

## 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 Specifications

ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
<b>PRIMARY DRIVE ENGINE-TO-TRANSMISSION</b>		
Engine sprocket – number of teeth	35	N/A
Clutch sprocket – number of teeth	56	N/A
Ratio*	1.60:1	N/A

Table 6-2. Final Drive Specifications

ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
<b>FINAL DRIVE (TRANSMISSION-TO-REAR WHEEL)</b>		
Transmission sprocket – number of teeth	27	N/A
Rear wheel sprocket – number of teeth	80	Replace at 15,000 mi
Secondary drive belt – number of teeth	139	Replace at 15,000 mi
Ratio	2.96:1	N/A

Table 6-3. Transmission Specifications

ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
<b>TRANSMISSION</b>		
Primary drive / transmission lubricant capacity	32 fl. oz. (946 ml)	N/A
<b>OVERALL GEAR RATIOS**</b>		
First gear (low)	12.74	N/A
Second gear	8.77	N/A
Third gear	6.79	N/A
Fourth gear	5.60	N/A
Fifth gear (high)	4.74	N/A

\* Internal gear ratios indicate number of mainshaft revolutions required to drive output sprocket one revolution.

\*\* Overall gear ratios indicate number of engine revolutions required to drive rear wheel one revolution.

**Table 6-4. Clutch Specifications**

WET CLUTCH/MULTIPLE DISC		
ITEM	NEW COMPONENTS	SERVICE WEAR LIMITS
<b>CLUTCH PLATE THICKNESS</b>		
Friction plate (fiber) (in.)	0.0866 + 0.0031	N/A
Friction plate (fiber) (mm)	2.200 + 0.079	N/A
Steel plate (in.)	0.0629 + 0.0020	N/A
Steel plate (mm)	1.598 + 0.051	N/A
Clutch pack (in.)	N/A	0.413 in. (minimum)
Clutch pack (mm)	N/A	(16.787)
<b>MAXIMUM ALLOWABLE WARPAGE</b>		
Friction plate (fiber) (in.)	N/A	0.0059
Friction plate (fiber) (mm)	N/A	0.150
Steel plate (in.)	N/A	0.0059
Steel plate (mm)	N/A	0.150

## TORQUE VALUES

ITEM	TORQUE		NOTES
Battery terminal bolts	60-96 <b>in-lbs</b>	7-11 Nm	Page 6
Clutch mainshaft nut	70-80 ft-lbs	95-109 Nm	LOCTITE 262 (red), left hand threads, Page 15
Crankcase 1/4 in. screws	180-100 <b>in-lbs</b>	9.0-12.4 Nm	LOCTITE 262 (red), Page 35
Crankcase 5/16 in. screws	15-19 ft-lbs	20-25 Nm	LOCTITE 262 (red), Page 35
Engine sprocket nut	190-210 ft-lbs	258-285 Nm	LOCTITE 262 (red), Page 15
Primary cover bolts	100-120 <b>in-lbs</b>	11-14 Nm	Follow torque sequence, Page 6
Retention collar screw	13-17 ft-lbs	18-23 Nm	LOCTITE 243 (blue), Page 38
Shift lever pinch fastener	12-14 ft-lbs	16-19 Nm	Page 6
Shifter shaft assembly locknuts	90-110 <b>in-lbs</b>	10-12 Nm	Bottom nut first, same torque for top, Page 37
Transmission sprocket nut	See NOTES	See NOTES	LOCTITE 262 (red), left hand threads, special torque turn method, Page 40
Transmission sprocket screws	90-110 <b>in-lbs</b>	10-12 Nm	Replace after 3 removals, Page 40

## GENERAL

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

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, it must be replaced. Remove and install the chain following the procedure under [6.4 PRIMARY DRIVE/CLUTCH](#).

