

# FRONT FORK

## GENERAL

The front fork consists of two telescoping outer tube/inner slider assemblies. Each tube/slider assembly has an internal compression spring which supports the forward weight of the vehicle/rider. The compression spring extends and retracts to cushion the ride over rough or irregular road surfaces. An oil-filled damping mechanism controls the telescoping action of each tube/slider assembly.

See [FRONT FORK](#) in Section 1 for fork oil change procedure.

## REMOVAL

1. Raise front wheel off floor using [FRONT WHEEL SUPPORT STAND](#) (Part No. B-41395) and [S1 LIFT ADAPTER](#) (Part No. B-41686).
2. Remove front brake caliper. See [FRONT BRAKE CALIPER, REMOVAL/DISASSEMBLY](#) on page 2-20.
3. Remove front wheel. See [FRONT WHEEL, REMOVAL](#) on page 2-8.
4. Remove front fender. See [FENDERS, REMOVAL/INSTALLATION](#) on page 2-54.
5. Loosen left and right headlamp brackets. See [HEADLAMP, REMOVAL](#) in Section 7.
6. Loosen all five pinch screws on both the upper and lower triple clamps.
7. Remove front forks.

## DISASSEMBLY

1. See [Figure 2-30](#). Clamp the fork vertically in a vise using [FRONT FORK HOLDING TOOL](#) (Part No. B-41177).
2. See [Figure 2-31](#). Turn adjuster to full slow position (completely clockwise).
3. See [Figure 2-32](#). Remove fork cap (2) (metric), O-ring (3) and washer (4).
4. Reduce spring pressure and remove both retaining clips (5).
5. Remove preload shim(s) (6) and steel washer (7).
6. Remove fork spring (8).
7. Invert fork and drain fork oil.
8. Clamp fork outer tube (9) horizontally using [FRONT FORK HOLDING TOOL](#) (Part No. B-41177). Loosen fork seal retaining ring (14) and spacer ring (13).
9. Using [ROBINAIR HEAT GUN](#) (Part No. HD-25070) heat bottom of outer tube. When the tube has sufficiently expanded, drive inner tube (18) from outer tube with a slide hammer action. Inner tube will retain fork oil seal (12) and support ring (11) in place.
10. Spread red retaining cap (15) and remove. Remove upper DU bushing (16) and washer (17).
11. Remove retaining ring (14) and spacer ring (13).

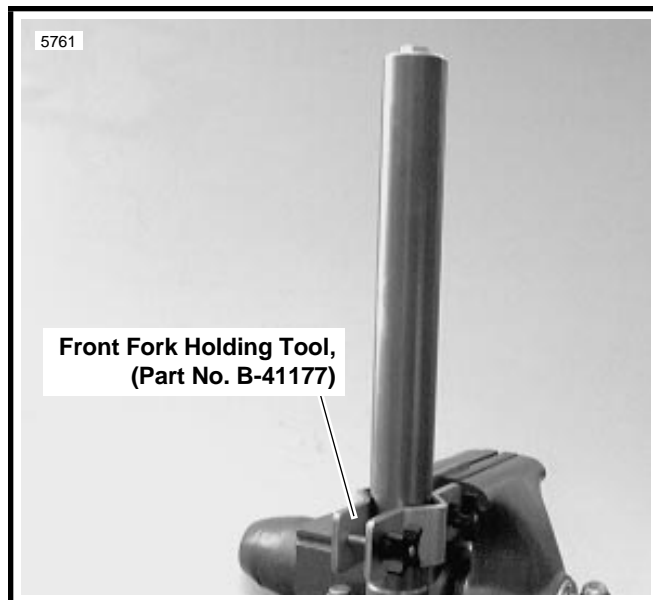


Figure 2-30. Front Fork Holding Tool

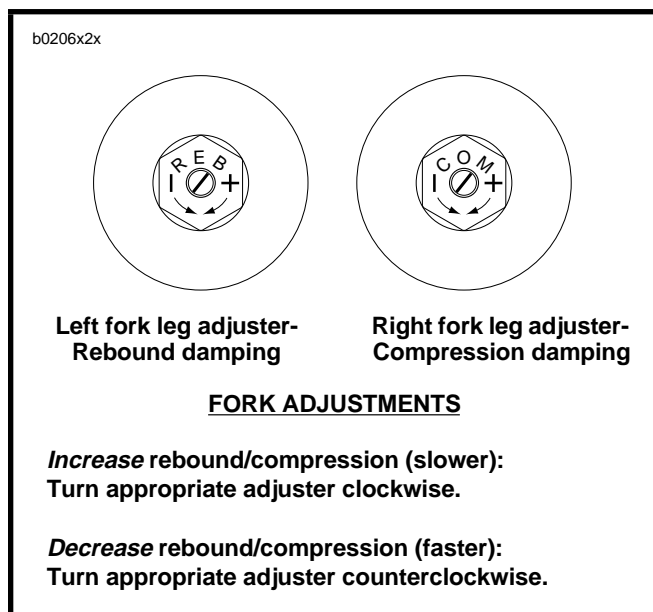


Figure 2-31. Fork Adjusters

12. Remove lower DU bushing (10), support ring (11) and fork oil seal (12). Discard fork oil seal and support ring.
13. Invert fork. Hold damper assembly and remove bolt (20) (metric) and copper washer (19). Discard copper washer.
14. Remove damper assembly (22).

### NOTE

*The damper assembly (22) contains no user serviceable parts.*

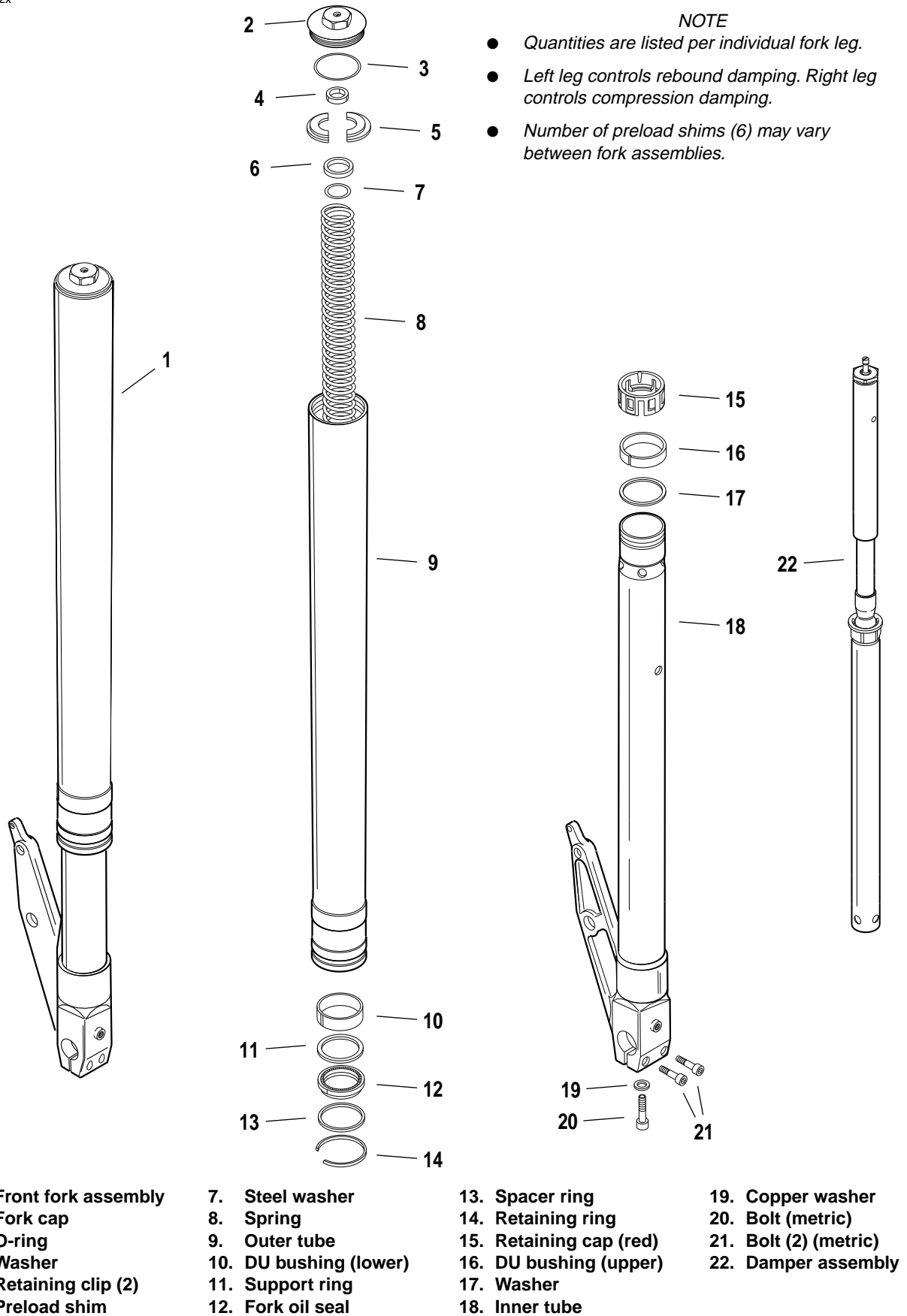


Figure 2-32. Front Forks

## CLEANING, INSPECTION AND REPAIR

1. Thoroughly clean and inspect all parts. Replace any parts that are bent, broken or damaged.
2. Inspect the O-rings for damage, wear or general deterioration; replace as necessary. Replace all other removed seals.
3. See [Figure 2-32](#). Check inner tube (18). Tube surface should be shiny, smooth and free of scoring or abrasions.

## ASSEMBLY

1. Install **new** fork seal retaining ring (14) and spacer ring (13) on inner tube.
2. See [Figure 2-33](#). Using **FRONT FORK BUSHING/SEAL INSTALLER** (Part No. B-41176), install **new** fork oil seal on inner tube. External spring on fork oil seal faces bottom of fork leg.
3. See [Figure 2-32](#). Install **new** support ring (11).
4. Install upper DU bushing (16) with large end towards the bottom of the fork leg. Install washer (17) and lower DU bushing (10). Install red retaining cap (15).

### NOTE

Inspect both DU bushings upon assembly. Bushings are bronze with a Teflon layer. A DU bushing should be replaced when 20-30% of the Teflon layer has been worn through. In this circumstance, a visual inspection will show 20-30% of the bronze base. Also replace bushings if bushing interiors show any small grooves. Such grooves will damage the outside surface of the inner tubes.

5. Clamp outer tube (9) upside down using **FRONT FORK HOLDING TOOL** (Part No. B-41177).
6. See [Figure 2-34](#). Place inner tube assembly inside outer tube. Using **bushing** side of **FRONT FORK BUSHING/SEAL INSTALLER** (Part No. B-41176), drive in DU bushings until fully seated.
7. Reverse **FRONT FORK BUSHING/SEAL INSTALLER**. (Part No. B-41176). Seat fork oil seal with **seal** side of tool. Drop seal retaining ring in place. Fully seat retaining ring.
8. See [Figure 2-32](#). Clamp fork in a horizontal position. Install damper assembly (22) using bolt (20) (metric) and a **new** copper washer (19). Tighten bolt to 18-23 ft-lbs (24.4-31.2 Nm).
9. Clamp fork upright in the fully compressed stage.
10. Fill fork with oil. See **FRONT FORK** in Section 1.
11. Install fork spring (8).
12. Pull damper assembly above fork spring. Place steel washer (7) and preload shim(s) (6) on top of spring.
13. Installing the retaining clips (5) requires two people. Have one person compress the spring, steel washer and preload shim(s). At the same time, have the second person install both retaining clips.
14. Install washer (4), **new** O-ring (3) and fork cap (2) (metric).

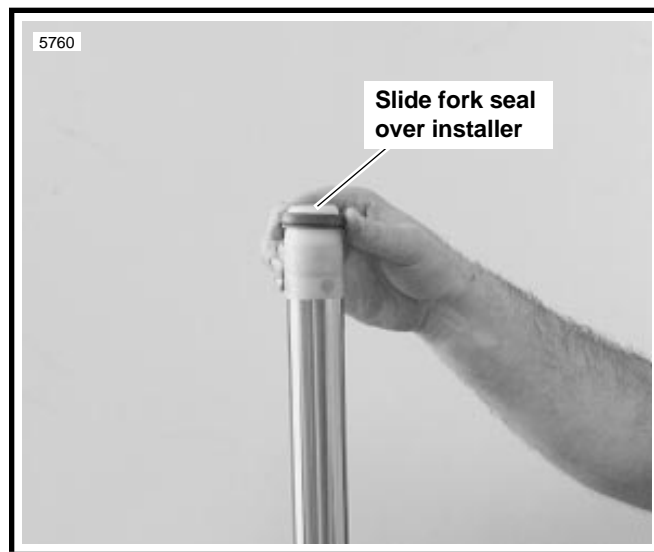


Figure 2-33. Installing New Fork Seal Using Front Fork Bushing/Seal Installer (Part No. B-41176)

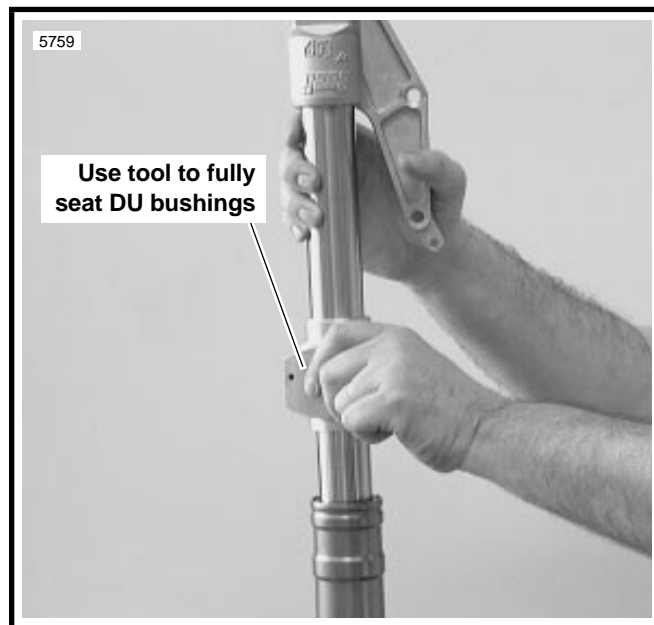


Figure 2-34. Installing Bushings and Seals Using Front Fork Bushing/Seal Installer (Part No. B-41176)

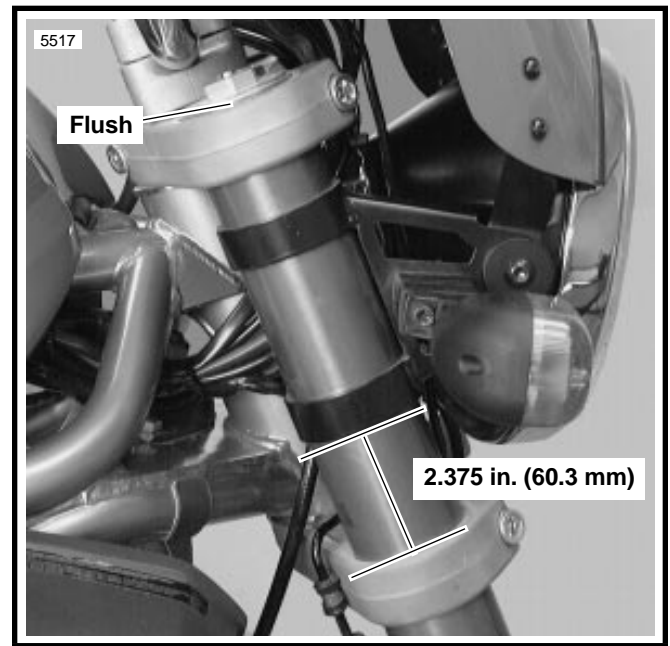
## INSTALLATION

1. Insert fork assembly through front fork triple clamps and headlamp brackets.

### NOTE

*When installing the front forks, use a screwdriver to pry apart the triple clamps.*

2. See [Figure 2-35](#). Position fork tubes so that top of each fork cap fits flush with the top surface of upper triple clamp.
3. Spread LOCTITE ANTI-SEIZE on the last three threads of all five front fork triple clamp pinch screws. Tighten screws to 18-20 ft-lbs (24.4-27.1 Nm).
4. Position headlamp bracket 2.375 in. (60.3 mm) above lower triple clamp. Tighten headlamp bracket screws.
5. Install front fender. See [FENDERS, REMOVAL/INSTALLATION](#) on [page 2-54](#).
6. Install front wheel. See [FRONT WHEEL, INSTALLATION](#) on [page 2-10](#).
7. Install front brake caliper. See [FRONT BRAKE CALIPER, INSTALLATION](#) on [page 2-21](#).
8. Set rebound and compression adjusters to the desired settings.



