

SPECIFICATIONS

DIMENSIONS	IN.	MM
Wheel Base	55	1397
Overall Length	79.5	2019
Overall Width	30	762
Seat Height	29.5	749

CAPACITIES	U.S.	LITERS
Fuel Tank (including reserve)	4.0 gallons	15.14
Reserve	0.6 gallons	2.27
Oil Tank	2.0 quarts	1.89
Transmission	1.0 quart	0.95

CHASSIS	IN.	MM
Road Clearance	5.2	132
Front Wheel Travel	4.7	119.4
Rear Wheel Travel	4.9	124.5
Trail	3.9	99
Rake	25 degrees	

TIRE AND POSITION	PRESSURE FOR SOLO RIDING	PRESSURE AT GVWR
Front-Dunlop Sportmax Radial II 120/70 ZR 17	32 PSI (2.2 bar)	36 PSI (2.5 bar)
Rear-Dunlop Sportmax Radial II 170/60 ZR 17	36 PSI (2.5 bar)	38 PSI (2.8 bar)

WARNING

Do not inflate any tire beyond its maximum inflation pressure as specified on tire sidewall. Overinflation may cause tire to suddenly deflate leading to personal injury.

WEIGHT	LBS.	KG
S1 Shipping weight	446	202
GVWR	820	372
GAWR - Front	340	154
GAWR - Rear	480	218

BRAKE ROTORS	IN.	MM
Front rotor minimum thickness	0.17	4.3
Rear rotor minimum thickness	0.19	4.8

NOTE

Gross Vehicle Weight Rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding Gross Axle Weight Ratings (GAWR) are given on an information decal located on the front frame steering head.



ITEM	TORQUE		NOTES
Clutch cable, primary cover fitting	3-5 ft-lbs	4-6.87 Nm	turn clockwise to install, page 2-45
Clutch clamp screw	30-33 in-lbs	3.4-4.0 Nm	metric, page 2-45
Drive support fastener	30-35 ft-lbs	40.7-47.4 Nm	page 2-53
Exhaust manifold nuts	6-8 ft-lbs	8.1-10.8 Nm	page 2-50
Fender mounting screw, lower	10-15 in-lbs	1.1-1.7 Nm	page 2-54
Fender mounting screw, upper	20-25 in-lbs	2.3-2.8 Nm	metric, page 2-54
Front axle nut	48-53 ft-lbs	65.1-71.9 Nm	LOCTITE THREADLOCKER 242 (blue), metric, page 2-6 , page 2-10
Front axle pinch screw	13-15 ft-lbs	17.6-20.3 Nm	metric, page 2-10
Front brake caliper screw	26-28 ft-lbs	35.2-38.0 Nm	2 sizes, page 2-21
Front brake carrier screw	7.5-8.5 ft-lbs	10.2-11.5 Nm	LOCTITE THREADLOCKER 242 (blue), page 2-9
Front brake line clamp screw	30-35 in-lbs	3.4-4.0 Nm	page 2-22
Front brake master cylinder clamp screw	80-90 in-lbs	9.0-10.2 Nm	metric, page 2-19
Front brake rotor carrier screw	20-22 ft-lbs	27.1-29.8 Nm	LOCTITE THREADLOCKER 242 (blue), page 2-9
Front caliper banjo bolt	16-20 ft-lbs	21.7-27.1 Nm	page 2-21 , page 2-22
Front caliper bleeder valve	4-6 ft-lbs	5.4-8.1 Nm	page 2-22
Front caliper center bolt	11-13 ft-lbs	14.9-17.6 Nm	page 2-21
Front caliper mounting bolt	30-33 ft-lbs	40.7-44.7 Nm	page 2-21
Front fork triple clamp screw	18-20 ft-lbs	24.4-27.1 Nm	LOCTITE ANTI-SEIZE, page 2-31
Front master cylinder banjo bolt	17-20 ft-lbs	23.0-27.1 Nm	metric, page 2-19 , page 2-22
Front master cylinder cover screw	9-13 in-lbs	1.0-1.5 Nm	page 2-19 , page 2-21
Fuel tank screw	9-11 ft-lbs	12.2-14.9 Nm	page 2-55
Handlebar bolt, lower clamp	30-33 ft-lbs	40.7-44.7 Nm	page 2-49
Handlebar screw, upper clamp	10-12 ft-lbs	13.6-16.2 Nm	page 2-49
Header tiebar screw	5-7 ft-lbs	6.8-9.5 Nm	page 2-50
Headlamp adjusting screw	6-8 ft-lbs	8.1-10.8 Nm	metric, page 2-56
Instrument support screw	7-9 ft-lbs	9.5-12.2 Nm	page 2-46
Muffler clamp	50-55 ft-lbs	67.8-74.6 Nm	discard after use, page 2-50
Muffler mounting bolt, front	22-25 ft-lbs	29.8-33.9 Nm	page 2-50
Muffler mounting bolt, rear	22-25 ft-lbs	29.8-33.9 Nm	page 2-50
Muffler support mounting bolt, front	30-33 ft-lbs	40.7-44.7 Nm	page 2-50
Muffler support mounting bolt, rear	12-15 ft-lbs	16.3-20.3 Nm	page 2-50

ITEM	TORQUE		NOTES
Rear axle nut	66-73 ft-lbs	89.5-98.9 Nm	metric, page 2-6 , page 2-13
Rear brake caliper banjo bolt	9.5-12.5 ft-lbs	12.9-17.0 Nm	metric, page 2-26 , page 2-27
Rear brake caliper bleeder valve	6-9 ft-lbs	8.1-12.2 Nm	metric, page 2-26 , page 2-27
Rear brake caliper mounting screw	18-22 ft-lbs	24.4-29.8 Nm	metric, page 2-26
Rear brake lamp switch	7-8 ft-lbs	9.5-10.8 Nm	LOCTITE SEALANT WITH TEFLON, page 2-27
Rear brake line clamp screw	10-12 ft-lbs	13.6-16.2 Nm	page 2-27
Rear brake reservoir mounting screw	12-15 in-lbs	1.4-1.7 Nm	page 2-24
Rear brake rotor screw	35-40 ft-lbs	47.5-54.2 Nm	LOCTITE THREADLOCKER 242 (blue), metric, page 2-12
Rear master cylinder banjo bolt	10-12 ft-lbs	13.6-16.2 Nm	metric, page 2-24 , page 2-27
Rear master cylinder mounting screw	8-10 ft-lbs	10.8-13.6 Nm	page 2-24
Rear master cylinder rod to brake pedal screw	10-12 ft-lbs	13.6-16.2 Nm	page 2-24
Rear shock mounting screw	40-45 ft-lbs	54.2-61.0 Nm	metric, page 2-37
Sprocket bolt	55-65 ft-lbs	74.6-88.1 Nm	LOCTITE THREADLOCKER 272 (red), page 2-12
Sprocket cover mounting screw	12-17 in-lbs	1.4-1.9 Nm	page 2-53
Sprocket cover screw	4-6 ft-lbs	5.4-8.6 Nm	page 2-53
Swingarm pinch screw	27-30 ft-lbs	36.6-40.7 Nm	LOCTITE THREADLOCKER 242 (blue), page 2-34
Swingarm/drive support screw	20-25 ft-lbs	27.1-33.9 Nm	page 2-53
Switchgear housing screws, left side	25-33 in-lbs	2.8-3.7 Nm	metric, page 2-45
Switchgear housing screws, right side	12-17 in-lbs	1.4-1.9 Nm	metric, page 2-43
Tie bar bolt	30-33 ft-lbs	40.7-44.7 Nm	page 2-34
Valve stem nut	42-44 in-lbs	4.7-5.0 Nm	page 2-16

TIRE SPECIFICATIONS

GENERAL

WARNING

Tires must be correctly matched to wheel rims. Only the tires listed in the fitment tables below can be used for replacement. Mismatching tires and rims can cause damage to the tire bead during mounting. Using tires other than those specified can adversely affect motorcycle handling and may result in personal injury.

Tire sizes are molded on the sidewall. Rim size and contour are marked on the rim's exterior surface.

Example: **MT 3.5 x 17.0 DOT**

MT designates the rim contour. The **3.5** is the width of the bead seat measured in inches. The **17.0** is the normal diameter of the rim in inches, measured at the bead seat diameter. **DOT** means that the rim meets Department of Transportation Federal Motor Vehicle Safety Standards.

See the tables below.

Table 2-1. Tire Fitment – Tubeless Cast Marchesini Wheels

WHEEL SIZE & POSITION	CONTOUR & RIM SIZE	RIM VALVE HOLE DIAMETER	DUNLOP SPORTMAX RADIAL II TIRE SIZE
17 in. – Front	MT 3.5 x 17.0 DOT	0.33 in.	120/70 ZR17
17 in. – Rear	MT 5.0 x 17.0 DOT	0.33 in.	170/60 ZR17

Table 2-2. Tire Fitment – Tubeless Aluminum P/M Wheels

WHEEL SIZE & POSITION	CONTOUR & RIM SIZE	RIM VALVE HOLE DIAMETER	DUNLOP SPORTMAX RADIAL II TIRE SIZE
17 in. – Front	MT 3.5 x 17.0 DOT	0.33 in.	120/70 ZR17
17 in. – Rear	MT 5.5 x 17.0 DOT	0.33 in.	170/60 ZR17

VEHICLE IDENTIFICATION NUMBER

GENERAL

A 17-digit serial number, or Vehicle Identification Number (V.I.N.), is stamped on the right side of the steering head (ex., 4MZSS11J1T3200001). Also affixed to the steering head at this location is an information plate bearing the V.I.N. code.

See Figure 2-1. An abbreviated V.I.N. is stamped on the front left side of the crankcase.

NOTE

Always give the V.I.N. or abbreviated V.I.N. when ordering parts or making inquiries about your Buell motorcycle.



Figure 2-1. Abbreviated V.I.N. Location

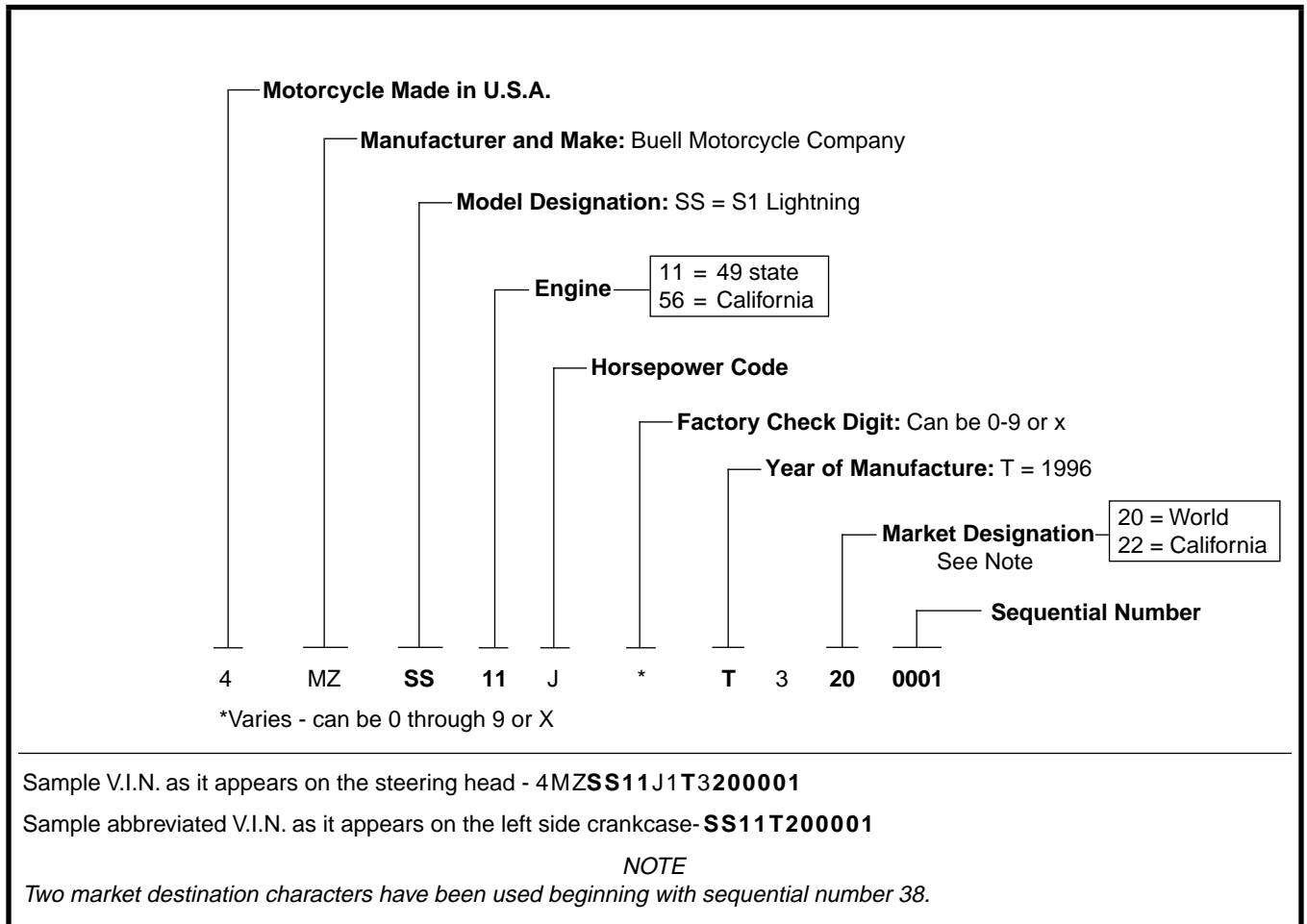


Figure 2-2. Vehicle Identification Number (V.I.N.)