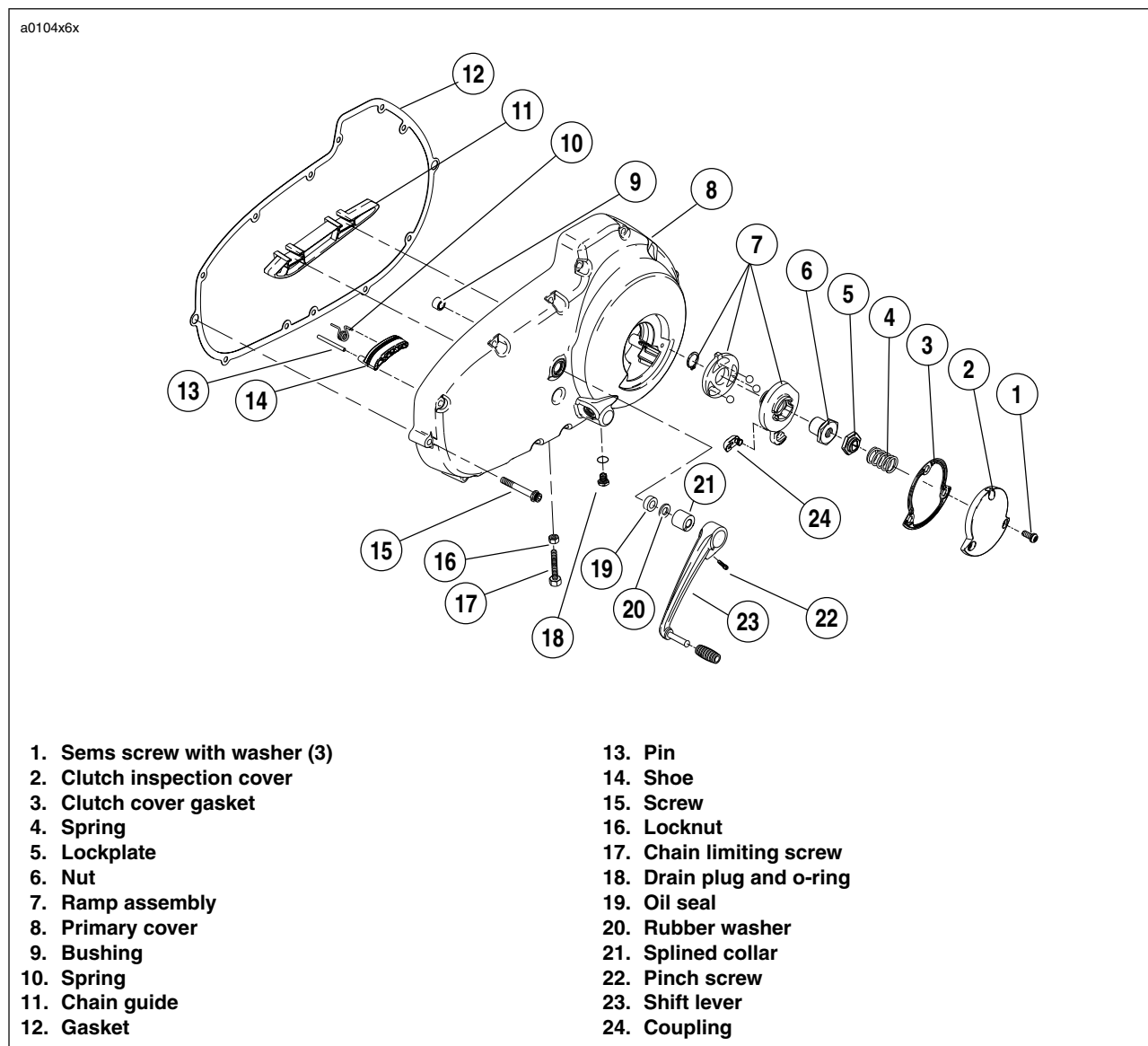


Figure 6-1. Primary Cover and Shifter Assembly

## REMOVAL

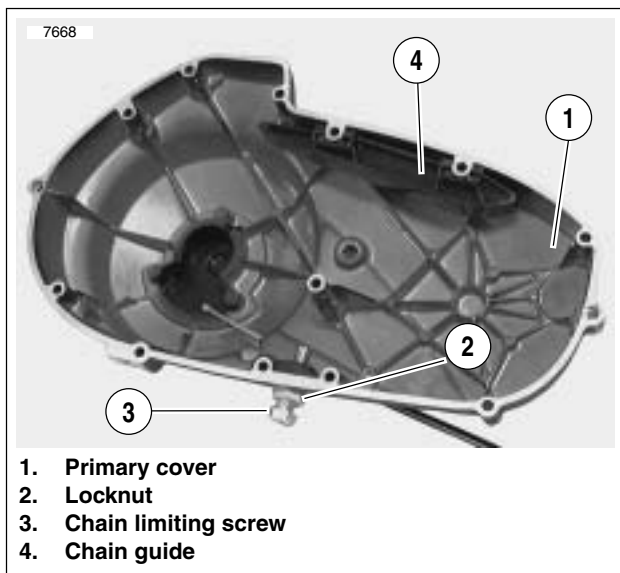
### Primary Cover

1. Remove seat. See [2.28 SEAT](#).

#### ⚠ WARNING

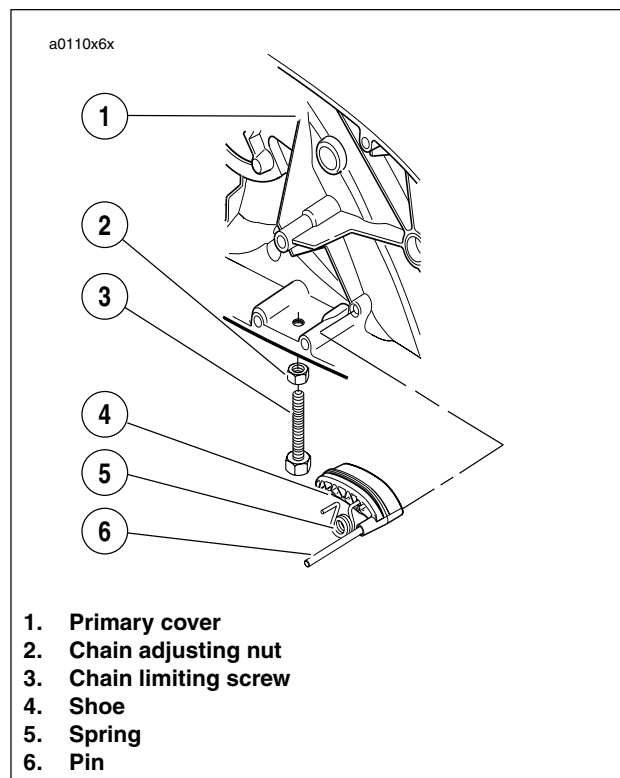
To avoid accidental start-up of vehicle and possible personal injury, disconnect the battery cables before proceeding. Always disconnect the negative cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion producing personal injury and/or property damage.

2. Disconnect negative battery cable from battery.
3. See [Figure 6-1](#). Place a drain pan under the engine. Remove drain plug and drain lubricant from primary drive.
4. Remove shifter lever assembly and rubber washer. Do not scratch primary cover.
5. See [ADJUSTMENT](#) under [1.9 CLUTCH](#). Add freeplay to clutch cable.



**Figure 6-2. Removing Primary Chain Adjuster**

6. See [Figure 6-2](#). Loosen locknut. Turn chain adjuster screw counterclockwise (outward).
7. Remove left foot peg support bracket. See [2.21 FOOT-PEGS AND FOOTPEG SUPPORT BRACKETS](#).
8. Remove three sems screws with washers and clutch inspection cover.
9. Remove and discard gasket from groove in primary cover.
10. Slide spring with attached hex lockplate from flats of clutch limiting screw.



**Figure 6-3. Primary Chain Adjuster**

11. See [Figure 6-3](#). Turn clutch adjusting screw clockwise to release ramp and coupling mechanism. As the limiting screw is turned, ramp assembly moves forward. Unscrew nut from end of limiting screw.
12. Remove hook of ramp from button to the rear of cable end coupling. Remove cable end from slot in coupling. Remove coupling and ramp assembly.
13. Remove screws which secure primary cover. Remove cover and gasket.
14. Discard gasket.
15. Remove and discard shifter lever oil seal.

### Primary Chain Adjuster

1. See [Figure 6-2](#). Remove primary cover.
2. Loosen locknut from chain limiting screw. Turn limiting screw out of threaded boss in primary cover.
3. See [Figure 6-3](#). Slide shoe outward and remove.
4. Remove chain tensioner spring.

## INSTALLATION

### Primary Chain Adjuster

1. See [Figure 6-3](#). If shoe is badly worn, replace it.
2. Install chain tensioner spring into shoe.
3. Slide shoe onto pin.
4. Tilt shoe upward until spring aligns with crankcase mounting hole.
5. Tilt shoe downward under primary chain.
6. Press shoe inward.
7. Install primary cover. See [Primary Cover](#) in 6.2 PRIMARY CHAIN.

### Primary Chain Adjustment

See [Figure 6-4](#). Buell Blast Models are shipped with a spacer between the primary chain limiting screw and the locknut. The spacer is used to quickly get proper adjustment during production. This spacer should be removed and discarded at the first adjustment interval.