**Figure 2-35. Aligning Front Forks**

# FORK STEM AND BRACKET ASSEMBLY

## REMOVAL/DISASSEMBLY

1. Remove fork assemblies. See [FRONT FORK, REMOVAL](#) on [page 2-28](#).
2. See [Figure 2-36](#). Remove fork stem bolt (1) and upper triple clamp (2).
3. Remove upper dust shield (3) and upper roller bearing (4).
4. Lower the lower triple clamp (6). The lower bearing cone is a press fit on fork stem. Chisel through outer bearing cage to allow rollers to fall free. Apply heat to remove the remaining portion of bearing cone. Continuously move flame around its entire circumference until bearing falls free. Remove lower dust shield (3).
5. If replacement of bearing cups (5) is necessary, drive cups from steering head using [STEERING HEAD BEARING RACE REMOVER](#) (Part No. HD-39301A) and [UNIVERSAL DRIVER HANDLE](#) (Part No HD-33416).

## CLEANING, INSPECTION AND REPAIR

See [FRONT FORK](#) in Section 1 for adjustment procedures.

1. See [Figure 2-36](#). Clean the dust shields (3), bearing cups (5), fork stem and lower triple clamp (6) and frame with solvent.
2. Carefully inspect bearing races and assemblies for pitting, scoring, wear and other damage. Replace damaged bearing as a set.
3. Check the fork stem and lower triple clamp (6) for damage. Replace damaged fork stem.

## ASSEMBLY/INSTALLATION

1. See [Figure 2-36](#). If removed, install **new** bearing cups (5) into frame steering head using [STEERING HEAD BEARING RACE INSTALLER](#) (Part No. HD-39302).
2. Liberally coat the bearing cones (4) with grease using [WHEEL BEARING PACKER TOOL](#) (Part No. HD-33067). Work the grease into the rollers.
3. Place lower bearing dust shield (3) over fork stem. Find a section of pipe having an inside diameter slightly larger than the outside diameter of the fork stem. Press bearing cone (4) onto fork stem and bracket (1) using the pipe as a press on tool.
4. Insert lower triple clamp (6) through the steering head. Install the upper bracket bearing (4) and dust shield (3) onto fork stem.

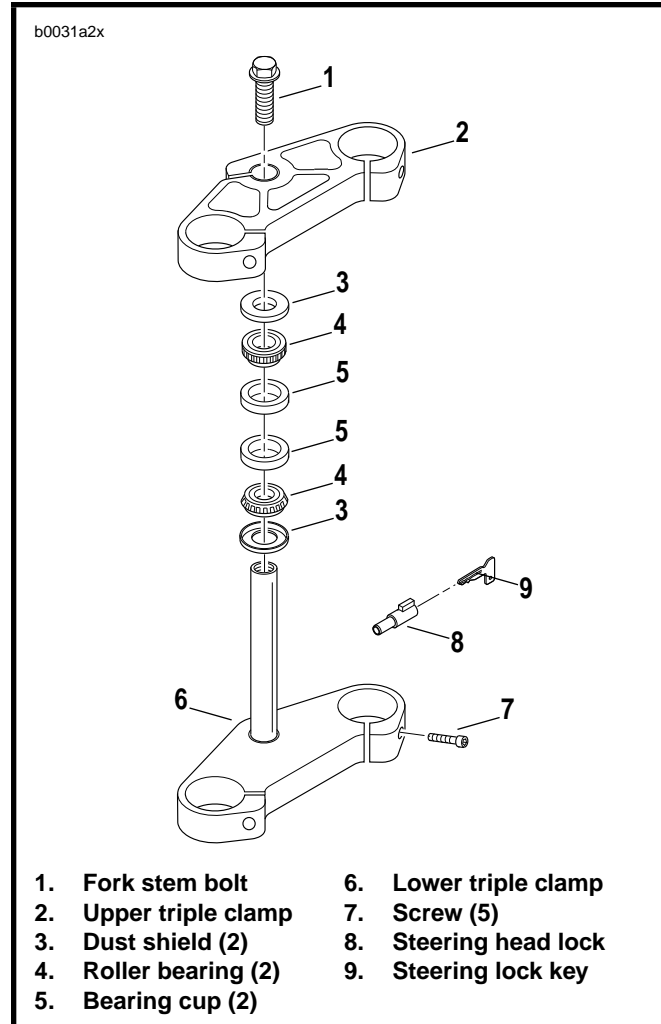


Figure 2-36. Bearing Cup Removal

5. Install the upper triple clamp (2) and loosely install fork stem bolt (1).
6. Install fork assemblies. See [FRONT FORK, INSTALLATION](#) on [page 2-31](#).
7. Tighten the fork stem bolt (1) until the bearings have no freeplay. Make sure the fork stem turns freely, then tighten the fork stem clamp screw (rear most pinch screw on upper triple clamp).
8. Check bearing adjustment. See [FRONT FORK, ADJUSTMENT](#) in Section 1.

# SWINGARM

## REMOVAL

### NOTE

Mark all hardware as it is removed so that it may be returned to its original location.

1. Swingarm removal requires motorcycle to be supported in several areas. First, secure front wheel and then raise rear wheel off ground with [REAR WHEEL SUPPORT STAND \(Part No. B-41174\)](#).

### ⚠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.

### ⚠CAUTION

Hold battery cable when loosening battery terminal hardware. Failure to hold cable may cause battery damage.

2. Disconnect **both** battery cables, negative cable first.
3. Remove seat, fuel tank and tail section. See [TAIL SECTION, REMOVAL](#) on [page 2-55](#).
4. Drain oil tank and remove filter. Detach feed, vent and return hoses from oil tank. See [ENGINE LUBRICATION SYSTEM](#) in Section 1.
5. Support motorcycle frame with a floor hoist such as the CENTRAL HYDRAULICS FOLDING CRANE (Model T-5466).
6. Remove rear fender. See [FENDERS, REMOVAL/INSTALLATION](#) on [page 2-54](#).
7. Remove rear brake caliper assembly from swingarm. See [REAR BRAKE CALIPER, REMOVAL/DISASSEMBLY](#) on [page 2-25](#).
8. Remove rear wheel. See [REAR WHEEL, REMOVAL](#) on [page 2-11](#).
9. Remove rear shock. See [REAR SHOCK ABSORBER, REMOVAL](#) on [page 2-36](#).
10. Remove rider footrests. See [FOOTRESTS, REMOVAL](#) on [page 2-52](#).
11. Remove air cleaner assembly. See [AIR CLEANER, REMOVAL](#) in Section 4.
12. Remove carburetor. See [CARBURETOR, REMOVAL](#) in Section 4.
13. Remove muffler and exhaust header. See [EXHAUST SYSTEM, REMOVAL/DISASSEMBLY](#) on [page 2-50](#).
14. Support engine under crankcase. Avoid pushing tie bar assembly upward.
15. Place a crating strap between the engine cylinders and around the lift. Tighten crating strap until snug.

16. Detach tie bars from frame mounts in the following sequence. Do not remove tie bars from engine.
  - a. Rear tie bar. Use a swivel socket.
  - b. Top tie bar.
  - c. Front tie bar and clutch cable clamp.
17. See [Figure 2-37](#). Remove isolator screws (9) and washers on each side.
18. Slowly raise floor hoist until rubber isolators (10) can be removed. Frame will rise while engine and swingarm remain secured to lift by crating strap.
19. Loosen one pinch screw (8) on the swingarm mount block (7).
20. Remove bearing adjusting bolt (1) on that side with [PIVOT SHAFT BEARING ADJUSTER \(Part No. B-41175\)](#).
21. Loosen the remaining pinch screw. Extract pivot shaft (5) and second adjuster as an assembly.
22. Remove swingarm.

## DISASSEMBLY

### ⚠CAUTION

Carefully mark all bearing components as they are removed, so that they may be returned to their original locations. Do not intermix bearing components.

1. See [Figure 2-37](#). Remove and discard swingarm seal (2).
2. Remove roller bearings (3).

### NOTE

Remove roller bearing cups (4) only if replacement is required. The complete bearing assembly must be replaced as a unit when replacement is necessary. Do not intermix bearing components.

3. See [Figure 2-38](#). Carefully press roller bearing cups (4) from swingarm using [STEERING HEAD BEARING RACE REMOVER \(Part No. HD-39301A\)](#) and [UNIVERSAL DRIVER HANDLE \(Part No. HD-33416\)](#).

## CLEANING/INSPECTION

1. Clean all components in solvent and blow dry. Carefully inspect all bearing components for wear and/or corrosion. Replace complete bearing assembly if any component is damaged.
2. Check that swingarm is not bent or twisted. Replace if damaged.

## ASSEMBLY

1. See [Figure 2-39](#). If necessary, draw **new** roller bearing cups (4) into swingarm using [BEARING INSTALLATION BOLT \(Part No. B-35316-5\)](#) and [STEERING HEAD BEARING RACE INSTALLER \(Part No. HD-39302\)](#).

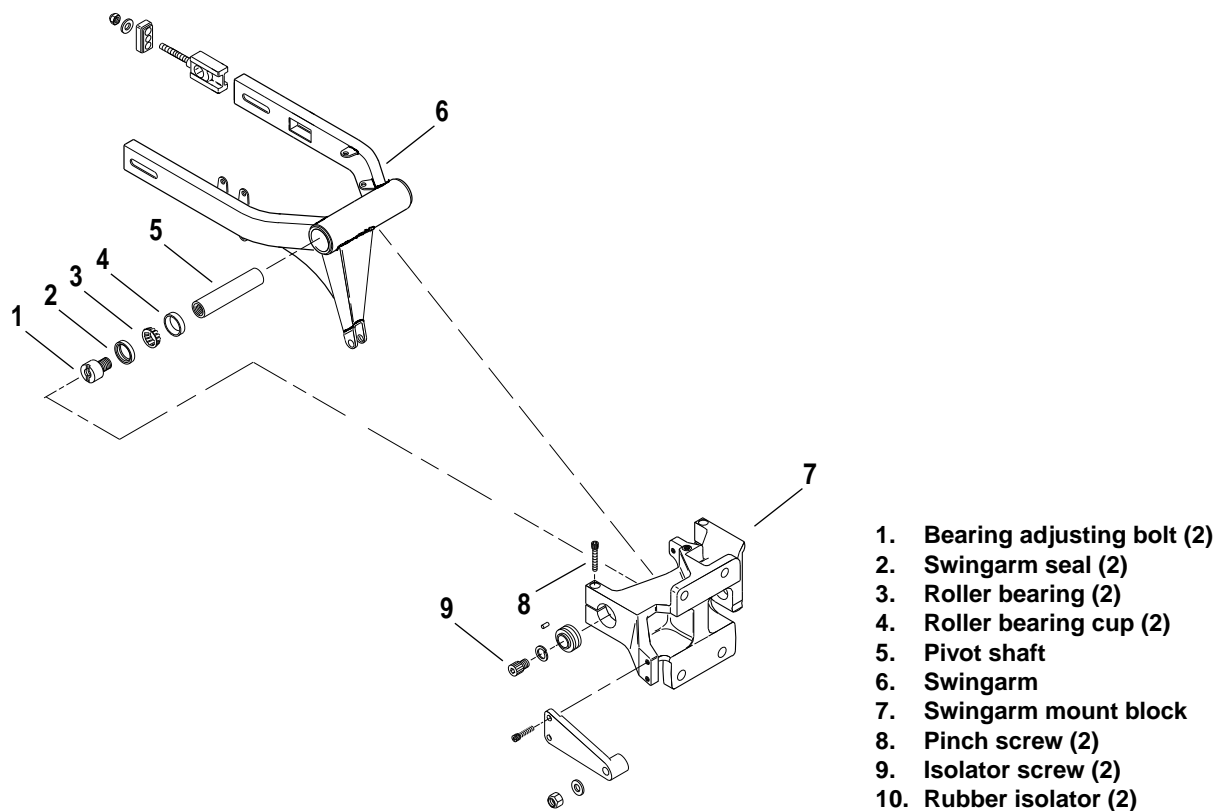


Figure 2-37. Swingarm Assembly and Swingarm Mount Block

#### NOTE

*Timkin roller bearing assemblies should be replaced as a unit. Do not intermix components. Mark all components so they may be correctly installed.*

- Coat bearing components with WHEEL BEARING GREASE (Part No. HD-99855-89) and assemble.

#### CAUTION

**Pivot shaft (5) must be installed between inner races (3) or bearing failure can result.**

- Install a **new** swingarm seal (2) flush to the swingarm.
- Apply LOCTITE ANTI-SEIZE LUBRICANT to pivot shaft threads.
- Install one bearing adjustment bolt (1) into pivot shaft (5). Bottom out the adjustment bolt.
- Slide swingarm assembly into position.
- Slide pivot shaft assembly through mount block and swingarm. Install the opposing bearing adjustment bolt (1) using [PIVOT SHAFT BEARING ADJUSTER \(Part No. B-41175\)](#).
- Tighten one pinch screw (8) into swingarm mount block. Do not tighten the other pinch screw (8) at this time.