WHEELS

GENERAL

Good handling and maximum tire mileage are directly related to the care of wheels and tires. Regularly inspect wheels and tires for damage and wear. If handling problems occur, check the TROUBLESHOOTING guide in Section 1 or see the table below for a list of probable causes.

See [TIRES AND WHEELS](#) in Section 1. Keep tires inflated to the recommended air pressure. Always balance the wheel after replacing a tire.

⚠WARNING

Do not inflate any tire beyond its maximum inflation pressure as specified on tire sidewall. Overinflation may cause tire to suddenly deflate leading to personal injury.

TROUBLESHOOTING

See [Figure 2-3](#). Check tire inflation pressure at least once each week. At the same time, inspect tire tread for punctures, cuts, breaks and other damage. Repeat the inspection before long trips.

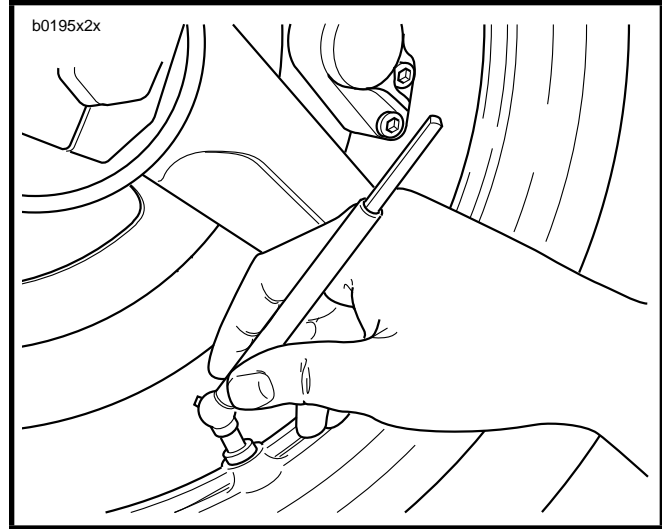


Figure 2-3. Checking Tire Inflation Pressure

Table 2-3. Wheel Service

CHECK FOR	REMEDY
1. Loose axle nuts.	Tighten front axle nut (metric) to 48-53 ft-lbs (65.1-71.9 Nm). Tighten rear axle nut (metric) to 66-73 ft-lbs (89.5-98.9 Nm).
2. Excessive side-play or radial (up-and-down) play in wheel hubs.	Replace wheel hub bearings.
3. Alignment of rear wheel in frame or with front wheel.	Check WHEEL BALANCING on page 2-17 or repair swingarm as described under SWINGARM on page 2-33 .
4. Rims and tires out-of-true sideways; should not be more than 0.080 in. (2.03 mm).	Replace rims. See TIRES, INSTALLATION on page 2-16 .
5. Rims and tires out-of-round or eccentric with hub; should not be more than 0.090 in. (2.29 mm).	See Item 4 above.
6. Irregular or peaked front tire wear.	Replace as described under FRONT WHEEL (page 2-8), REAR WHEEL (page 2-11) and TIRES (page 2-15).
7. Correct tire inflation.	Inflate tires to correct pressure. See SPECIFICATIONS on page 2-1 .
8. Correct tire and wheel balance.	Static balance may be satisfactory if dynamic balancing facilities are not available. However, dynamic balancing is strongly recommended.
9. Steering head bearings.	Correct adjustment and replace pitted or worn bearings. See FORK STEM AND BRACKET ASSEMBLY on page 2-32 .
10. Damper tubes.	Check for leaks. See FRONT FORK on page 2-28 .
11. Shock absorbers.	Check damping action and mounts. See SWINGARM on page 2-33 .
12. Swingarm bearings.	Check for looseness. See SWINGARM on page 2-33 .



⚠ WARNING

To prevent personal injury, use the following guidelines when installing a new tire or repairing a flat:

1. Always locate and eliminate the cause of the original tire failure.
2. Do not patch or vulcanize a tire casing. These procedures weaken the casing and increase the risk of a blowout.
3. The use of tires other than those specified can adversely affect handling resulting in personal injury.
4. Tires and wheels are critical safety items. Since the servicing of these components requires special tools and skills, Buell recommends that you see your dealer for these services.

⚠ WARNING

Excessively worn tires adversely affect motorcycle traction, steering and handling and could result in personal injury.

At regular intervals of 5000 miles (8000 km) or whenever handling irregularities are noted, perform the recommended service checks. See [Table 2-3](#).

If tires must be replaced, same as original equipment tires must be used. Other tires may not fit correctly and may be hazardous to use.

FRONT WHEEL

REMOVAL

1. See [Figure 2-4](#). 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](#).

NOTE

Do not operate front brake lever with front wheel removed or caliper pistons may be forced out. Reseating pistons requires caliper disassembly.

3. See [Figure 2-5](#). Insert screwdriver/rod through hole in axle (1) and loosen front axle nut (4) (metric).
4. Loosen pinch screws (2) (metric).
5. Remove front axle nut (4) and washer (3). Pull front axle out of hub while supporting front wheel.
6. See [Figure 2-6](#). Detach speedometer drive spacer (3) and speedometer drive (4) from left side of wheel. Remove front wheel.

DISASSEMBLY

1. See [Figure 2-6](#). Move wheel to bench area. On the side of the wheel opposite the brake rotor, remove left axle spacer (5).
2. On brake rotor side of wheel, remove right axle spacer (12).
3. Remove wheel bearings (6, 11) using [BUSHING AND BEARING PULLER \(Part No. HD-95760-69A\)](#) and [3/4 in. COLLET \(Part No. HD-95767-69A\)](#).
4. Remove six locknuts (14), washers (21), spring washers (20), screws (19) and brake drive pins (18). Remove brake rotor (17).
5. Remove five screws (16) and front brake carrier (15).
6. Remove tire. See [TIRES, REMOVAL](#) on [page 2-15](#).

CLEANING, INSPECTION AND REPAIR

1. Thoroughly clean all parts in solvent.

⚠ WARNING

Never use compressed air to “spin-dry” bearings. Very high bearing speeds can damage unlubricated bearings. Spinning bearings with compressed air can also cause a bearing to fly apart, which may result in personal injury.

2. Inspect all parts for damage or excessive wear.
3. Inspect brake rotor. Replace rotor if warped or badly scored. Measure rotor thickness for excessive wear. Minimum rotor thickness is 0.17 in. (4.4 mm).



Figure 2-4. Front Wheel Support Stand (Part No. B-41395) with S1 Lift Adapter (Part No. B-41686)

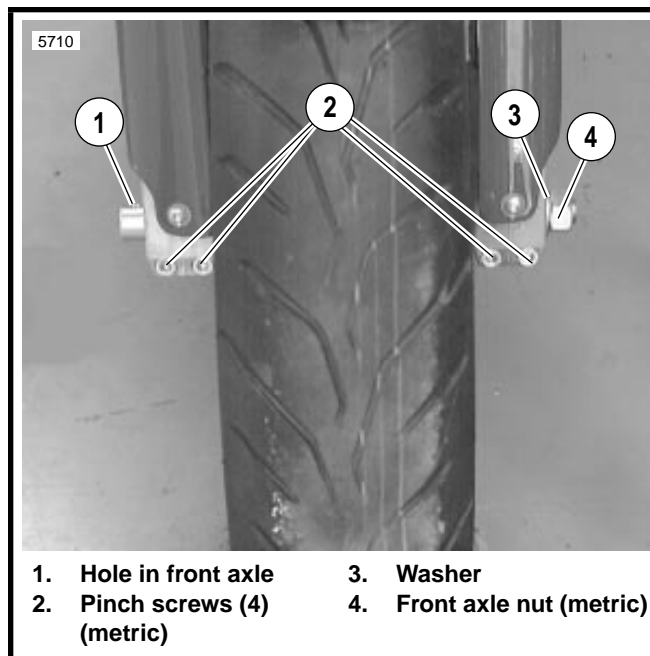


Figure 2-5. Front Wheel Mounting

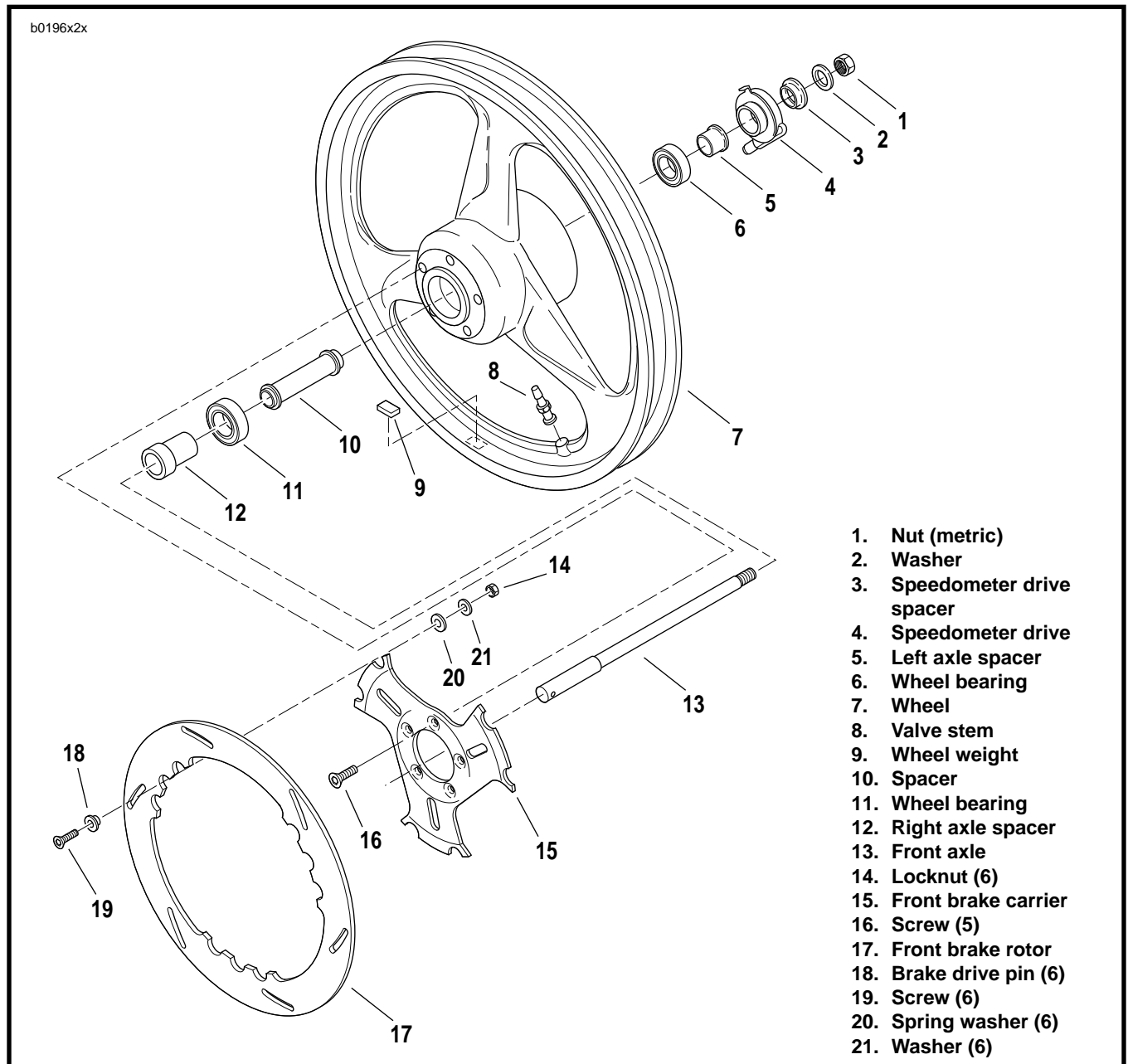


Figure 2-6. Front Wheel

ASSEMBLY

⚠ WARNING

Do not allow brake fluid, bearing grease, lubricants, etc. to contact brake rotor or reduced braking ability will occur, possibly resulting in personal injury.