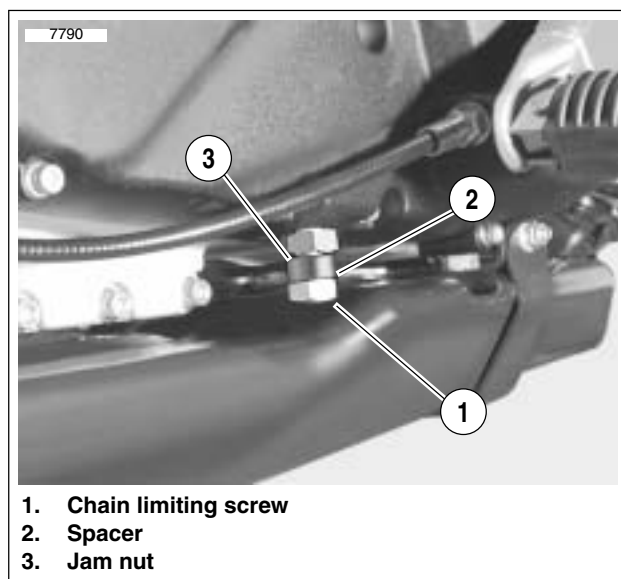


Figure 6-4. Adjustment Nut-with Spacer

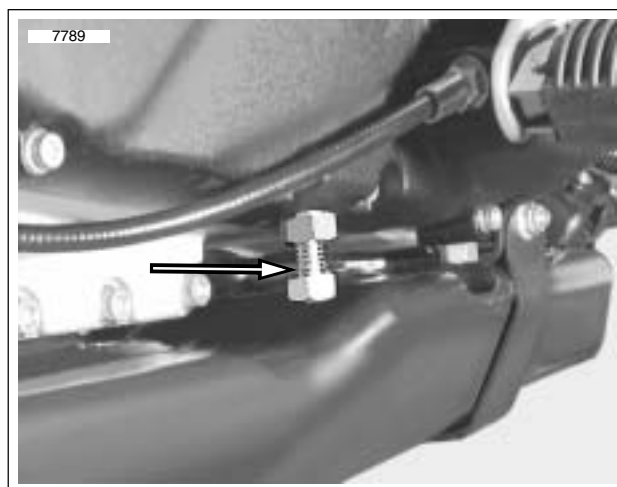


Figure 6-5. Chain Limiting Screw-without Spacer

1. See [Figure 6-5](#). Back-off locknut and chain limiting screw. Remove spacer.

#### IMPORTANT NOTE

Be certain to use **Inch-Pound Wrench**. Chain adjuster shoe can be damaged by excessive force.



Figure 6-6. Torquing Chain Limiting Screw

2. See [Figure 6-6](#). Tighten chain limiting screw to 24 in-lbs (2.7 Nm).
3. Back-off chain limiting screw 3/4 turn (4 1/2 "flats").
4. Hold chain limiting screw while tightening jam nut.

## Primary Cover

1. Remove foreign material from magnetic drain plug. Install plug and tighten to 14-30 ft-lbs (19-40.7 Nm).
2. Wipe gasket surface clean. Install **new** gasket on primary cover.

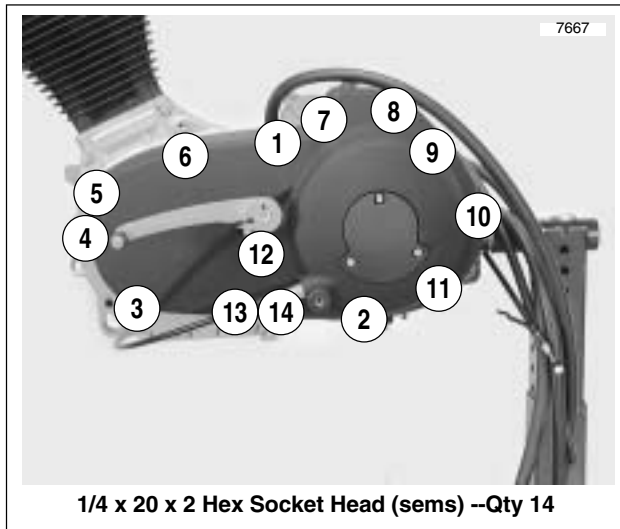


Figure 6-7. Primary Cover Tightening Sequence

3. See [Figure 6-7](#). Install primary cover and gasket onto left crankcase half using mounting screws and tighten to 100-120 **in-lbs** (11-14 Nm) in sequence shown.
4. See [Figure 6-1](#). Install **new** shifter lever oil seal.
5. Fit coupling over cable end with rounded side inboard and the ramp connector button outboard. With retaining ring side of ramp assembly facing inward, place hook of ramp around coupling button and rotate assembly counterclockwise until tang on inner ramp fits in slot of primary cover.

6. 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.
7. Adjust clutch. See [ADJUSTMENT](#) under [1.9 CLUTCH](#).
8. Adjust primary chain tension. See [6.2 PRIMARY CHAIN](#).
9. Fill transmission to proper level with fresh lubricant. See [TRANSMISSION](#) under section [1.10 TRANSMISSION/PRIMARY FLUID](#).
10. Install clutch inspection cover with **new** gasket and three sems screws with washers. Tighten screws in a cross-wise pattern to 84-108 **in-lbs** (10-12 Nm).
11. See [Figure 6-1](#). Install rubber washer and shifter lever assembly and tighten pinch screw to 12-14 ft-lbs (16-19 Nm)
12. Install left footpeg support bracket. See [2.21 FOOT-PEGS AND FOOTPEG SUPPORT BRACKETS](#).

### 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 resulting in personal injury and/or property damage.**

13. Connect negative battery cable to battery terminal. Tighten fastener to 60-96 **in-lbs** (7-11 Nm).

### WARNING

**After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift during vehicle operation and startle the rider, causing loss of control and personal injury.**

14. Install seat. See [2.28 SEAT](#).

# CLUTCH RELEASE MECHANISM

6.3

## DISASSEMBLY

### NOTE

For clutch adjustment procedure, See [1.9 CLUTCH](#).

1. Remove seat. See [2.28 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.
3. Pull clutch cable ferrule (end of cable housing) away from clutch hand lever bracket. Gap between ferrule and bracket should be 0.0625-0.125 (1.6-3.2 mm). Adjust freeplay by turning cable adjuster.
4. Remove left footpeg support bracket. See [2.21 FOOTPEGS AND FOOTPEG SUPPORT BRACKETS](#).
5. See [Figure 6-8](#). Remove three sems screws with washers and clutch inspection cover.

6. Slide spring with attached screw lockplate from flats of adjusting screw.
7. Turn adjusting screw clockwise to release ramp and coupling mechanism. As the adjusting screw is turned, ramp assembly moves forward. Unscrew nut from end of adjusting screw.

## CLEANING AND INSPECTION

1. Thoroughly clean all parts in cleaning solvent.
2. See [Figure 6-8](#). Inspect three balls of release mechanism and ball socket surfaces of inner and outer ramps for wear, pitting, surface breakdown and other damage. Replace parts as necessary.
3. Check hub fit of inner and outer ramps. Replace ramps if excessively worn.
4. Check clutch cable for frayed or worn ends. Replace cable if damaged or worn.
5. Change or add transmission fluid if necessary. See [1.10 TRANSMISSION/PRIMARY FLUID](#).