## INSTALLATION

- Adjust swingarm preload. Using a scale as shown in [Figure 2-40](#). Preload should measure 3.5-5.5 lbs (1.6-2.5 kg).
- Remove both pinch screws (8). Apply LOCTITE THREADLOCKER 242 (blue) to pinch screw threads.
- Check that swingarm is centered between mounts. Torque pinch screws (8) to 27-30 ft-lbs (36.6-40.7 Nm).
- Install rubber isolators and bolts. See [SECONDARY DRIVE BELT](#) in Section 6.
- Attach tie bars to the frame in the following order. Torque to 30-33 ft-lbs (40.7-44.7 Nm)
  - Front tie bar. Clutch cable clamp holds cable on air cleaner side of motor.
  - Top tie bar.
  - Rear tie bar. Tie bar must be horizontal and below frame tab.
- Install carburetor. See [CARBURETOR, INSTALLATION](#) in Section 4.
- Install muffler and exhaust header. See [EXHAUST SYSTEM, ASSEMBLY/INSTALLATION](#) on [page 2-50](#).
- Install air cleaner. See [AIR CLEANER, INSTALLATION](#) in Section 4.



Figure 2-38. Removing Roller Bearing Cups



Figure 2-39. Installing Bearings into Swingarm

9. Install rear shock. See [REAR SHOCK ABSORBER, INSTALLATION](#) on page 2-37.
10. Install rear brake caliper assembly. See [REAR BRAKE CALIPER, INSTALLATION](#) on page 2-26.
11. Install rear wheel. See [REAR WHEEL, INSTALLATION](#) on page 2-13.
12. Install rider footrests. See [FOOTRESTS, INSTALLATION](#) on page 2-52.
13. Install rear fender. See [FENDERS, REMOVAL/INSTALLATION](#) on page 2-54.
14. Connect and fill lubrication system. See [ENGINE LUBRICATION SYSTEM](#) in Section 1.

**⚠ 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.

**⚠ CAUTION**

Hold battery cable when tightening battery terminal hardware. Failure to hold cable may cause battery damage.

15. Connect battery cables, positive cable first.

**⚠ 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.

16. Install tail section, fuel tank and seat. See [TAIL SECTION, INSTALLATION](#) on page 2-55.

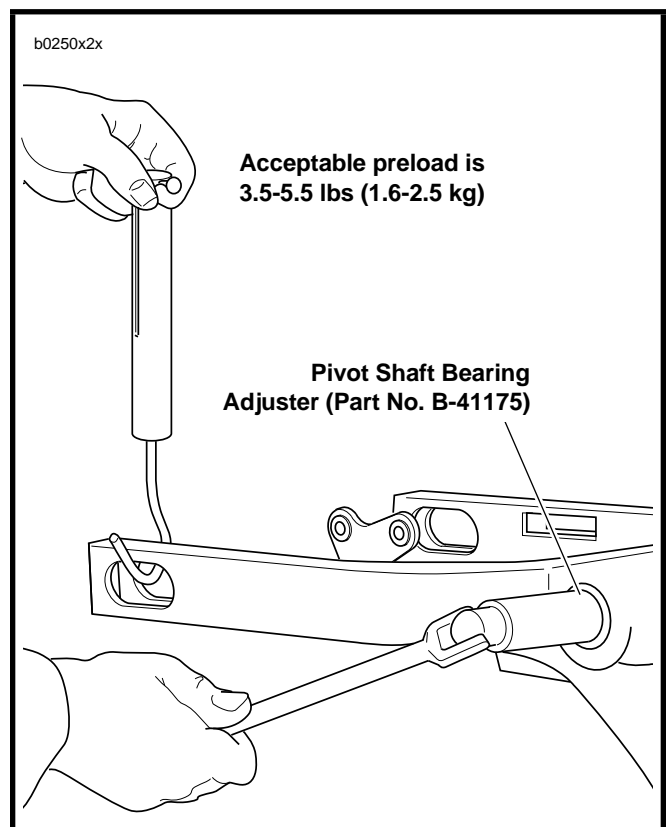


Figure 2-40. Adjusting Swingarm Preload



# REAR SHOCK ABSORBER

## GENERAL

See [Figure 2-41](#). The rear suspension features a WP Suspension shock absorber. The shock adjusts for compression and rebound damping as well as spring preload.

The most important rear shock adjustment is the preload setting. Before making any suspension adjustments, set the proper preload. This procedure can be found under [SUSPENSION ADJUSTMENTS](#) on [page 2-39](#).

### NOTE

*Rear shock absorber contains no user serviceable parts.*

## REMOVAL

1. Lift rear wheel off ground using [REAR WHEEL SUPPORT STAND \(Part No. B-41174\)](#).
2. Remove seat, fuel tank and tail section. See [TAIL SECTION, REMOVAL](#) on [page 2-55](#).
3. Support motorcycle frame with a floor hoist such as the [CENTRAL HYDRAULICS FOLDING CRANE](#).
4. See [Figure 2-41](#). Use a flex socket and extension to remove allen screw on front reservoir clamp (3).
5. Remove allen screw and locknut (4) (metric) on front mounting point.
6. Remove allen screw and locknut (1) (metric) on rear mount while supporting shock absorber.
7. Loosen rear reservoir clamp (2).
8. Remove shock absorber assembly.

## DISASSEMBLY

### ⚠ WARNING

The following steps require using a press. Wear eye protection and make certain set-up is stable. The force involved could cause parts to “flyout” at great speeds causing personal injury.

1. See [Figure 2-42](#). Place rear shock absorber in a hydraulic press with [REAR SHOCK COMPRESSING TOOL \(Part No. B-41178-A\)](#) on rear drawing ring.
2. Apply pressure to compress shock spring. Loosen and remove preload adjusting nuts (metric).
3. Release pressure. Remove [REAR SHOCK COMPRESSING TOOL \(Part No. B-41178-A\)](#) and shock from press.
4. See [Figure 2-43](#). Remove rear drawing ring (2).
5. Remove support ring (3) and bump rubber (4).
6. Remove circlip (5) on end of shock cartridge.
7. Remove steel spring retainer (6).
8. Remove spring (7).

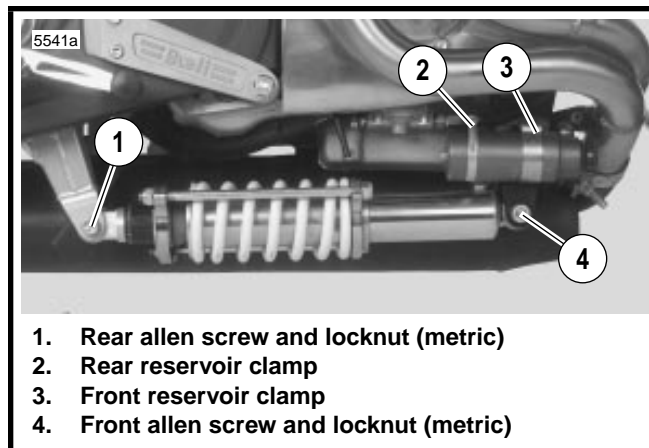


Figure 2-41. Rear Shock Mounting Hardware

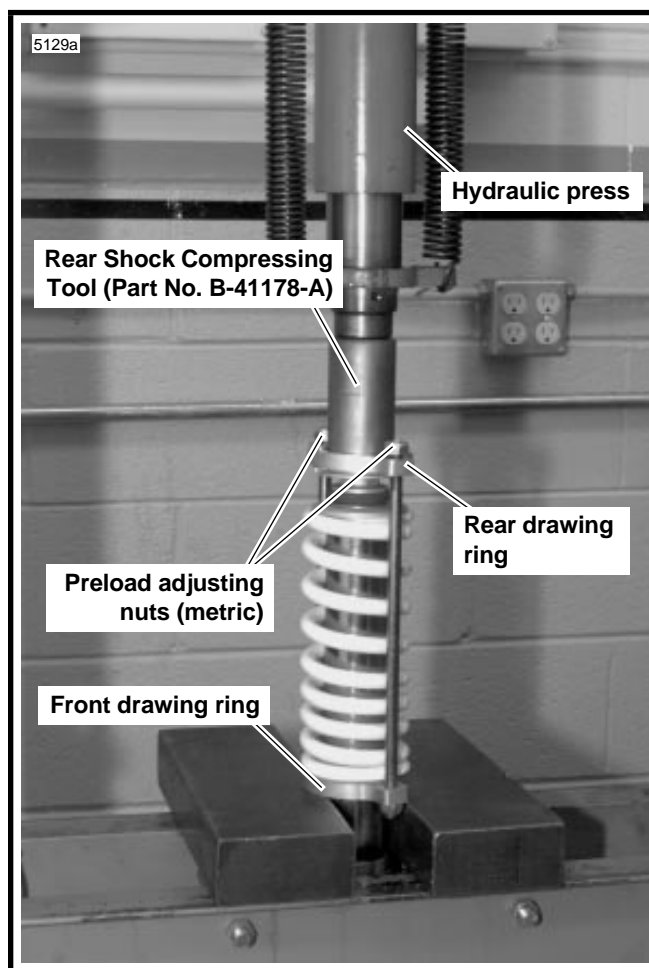


Figure 2-42. Compressing Rear Shock

## ASSEMBLY

1. See [Figure 2-43](#). Install spring (7).
2. Install steel spring retainer (6).
3. Install circlip (5) on end of shock cartridge.
4. Install bump rubber (4) and support ring (3).

### **⚠WARNING**

The following steps require using a press. Wear eye protection and make certain set-up is stable. The force involved could cause parts to “flyout” at great speeds causing personal injury.

5. See [Figure 2-42](#). Place rear shock absorber in a hydraulic press with [REAR SHOCK COMPRESSING TOOL \(Part No. B-41178-A\)](#) on rear drawing ring.
6. Apply pressure to compress shock spring. Install rear preload adjusting nuts (metric).
7. Release pressure. Remove [REAR SHOCK COMPRESSING TOOL \(Part No. B-41178-A\)](#) and shock from press.

## INSTALLATION

1. See [Figure 2-41](#). Loosely install reservoir clamps (2, 3).
2. With banjo bolt facing upward, place shock in mounts and loosely install front allen screw and locknut (4) (metric).
3. Loosely install rear allen screw and locknut (1) (metric). Tighten reservoir clamp hardware (2, 3).
4. Tighten front and rear allen screws (1, 4) (metric) to 40-45 ft-lbs (54.2-61.0 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.

5. Install tail section, fuel tank and seat. See [TAIL SECTION, INSTALLATION](#) on [page 2-55](#).
6. Check rear shock preload. See [SUSPENSION ADJUSTMENTS](#) on [page 2-39](#).

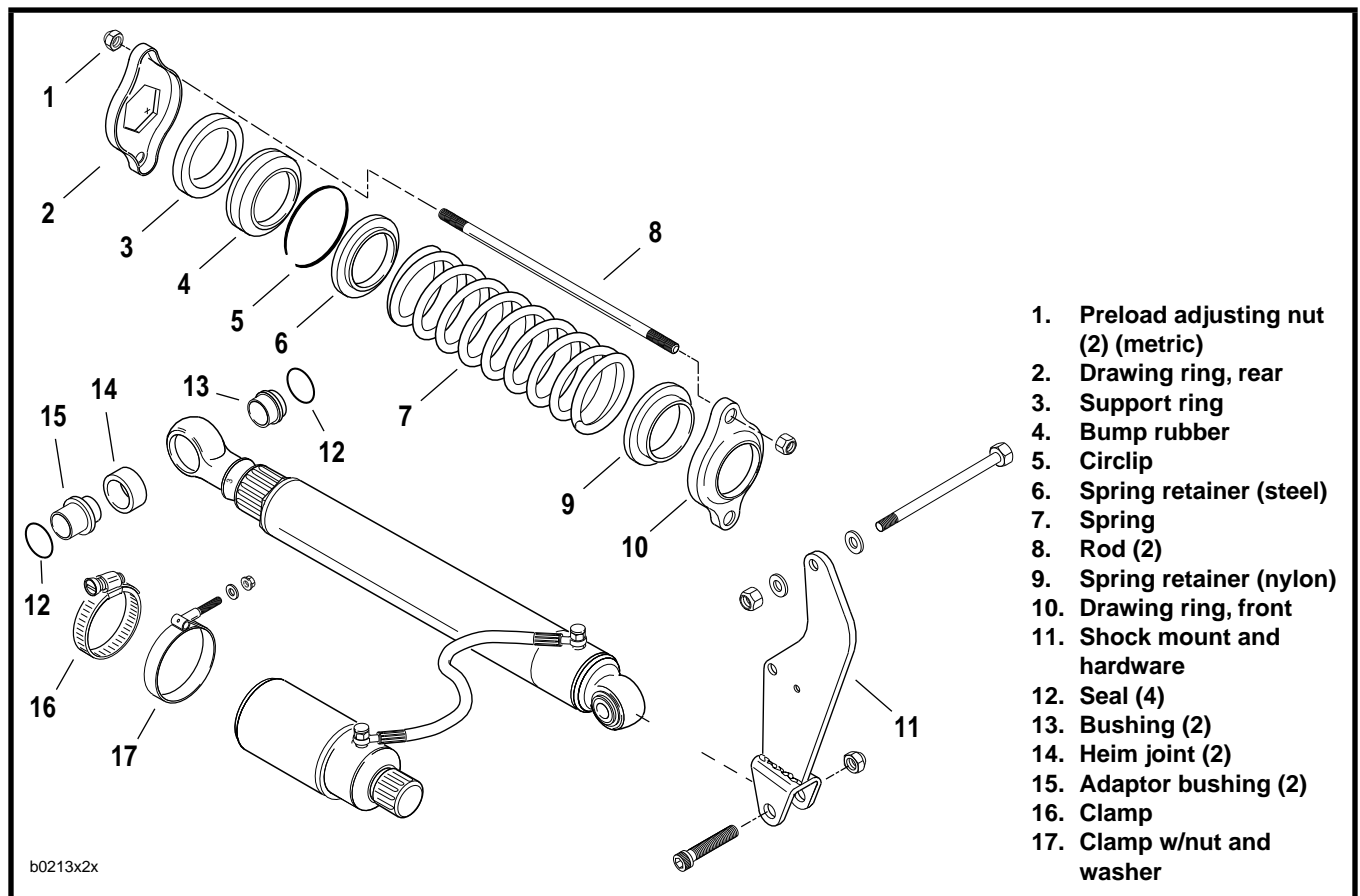


Figure 2-43. Rear Shock

# SUSPENSION THEORY

## DEFINITIONS

- **Compression:** Suspension is compressed when the wheel moves upward.
- **Damping:** Resistance to movement. Damping affects how easily the suspension can move and limits oscillation of the system once movement has begun.
- **Preload:** The spring is compressed somewhat during assembly. This initial compression provides a “loaded” condition in the spring. This compression is referred to as preload.
- **Rebound:** The suspension is rebounding when it is moving back from being compressed.

## GENERAL

### **⚠ WARNING**

Before evaluating and adjusting suspension settings, check the motorcycle's tires. Tires must be in good condition and properly inflated. Failure to check the tires may cause personal injury.