1. See [Figure 2-6](#). Verify that the front brake carrier is thoroughly clean. Apply **LOCTITE THREADLOCKER 242** (blue) to each screw (16). Install carrier (15) on hub with five screws. Tighten to 20-22 ft-lbs (27.1-29.8 Nm).
2. Verify that the brake rotor is thoroughly clean. Apply **LOCTITE THREADLOCKER 242** (blue) to each screw (19). Install rotor on front brake carrier with six screws, brake drive pins (18), spring washers (20), washers (21) and locknuts (14). Tighten to 7.5-8.5 ft-lbs (10.2-11.5 Nm).
3. Install spacer (10).
4. Install **new** wheel bearings (6, 10) into hub using suitable driver. Press on outer race only.
5. On the side of the wheel opposite the brake rotor insert left axle spacer (5) into hub until it seats in bore. Spacer sleeve must not be cocked or tilted in bore.
6. On the right side of the wheel insert right axle spacer (12) into hub until it seats in bore. Spacer sleeve must not be cocked or tilted in bore.
7. Install tire, if removed. See [TIRES, INSTALLATION](#) on [page 2-16](#).
8. Verify that wheel and tire are true. See [CHECKING CAST RIM RUNOUT](#) on [page 2-14](#).

INSTALLATION

1. Apply LOCTITE ANTI-SEIZE LUBRICANT to axle.
2. Position wheel between forks with brake rotor on right side of vehicle. With pinch screws (metric) loose, insert threaded end of axle through right side fork. Push axle through fork and wheel hub until axle begins to emerge from left side of hub.

CAUTION

Speedometer drive tab must be properly inserted or damage to the unit will occur. If drive tab is damaged, it must be replaced.

3. See [Figure 2-7](#). Align speedometer drive tab and wheel hub. Push axle through speedometer drive, speedometer drive spacer and left fork leg.
4. Compress the front suspension to make sure it is free and not binding.
5. See [Figure 2-6](#). Apply LOCTITE THREADLOCKER 242 (blue) to axle nut. Install washer (2) and axle nut (1) (metric) over threaded end of axle. Insert screwdriver or steel rod through hole in axle on right side of vehicle. While holding axle stationary, tighten axle nut to 48-63 ft-lbs (65.1-71.9 Nm).
6. See [Figure 2-5](#). Tighten the four front axle pinch screws (2) (metric) to 13-15 ft-lbs (17.6-20.3 Nm).
7. Install front brake caliper. See [FRONT BRAKE CALIPER, INSTALLATION](#) on [page 2-21](#).

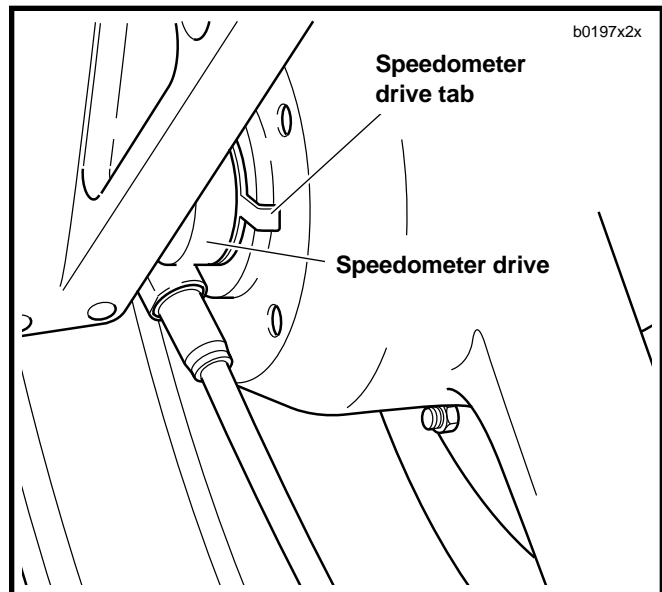


Figure 2-7. Speedometer Drive

REAR WHEEL

REMOVAL

1. Raise rear wheel off floor using [REAR WHEEL SUPPORT STAND \(Part No. B-41174\)](#).
2. Remove rear fender. See [FENDERS, REMOVAL/INSTALLATION](#) on [page 2-54](#).
3. Remove rear brake caliper. See [REAR BRAKE CALIPER, REMOVAL/DISASSEMBLY](#) on [page 2-25](#).

NOTE

Do not operate rear brake pedal with rear wheel removed or caliper piston may be forced out. Reseating piston requires caliper disassembly.

4. See [Figure 2-8](#). Loosen rear axle nut (metric).
5. Loosen rear axle adjuster nuts. Push wheel as far forward as possible.
6. Slip secondary drive belt from bottom of rear wheel sprocket and remove.
7. See [Figure 2-9](#). Remove rear axle nut (14) (metric), lock-washer (13), and washer (12). Pull axle (3) and washer (4) out from left side and remove wheel.

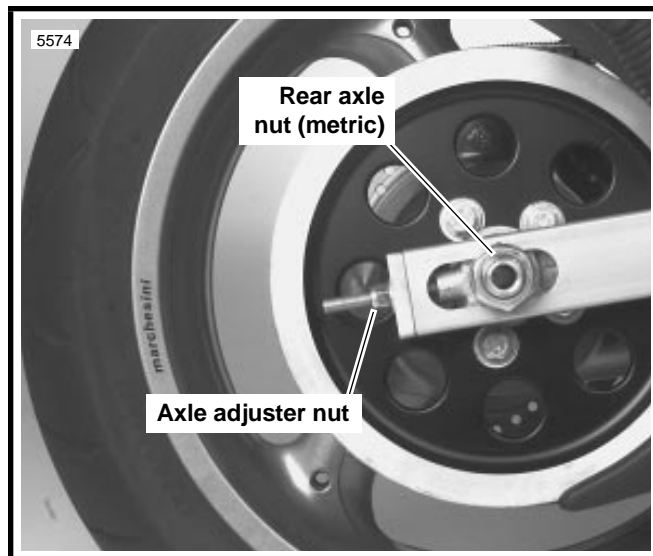


Figure 2-8. Rear Wheel Mounting

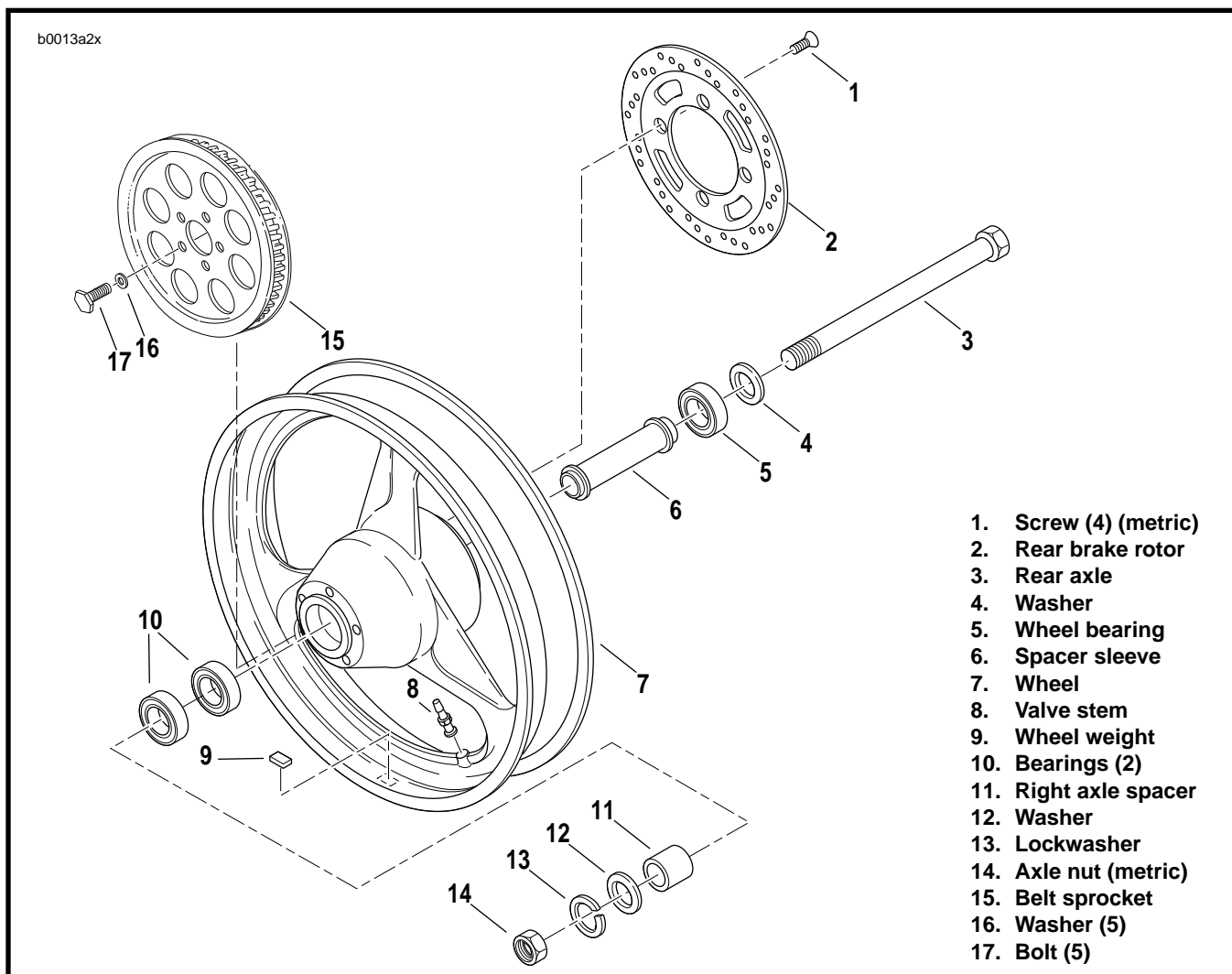


Figure 2-9. Rear Wheel

DISASSEMBLY

1. See [Figure 2-10](#). Move wheel to bench area. On the brake rotor side of the wheel, remove bearing using [BUSHING AND BEARING PULLER \(Part No. HD-95760-69A\)](#) and 1 1/8 in. [COLLET \(Part No. HD-95769-69\)](#).
2. Remove two bearings from sprocket side of wheel.
3. See [Figure 2-9](#). Remove four screws (1) (metric) to remove rear brake rotor (2) from hub.
4. Remove five bolts (17) and washers (16) on belt sprocket (15). Remove belt sprocket from wheel.

CLEANING, INSPECTION AND REPAIR

1. Thoroughly clean all parts in solvent.

⚠WARNING

Never use compressed air to “spin-dry” bearings. Very high bearing speeds can damage unlubricated bearings. Spinning bearings with compressed air can also cause a bearing to fly apart, which may result in personal injury.

2. Inspect all parts for damage or excessive wear.
3. Inspect brake rotor. Replace rotor if warped or badly scored. Measure rotor thickness for excessive wear. Minimum acceptable thickness (0.19 in. (4.8 mm)) is stamped on side of rotor.

ASSEMBLY

⚠WARNING

Do not allow brake fluid, bearing grease, lubricants, etc. to contact brake rotor or reduced braking ability will occur, possibly resulting in personal injury.

1. See [Figure 2-9](#). Verify that brake rotor (2) is thoroughly clean. Apply [LOCTITE THREADLOCKER 242 \(blue\)](#) to each screw (1) (metric). Fasten rotor to hub with four screws. Tighten to 35-40 ft-lbs (47.5-54.2 Nm).

NOTE

P/M wheels use a nut (not shown) with each screw (1).

2. Apply two drops of [LOCTITE THREADLOCKER 272 \(red\)](#) to threads of each sprocket bolt (17). Install belt sprocket (15) using five bolts (17) and washers (16). Tighten bolts to 55-65 ft-lbs (74.6-88.1 Nm).