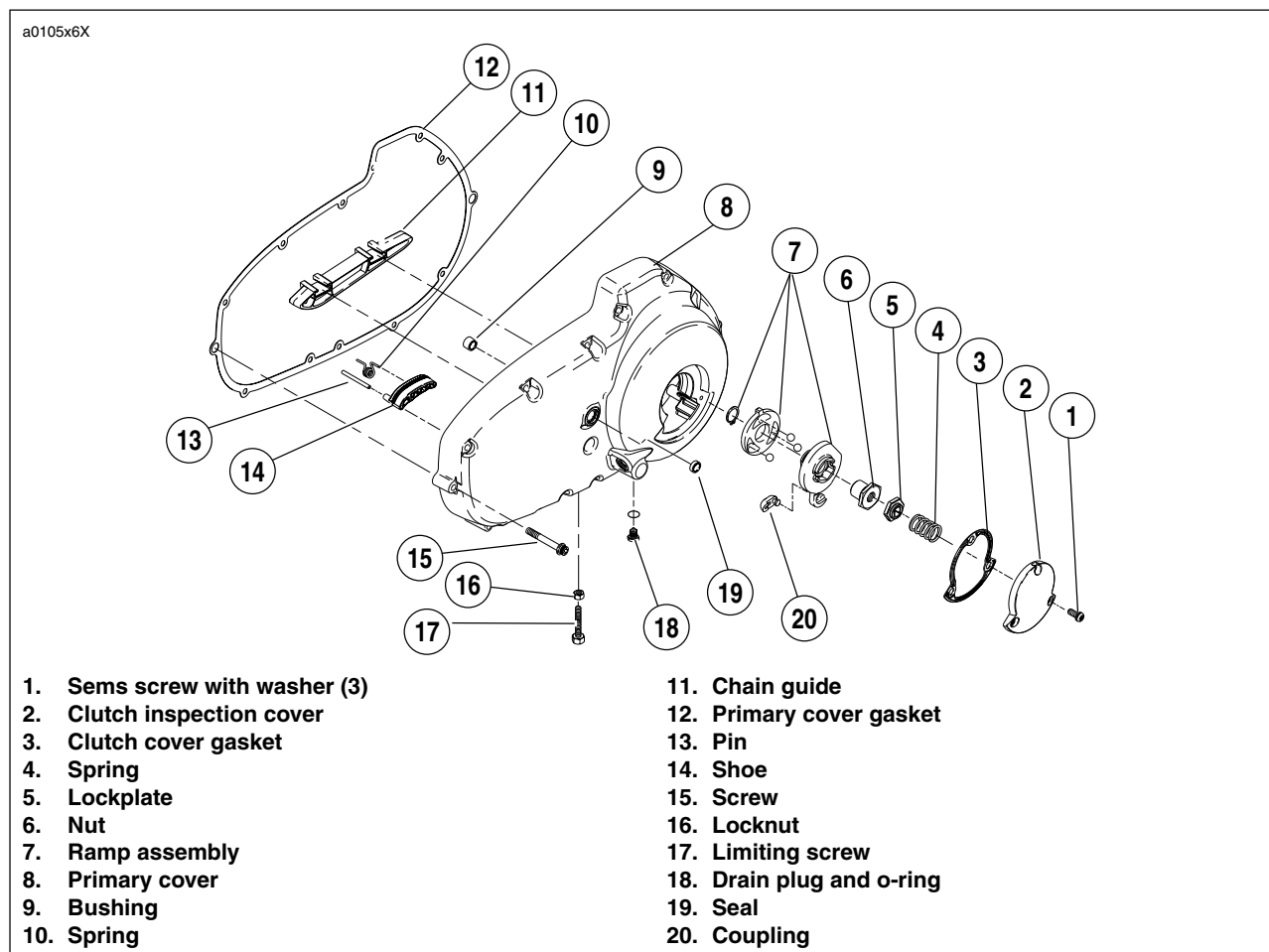


Figure 6-8. Clutch Release Mechanism



## ASSEMBLY

1. See [Figure 6-9](#). Assemble inner and outer ramp.
  - 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 [1.9 CLUTCH](#).
  - d. Fit nut hex into recess of outer ramp.
4. Install left footpeg support bracket. See [2.21 FOOTPEGS AND FOOTPEG SUPPORT BRACKETS](#).

### 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.**

5. Connect negative battery cable to battery terminal. Tighten fastener to 60-96 in-lbs (6.8-10.9 Nm).

### WARNING

**After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift during vehicle operation and startle the rider, causing loss of control and personal injury.**

6. Install seat. See [2.28 SEAT](#).

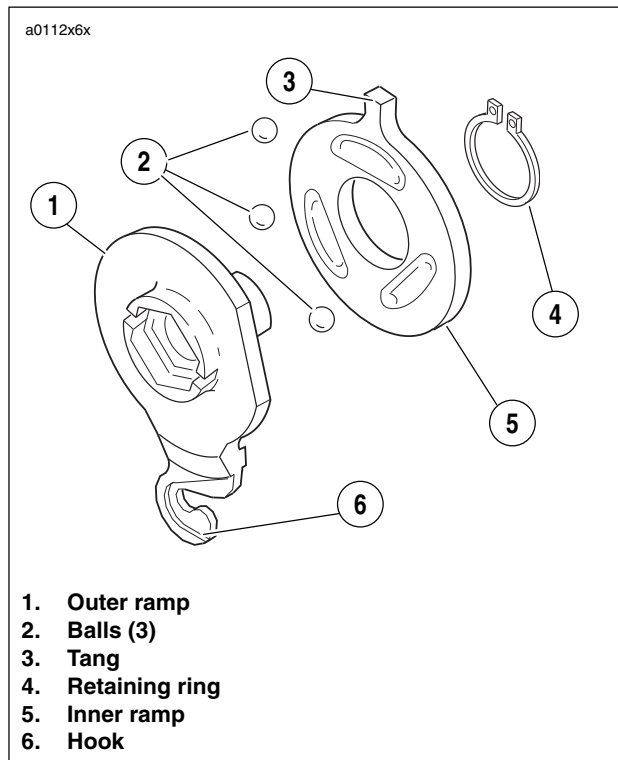


Figure 6-9. Inner & Outer Ramp

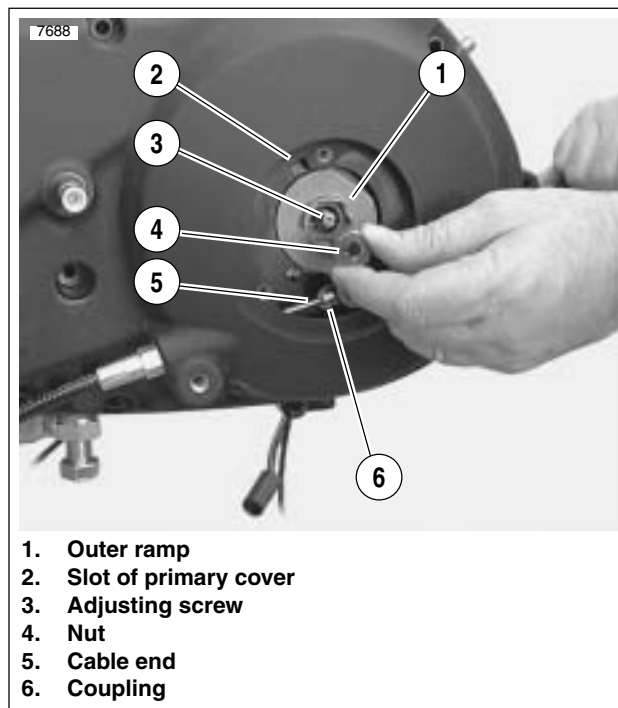


Figure 6-10. Nut & Outer Ramp



## 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 five steel plates and five fiber (friction) plates stacked alternately in the clutch shell. The order of plate assembly, from inboard to outboard, is as follows:

St - F - St - F - St - F - St - F - St - F

(St = Steel plate, F = Fiber plate)

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) and the centrally located spring plate (also a clutch driven plate) 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 inward force against the pressure plate. The pressure plate then presses the clutch plates together, allowing no slippage between the plates and causing the plates to turn as a single unit. The result is that the rotational force of the clutch shell is fully transmitted through the “locked” 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 and spring plates (i.e. – Slippage 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.