See [Figure 2-44](#) and [Figure 2-45](#). The rear suspension features a WP Suspension shock absorber that adjusts for compression and rebound damping as well as spring preload.

See [Figure 2-46](#). The front suspension uses WP Suspension inverted forks that adjust for compression and rebound damping. These forks offer strength and stiffness for improved sliding action, better shock absorption and compliance with the road.

If the preload adjustment is correct, and you have the rebound and compression damping set at the factory recommended points the motorcycle should handle and ride properly. If you are unhappy with these settings they can be changed according to the following procedures.

### NOTE

*Evaluating and changing the rebound and compression damping is a very subjective process. Many variables affect motorcycle handling under different circumstances. Changes should be approached carefully.*

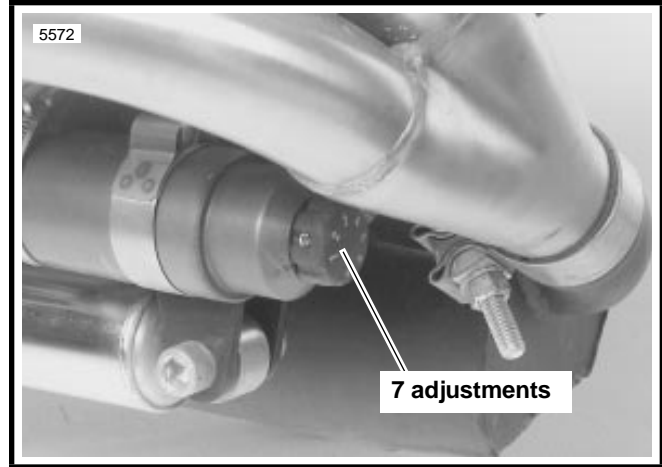


Figure 2-44. Rear Shock Rebound Adjuster

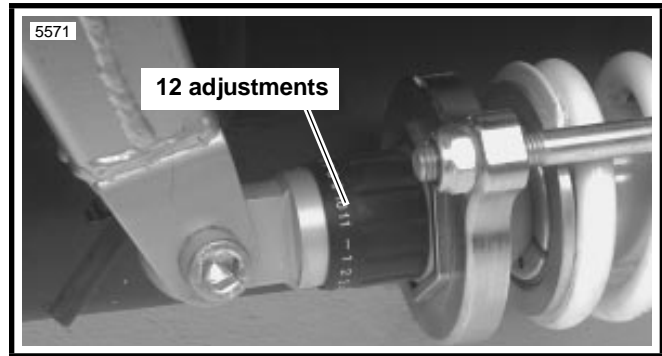


Figure 2-45. Rear Shock Compression Adjuster

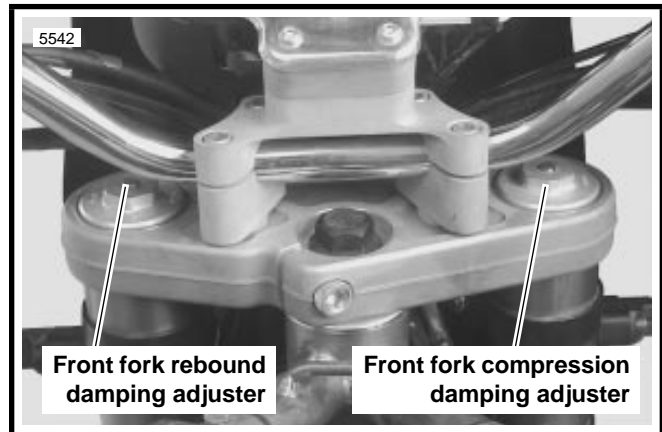


Figure 2-46. Front Fork Adjusters

# SUSPENSION ADJUSTMENTS

## REAR SHOCK PRELOAD

Rear shock spring preload must be adjusted before any other adjustments can be attempted. This adjustment assures the rear suspension has the proper amount of travel for the rider's weight. This setting should be made before the motorcycle is ridden any distance. Your Buell dealer can assist you with rear shock spring preload settings.

Improper preload will adversely affect both the handling and the ride of the motorcycle. Correct setting of preload will result in a motorcycle that suits the rider's size and weight.

You will need three people to carry out this adjustment.

1. Verify correct front and rear tire pressure. See [SPECIFICATIONS](#) on [page 2-1](#).
2. Remove all accessories from motorcycle including tank bag and/or saddlebags.
3. Take the motorcycle off the side stand and bounce the rear up and down a few times to be sure the suspension is free and not binding.
4. See [Figure 2-47](#). Measure the distance from the center of the rear axle nut to the rear turn signal mounting bolt without rider/passenger/cargo/accessories on the motorcycle.
5. Install items removed in Step 2. Load all cargo.
6. Bounce a few times on the seat to be sure the suspension is free and not binding.
7. With the help of an assistant, take the same measurement with the vehicle fully loaded (rider/passenger/luggage/cargo). The assistant should help balance the motorcycle so the rider can keep both feet on the footrests.
8. Subtract the second measurement from the first. The difference, which is the squat, should be 0.25-0.75 in. (6.4-19.1 mm). If it is not, you will have to adjust the spring preload.

### **CAUTION**

- **Be sure to apply the same number of turns to each mechanical preload adjusting nut to ensure that the end plates do not become misaligned. Misaligned end plates will cause the shock absorber spring to bind against the adjustment rods.**
  - **Be sure the plates are parallel within 1/64 in. (0.4 mm). Misaligned end plates will cause the shock absorber spring to bind against the adjustment rods.**
9. See [Figure 2-48](#). Change the spring preload by adjusting the mechanical preload adjusting nuts (metric) on the rods that connect the end plates.
    - a. Increase the preload by tightening the nuts.
    - b. Decrease the preload by loosening the nuts.

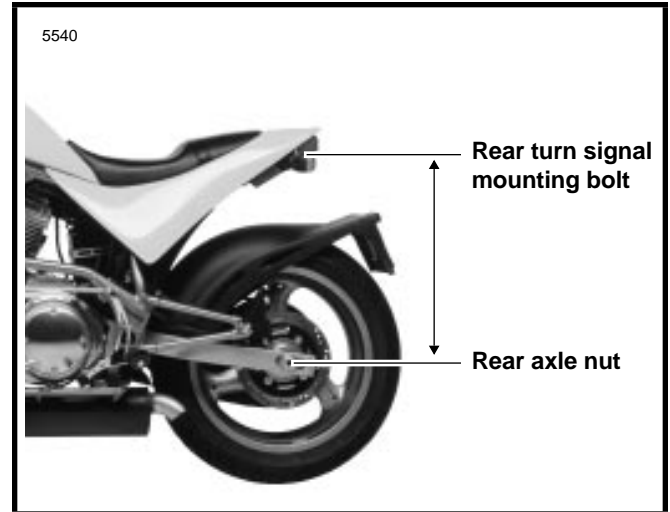


Figure 2-47. Checking Rear Preload

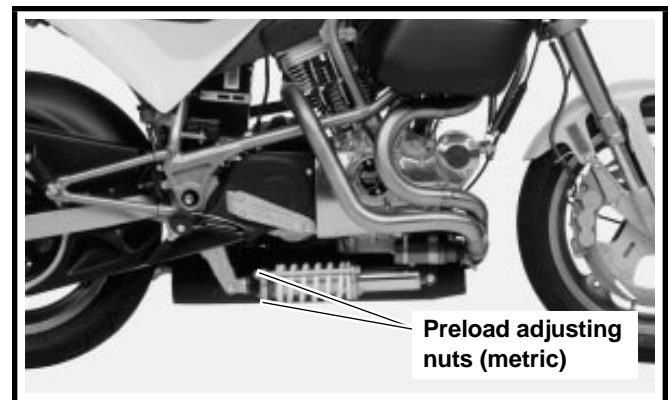


Figure 2-48. Adjusting Rear Preload

## ADJUSTMENTS

Evaluating and changing the rebound and compression damping is a very subjective process. A good performing suspension finds a proper balance between spring, spring preload, damping, track conditions and riding speed. However, all settings are at best a compromise. If a rider fails to find a good set-up, go back to the factory recommended settings and start over again.

Make all suspension adjustments in one or two click increments. Adjusting more than one or two clicks at a time may cause you to skip the best adjustment. Test ride after each adjustment. When an adjustment makes no difference, return to the previous adjustment and try a different approach.

To find the optimum settings you will need the preload properly adjusted, the tires properly inflated and a familiar bumpy road. It is useful if the road contains a variety of different bumps from small sharp bumps such as potholes or frost heaves to large undulations. Begin the process by putting all the damping adjustments at the factory recommended settings. Ride the bike over a variety of different surfaces and bumps at different speeds. When the suspension is set properly the motorcycle will be stable and comfortable.

### Rear Suspension Adjustments

Beyond the rear preload adjustment, the rear shock can also be adjusted for rebound and compression damping. However, it is important to note the rear preload must be set correctly before performing any other adjustments.

See [Table 2-6](#). The compression damping adjuster has 11 possible settings. Adjust compression damping by using the black dial at the rear of the shock. Position #1 sets the minimum amount of compression damping. This is the softest setting. Position #11 maximizes compression damping. The factory recommended setting is Position #5.

The rebound damping adjuster has 7 possible settings. Changes are made using the dial on the remote nitrogen reservoir. When set to Position #1, the rear shock exhibits minimum rebound damping. At this setting, the shock will have a very fast rebound. Position #7 sets the rear shock to maximum rebound damping. The factory recommended setting is Position #3.

### Front Suspension Adjustments

See [Table 2-6](#). The fork compression damping adjuster on right fork leg has 28 positions. Position #20 is the factory recommended setting.

The fork rebound adjuster on the left fork leg has 28 positions. Position #12 is the factory recommended setting.

See [Figure 2-49](#). To set the forks to their factory recommended setting, turn the adjusters clockwise until they lock. Then turn the knobs counterclockwise the recommended 12 or 20 positions. A higher number of clicks increases damping.

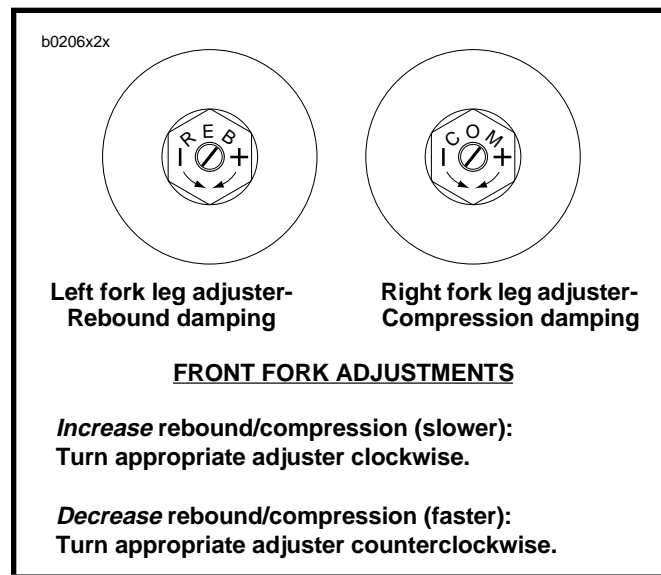


Figure 2-49. Fork Adjustments

## TROUBLESHOOTING

The following tables list possible suspension and operating troubles and their probable causes. Use the tables to keep your motorcycle in good operating condition.

When making adjustments, remember there are two mediums in setting up a bike, geometry and suspension. Both components work together because suspension is a part of geometry. In order to solve handling problems, it is important to diagnose the problem's true nature. Chattering, sliding or an uncomfortable feeling are suspension problems. Handling and a swinging fork are geometric problems, but often these problems can be solved by suspension adjustments.

### ⚠ WARNING

**This section is intended solely as a guide to diagnosing problems. Carefully read the appropriate sections of this manual before performing any work. Improper suspension adjustments may cause loss of control and personal injury.**

**Table 2-6. Factory Recommended Suspension Settings**

PART	RANGE IN CLICKS	FACTORY SETTING	SEE FIGURE
Rear shock rebound	7	3	<a href="#">Figure 2-44.</a>
Rear shock compression	11	5	<a href="#">Figure 2-45.</a>
Front fork rebound	28	12	<a href="#">Figure 2-46.</a>
Front fork compression	28	20	<a href="#">Figure 2-46.</a>

**Table 2-7. General Suspension Problems**

<b>TROUBLESHOOTING CONDITION</b>	<b>ADJUSTMENT SOLUTION</b>
Bike wallows through turns. Feels loose or vague after bumps. Wheel tends to “pogo” after passing over a bump. This is noticeable by watching the bike continue to bounce as it travels over multiple bumps.	Increase rebound damping.
Wheel responds to bump, but doesn’t return to ground quickly after bumps. This is more pronounced over a series of bumps and is often referred to as “packing down.”	Reduce rebound damping.
The bike bottoms out or dips while cornering. Bike has excessive brake dive.	Increase compression damping.
Harsh ride particularly over washboard surfaces. Bumps kick through handlebars or seat. Suspension seems not to respond to bumps. This is evidenced by tire chattering (a movement with short stroke and high frequency) through corners or by jolting the rider over rough roads.	Reduce compression damping.

**Table 2-8. Rear Suspension Problems**

<b>TROUBLESHOOTING CONDITION</b>	<b>ADJUSTMENT SOLUTION</b>
“Pumping on the Rear” occurs when you are accelerating out of a corner. This problem occurs in two varieties. 1. The first type has a movement with a long stroke and a high frequency. 2. The second version has a movement with a short stroke and high frequency.	1. The shock is too soft. Increase compression damping. If the adjuster is already set to the maximum, add more preload to the spring (one turn maximum). 2. In this case the shock is too hard. Decrease compression damping.
Chattering during braking.	Decrease the compression damping. If the problem persists, decrease rebound damping for a faster rebound rate. Less spring preload may also help.
Lack of tire feedback.	The suspension is too soft. Increase compression damping.
Sliding during cornering. Sliding may occur going into the corner or accelerating out of the corner.	The suspension is too hard. Decrease compression damping.

**Table 2-9. Front Suspension Problems**

<b>TROUBLESHOOTING CONDITION</b>	<b>ADJUSTMENT SOLUTION</b>
Not absorbing bumps.	A good suspension is a balance between damping and track condition. Finding this balance requires exploring all possible compression settings.
Lack of tire feedback.	Increase compression damping.
Tire slides.	Decrease compression damping.



# THROTTLE CONTROL

## REMOVAL/DISASSEMBLY

1. See [Figure 2-50](#). Slide rubber boot (5) off the cable adjusters (2). Loosen jam nut (metric) on each adjuster.
2. Remove two screws (1) (metric). Separate housings from handlebar.
3. See [Figure 2-51](#). Unhook ferrules (7) from cable wheel (8).
4. Remove cables from under cable guide (6).
5. Remove cables from housings (5, 9) by loosening cable adjusters (2) (metric).
6. Remove air cleaner assembly. See [AIR CLEANER, REMOVAL](#) in Section 4.
7. Disconnect cables from carburetor.
8. Remove cables from motorcycle.