Figure 2-10. Removing Wheel Bearing Using Bushing/ Bearing Puller (Part No. HD-95760-69A) and 1 1/8 in. Collet (Part No. HD-95769-69)

3. On the sprocket side of the wheel, insert two bearings (10) into hub until they contact shoulder for spacer sleeve. Press bearings in separately, pressing on outer race only.
4. Insert spacer sleeve (6) into hub.
5. On the brake rotor side of the wheel, insert bearing (5) into hub until it contacts end of spacer sleeve. Press on outer race only.
6. Install tire, if removed. See [TIRES, INSTALLATION](#) on [page 2-16](#).
7. Verify that wheel and tire are true. See [CHECKING CAST RIM RUNOUT](#) on [page 2-14](#).

INSTALLATION

1. Place wheel centrally in the swingarm with the brake rotor in the caliper. Slide wheel far enough forward to slip belt over sprocket and then slide wheel back.
2. See [Figure 2-9](#). Apply LOCTITE ANTI-SEIZE LUBRICANT to axle (3).
3. Insert axle (3) through washer (4), left side of swingarm, rear brake caliper mount, wheel assembly, spacer (11) and right side of swingarm.
4. Install washer (12), lockwasher (13), and axle nut (14) (metric) on right side of axle. Do not fully tighten rear axle nut at this time.
5. Install rear brake caliper. See [REAR BRAKE CALIPER, INSTALLATION](#) on [page 2-26](#).
6. Check for proper belt tension and wheel alignment. See [REAR BELT DEFLECTION](#) in Section 1.
7. Tighten rear axle nut (14) (metric) to 66-73 ft-lbs (89.5-98.9 Nm).
8. Install rear fender. See [FENDERS, REMOVAL/INSTALLATION](#) on [page 2-54](#).



H
O
M
E



CHECKING CAST RIM RUNOUT

GENERAL

Check wheels for lateral and radial runout before installing a new tire.

Rim Lateral Runout

1. See Figure 2-11. Install truing arbor in wheel hub and place wheel in **WHEEL TRUING AND BALANCING STAND (Part No. HD-99500-80)**.
2. Tighten arbor nuts so hub will turn on its bearings.
3. Check rim lateral runout by placing a gauge rod or dial indicator near the rim bead. Replace wheel if lateral runout exceeds specification shown in Table 2-4.

Rim Radial Runout

1. See Figure 2-12. Install truing arbor in wheel hub and place wheel in **WHEEL TRUING AND BALANCING STAND (Part No. HD-99500-80)**.
2. Tighten arbor nuts so hub will turn on its bearings.
3. Check radial runout as shown. Replace wheel if runout exceeds specification shown in Table 2-4.

Table 2-4. Wheel Runout

WHEEL TYPE	MAXIMUM LATERAL RUNOUT	MAXIMUM RADIAL RUNOUT
Cast Marchesini	0.040 in. (1.02 mm)	0.030 in. (0.76 mm)
Aluminum P/M	0.020 in. (0.51 mm)	0.020 in. (0.51 mm)

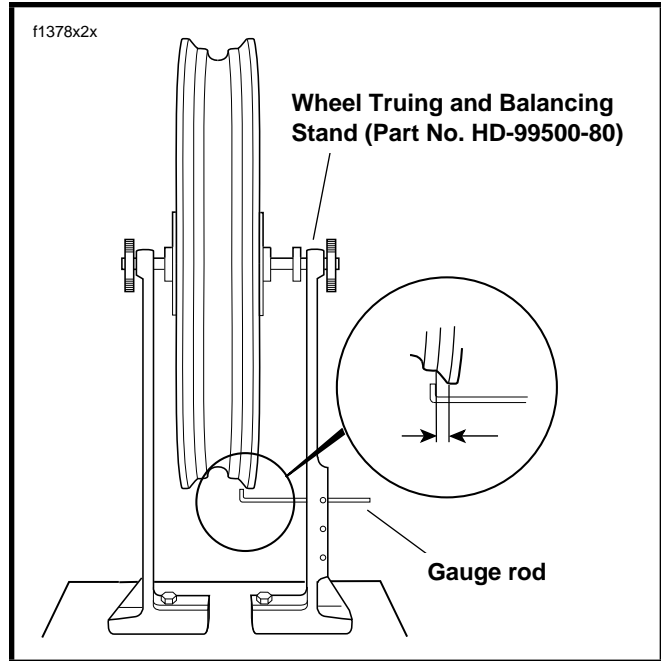


Figure 2-11. Checking Cast Rim Lateral Runout

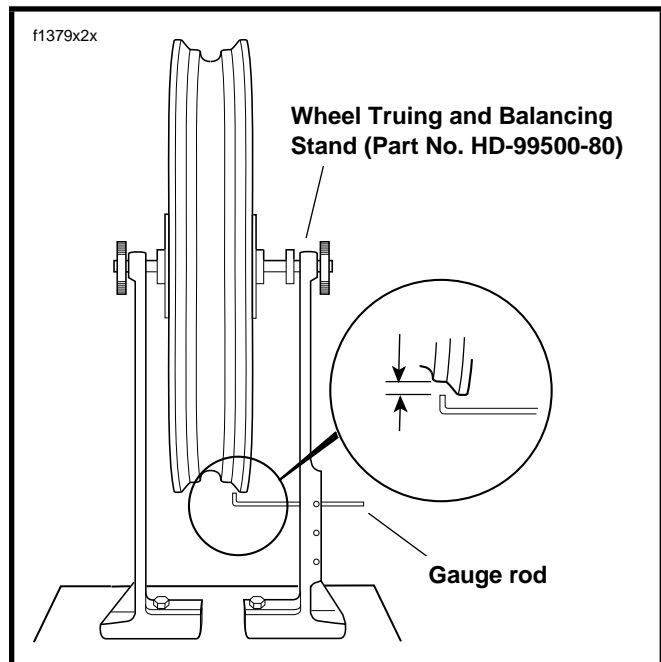


Figure 2-12. Checking Cast Rim Radial Runout

TIRES

GENERAL

Tires should be inspected for punctures, cuts, breaks and wear at least weekly.

⚠WARNING

Always check both tire sidewalls for arrows indicating forward rotation. Some tires require different tire rotation depending on whether tire is used on front or rear wheel. Installing a tire with the wrong rotation could result in personal injury.

Some tires have arrows molded into the tire sidewall. These tires should be mounted on the rim with the arrow pointing in the direction of forward rotation. The red circle on the sidewall is a balance mark and should be located next to the valve stem hole.

REMOVAL

1. Remove wheel from motorcycle. See [FRONT WHEEL, REMOVAL](#) on [page 2-8](#) or [REAR WHEEL, REMOVAL](#) on [page 2-11](#).
2. Deflate tire.
3. See [Figure 2-13](#). Loosen both tire beads from rim flange.

⚠WARNING

Do not use excessive force when starting bead over rim. Excessive force may damage tire or rim and adversely affect handling resulting in personal injury.

4. If a bead breaker machine is not available, attach [RIM PROTECTORS \(Part No. HD-01289\)](#) to the rim. Using tire tools (not sharp instruments), start upper bead over edge of rim at valve. Repeat all around rim until first bead is over rim.
5. See [Figure 2-14](#). Push lower bead into rim well on one side and insert tire tool underneath bead from opposite side. Pry bead over rim edge. Remove tire from rim.
6. Remove valve stem if it is damaged or leaks.
7. Mount tire on [TIRE SPREADER \(Part No. HD-21000\)](#) for inspection and repair procedures.

CLEANING, INSPECTION AND REPAIR

1. Clean inside of tire.
2. If rim is dirty or corroded, clean with a stiff wire brush.
3. Inspect tire for wear and damage. Replace worn tires. Use [TIRE REPAIR KIT \(Part No. HD-20000\)](#) for tire repair. Follow the kit manufacturer's instructions.

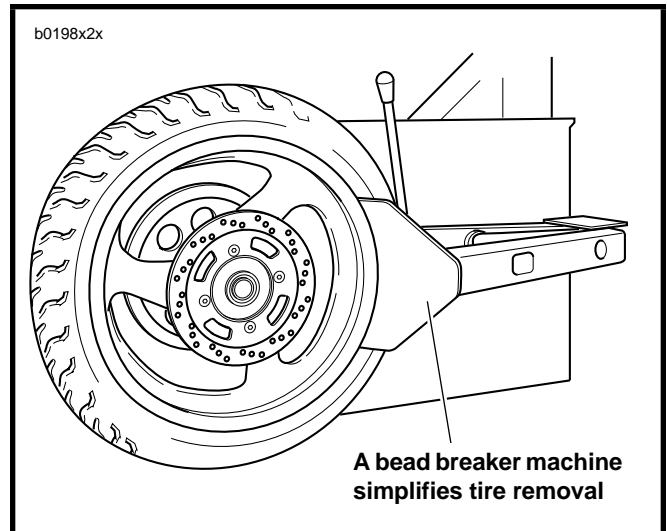


Figure 2-13. Loosening Beads from Rim Flange

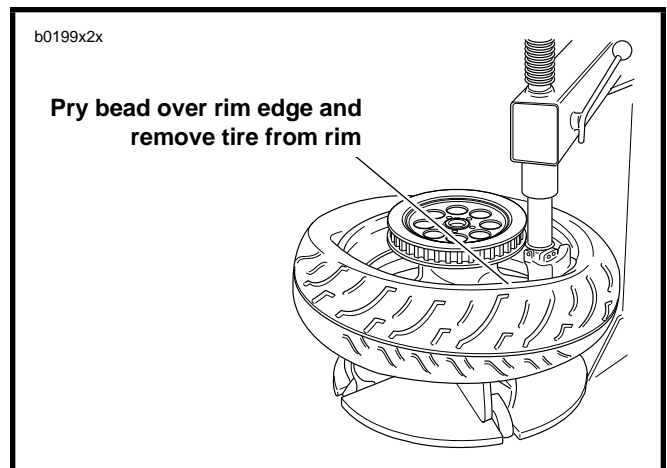


Figure 2-14. Starting Tire Off Rim

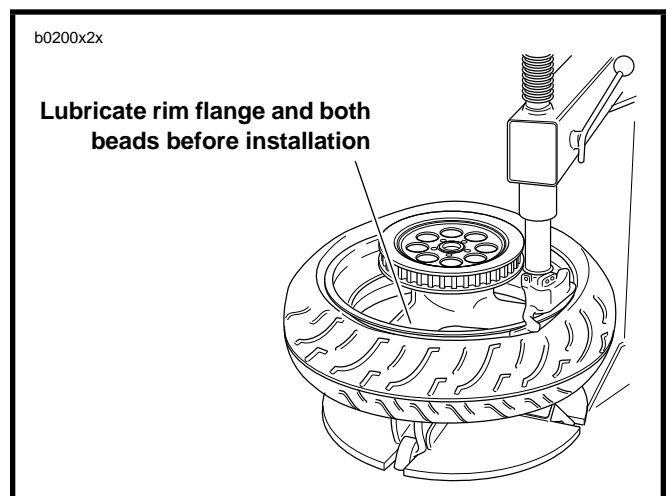


Figure 2-15. Starting Bead on Rim

INSTALLATION

⚠WARNING

- Only install original equipment (stock) tire valves and valve caps. A valve or valve and cap combination that is too long may interfere with (strike) adjacent components, damage the valve and cause rapid tire deflation. Rapid tire deflation could cause loss of control and personal injury.
 - Also, aftermarket valve caps that are heavier than the stock cap may have clearance at slow speeds; but, at high speed the valve/cap will be moved outward by centrifugal force. This outward movement could cause the valve/cap to strike the adjacent components, damage the valve and cause rapid tire deflation. Rapid tire deflation could cause loss of control and personal injury.
1. Damaged or leaking valve stems must be replaced. Place rubber grommet on valve stem with shoulder in recess of the valve stem head.
 2. Install and tighten nut to 42-44 in-lbs (4.7-5.0 Nm).
 3. Thoroughly lubricate rim flanges and both beads of tire with tire lubricant.
 4. See [Figure 2-15](#). Starting at the valve stem, start first bead into the rim well using a bead breaker machine. If no machine is available, work bead on as far as possible by hand. Use a tire tool to pry the remaining bead over rim flange.
 5. Start 180° from valve stem hole and place second bead on rim. Work bead onto rim with tire tools, working toward valve in both directions.