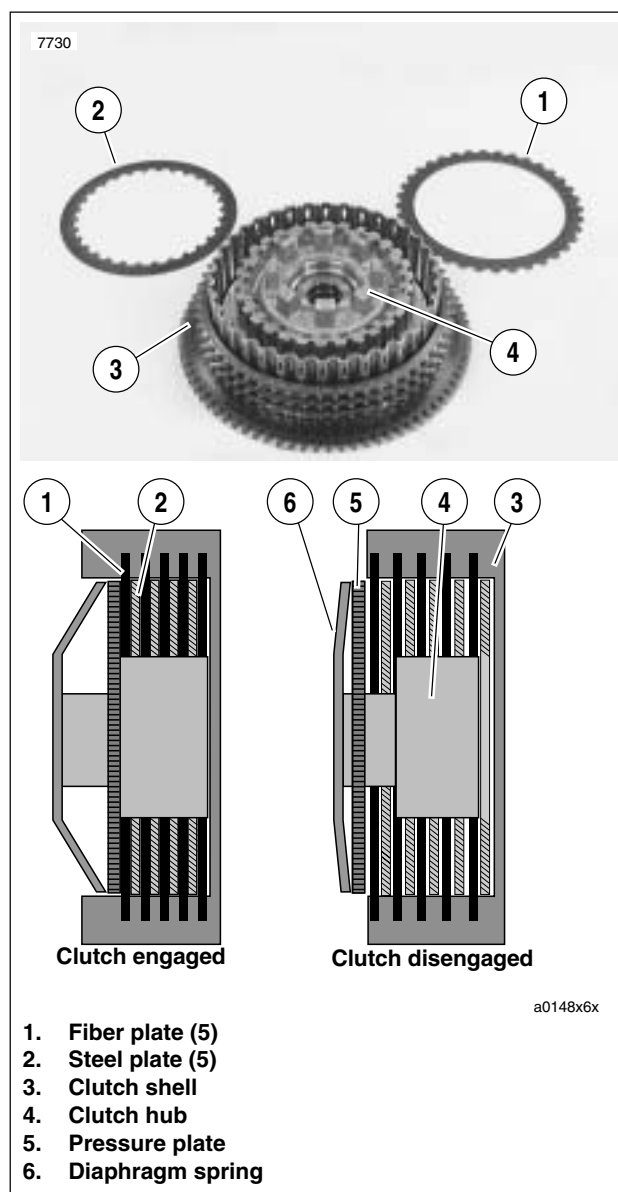


Figure 6-11. Clutch Plates and Hub/Shell Assembly

Table 6-5. Clutch Troubleshooting

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

## REMOVAL/DISASSEMBLY

### Clutch Pack

#### 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 primary cover. See [6.2 PRIMARY CHAIN](#).

#### 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.

2. See [Figure 6-12](#). Attach tools to compress clutch diaphragm spring.
  - a. Thread the CLUTCH SPRING FORCING SCREW (4)(Part No. HD-38515-91) onto the clutch adjusting screw.
  - b. Place the bridge (3) of SPRING COMPRESSING TOOL (Part No. HD-38515-A) against diaphragm spring (2).
  - c. Install bearing (5) and washer (6).
  - d. Thread the tool handle (1) onto end of forcing screw (4).

#### 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.

3. Remove pressure plate assembly.
  - a. Place a wrench on the clutch spring forcing screw flats to prevent the forcing screw (9) from turning.
  - b. Turn compressing tool handle (1) clockwise until tool relieves pressure on snap ring (6) and spring seat (8). Remove and discard snap ring (6).
  - c. Unseat spring seat (8) from the groove in clutch hub prongs.
  - d. Remove pressure plate assembly (7).
4. See [Figure 6-14](#). Remove the clutch pack from the hub/shell assembly. The pack consists of five fiber plates and five steel plates.

