.2 Nm).
2. Slide idler pulley bracket (4), washer and nuts (5) on to studs (3) and tighten to 33-35 ft-lbs (45-47 Nm). See [DRIVE BELT INSTALLATION](#).
3. Install front sprocket cover. See [2.30 SPROCKET COVER](#).
4. Install chin fairing fasteners and tighten to 36-48 in-lbs (4-5 Nm). See [2.33 CHIN FAIRING](#).

CAUTION

Never tighten rear axle with swingarm brace removed.

5. See [Figure 6-43](#). Install and tighten rear axle (1) to 23-27 ft-lbs (31.2-36.6 Nm), back off two full turns and then retighten to 48-52 ft-lbs (65.1-70.5 Nm). See [6.6 DRIVE BELT SYSTEM](#).
6. Tighten rear axle pinch fastener (2) to 40-45 ft-lbs (54-61 Nm).

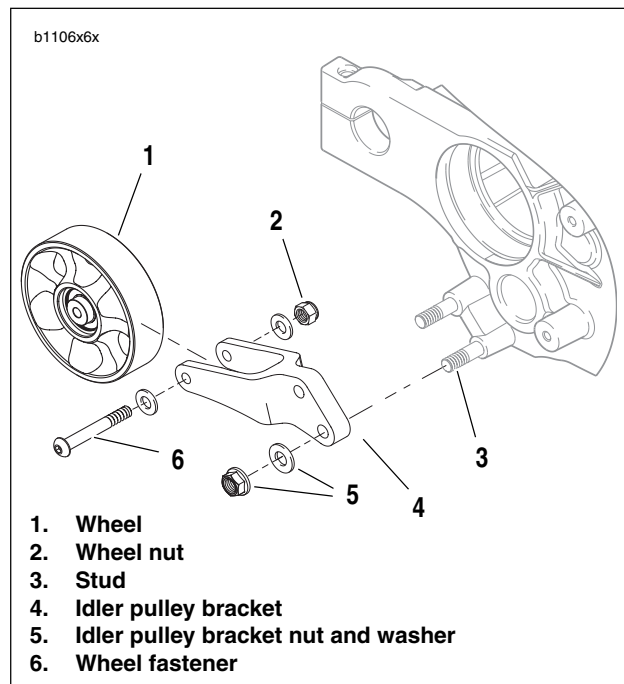


Figure 6-44. Idler Pulley Assembly