⚠WARNING

Do not inflate over 40 psi (2.8 bars) to seat the beads. Inflating the tire beyond 40 psi (2.8 bars) to seat the beads can cause the tire rim assembly to burst with force sufficient to cause personal injury. If the beads fail to seat to 40 psi (2.8 bars), deflate and relubricate the bead and rim and reinflate to seat the beads, but do not exceed 40 psi (2.8 bars).

6. Apply air to stem to seat beads on rim. It may be necessary to use a [TIRE BEAD EXPANDER \(Part No. HD-28700\)](#) on the tire until beads seal on rim.

Checking Tire Lateral Runout

1. See [Figure 2-16](#). Turn wheel on axle and measure amount of displacement from a fixed point to tire side-wall.
2. Tire tread lateral runout should be no more than 0.080 in. (2.03 mm). If runout is more than 0.080 in. (2.03 mm), remove tire from rim.
3. Check rim bead side runout. See [CHECKING CAST RIM RUNOUT](#) on [page 2-14](#). Replace rims not meeting specifications.
4. Install tire and check again for tire tread lateral runout.

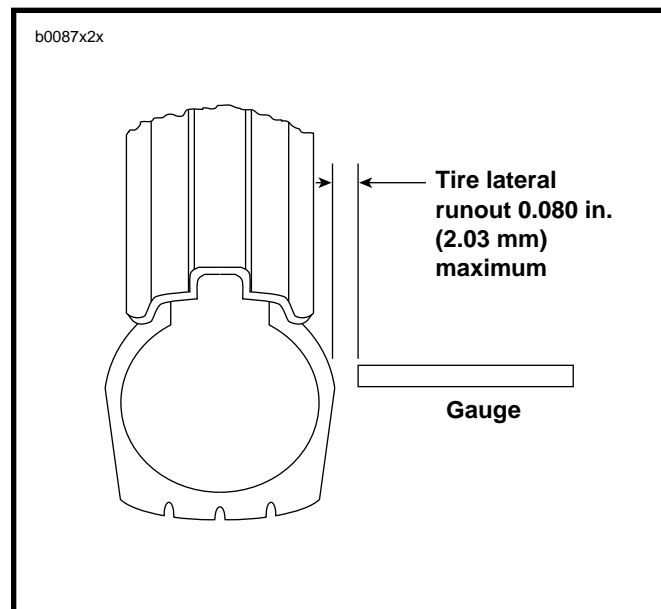


Figure 2-16. Checking Tire Lateral Runout

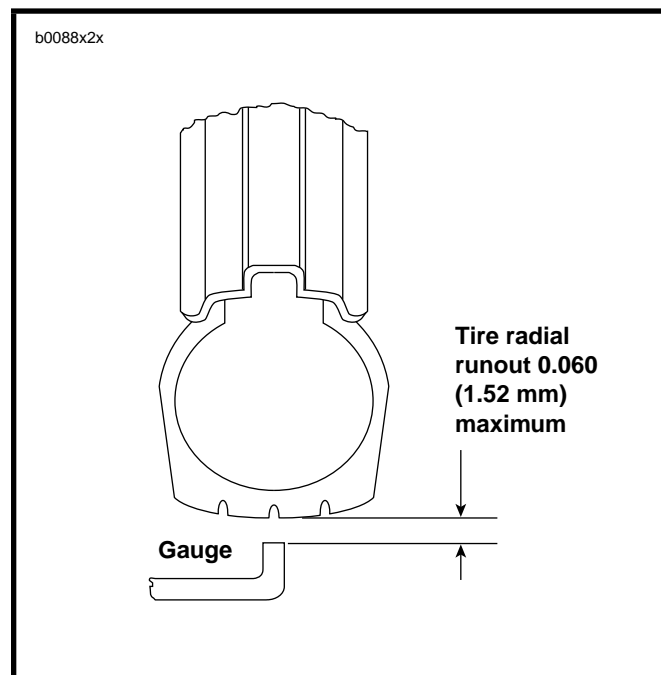


Figure 2-17. Checking Tire Radial Runout

Checking Tire Radial Runout

1. See [Figure 2-17](#). Turn wheel on axle and measure tread radial runout.
2. Tire tread radial runout should not be greater than 0.060 in. (1.52 mm). If runout exceeds specification, remove tire from rim.
3. Check rim bead runout. See [CHECKING CAST RIM RUNOUT](#) on [page 2-14](#). Replace rims not meeting specifications.
4. Install tire and check tire tread radial runout again.

ADJUSTMENT

Wheel Balancing

Wheel balancing is recommended to improve handling and reduce vibration, especially at high road speeds.

In most cases, static balancing using [WHEEL TRUING AND BALANCING STAND \(Part No. HD-99500-80\)](#) will produce satisfactory results. However, dynamic balancing, utilizing a wheel spinner, can be used to produce finer tolerances for best high-speed handling characteristics. Follow the instructions supplied with the balance machine you are using.

WEIGHTS FOR CAST WHEELS

Buell specifies WHEEL WEIGHTS (Part No. 43692-94Y) which have special self-adhesive backings.

The maximum weight permissible to accomplish balance is 1 oz. (28 g) (total weight applied to the rim). Wheels should be balanced to within 1/4 oz. (7 g) at 60 MPH (97 KM/H).

These weights are applied to the flat surface of the wheel rim according to the following procedures.

1. Make sure that area of application is completely clean, dry, and free of oil and grease.
2. Remove paper backing from weight. For additional adhesive strength, apply three drops of LOCTITE SUPER-BONDER 420 to adhesive side of weight. Place weight on flat surface of wheel rim. Press weight firmly in place and hold for ten seconds.
3. Allow eight hours for adhesive to cure completely before using wheel.



BRAKES

GENERAL

The front and rear brakes are fully hydraulic disc brake systems that require little maintenance. The front brake master cylinder is an integral part of the brake hand lever assembly. The rear brake master cylinder is located on the right side of the motorcycle near the brake pedal.

Check the master cylinder reservoirs for proper fluid levels every 5000 miles (8000 km). See [BRAKES](#) in Section 1.

Check brake pads and rotors for wear every 2500 miles (4000 km). Replace brake pads if friction material is worn to 1/16 in. (1.6 mm) or less. Replace brake rotors not meeting minimum rotor thickness. See [BRAKES](#) in Section 1.

If determining probable causes of poor brake operation, see [Table 2-5](#).

⚠WARNING

- Clean brake system components using denatured alcohol. Do not use mineral-base cleaning solvents, such as gasoline or paint thinner. Use of mineral-base solvents causes deterioration of rubber parts that continues after assembly. This could result in improper and unsafe brake operation which may cause personal injury.
- Always test motorcycle brakes at low speed after servicing or bleeding system. To prevent personal injury, Buell recommends that all brake repairs be performed by a Buell dealer or other qualified mechanic.
- Exercise caution when handling brake fluid. Brake fluid can cause irritation of eyes and skin and may be harmful or fatal if swallowed. If swallowed, administer two tablespoons of salt in a glass of warm water to induce vomiting. Call a doctor immediately. In case of contact with skin or eyes, flush with plenty of water. Get medical attention for eyes. **KEEP BRAKE FLUID OUT OF THE REACH OF CHILDREN.**

Table 2-5. Brake Troubleshooting

CONDITION	CHECK FOR	REMEDY
Excessive lever/pedal travel or spongy feel.	Air in system. Master cylinder low on fluid.	Bleed brake(s). Fill master cylinder with approved brake fluid.
Chattering sound when brake is applied.	Worn pads. Loose mounting bolts. Warped rotor.	Replace brake pads. Tighten bolts. Replace rotor.
Ineffective brake – lever/pedal travels to limit.	Low fluid level. Piston cup not functioning.	Fill master cylinder with approved brake fluid, and bleed system. Rebuild cylinder.
Ineffective brake – lever/pedal travel normal.	Distorted or glazed rotor. Distorted, glazed or contaminated brake pads.	Replace rotor. Replace pads.
Brake pads drag on rotor – will not retract.	Cup in master cylinder not uncovering relief port. Rear brake pedal linkage out of adjustment.	Inspect master cylinder. Adjust linkage.

FRONT BRAKE MASTER CYLINDER

REMOVAL

NOTE

The front master cylinder contains no user serviceable parts. Do not remove the master cylinder unless problems are being experienced. Replace the entire assembly when necessary.

1. Remove mirror mounting hardware (metric, left hand threads).
2. Open bleeder nipple cap on front caliper. Install end of a length of plastic tubing over caliper bleeder valve, while placing free end in a suitable container. Open bleeder valve about 1/2-turn. Pump brake hand lever to drain brake fluid.
3. See [Figure 2-18](#). Remove banjo bolt (6) (metric) and two gaskets (4) to disconnect brake line from master cylinder. Discard gaskets.
4. Remove screw (10), lockwasher (9) and washer (8) to detach brake lamp switch (7).

NOTE

The individual parts of the brake lamp switch are not serviceable. Replace switch upon failure.

5. Remove two screws (1) (metric) and clamp to free master cylinder assembly from handlebar.

INSTALLATION

1. See [Figure 2-18](#). Fasten master cylinder to handlebar by installing clamp (2) and screws (1) (metric). Tighten screws to 80-90 **in-lbs** (9.0-10.2 Nm).

CAUTION

To avoid leakage, verify that gaskets, banjo bolt, hydraulic brake line and master cylinder bore are completely clean.

2. Place **new** gaskets on each side of the hydraulic brake line. Install banjo bolt through gaskets and brake line fitting into master cylinder. Tighten banjo bolt (6) (metric) to 17-20 ft-lbs (23.0-27.1 Nm).
3. Attach brake lamp switch (7) with screw (10), lockwasher (9) and washer (8).
4. Remove both master cylinder cover screws (3) and cover.
5. With the master cylinder in a level position, add D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID. Bring fluid level to within 1/8 in. (3.2 mm) of molded boss inside front master cylinder reservoir.

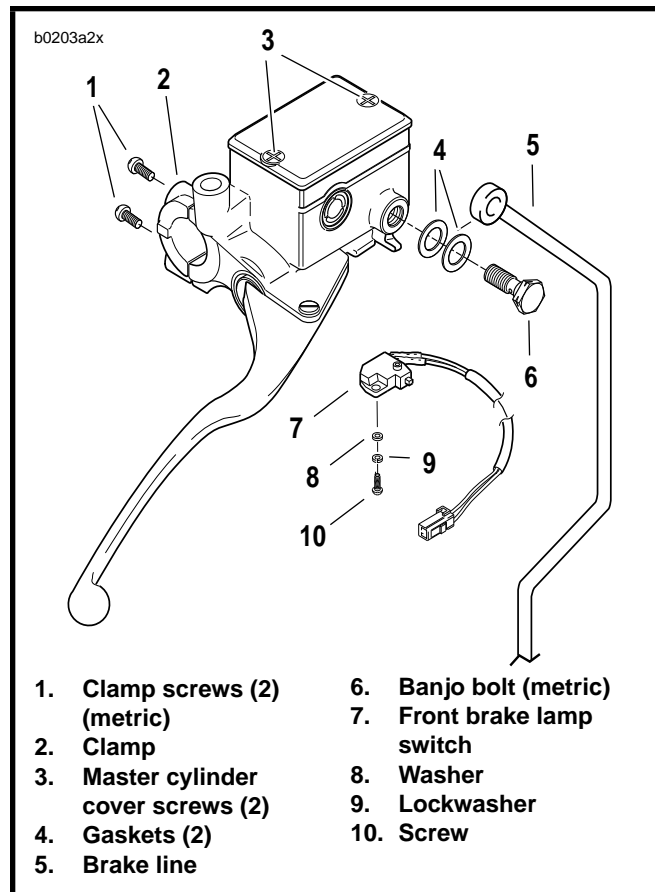


Figure 2-18. Front Master Cylinder Banjo Bolt

WARNING

A plugged or covered relief port can cause brake drag or lockup, which may result in loss of vehicle control and possible personal injury.

6. Verify proper operation of the master cylinder relief port. Actuate the brake lever with the reservoir cover removed. A slight spurt of fluid will break the surface if all internal components are working properly.
7. Install master cylinder cover screws (3) and cover. Tighten cover screws to 9-13 **in-lbs** (1.0-1.5 Nm).
8. Bleed brake system. See [BRAKES](#) in Section 1.
9. Install mirror parallel to handlebars. Mirror mount has metric, left hand threads.
10. Test brake lamp operation with the brake hand lever applied and the ignition/headlamp switch turned to IGN.

FRONT BRAKE CALIPER

REMOVAL/DISASSEMBLY

NOTE

Step 1 (draining fluid) is not required for caliper removal. Drain brake fluid only when disassembling caliper.