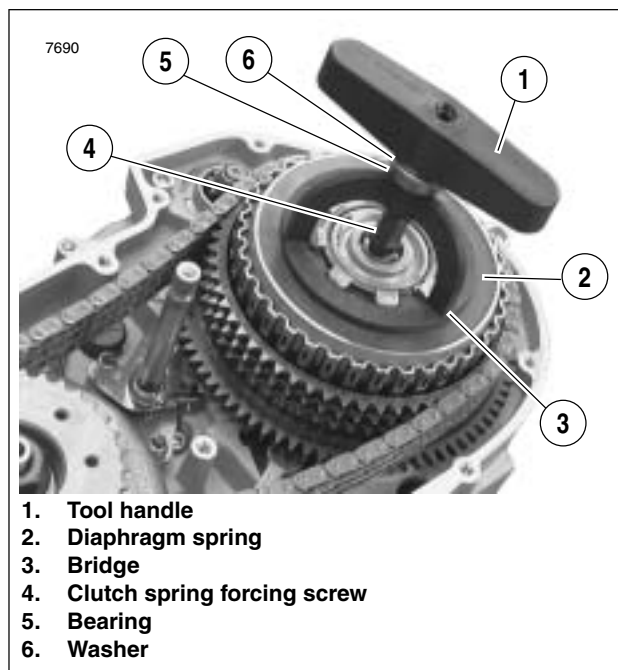
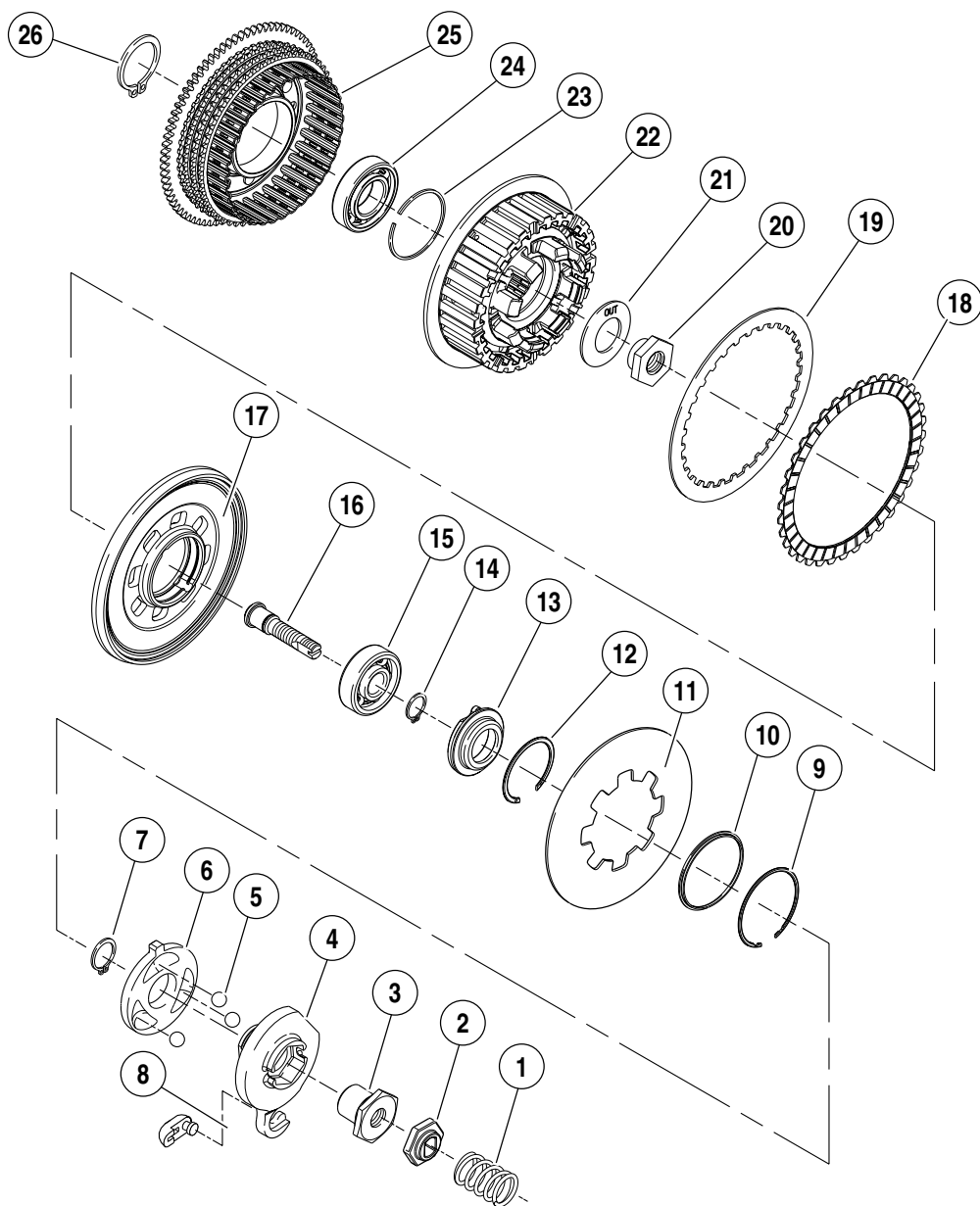


Figure 6-12. Compressing Clutch Diagram Spring



Figure 6-13. Pressure Plate Assembly

a0114x6x



1. Spring
2. Lockplate
3. Nut
4. Outer ramp
5. Ball (3)
6. Inner ramp
7. Retaining ring
8. Coupling
9. Retaining ring
10. Spring seat
11. Diaphragm spring
12. Retaining ring
13. Release plate

14. Retaining ring
15. Bearing
16. Adjusting screw
17. Pressure plate
18. Friction plate (paper) (5)
19. Steel plate (5)
20. Mainshaft nut
21. Washer, labeled "out"
22. Clutch hub
23. Retaining ring
24. Bearing
25. Clutch shell and sprocket
26. Retaining ring

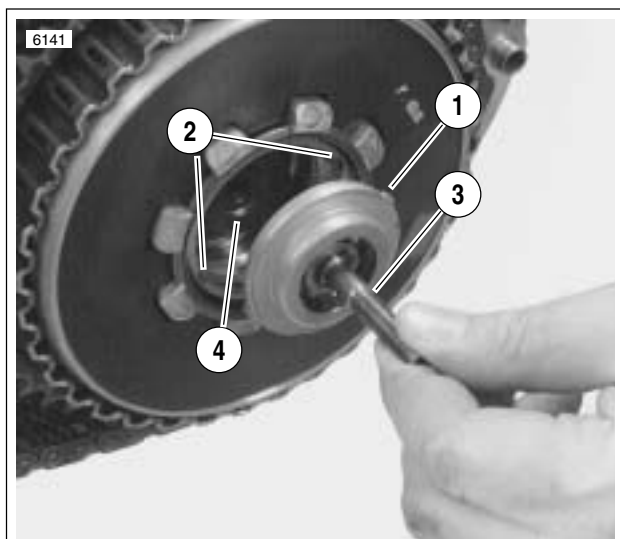
Figure 6-14. Clutch Assembly

## Primary Chain/Drive

### 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. Remove primary cover. See [6.2 PRIMARY CHAIN](#).
3. Loosen engine sprocket.
  - a. 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.



1. Tabs on release plate (2)
2. Recesses
3. Adjusting screw assembly
4. Mainshaft nut

Figure 6-15. Aligning Tabs

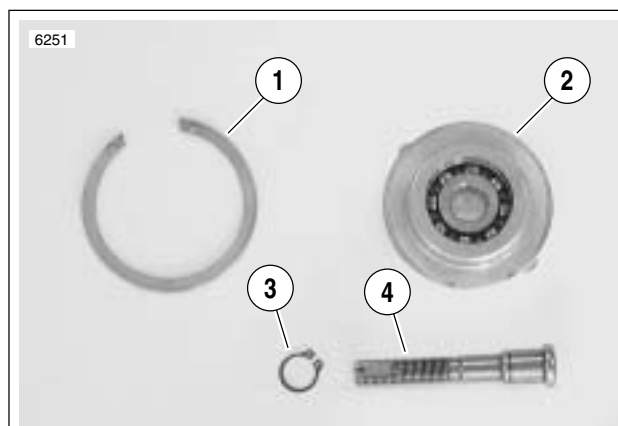
4. See [Figure 6-15](#). Remove adjusting screw assembly.
  - a. Remove large retaining ring.
  - b. Remove adjusting screw assembly from pressure plate.

### CAUTION

See [Figure 6-15](#). Mainshaft nut has left-hand threads. To prevent damage, turn nut clockwise to loosen and remove from mainshaft.

5. Remove mainshaft nut and washer.
6. Remove the clutch assembly, primary chain and engine sprocket as a unit.
  - a. Inspect primary chain and sprockets for damage or excessive wear.
  - b. Inspect stator and rotor. See [7.14 ALTERNATOR](#).
  - c. Replace damaged parts as necessary.