## CLEANING, INSPECTION AND REPAIR

Clean all parts in a non-flammable cleaning solvent. Blow dry with compressed air. Replace cables if frayed, kinked or bent.

## ASSEMBLY/INSTALLATION

1. See [Figure 2-51](#). Screw cable assemblies (3, 4) into housings (5, 9). Throttle control cable (4) has a larger fitting end and is positioned inside the front housing (5). Idle control cable (3) has a smaller fitting end and is positioned inside the rear housing (9).
2. Run cables in grooves on cable guide (6).
3. Attach ferrules (7) to cable wheel (8). When properly assembled, notches for ferrules will be at 12 o'clock.
4. Position housings on right handlebar by engaging locating pin (10) on front housing with hole in handlebar. Attach housings with screws (1) (metric). Tighten to 12-17 **in-lbs** (1.4-1.9 Nm).
5. Route idle and throttle control cables.
  - a. Cables must be routed forward from throttle control grip, forward of upper triple clamp and down and to the left.
  - b. Continue between side of frame steering head and left frame tube. Cables should be above and to the left of the D-shaped washer behind the steering head.
  - c. Route cables below the fuel tank and above the horn mount. Continue downward to carburetor.
6. Install idle control cable into longer, inboard cable guide on carburetor.
7. Install throttle control cable into shorter, outboard cable guide on carburetor.
8. Adjust throttle cables. See [CARBURETOR, CABLE ADJUSTMENT](#) in Section 1.
9. Install air cleaner. See [AIR CLEANER, INSTALLATION](#) in Section 4.

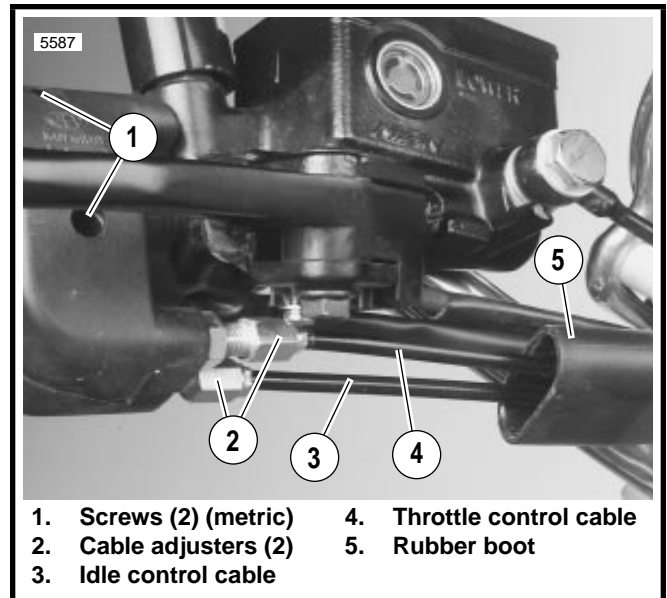


Figure 2-50. Throttle Control Cables

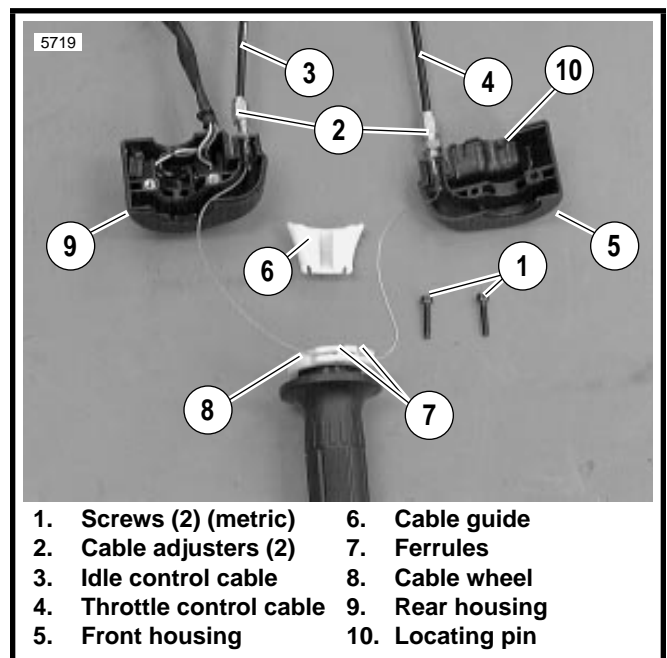


Figure 2-51. Cable Connections



# CLUTCH CONTROL

## ADJUSTMENT

See **CLUTCH** in Section 1.

## REMOVAL/DISASSEMBLY

### Clutch Cable – Lower

1. Raise rear wheel off floor using **REAR WHEEL SUPPORT STAND** (Part No. B-41174).
2. See **Figure 2-52**. Remove four TORX screws (1) with washers and clutch inspection cover (2). Do not damage or dislodge quad ring (14) in primary cover (11).
3. Slide spring (3) with attached hex lockplate (4) from flats of adjusting screw (12).
4. Turn adjusting screw clockwise to release ramp and coupling mechanism. As the adjusting screw is turned, ramp assembly moves forward. Unscrew nut (5) from end of adjusting screw.
5. Remove hook of ramp (6) from button at the rear of cable end coupling (16). Remove cable end (10) from slot in coupling.
6. Turn cable end fitting (9) counterclockwise to remove clutch cable lower section from primary cover (11). Remove O-ring (8) from cable end fitting.

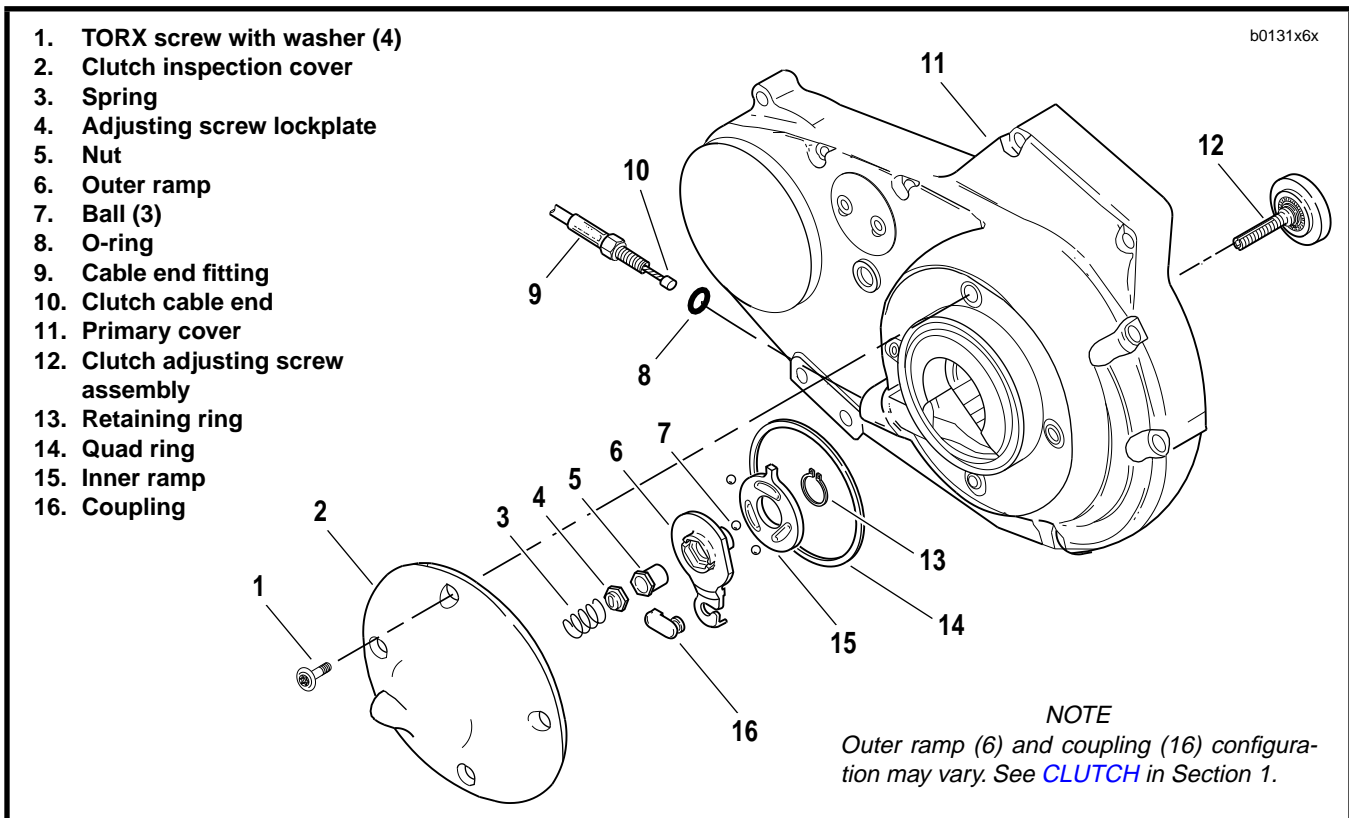
### Clutch Hand Control

1. See **Figure 2-53**. Detach clutch switch (7) as follows.
  - a. Remove screw (8).
  - b. Depress clutch lever and hold.
  - c. Detach switch by depressing switch trigger button and pulling switch towards the end of the handlebar.

#### NOTE

*The individual parts of the clutch switch are not serviceable. Replace switch upon failure.*

2. Remove bolt (2) (metric) and nut (6) (metric).
3. Remove handlebar from clutch clamp (5). Detach clutch cable from handlebar.
4. Slide clutch cable out of wire guide (10) on right fork leg.
5. Remove clutch cable clamp (11) from frame.
6. Remove clutch clamp as follows.
  - a. Cut off left handgrip.
  - b. Remove left handlebar switch housing. See **HANDLEBAR SWITCHES** in Section 7.
  - c. Detach mirror mounting hardware (metric, left hand threads).
  - d. Remove clamp screw (4) (metric). Slide clamp off the end of the handlebar.



**NOTE**  
*Outer ramp (6) and coupling (16) configuration may vary. See **CLUTCH** in Section 1.*

Figure 2-52. Clutch Release Mechanism

# ASSEMBLY/INSTALLATION

## Clutch Cable – Lower

1. See [Figure 2-52](#). Install O-ring (8) over cable end fitting (9) of clutch cable lower section. Turn fitting clockwise to install into primary cover (11). Tighten fitting to 3-5 ft-lbs (4.0-6.8 Nm).
2. Fit coupling (16) over cable end. Place hook of ramp around coupling button and rotate assembly counter-clockwise until tang on inner ramp (15) fits in slot of primary cover (11).
3. Thread nut (5) on adjusting screw (12) until slot of screw is accessible with a screwdriver. Fit nut hex into recess of outer ramp (6) and turn adjusting screw counter-clockwise.
4. If not yet performed, route clutch cable from hand grip across front of upper triple clamp to right side, down between right fork leg and steering neck above lower triple clamp. Continue down to left side of bike through clamp along primary chaincase to clutch.
5. With clutch cable upper section connected to clutch lever, adjust primary chain tension. See [PRIMARY CHAIN](#) in Section 1.
6. Adjust clutch. See [CLUTCH](#) in Section 1.

## Clutch Hand Control

1. See [Figure 2-53](#). Attach clutch clamp (5) as follows.
  - a. Slide clamp over handlebar.
  - b. Install left switchgear housing. See [HANDLEBAR SWITCHES](#) in Section 7.
  - c. Place clamp next to switchgear housing. Fasten to handlebar with screw (4) (metric). Tighten screw to 30-35 **in-lbs** (3.4-4.0 Nm).
  - d. Install mirror parallel to handlebars. Mirror mount has metric, left hand threads.
  - e. Install a **new** left handgrip. See [HANDLEBAR, INSTALLATION](#) on [page 2-49](#).
2. Connect end of clutch cable upper section to clutch handlever. Position lever within clutch clamp.
3. Apply small amount of LOCTITE ANTI-SEIZE LUBRICANT to bolt (2). Secure handlever with bolt (2) (metric) and nut (6) (metric).
4. Attach clutch switch (7) with screw (8).
5. If not yet performed, route clutch cable from hand grip across front of upper triple clamp to right side, down between right fork leg and steering neck above lower triple clamp. Continue down to left side of bike through clamp along primary chaincase to clutch.
6. With clutch cable lower section connected to primary cover, adjust clutch. See [CLUTCH](#) in Section 1.

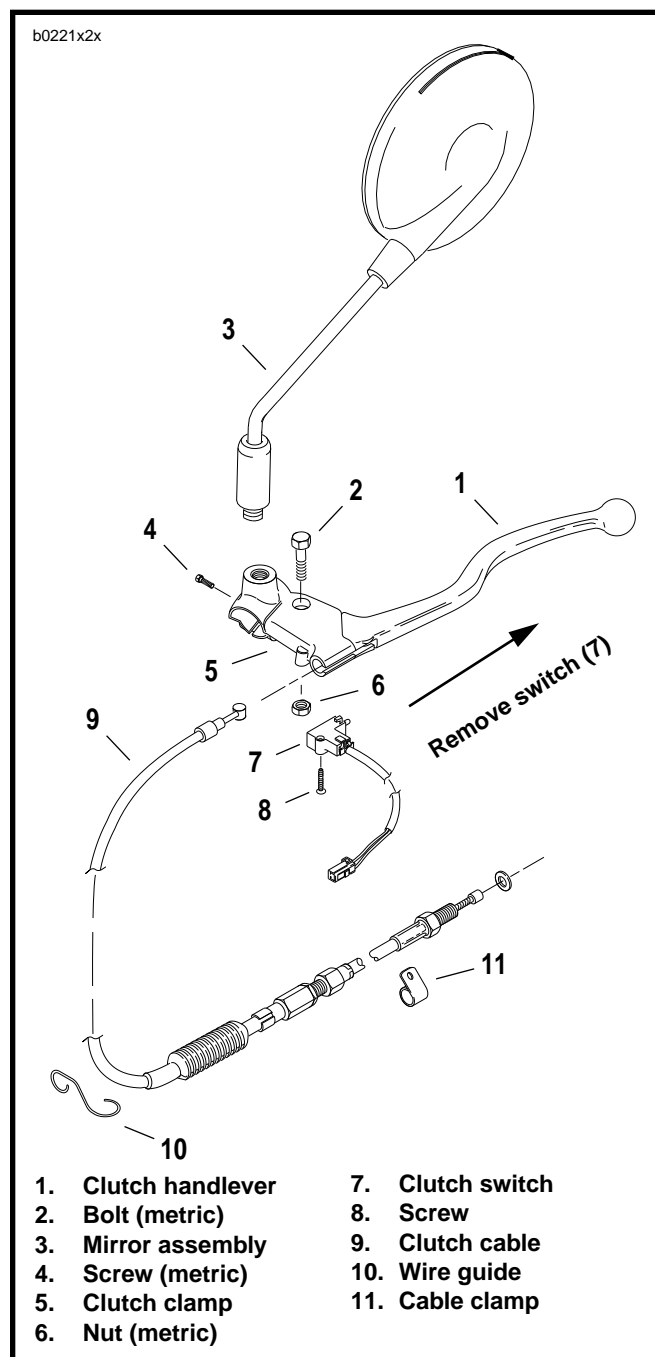


Figure 2-53. Clutch Hand Control

# SPEEDOMETER AND TACHOMETER

## GENERAL

Replace the speedometer or tachometer if the unit is not working properly. These instruments are not repairable. However, before replacing the instrument check that the problem is not caused by a faulty cable or loose wire connection.