1. See Figure 2-19. Remove banjo bolt (4) and gaskets to disconnect brake line from caliper. Drain brake fluid into a clean, suitable container. Discard gaskets.
2. Remove cotter and support pins (1).
3. Remove center caliper bolt (2) and spacer.
4. Remove brake pads from front brake caliper. Pads must be removed in order to remove caliper from rotor.
5. Remove both caliper mounting bolts (3).
6. Free caliper from front brake rotor.
7. Move caliper assembly to bench area.
8. See Figure 2-20. Remove screws (13, 14) to separate caliper halves (7, 12). Remove O-rings (11) and discard.

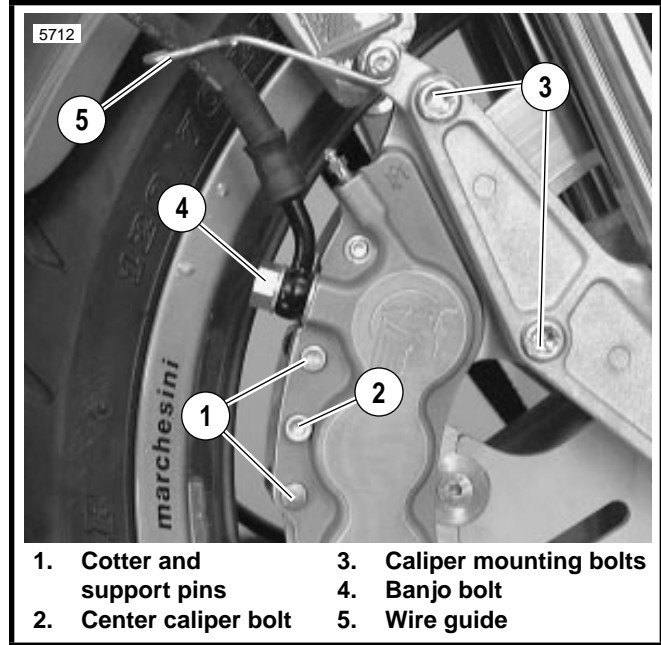


Figure 2-19. Front Brake Caliper Mounts

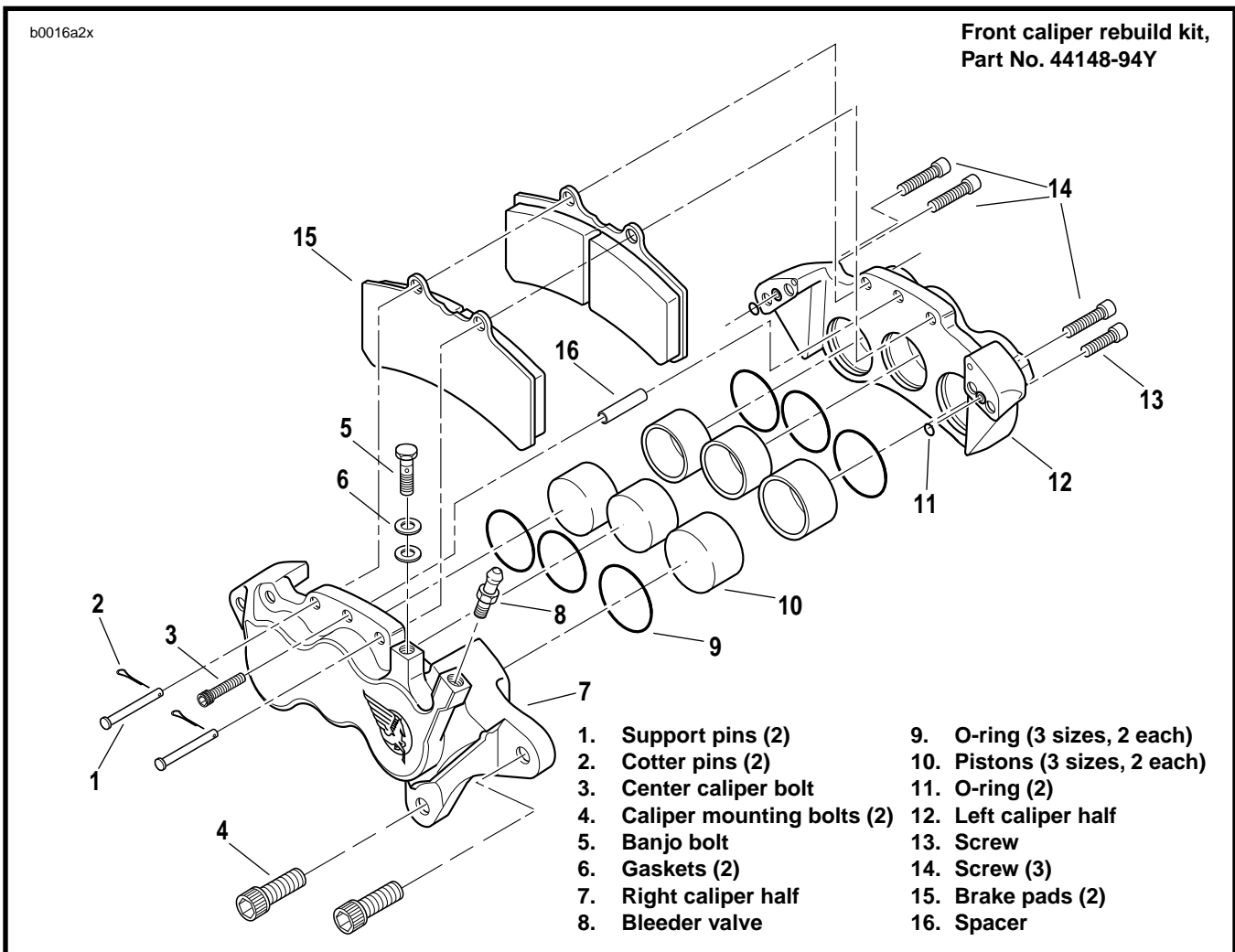


Figure 2-20. Front Brake Caliper



HOME



97 INFO

⚠WARNING

When using air pressure to remove pistons from caliper, pistons may be ejected with considerable force. Wear safety glasses, heavy gloves and hold caliper with heavy towel to prevent personal injury.

⚠CAUTION

Exercise care to avoid dropping piston on hard surface. Any damage requires piston replacement.

9. See [Figure 2-21](#). Use **BRAKE CALIPER PISTON REMOVER (Part No. B-42079)** to remove caliper pistons.
10. See [Figure 2-20](#). Pry O-rings (9) out of their respective grooves on each side of caliper. Discard O-rings.

CLEANING, INSPECTION AND REPAIR

⚠WARNING

Clean brake system components using denatured alcohol. Do not use mineral-base cleaning solvents, such as gasoline or paint thinner. Use of mineral-base solvents causes deterioration of rubber parts that continues after assembly. This could result in improper and unsafe brake operation which may cause personal injury.

1. Thoroughly clean brake system components using denatured alcohol. Blow dry using compressed air. Carefully inspect all components. Replace any parts that appear damaged or worn. Do not hone caliper piston bore.
2. Inspect brake rotor. Replace if warped or badly scored. Measure rotor thickness for excessive wear. Replace rotors less than 0.17 in. (4.3 mm) thick.

⚠WARNING

Always replace brake pads in complete sets for correct and safe brake operation. Never replace just one brake pad. Failure to install brake pads as a set may cause personal injury.

3. Inspect brake pads for damage or wear. Replace both pads as a set if the friction material of either pad is worn to 1/16 in. (1.6 mm) or less.

ASSEMBLY

1. See [Figure 2-20](#). Install **new** O-rings (11) in groove of each caliper half (7, 12). Install **new** O-rings (9) in groove of piston bores.
2. Install pistons (10) in each caliper piston bore.
3. Tighten caliper halves together with four screws (13, 14). Smallest screw (13) is placed on top next to bleeder valve (8). Tighten screws to 26-28 ft-lbs (35.2-38.0 Nm).

INSTALLATION

1. Fit caliper on front brake rotor without brake pads.
2. See [Figure 2-20](#). Tighten both caliper mounting bolts (4) to 30-33 ft-lbs (40.7-44.7 Nm).
3. Insert brake pads (15) from top.



Figure 2-21. Removing Brake Caliper Pistons Using Brake Caliper Piston Remover (Part No. B-42079)

4. Install center caliper bolt (3) and spacer (16). Tighten center caliper bolt to 11-13 ft-lbs (14.9-17.6 Nm).
5. Install two support pins (1) and **new** cotter pins (2).
6. Connect brake line to caliper using **new** gaskets. Tighten banjo bolt (5) to 16-20 ft-lbs (21.7-27.1 Nm).
7. With the master cylinder in a level position, verify that the brake fluid level is 1/8 in. (3.2 mm) from molded boss inside reservoir. Add D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID if necessary.

⚠WARNING

A plugged or covered relief port can cause brake drag or lockup, which may result in loss of vehicle control and possible personal injury.

8. Verify proper operation of the master cylinder relief port. Actuate the brake lever with the reservoir cover removed. A slight spurt of fluid will break the surface if all internal components are working properly.
9. Install cover gasket, cover and screws. Tighten screws to 9-13 **in-lbs** (1.0-1.5 Nm).
10. Depress front brake lever several times to set brake pads to proper operating position within caliper. Bleed brake system. See [BRAKES](#) in Section 1.
11. Test brake lamp operation with the brake hand lever applied and the ignition/headlamp switch turned to IGN.

NOTE

To allow **new** brake pads to “wear in” properly with the brake rotor, avoid making hard stops for the first 100 miles (160 km).

FRONT BRAKE LINE

REMOVAL

1. Open bleeder nipple cap on front brake caliper. Install end of a length of plastic tubing over caliper bleeder valve, while placing free end in a suitable container. Open bleeder valve about 1/2-turn. Pump brake hand lever to drain brake fluid.
2. See [Figure 2-22](#). Remove screw (4) to detach brake line clamp (5) from lower triple clamp (right side).
3. Slide brake line out of wire guide (6) on front fender.
4. Remove master cylinder banjo bolt (1) (metric) and two gaskets (2) to detach brake line from master cylinder body. Discard gaskets.
5. Remove caliper banjo bolt (7) and two gaskets (8) to detach brake line from front brake caliper. Discard gaskets.
6. Carefully inspect the brake line for dents, cuts or other defects. Replace the brake line if any damage is noted.

INSTALLATION

1. See [Figure 2-22](#). Position **new** master cylinder gaskets (2) on each side of the banjo fitting. Insert banjo bolt (1) (metric) through gaskets and banjo fitting. Loosely install bolt into master cylinder.
2. From the master cylinder, the brake line runs downward in front of the right handlebar, where it turns inboard at the upper triple clamp. Loosely install clamp (5), and screw (4) to attach front brake line to right side of lower triple clamp.
3. Place brake line inside wire guide (6) on front fender.
4. Position **new** gaskets (8) on each side of banjo fitting at free end of brake line. Insert caliper banjo bolt (7) through gaskets. Loosely install bolt into caliper.
5. Tighten clamp screw (4) on lower triple clamp to 30-35 **in-lbs** (3.4-4.0 Nm).
6. Tighten master cylinder banjo bolt (1) (metric) to 17-20 ft-lbs (23.0-27.1 Nm).
7. Tighten brake caliper banjo bolt (7) to 16-20 ft-lbs (21.7-27.1 Nm).
8. Install bleeder valve if removed. Refill master cylinder and bleed brakes. See [BRAKES](#) in Section 1.
9. Test operation of brake lever.
10. Tighten front bleeder valve to 4-6 ft-lbs (5.4-8.1 Nm). Install bleeder cap.
11. Test brake lamp operation with the brake hand lever applied and ignition/headlamp switch turned to IGN.