7. Install adjusting screw assembly into pressure plate.
  - a. See [Figure 6-15](#). Align two tabs on perimeter of release plate with corresponding recesses in pressure plate.
  - b. See [Figure 6-16](#). Secure the adjusting screw assembly with large retaining ring.
8. Attach tools to compress clutch diaphragm spring. See Step 2 of [CLUTCH PACK](#) under [6.4 PRIMARY DRIVE/CLUTCH](#).
9. Remove clutch pack components. See Steps 3-4 of [CLUTCH PACK](#) under [6.4 PRIMARY DRIVE/CLUTCH](#).
10. See [Figure 6-13](#). Disassemble pressure plate.
  - a. Place a wrench on the clutch spring forcing screw flats to prevent the forcing screw from turning.
  - b. Turn the compressing tool handle counterclockwise until the handle spins off.
  - c. Remove washer, bearing and bridge.
  - d. Remove clutch spring forcing screw from clutch adjusting screw.
  - e. Remove spring seat and diaphragm spring from pressure plate.



1. Retaining ring
2. Bearing and release plate
3. Retaining ring
4. Adjusting screw

Figure 6-16. Adjusting Screw Assembly

11. See [Figure 6-16](#). Remove and disassemble adjusting screw assembly.
  - a. Remove large retaining ring.
  - b. Remove adjusting screw assembly from pressure plate.
  - c. If necessary, disassemble adjusting screw assembly. Remove and discard small retaining ring and then separate the adjusting screw from the bearing and release plate. Remove bearing from release plate.

**CAUTION**

See **Figure 6-14**. To prevent possible damage to the bearing, the clutch hub and shell assembly should not be disassembled unless the bearing, hub or shell require replacement. If the assembly is pressed apart, the bearing must be replaced.

12. Disassemble clutch hub and clutch shell if necessary.
  - a. Remove retaining ring from inboard end of clutch hub.
  - b. Using an arbor press, separate clutch hub from assembly of clutch shell, bearing and retaining ring.
  - c. Remove retaining ring from groove in clutch shell.
  - d. Press on the inboard side of bearing outer race to remove bearing from clutch shell.

**INSPECTION****WARNING**

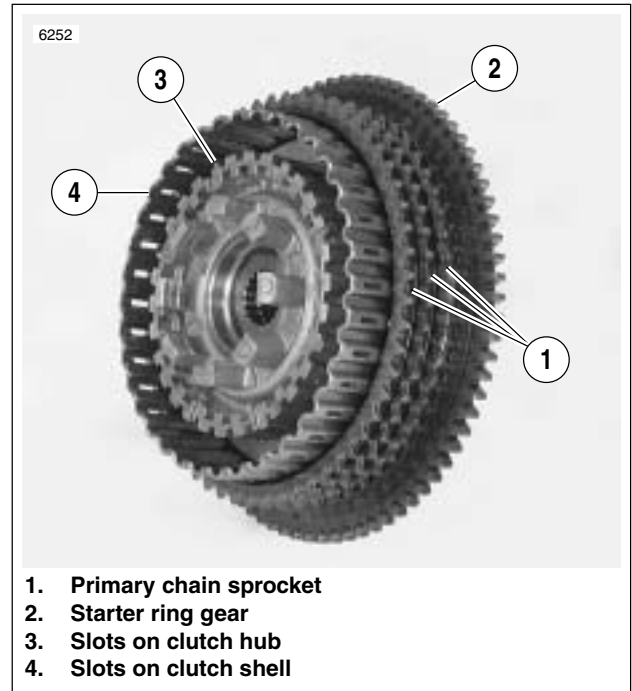
Low pressure compressed air can blow debris into your face and eyes. Always wear eye protection or a face shield when using pressurized air. Failure to take adequate safety precautions could result in death or serious injury.

1. Wash all parts, except fiber (friction) plates and bearing, in cleaning solvent. Blow dry with compressed air. 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. (0.152 mm).
2. Check the diaphragm spring for cracks or bent tabs. Install a **new** spring if either condition exists.



**Figure 6-17. Measuring Friction Plates**

3. See **Figure 6-17**. Check fiber plates for thickness.
  - a. Wipe the lubricant from the five fiber plates and stack them on top of each other.
  - b. Measure the thickness of the five stacked fiber plates with a dial caliper or micrometer. The minimum thickness must be 0.413 in. (10.490 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 6-18. Checking Clutch Shell**

4. See **Figure 6-18**. Check the clutch shell.
  - a. Inspect primary chain sprocket (1) and the starter ring gear (2) on the clutch shell. If either sprocket or ring gear are badly worn or damaged, replace the clutch shell.
  - b. Check the slots (3,4) that mate with the clutch plates on both clutch shell and hub. If slots are worn or damaged, replace shell and/or hub.
  - c. If clutch shell was removed from motorcycle, check the bearing for smoothness. Rotate the clutch shell while holding the clutch hub. If bearing is rough or binds, it must be replaced.



## ASSEMBLY

### Clutch Pack

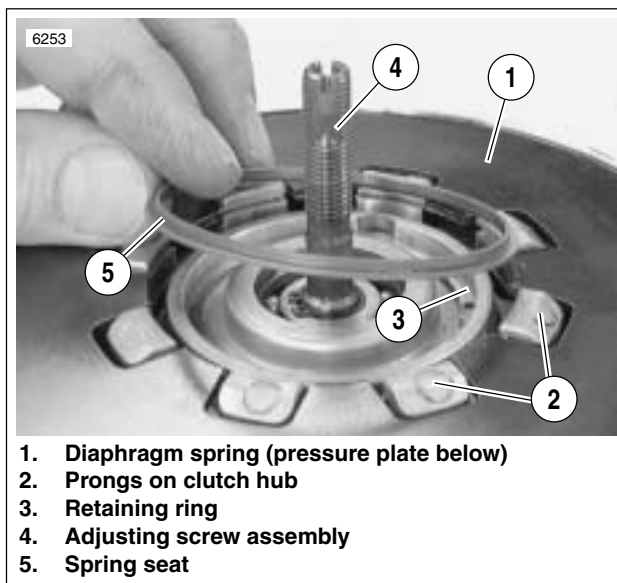
See [Figure 6-14](#). Install the clutch pack which consists of five fiber plates and five steel plates, into the clutch hub. The order of plate assembly, from inboard to outboard, is as follows:

St - F - St - F - St - F - St - F - St - F

(St = Steel plate, F = Fiber plate)

#### CAUTION

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.