## REMOVAL

### Speedometer

1. Detach windscreen from mounts. See [WINDSCREEN, REMOVAL](#) on [page 2-56](#).
2. See [Figure 2-54](#). Loosen and remove the speedometer cable (5) from the speedometer.
3. Remove nuts and lockwashers (4) from speedometer cover (1).
4. Straighten reset cable cotter pin and remove. Discard pin. Detach reset cable assembly from speedometer.
5. Remove cover. Remove wires from clamp inside cover.
6. Detach ground wire.
7. See [Figure 2-55](#). Disconnect wire terminals from back of speedometer. Pull bulbs (3) from bores.
8. Remove speedometer (1) through front of instrument support (8).

### Tachometer

1. Detach windscreen from mounts. See [WINDSCREEN, REMOVAL](#) on [page 2-56](#).
2. See [Figure 2-54](#). Remove nut and lockwasher (4) from tachometer cover (2).
3. Remove nut on windscreen mount (3). Remove windscreen mount from tachometer cover.
4. Remove tachometer cover.
5. Remove ground wires from bottom stud.
6. See [Figure 2-55](#). Disconnect wire terminals from back of tachometer. Pull bulbs (3) from bores.
7. Remove tachometer (2) through front of instrument support (8).

### Instrument Support

1. Remove speedometer and tachometer.
2. See [Figure 2-55](#). Remove knurled nut (5), washer (6) and odometer reset cable.
3. Pull indicator lights assembly (4) out towards the headlamp. Pull bezel (19) out towards the tail lamp.
4. Remove two screws (7).
5. Remove instrument support.

## INSTALLATION

### Speedometer

1. See [Figure 2-55](#). If removed, install instrument support (8). Slide speedometer into instrument support.

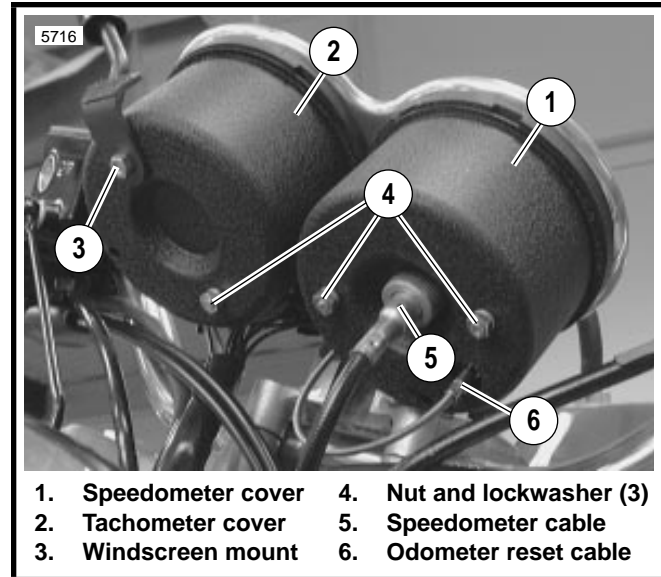


Figure 2-54. Instruments

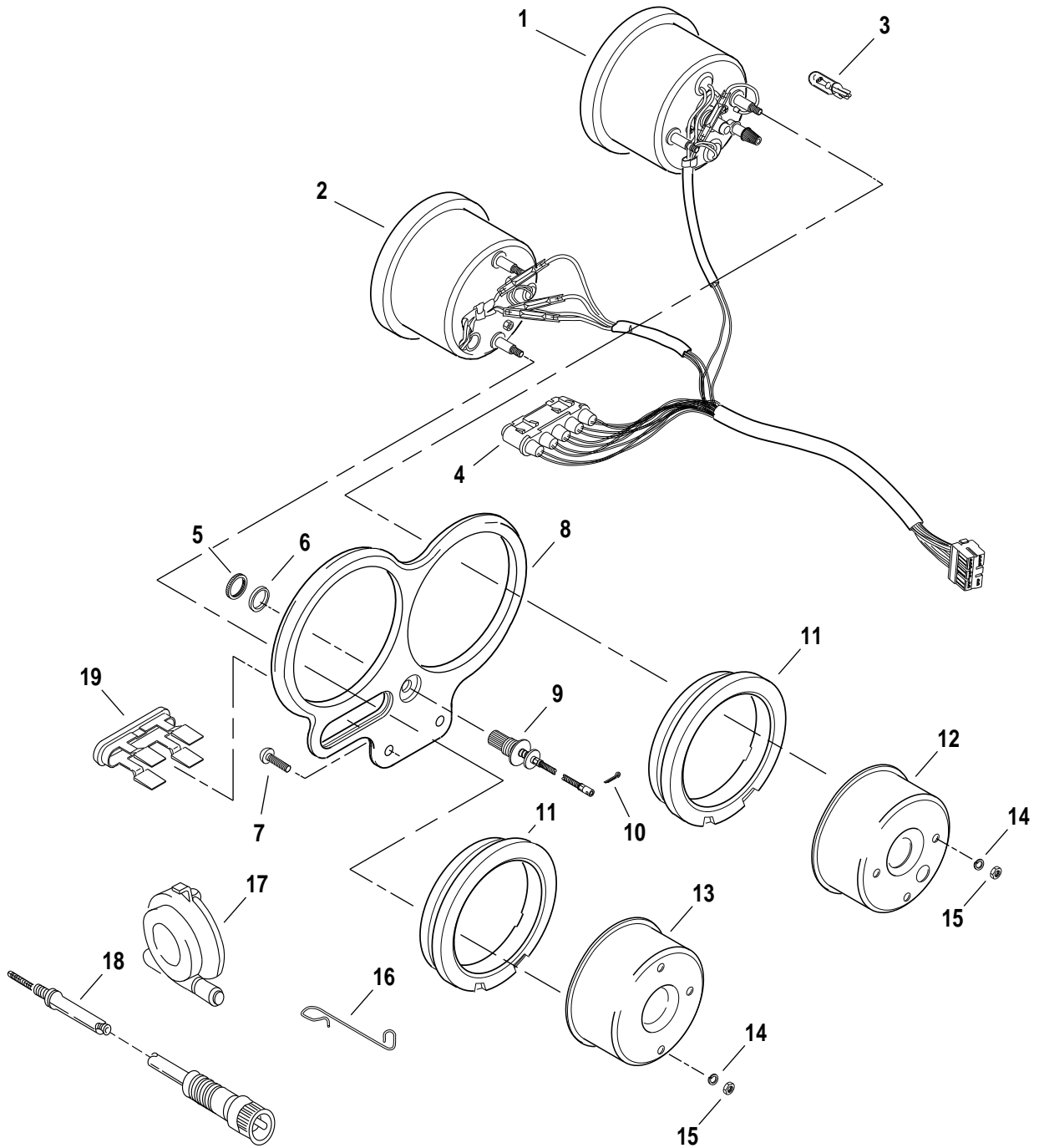
2. Attach ground wire with screw and lockwasher.
3. Connect wire terminals on back of speedometer. Insert bulbs into bores at back of speedometer.
4. See [Figure 2-54](#). Using a **new** cotter pin, connect reset cable assembly (6) to speedometer.
5. Place speedometer cover over speedometer. Tighten nuts and lockwashers (4).
6. Connect speedometer cable (5) to speedometer.
7. Attach windscreen. See [WINDSCREEN, INSTALLATION](#) on [page 2-56](#).

### Tachometer

1. See [Figure 2-55](#). If removed, install instrument support (8). Slide tachometer into instrument support (8).
2. Connect wire terminals on back of tachometer. Insert bulbs into bores.
3. Attach ground wire.
4. See [Figure 2-54](#). Slide tachometer cover (2) over tachometer. Install nut and lockwasher (4).
5. Install windscreen mount (3) with nut.
6. Attach windscreen. See [WINDSCREEN, INSTALLATION](#) on [page 2-56](#).

### Instrument Support

1. See [Figure 2-55](#). Attach instrument support to mounts using two screws (7). Tighten screws to 7-9 ft-lbs (9.5-12.2 Nm).
2. Install odometer reset cable using washer (6) and knurled nut (5).
3. Insert bezel (19) through instrument support. Attach indicator lights assembly (4) to bezel.



- |                             |                         |                          |
|-----------------------------|-------------------------|--------------------------|
| 1. Speedometer              | 8. Instrument support   | 15. Nut (2)              |
| 2. Tachometer               | 9. Odometer reset cable | 16. Wire guide           |
| 3. Bulb                     | 10. Cotter pin          | 17. Speedometer drive    |
| 4. Indicator light assembly | 11. Rubber cushion (2)  | 18. Speedometer cable    |
| 5. Knurled nut              | 12. Speedometer cover   | 19. Indicator lamp bezel |
| 6. Washer                   | 13. Tachometer cover    |                          |
| 7. Screw (2)                | 14. Lockwasher (3)      |                          |

Figure 2-55. Speedometer and Tachometer

## SPEEDOMETER CABLE

### Cable Cleaning, Inspection and Lubrication

Clean, inspect and lubricate speedometer cable every 5000 miles (8000 km). Proceed as follows:

1. See [Figure 2-56](#). Examine speedometer cable housing (outer sheathing) for kinks or other damage. Replace entire cable assembly if any damage is noted.
2. Detach windscreen from mounts. See [WINDSCREEN, REMOVAL](#) on [page 2-56](#).
3. Loosen and remove the speedometer cable assembly from the speedometer.
4. Carefully withdraw inner speedometer cable from its housing. Exercise caution to avoid stretching coils of inner cable. Outer cable housing remains attached to speedometer drive unit.
5. Carefully wipe off old lubricant from inner cable. Inspect cable coils for bends, bulges, discoloration or other defects. Replace entire cable assembly if any damage or defect is noted.
6. Apply a good quality graphite grease to entire length of inner cable. Wipe off excess grease.
7. Insert inner cable fully into its housing, rotating inner cable somewhat to allow its lower end to engage with speedometer drive unit. Inner cable will no longer rotate once engaged with drive unit.
8. Insert pin of speedometer cable into receptacle at back of speedometer. Tighten to secure cable.
9. Attach windscreen. See [WINDSCREEN, INSTALLATION](#) on [page 2-56](#).

### Speedometer Drive Unit

See the procedures listed under [FRONT WHEEL](#) starting on [page 2-8](#).

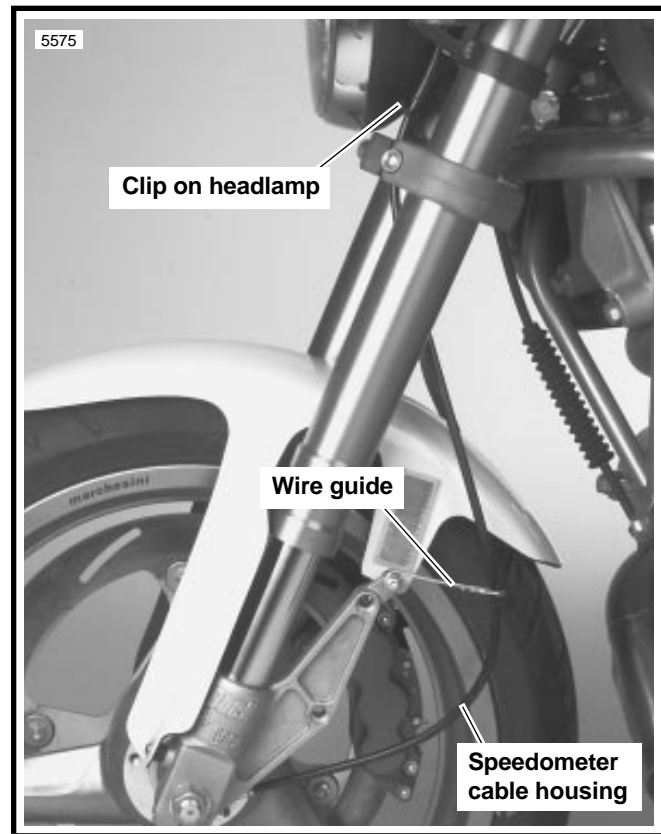


Figure 2-56. Speedometer Cable

# HANDLEBAR

## REMOVAL

1. Remove front brake master cylinder. See [FRONT BRAKE MASTER CYLINDER, REMOVAL](#) on page 2-19.
2. Remove left and right handlebar switch housings. See [HANDLEBAR SWITCHES](#) in Section 7.
3. Cut left handlebar grip and remove.
4. Remove instrument support. See [SPEEDOMETER AND TACHOMETER](#) on page 2-46.
5. Loosen four screws (1) on upper handlebar clamp (2).
6. Move handlebar towards the air cleaner to increase clutch cable freeplay. Remove clutch control. See [CLUTCH CONTROL, REMOVAL/DISASSEMBLY](#) on page 2-44.
7. Remove four screws (1), upper handlebar clamp (2) and handlebars (3).
8. Remove four bolts (8), lockwashers (7) and washers (6) to detach lower handlebar clamps (4, 5) from upper triple clamp.

## INSTALLATION

1. Install lower handlebar clamps (4, 5) with four bolts (8), lockwashers (7) and washers (6). Tighten to 30-33 ft-lbs (40.7-44.7 Nm).
2. Install clutch control. See [CLUTCH CONTROL, ASSEMBLY/INSTALLATION](#) on page 2-45.
3. Install handlebar (3) using upper handlebar clamp (2) and four screws (1). Tighten screws to 10-12 ft-lbs (13.6-16.2 Nm).
4. Install instrument support. See [SPEEDOMETER AND TACHOMETER](#) on page 2-46.
5. Install left and right handlebar switch housings. See [HANDLEBAR SWITCHES](#) in Section 7.
6. Install a **new** left handgrip.
  - a. Clean end of handlebar with M600.
  - b. Place LOCTITE 411 ADHESIVE around inside of grip.
  - c. Push grip onto handlebar end. Twist grip on bar until end touches left switchgear housing.
  - d. Wipe off excess adhesive with a rag.
7. Install front brake master cylinder. See [FRONT BRAKE MASTER CYLINDER, INSTALLATION](#) on page 2-19.