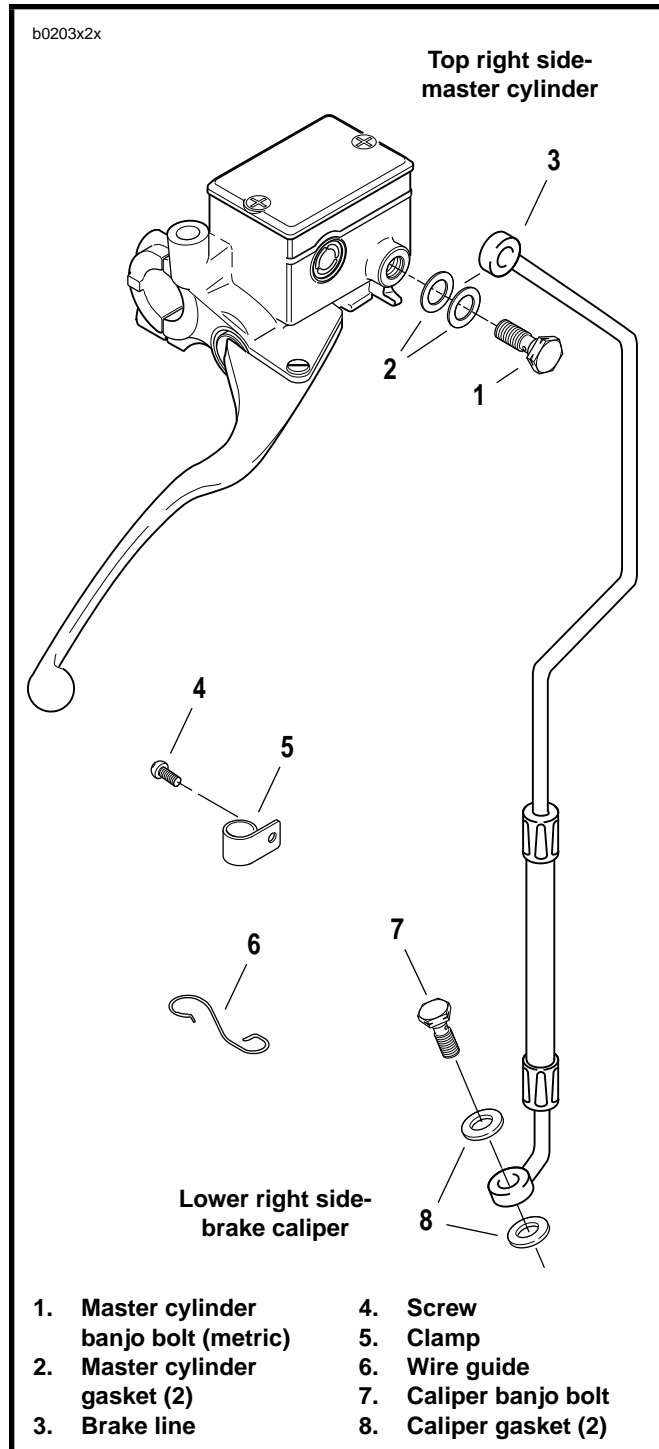


Figure 2-22. Front Brake Line

REAR BRAKE MASTER CYLINDER

ADJUSTMENT

Brake Pedal

1. See [Figure 2-23](#). Brake pedal must have 1/8 in. (3.2 mm) pushrod freeplay. If adjustment is necessary, hold pushrod (1) and loosen locknut (2) (metric).
2. Rotate pushrod to increase or decrease freeplay.
3. Tighten locknut.

NOTE

If you alter pedal height, always check pushrod freeplay.

REMOVAL/DISASSEMBLY

NOTE

Do not disassemble the master cylinder unless problems are experienced. Discard all seals during the disassembly procedure. Install a complete rebuild kit upon assembly.

1. Open bleeder nipple cap on rear caliper. Install end of a length of plastic tubing over caliper bleeder valve, while placing free end in a suitable container. Open bleeder valve (metric) about 1/2-turn. Pump brake pedal to drain brake fluid.
2. See [Figure 2-23](#). Remove screw and locknut (3) to detach male end of push rod (4) from brake pedal. Remove push rod.

CAUTION

Damaged banjo seating surfaces will leak when reassembled. Prevent damage to seating surfaces by carefully removing brake line components.

3. See [Figure 2-24](#). Remove banjo bolt (metric) (3) and two gaskets (4) from rear master cylinder. Discard gaskets.
4. Remove two screws and locknuts (5) holding the rear brake master cylinder to frame.
5. Remove reservoir hose clamp from rear master cylinder.
6. Remove screw on reservoir assembly.

CLEANING, INSPECTION AND REPAIR

WARNING

Clean brake system components using denatured alcohol. Do not use mineral-base cleaning solvents, such as gasoline or paint thinner. Use of mineral-base solvents causes deterioration of rubber parts that continues after assembly. This could result in improper and unsafe brake operation which may cause personal injury.

1. Thoroughly clean master cylinder and all brake system components. Examine walls of master cylinder reservoir for scratches and grooves. Replace if damaged. Verify that vent holes on master cylinder are completely open and free of dirt or debris. Stand master cylinder on wooden block or towel to protect seating surfaces.
2. Inspect cover gasket on front of master cylinder for cuts, tears or general deterioration. Replace as necessary.

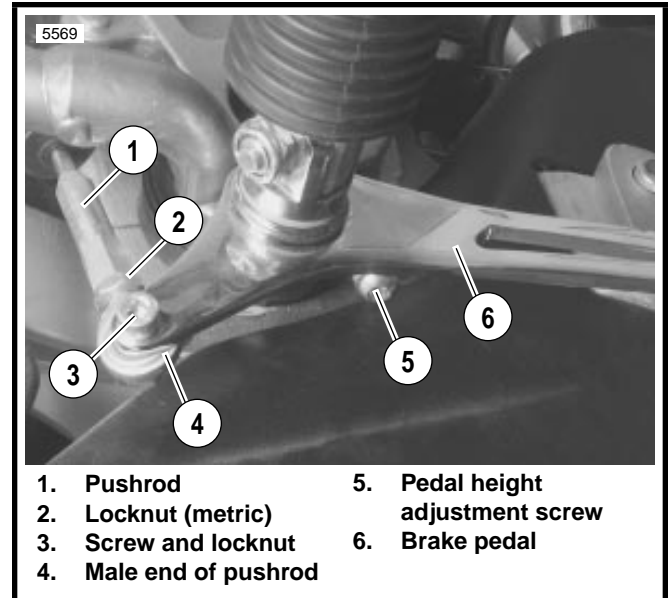


Figure 2-23. Brake Pedal

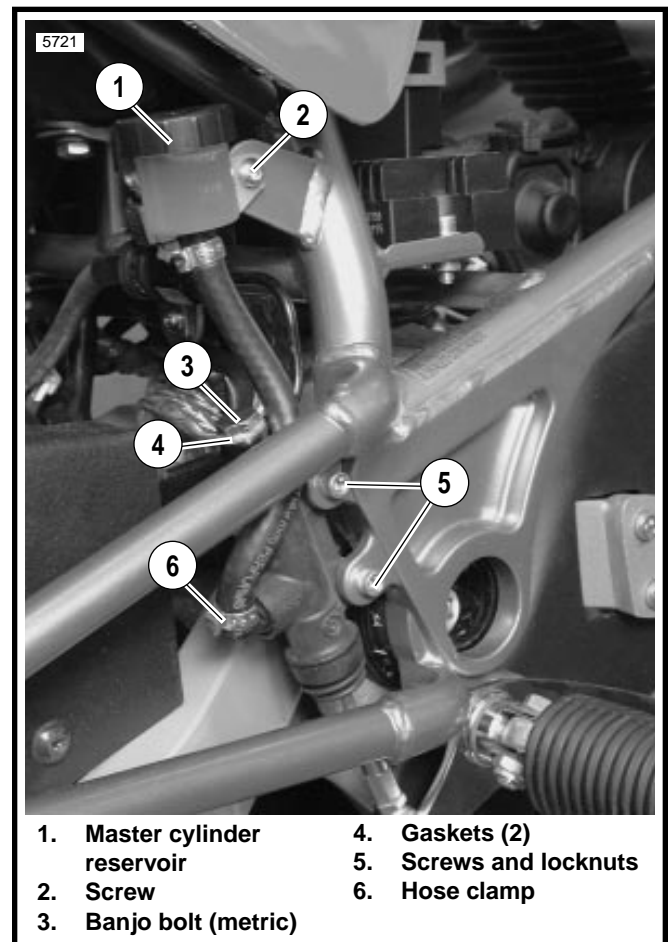


Figure 2-24. Rear Master Cylinder

ASSEMBLY/INSTALLATION

1. See [Figure 2-24](#). Mount reservoir assembly on frame with screw. Tighten screw to 12-15 **in-lbs** (1.4-1.7 Nm). Clamp reservoir hose to rear master cylinder with a **new** clamp and **HOSE CLAMP PLIERS** (Part No. HD-41137).
2. Attach rear master cylinder to frame with two screws and locknuts. Tighten to 8-10 ft-lbs (10.8-13.6 Nm).

CAUTION

To avoid leakage after assembly, verify that gaskets, banjo bolt, rear brake line and bore of master cylinder are completely clean.

3. Position **new** gaskets on each side of rear brake line at master cylinder. Insert banjo bolt (metric) through gaskets and brake line. Thread banjo bolt (metric) into rear brake master cylinder and tighten to 10-12 ft-lbs (13.6-16.2 Nm).
4. See [Figure 2-23](#). Place push rod into rear master cylinder. Install male rod end behind brake pedal with screw and locknut. Tighten screw to 10-12 ft-lbs (13.6-16.2 Nm).
5. Adjust brake pedal freeplay.
6. See [Figure 2-25](#). With the master cylinder in a level position, check that the brake fluid level is between the upper and lower marks on reservoir. Add D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID if necessary. Be sure cap is securely screwed on.

WARNING

A plugged or covered relief port can cause brake drag or lockup, which may result in loss of vehicle control and possible personal injury.

7. Bleed brake system. See [BRAKES](#) in Section 1.
8. Test brake lamp operation with the rear brake pedal applied and the ignition/headlamp switch turned to IGN.

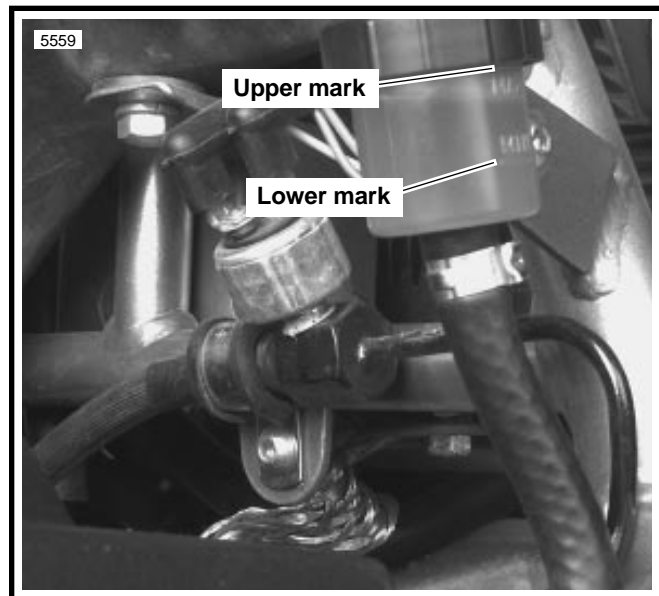


Figure 2-25. Proper Rear Brake Fluid Level

REAR BRAKE CALIPER

REMOVAL/DISASSEMBLY

NOTE

Step 1 (draining fluid) is not required for caliper removal. Drain brake fluid only when disassembling caliper.

1. See Figure 2-26. Open bleeder nipple cap on rear caliper. Install end of a length of plastic tubing over caliper bleeder valve (2), while placing free end in a suitable container. Open bleeder valve (metric) about 1/2-turn. Pump brake pedal to drain brake fluid.
2. Remove both caliper mounting screws (11) (metric) and washers (10) to free caliper from caliper mount.
3. Pump brake pedal until piston reaches its full travel. Remove banjo bolt (1) (metric) and two gaskets (3) to disconnect brake line from caliper. Discard gaskets.
4. Remove slave pad from rear pad bracket (9).
5. Remove rear pad bracket and dust boots (12, 13) from rear caliper assembly (4).
6. Remove master brake pad (7) from piston (6).

NOTE

Do not remove piston from caliper unless there are signs of hydraulic fluid leakage or piston is not operating properly. If piston must be removed, proceed to Step 7.

WARNING

When using air pressure to remove piston from caliper, piston may be ejected with considerable force. Wear safety glasses, heavy gloves and hold caliper with heavy towel to prevent personal injury.

CAUTION

Exercise care to avoid dropping piston on hard surface. Any damage requires piston replacement.

7. Hold caliper with piston facing downward. Place a clean shop towel under piston. Apply low air pressure to hydraulic brake line inlet hole until piston is forced out caliper bore. If piston is tight in bore, tap lightly around caliper while applying air pressure.
8. Remove and discard O-ring (5) from groove within piston bore.