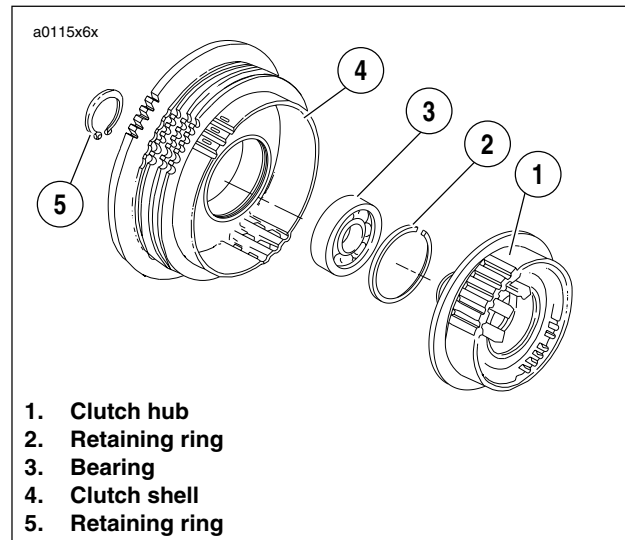
1. Diaphragm spring (pressure plate below)
2. Prongs on clutch hub
3. Retaining ring
4. Adjusting screw assembly
5. Spring seat

**Figure 6-19. Spring Seat Installation**

5. Place assembly of spring seat, **new** snap ring, diaphragm spring, pressure plate, adjusting screw components and compressing tool onto clutch hub and against clutch pack.
  - a. See [Figure 6-19](#). Align square openings of pressure plate and diaphragm spring so that the assembly can be installed over prongs of clutch hub.
  - b. Position spring seat with its larger O.D. side toward diaphragm spring.
  - c. See [Figure 6-20](#). 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 spring seat and **new** snap ring into the groove in clutch hub prongs.
  - e. With snap ring positioned against outboard side of spring seat, and fully seated in groove of clutch hub, carefully loosen and remove compression tool.

### Primary Drive

1. See [Figure 6-20](#). Assemble clutch hub and shell if necessary.
  - a. Press **new** bearing in clutch shell. Secure bearing with a **new** retaining ring.
  - b. Press inboard end of clutch hub into shell bearing. Secure with **new** retaining ring on end of hub.



**Figure 6-20. Clutch Hub and Shell Assembly**

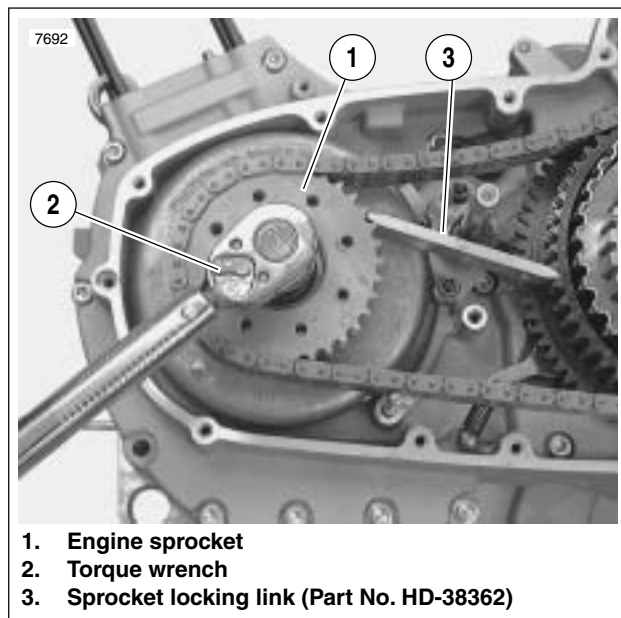
2. Assemble pressure plate hardware.
  - a. See [Figure 6-16](#). Place bearing inside release plate. Insert adjusting screw through bearing and release plate. Secure with **new** retaining ring.
  - b. See [Figure 6-19](#). Position diaphragm spring with its concave side facing toward pressure plate onto pressure plate assembly.
  - c. Insert adjusting screw assembly into pressure plate. Secure with large retaining ring.
  - d. Position spring seat with its larger O.D. side toward diaphragm spring.
3. Attach tools to compress clutch diaphragm spring. Do not tighten compressing tool against diaphragm spring at this time. See Step 2 of [CLUTCH PACK](#) under [6.4 PRIMARY DRIVE/CLUTCH](#).
4. Install the clutch pack. Follow all instructions of [CLUTCH PACK](#) under [6.4 PRIMARY DRIVE/CLUTCH](#).

## INSTALLATION

### NOTE

If clutch pack replacement was the only service work performed, start with Step 5.

1. Install the engine sprocket, clutch assembly and primary chain as a unit into primary chaincase.



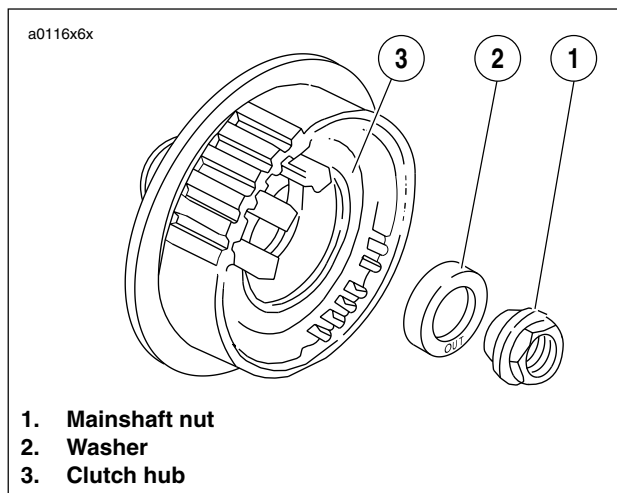
1. Engine sprocket
2. Torque wrench
3. Sprocket locking link (Part No. HD-38362)

Figure 6-21. Sprocket Locking Link

2. See Figure 6-21. Install the engine sprocket nut.
  - a. Place SPROCKET LOCKING LINK (Part No. HD-38362) between primary chain and engine sprocket.
  - b. Apply two or three drops of LOCTITE 262 (red) onto threads of sprocket shaft.
  - c. Install engine sprocket nut. Tighten to 190-210 ft-lbs (258-285 Nm).

### CAUTION

See Figure 6-22. Washer must be installed with the word "out" facing the mainshaft nut or transmission may be damaged.



1. Mainshaft nut
2. Washer
3. Clutch hub

Figure 6-22. Mainshaft Nut and Washer

3. See Figure 6-22. Install mainshaft nut and washer.
  - a. Apply two or three drops of LOCTITE 262 (red) onto threads on end of mainshaft.
  - b. Place washer on mainshaft with the word "out" facing away from clutch hub.
  - c. Install nut (**left-hand threads**). Tighten to 70-80 ft-lbs (95-109 Nm).
4. Remove SPROCKET LOCKING LINK.
5. Install adjusting screw assembly into pressure plate.
  - a. See Figure 6-15. Align two tabs on perimeter of release plate with corresponding recesses in pressure plate.
  - b. See Figure 6-16. Secure the adjusting screw assembly with retaining ring.
6. Install primary cover. See 6.2 PRIMARY CHAIN.
7. Install left footpeg support bracket. See 2.21 FOOTPEGS AND FOOTPEG SUPPORT BRACKETS.

### 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 resulting in personal injury and/or property damage.

8. Connect negative battery cable to battery terminal. Tighten fastener to 60-96 in-lbs (7-11 Nm).

### WARNING

After installing seat, pull upward on front of seat to be sure it is locked in position. If seat is loose, it could shift during vehicle operation and startle the rider, causing loss of control and personal injury.

9. Install seat. See 2.28 SEAT.



# NOTES

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