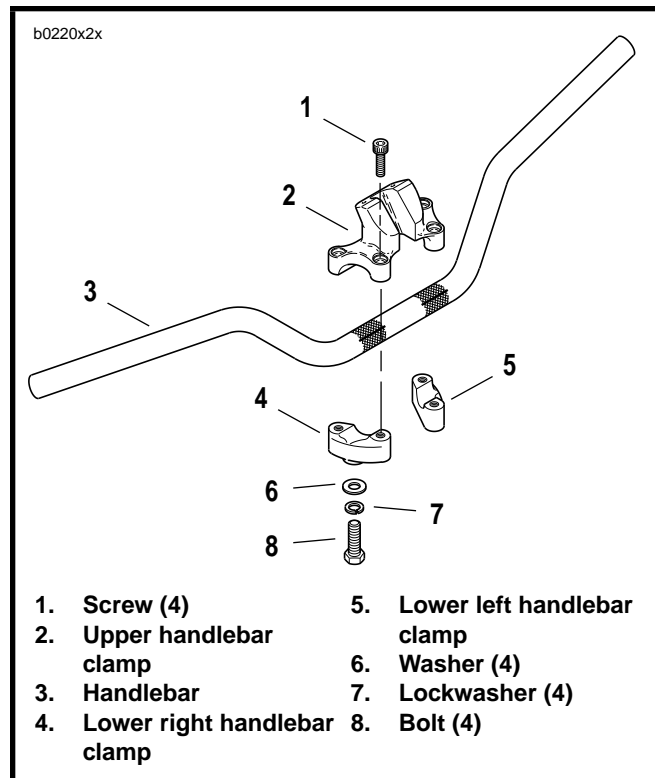


Figure 2-57. Handlebars

# EXHAUST SYSTEM

## REMOVAL/DISASSEMBLY

### Muffler

1. See [Figure 2-58](#). Remove bolts (2), locknuts (9) and washers (6) from rear muffler supports (19).
2. Remove bolt (3) and locknut (9) from muffler support (15).
3. Loosen muffler clamp (14).
4. Loosen screw (1) on header tiebar (26).
5. Remove muffler (13) and muffler clamp. Discard clamp.
6. Remove muffler/header supports (15, 19) as follows:
  - a. Remove bolts (4), locknuts (9) and washers (21).
  - b. Remove rear muffler mounts (24) and mount spacers (20).
  - c. Remove bolts (5), locknuts (10) and washers (7).
  - d. Remove muffler support (15). Remove front muffler mounts (25) and mount spacer.

### Exhaust Header

1. See [Figure 2-58](#). Remove muffler as described above.
2. Remove screw (1), locknut (11) and washers (27) from header tiebar (26).
3. Using a SNAP-ON SWIVEL SOCKET (Part No. PFSX916), remove nuts (8) from front and rear cylinder head exhaust studs.
4. Remove exhaust header clamps (18), exhaust clamp retaining rings (17) and exhaust port gaskets (16).
5. Remove exhaust header (12).
6. Remove heat shield clamps (23) and heat shield (22) from exhaust header.

## ASSEMBLY/INSTALLATION

### Muffler

1. See [Figure 2-58](#). If removed, install exhaust header (12).
2. If removed, install muffler/header supports (15, 19).
  - a. Hold rear muffler mounts (24), mount spacers (20) and muffler supports (19) in place. Fasten with bolts (4), locknuts (9), washers (21). Tighten to 12-15 ft-lbs (16.3-20.3 Nm).
  - b. Fasten muffler support (15) to crankcase with bolts (5), washers (7) and locknuts (10). Tighten to 30-33 ft-lbs (40.7-44.7 Nm).
  - c. Install front muffler mounts (25) and mount spacer.

3. Coat inside of muffler inlet with PERMATEX ULTRA-COPPER HIGH TEMP RTV SILICON GASKET material.
4. Place a **new** muffler clamp (14) over slotted end of muffler. Place muffler and clamp on end of exhaust header. Loosely tighten clamp.

#### NOTE

*If necessary, use a fiber hammer to fit muffler on header.*

5. Install bolt (3) and locknut (9). Tighten to 22-25 ft-lbs (29.8-33.9 Nm).

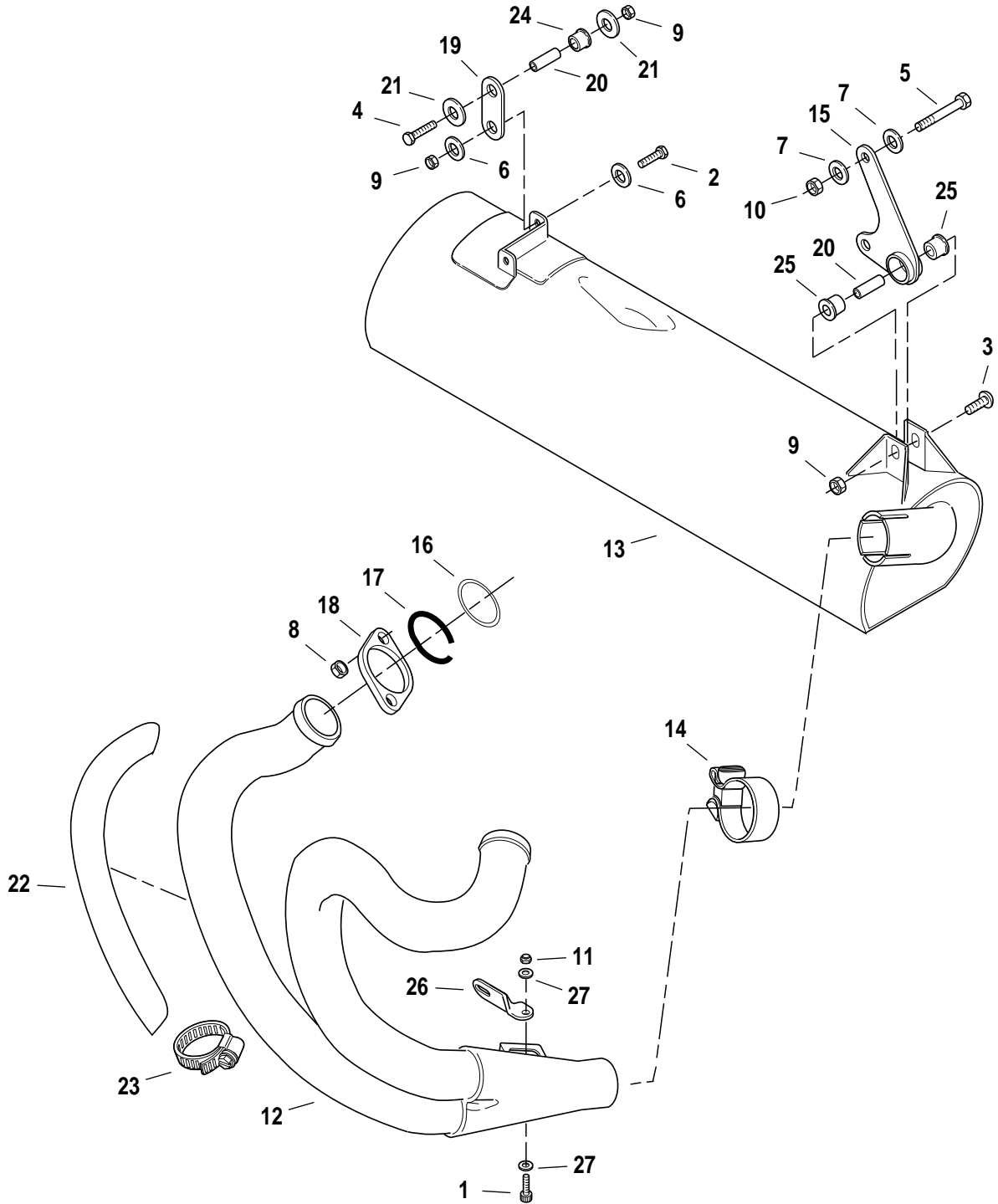
#### WARNING

**Before tightening muffler hardware, position muffler to provide adequate clearance from rear shock absorber and side stand spring post. Failure to provide adequate clearance may cause personal injury during motorcycle operation.**

6. Install rear mounting bolts (2), washers (6), and locknuts (9). Tighten to 22-25 ft-lbs (29.8-33.9 Nm).
7. Tighten muffler clamp (13) to 50-55 ft-lbs (67.8-74.6 Nm).

### Exhaust Header

1. See [Figure 2-58](#). Install **new** exhaust port gaskets (16), exhaust clamp retaining rings (17), exhaust header clamps (18), and nuts (8). Loosely tighten nuts with SNAP-ON SWIVEL SOCKET (Part No. PFSX916).
2. Install screw (1) with washers (27) and locknut (11). Tighten to 5-7 ft-lbs (6.8-9.5 Nm).
3. Place a **new** muffler clamp (14) over slotted end of muffler. Place muffler and clamp on end of exhaust header (20). Loosely tighten clamp.
4. Tighten manifold nuts (8) to 6-8 ft-lbs (8.1-10.8 Nm).
5. Tighten muffler clamp (13) to 50-55 ft-lbs (67.8-74.6 Nm).
6. If removed, install heat shield (22) with heat shield clamps (23).



- |                 |                                      |                             |
|-----------------|--------------------------------------|-----------------------------|
| 1. Screw        | 11. Locknut                          | 20. Mount spacer (3)        |
| 2. Bolt (2)     | 12. Exhaust header                   | 21. Washer (4)              |
| 3. Bolt         | 13. Muffler                          | 22. Heat shield             |
| 4. Bolt (2)     | 14. Muffler clamp                    | 23. Heat shield clamp (2)   |
| 5. Bolt (2)     | 15. Muffler support                  | 24. Rear muffler mount (2)  |
| 6. Washer (4)   | 16. Exhaust port gasket (2)          | 25. Front muffler mount (2) |
| 7. Washer (5)   | 17. Exhaust clamp retaining ring (2) | 26. Header tiebar           |
| 8. Nut (4)      | 18. Exhaust header clamp (2)         | 27. Washer (2)              |
| 9. Locknut (5)  | 19. Muffler support (2)              |                             |
| 10. Locknut (2) |                                      |                             |

Figure 2-58. Exhaust System



# FOOTRESTS

## REMOVAL

1. See [Figure 2-59](#). Remove locknut (1) and bolt (2).
2. Remove footrest.
  - a. Detach passenger footrests (3) from frame.
  - b. Detach rider footrests (4) from footrest mounts (5).
3. If necessary, remove bolts (10) and washers (9) to remove footrest mounts from frame.

### NOTE

Brake pedal and shift lever must be removed with footrest mounts. See [REAR BRAKE MASTER CYLINDER](#) in this section and [PRIMARY COVER](#) in Section 6 or more information.

## INSTALLATION

1. See [Figure 2-59](#). Install passenger footrests with bolts (2) and locknuts (1). Tighten securely.

### NOTE

Tighten bolts (2) so footrests are tight, but not binding.

2. If removed, install footrest mounts (5).
  - a. Assemble brake pedal with bushing (8) on the inside and thrust washer (6) on the outside. Fasten brake pedal to frame with bolt (10), washer (9) and footrest mount.
  - b. Assemble shift lever with bushing on the inside and thrust washer on the outside. Fasten shift lever to frame with bolt, washer and footrest mount.
3. Install rider footrests with bolts (2) and locknuts (1). Tighten securely.
4. Adjust shift lever and brake pedal for smooth operation.

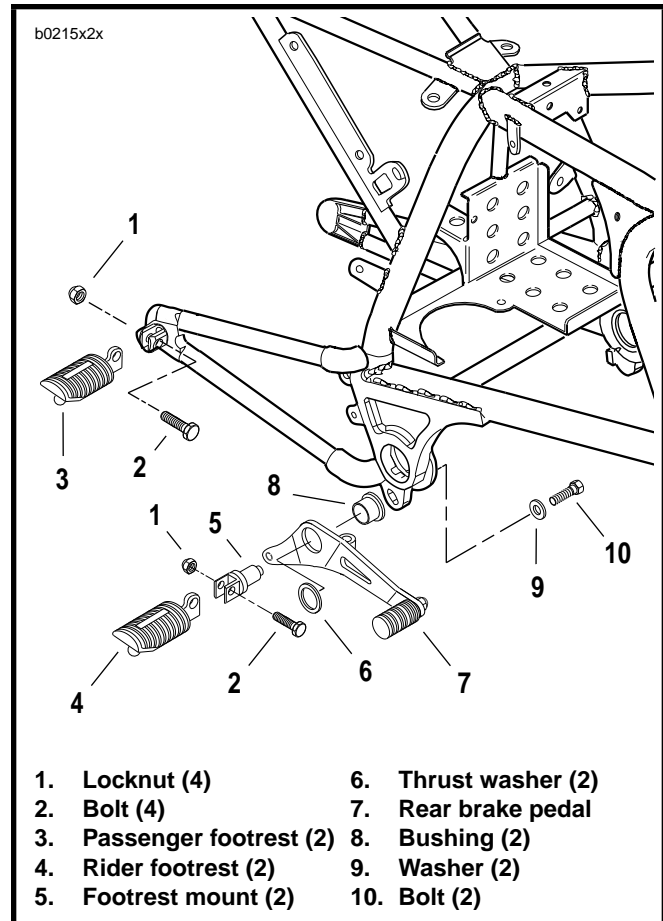


Figure 2-59. Footrests, Right Side

# SPROCKET COVER

## REMOVAL/DISASSEMBLY

1. See [Figure 2-60](#). Remove nut (1) and washer (2).
2. Remove two screws (3).
3. Remove sprocket cover screw (5), washer (6) and spacer (8).
4. Remove swingarm drive/support (4) and sprocket cover (7) as an assembly.
5. Remove two screws (9) to separate sprocket cover from swingarm/drive support.

## ASSEMBLY/INSTALLATION

1. See [Figure 2-60](#). If removed, attach sprocket cover to swingarm/drive support with two screws (9). Tighten screws to 12-17 in-lbs (1.4-1.9 Nm).
2. Install sprocket cover assembly with screw (5), washer (6) and spacer (8). Tighten screw to 4-6 ft-lbs (5.4-8.6 Nm).
3. Install screws (3). Tighten to 20-25 ft-lbs (27.1-33.9 Nm).
4. Install nut (1) and washer (2). Tighten nut to 30-35 ft-lbs (40.7-47.4 Nm).