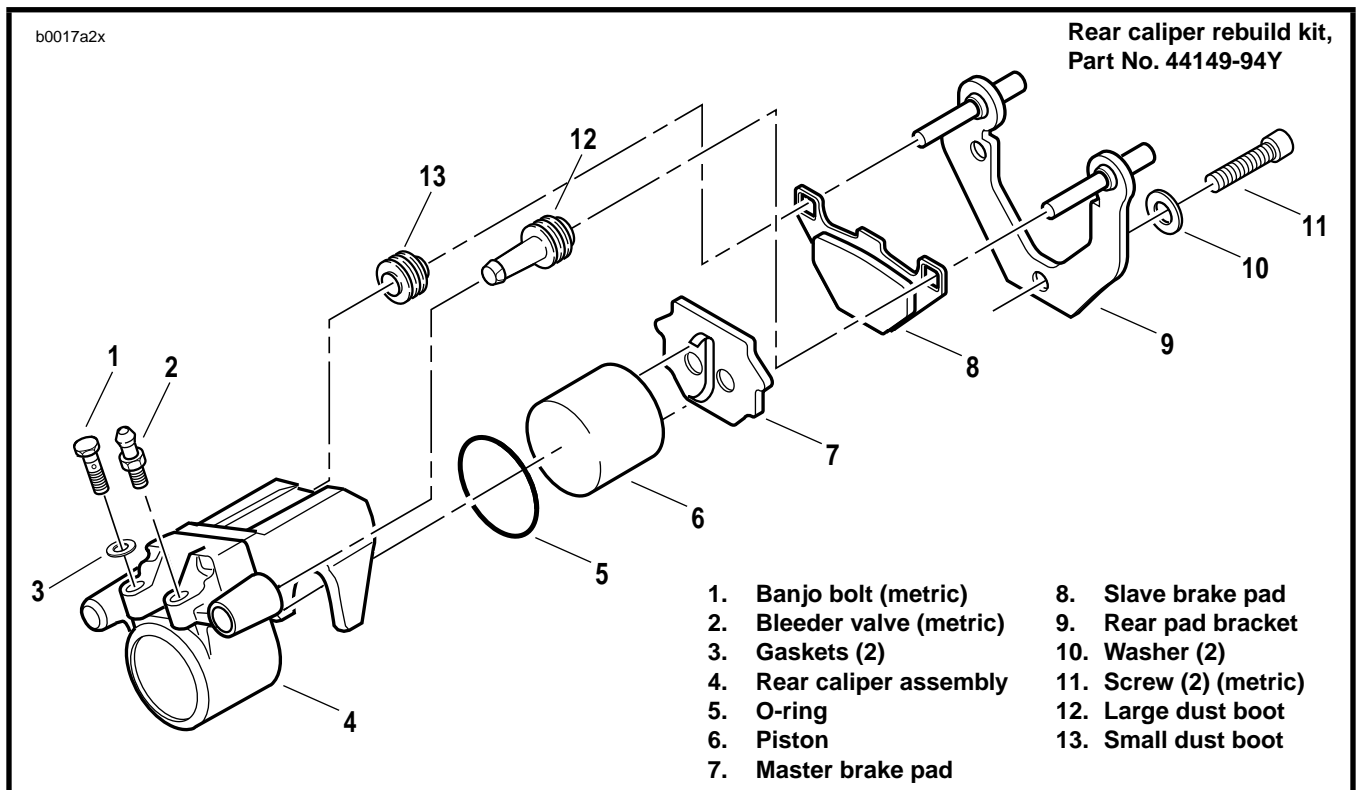


Figure 2-26. Rear Brake Pads and Caliper

CLEANING, INSPECTION AND REPAIR

⚠WARNING

Clean brake system components using denatured alcohol. Do not use mineral-base cleaning solvents, such as gasoline or paint thinner. Use of mineral-base solvents causes deterioration of rubber parts that continues after assembly. This could result in improper and unsafe brake operation which may cause personal injury.

1. Clean brake system components using denatured alcohol. Blow dry using compressed air. Carefully inspect all components. Replace any parts that appear damaged or worn. Replace rubber dust boots (12, 13) if damaged or worn. Do not hone caliper piston bore.
2. Inspect brake rotor. Replace rotor if warped or badly scored. Measure rotor thickness for excessive wear. Replace rotors less than 0.19 in. (4.8 mm) thick.

⚠WARNING

Always replace brake pads in complete sets for correct and safe brake operation. Never replace just one brake pad. Failure to install brake pads as a set may cause personal injury.

3. Inspect brake pads for damage or excessive wear. Replace both pads as a set if friction material of either pad is worn to 1/16 in. (1.6 mm) or less.

ASSEMBLY

1. See [Figure 2-26](#). Install **new** O-ring (5) within groove in piston bore of rear caliper assembly (4).
2. Apply light coat of D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID to piston OD, including chamfer. Apply a light coat to caliper piston bore (6) and ID of installed piston O-ring (5). Install piston into caliper piston bore. Use a "C" clamp to press in piston, if necessary.

NOTE

*To ensure proper brake pad-to-brake rotor clearance when the caliper is installed, piston must be pressed all the way into the bore whenever **new** brake pads are used.*

3. Install master brake pad (7) on piston (6).
4. Install dust boots (12, 13) and rear pad bracket (9) into rear caliper assembly.
5. Install slave brake pad (8).

INSTALLATION

1. With friction material facing brake rotor, align rear caliper assembly on mounting bracket.
2. See [Figure 2-26](#). Install washers and screws (metric) to fasten rear caliper assembly to mounting bracket. Tighten screws to 18-22 ft-lbs (24.4-29.8 Nm).
3. Install bleeder valve (metric) if removed. Tighten valve to 6-9 ft-lbs (8.1-12.2 Nm). Install bleeder cap.
4. Position **new** gaskets on each side of banjo fitting. Insert banjo bolt (metric) through gaskets and banjo fitting into caliper. Tighten banjo bolt (metric) to 9.5-12.5 ft-lbs (12.9-17.0 Nm).
5. With the master cylinder in a level position, check that the brake fluid level is between the upper and lower marks on reservoir. See [Figure 2-25](#). Add D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID if necessary. Be sure cap is securely screwed on.

⚠WARNING

A plugged or covered relief port can cause brake drag or lockup, which may result in loss of vehicle control and possible personal injury.

6. Depress rear brake pedal several times to set brake pads to proper operating position within caliper. Bleed brake system. See [BRAKES](#) in Section 1.
7. Verify proper reservoir fluid level as described in Step 5.
8. Test brake lamp operation with the rear brake pedal applied and the ignition/headlamp switch turned to IGN.

NOTE

*To allow **new** brake pads to "wear in" properly with the brake rotor, avoid making hard stops for the first 100 miles (160 km).*

REAR BRAKE LINE AND SWITCH

REMOVAL

1. Open bleeder nipple cap on rear caliper. Install end of a length of plastic tubing over caliper bleeder valve, while placing free end in a suitable container. Open bleeder valve (metric) about 1/2-turn. Pump rear brake pedal to drain brake fluid.
2. See [Figure 2-27](#). Remove banjo bolt (metric) and two gaskets to detach brake line from rear brake caliper. Discard gaskets.
3. See [Figure 2-28](#). Remove banjo bolt (metric) and two gaskets to detach brake line from rear master cylinder. Discard gaskets.
4. See [Figure 2-29](#). Remove screw and clamp to detach brake line clamp from frame.
5. Remove brake line from clamp under oil tank.
6. Pull terminal sockets from spade connections at top of brake lamp switch. Unthread switch from tee nut.

INSTALLATION

1. See [Figure 2-29](#). Coat brake lamp switch threads with LOCTITE PIPE SEALANT WITH TEFLON. Thread brake lamp switch to tee nut of brake line. Tighten switch assembly to 7-8 ft-lbs (9.5-10.8 Nm). Install terminal sockets on switch spade connections.
2. From left side of vehicle, feed **new** brake line from rear brake caliper mount forward to frame mount. Thread brake line right to rear master cylinder.
3. Install screw and clamp to secure rear brake line to frame. Tighten clamp screw to 10-12 ft-lbs (13.6-16.2 Nm).
4. Attach brake line to clamp under oil tank.
5. See [Figure 2-28](#). Position **new** gaskets on each side of master cylinder banjo fitting. Insert banjo bolt (metric) through gaskets and banjo fitting. Thread bolt into master cylinder and tighten to 10-12 ft-lbs (13.6-16.2 Nm).
6. See [Figure 2-27](#). Position **new** gaskets on each side of caliper banjo fitting. Insert banjo bolt (metric) through gaskets and banjo fitting into caliper. Tighten banjo bolt to 9.5-12.5 ft-lbs (12.9-17.0 Nm). Install bleeder valve if removed. Refill master cylinder and bleed brakes. See [BRAKES](#) in Section 1.
7. Tighten bleeder valve (metric) to 6-9 ft-lbs (8.1-12.2 Nm). Install bleeder cap.
8. Test brake lamp operation with the rear brake pedal applied and the ignition/headlamp switch turned to IGN.

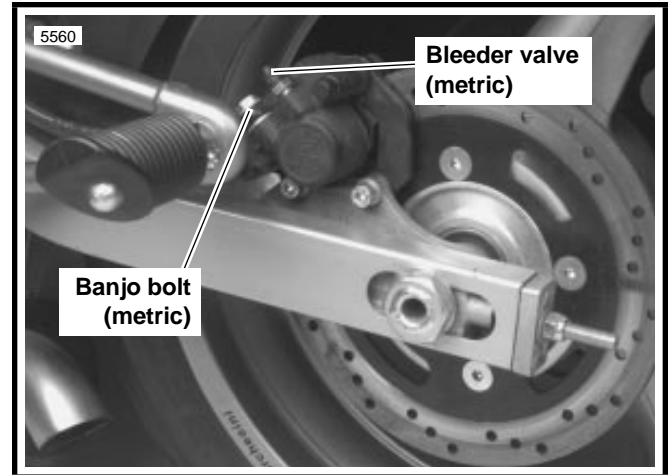


Figure 2-27. Rear Brake Caliper Banjo Bolt

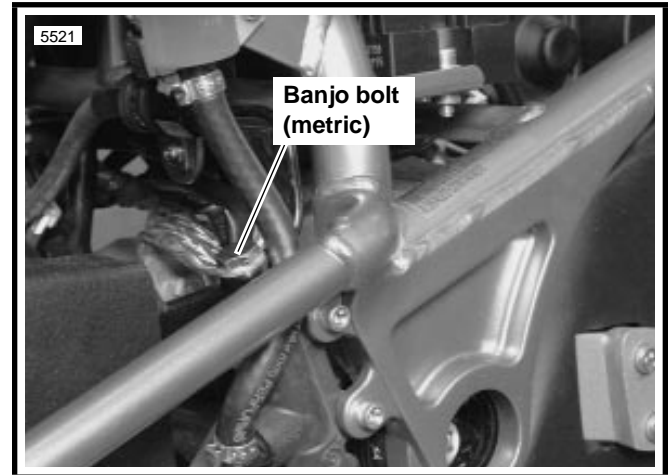


Figure 2-28. Rear Master Cylinder Banjo Bolt

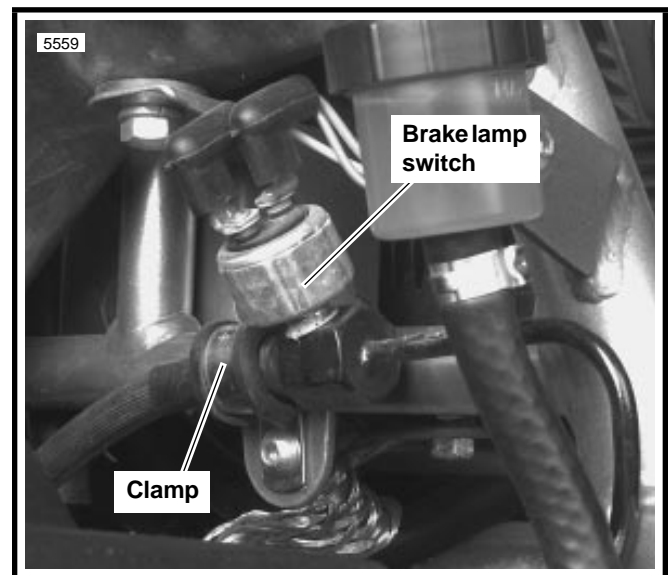


Figure 2-29. Brake Line and Switch