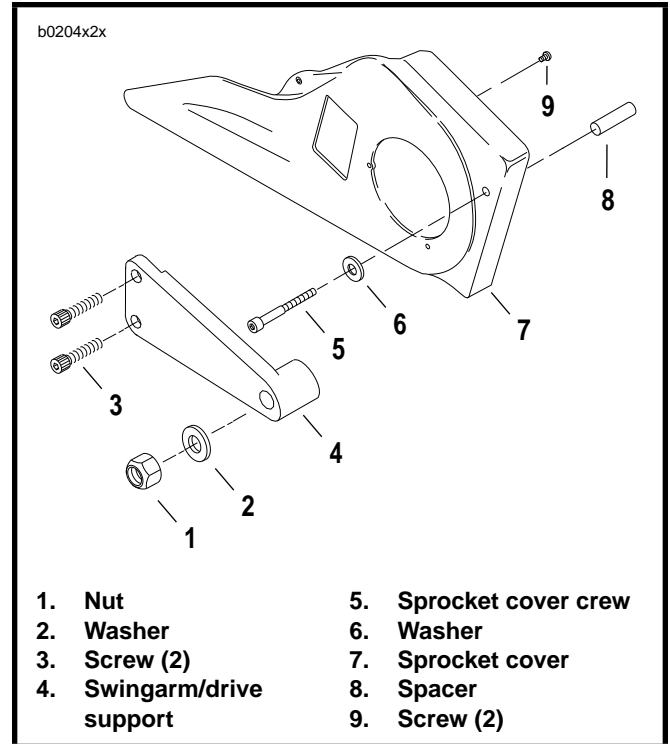


Figure 2-60. Sprocket Cover

# FENDERS

## REMOVAL/INSTALLATION

### Front Fender

1. Raise front wheel off ground with [FRONT WHEEL SUPPORT STAND \(Part No. B-41395\)](#) and [S1 LIFT ADAPTER \(Part No. B-41686\)](#).
2. Remove front brake caliper. See [FRONT BRAKE CALIPER, REMOVAL/DISASSEMBLY](#) on [page 2-20](#).
3. See [Figure 2-61](#). Remove lower fender mounting screws (8) (metric), washers (9) and plastic spacers (6).
4. Remove upper fender mounting screws (3), washers (4), wire guides (5), plastic spacers (6) and locknuts (7).
5. Carefully remove fender (1) from between front forks.
6. Install in reverse order.
  - a. Tighten upper fender mounting screws (3) to 20-25 **in-lbs** (2.3-2.8 Nm).
  - b. Tighten lower fender mounting screws (8) (metric) to 10-15 **in-lbs** (1.1-1.7 Nm).

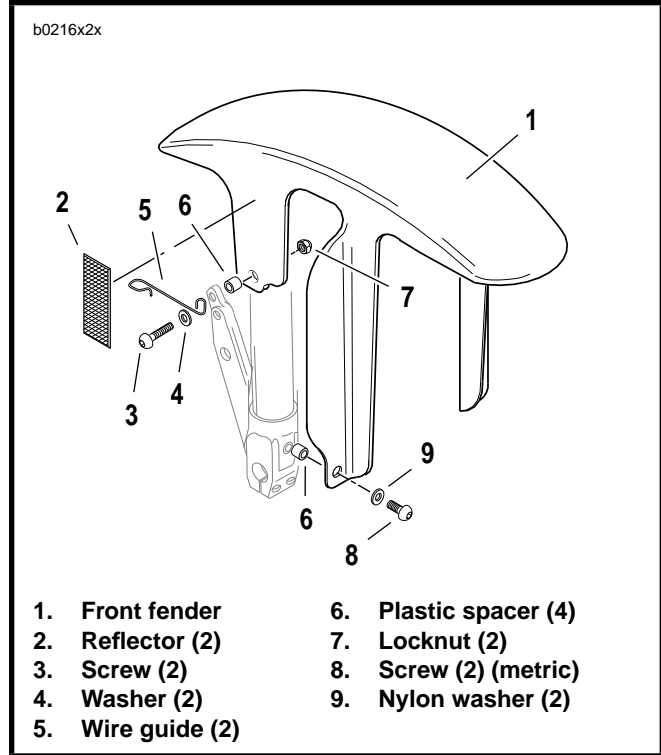


Figure 2-61. Front Fender

### Rear Fender/Lower Belt Guard

1. See [Figure 2-62](#). Unplug connector (10)
2. Remove screws (13) and nylon washers (2) on right side to detach lower belt guard (11).
3. Remove shoulder bolts (7), washers (8) and grommets (9) on left side.
4. Remove rear fender (6) from swingarm.
5. Install in reverse order.

### Frame Heat Shield

1. Remove seat and tail section. See [TAIL SECTION, REMOVAL](#) on [page 2-55](#).
2. See [Figure 2-62](#). Remove screws (1), nylon washers (2) and locknut (4).
3. Remove frame heat shield (5).
4. If necessary, remove clamp (3).
5. Install in reverse order.

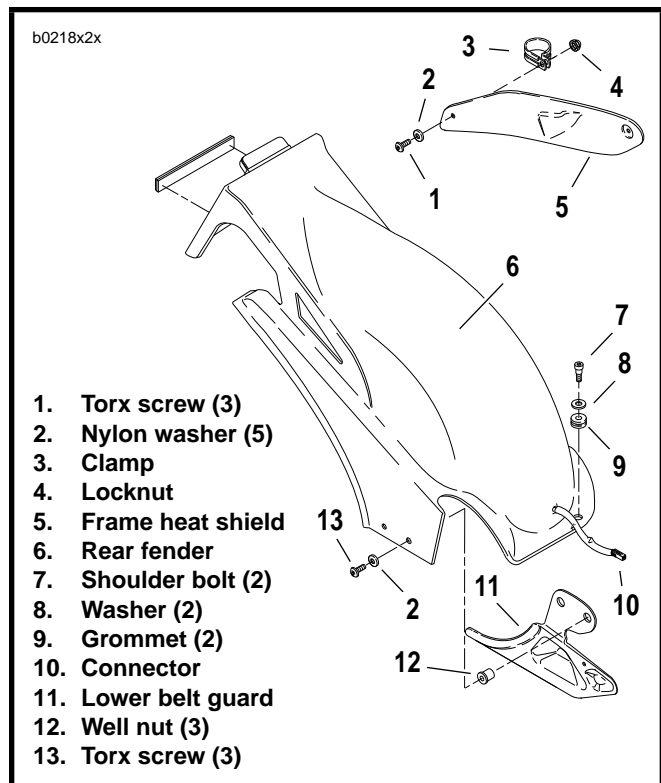


Figure 2-62. Rear Fender, Lower Belt Guard and Heat Shield

# TAIL SECTION

## REMOVAL

1. See [Figure 2-63](#). Loosen seat wing screw (1). Remove seat by pulling up and back.
2. Remove two screws (4) and nylon washers (3).
3. Loosen fuel tank screw (6).
4. Lift fuel tank (8) and withdraw tail section.

### NOTE

See [FUEL TANK, REMOVAL](#) in Section 4 for information on removing fuel tank from frame.

## INSTALLATION

1. Place tail section on frame so mounting holes align with holes on frame.
2. See [Figure 2-63](#). Install two screws (4) and nylon washers (3).

### NOTE

If fuel tank was removed, see [FUEL TANK, INSTALLATION](#) in Section 4.

3. Tighten screw (6) to 9-11 ft-lbs (12.2-14.9 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.

4. Place seat on tail section. Tighten wing screw.

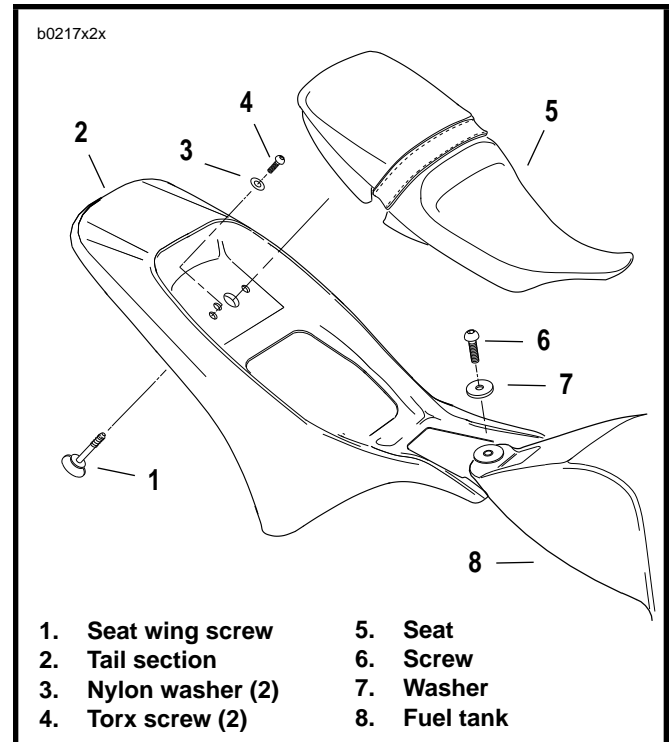


Figure 2-63. Tail Section

# WINDSCREEN

## REMOVAL

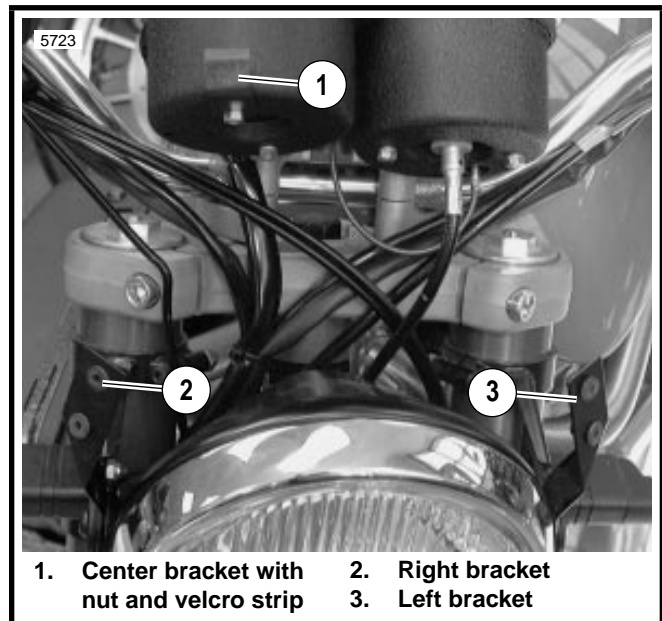
1. See [Figure 2-64](#). Remove two screws and nylon washers on each side.
2. Detach windscreen from center bracket on tachometer cover. Remove windscreen.
3. If necessary, remove the three windscreen brackets.
  - a. See [Figure 2-65](#). Remove center windscreen bracket by removing nut on tachometer cover.
  - b. While holding headlamp, remove left and right headlamp adjusting screws (metric). Slide windscreen brackets from between headlamp housing and headlamp brackets.

## INSTALLATION

1. If removed, install the three windscreen brackets.
  - a. See [Figure 2-65](#). Install center bracket using nut.
  - b. Install left and right brackets between headlamp housing and headlamp brackets. Tighten headlamp adjusting screws (metric) 6-8 ft-lbs (8.1-10.8 Nm).
2. Align windscreen on right, left and center brackets. Attach windscreen to center bracket velcro strip.
3. See [Figure 2-64](#). Install two screws and nylon washers on each side.



Figure 2-64. Windscreen, Right Side



1. Center bracket with nut and velcro strip    2. Right bracket  
3. Left bracket

Figure 2-65. Windscreen Brackets

# SEAT

## REMOVAL

1. See [Figure 2-66](#). Detach seat from frame by loosening the wing screw underneath the tail section.
2. Remove seat by pulling up and back.

## INSTALLATION

1. See [Figure 2-67](#). Install seat by sliding the metal locating tab on the underside of the seat into the opening on the motorcycle.

### **⚠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.

2. See [Figure 2-66](#). Fasten seat to frame with wing screw. Tighten securely.



Figure 2-66. Seat Wing Screw

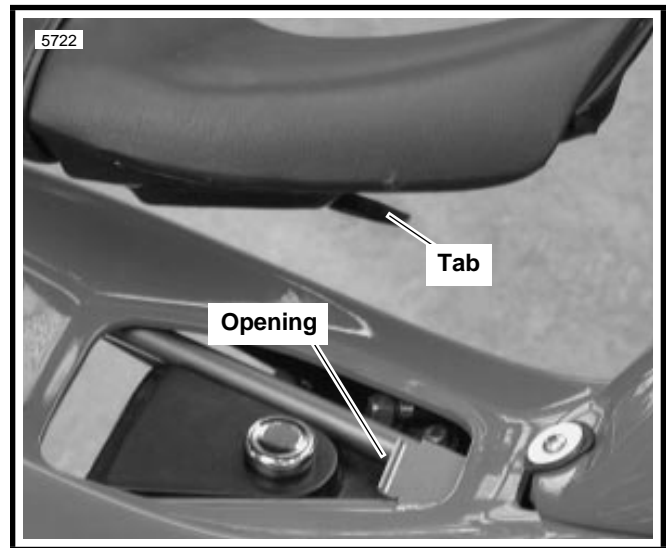


Figure 2-67. Seat Mount

# SIDE STAND

## GENERAL

The side stand is located on the left side of the motorcycle. The side stand swings outward to support the motorcycle for parking.

Test the side stand in the following manner. Without vehicle weight resting on it, side stand should move freely into extended (down) and retracted (up) positions.

## REMOVAL/DISASSEMBLY

1. See [Figure 2-68](#). Remove spring (6) from side stand and spring pin (5).
2. Remove retaining clip (7) and pivot pin (8). Detach side stand from frame.
3. Remove screw (2) and side stand dragger (1).
4. Remove bumper (3) from frame.

## ASSEMBLY/INSTALLATION

1. See [Figure 2-68](#). Attach bumper (3) to frame.
2. Attach side stand dragger (1) to side stand with screw (2).
3. Install side stand using pivot pin (8) and retaining clip (7).
4. Connect spring (6) to side stand and spring pin (5).

### **⚠ WARNING**

- If the side stand is not in the full forward position when vehicle weight is rested on it, the vehicle could fall over, possibly causing personal injury.
- Always park motorcycle on a level, firm surface. Vehicle weight could cause motorcycle to fall over, possibly causing personal injury.
- Be sure side stand is fully retracted before riding the motorcycle. If side stand is not fully retracted during vehicle operation, it could contact the road surface causing a momentary disturbance before retracting. This momentary disturbance could distract the rider, possibly causing loss of vehicle control and personal injury.

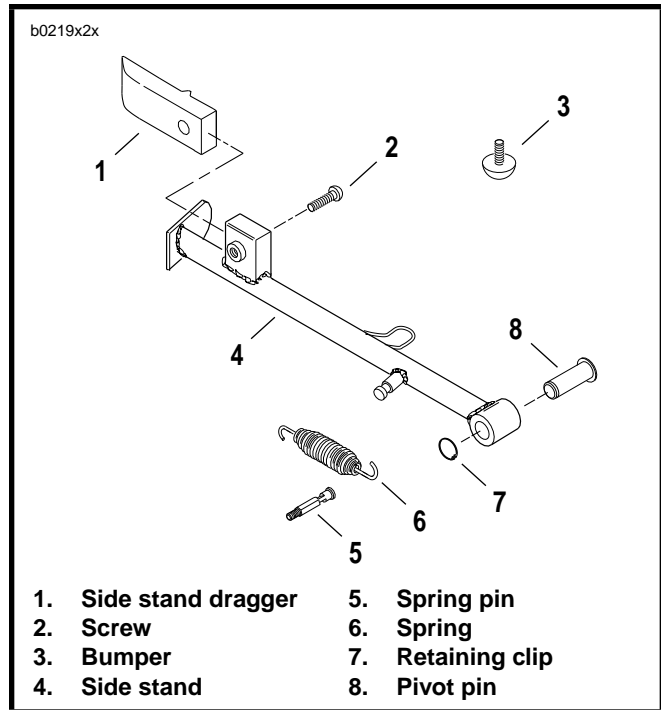


Figure 2-68. Side Stand