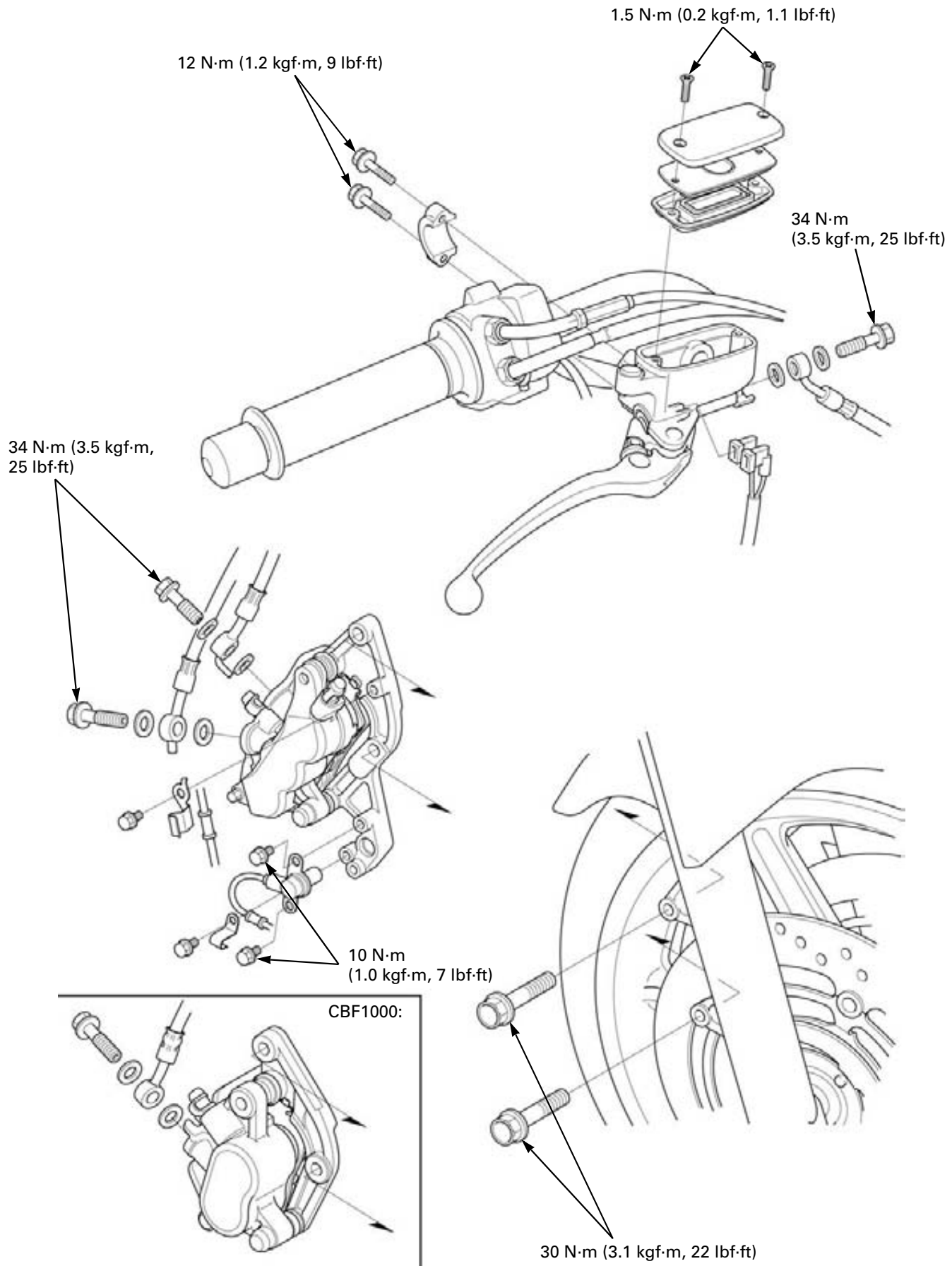


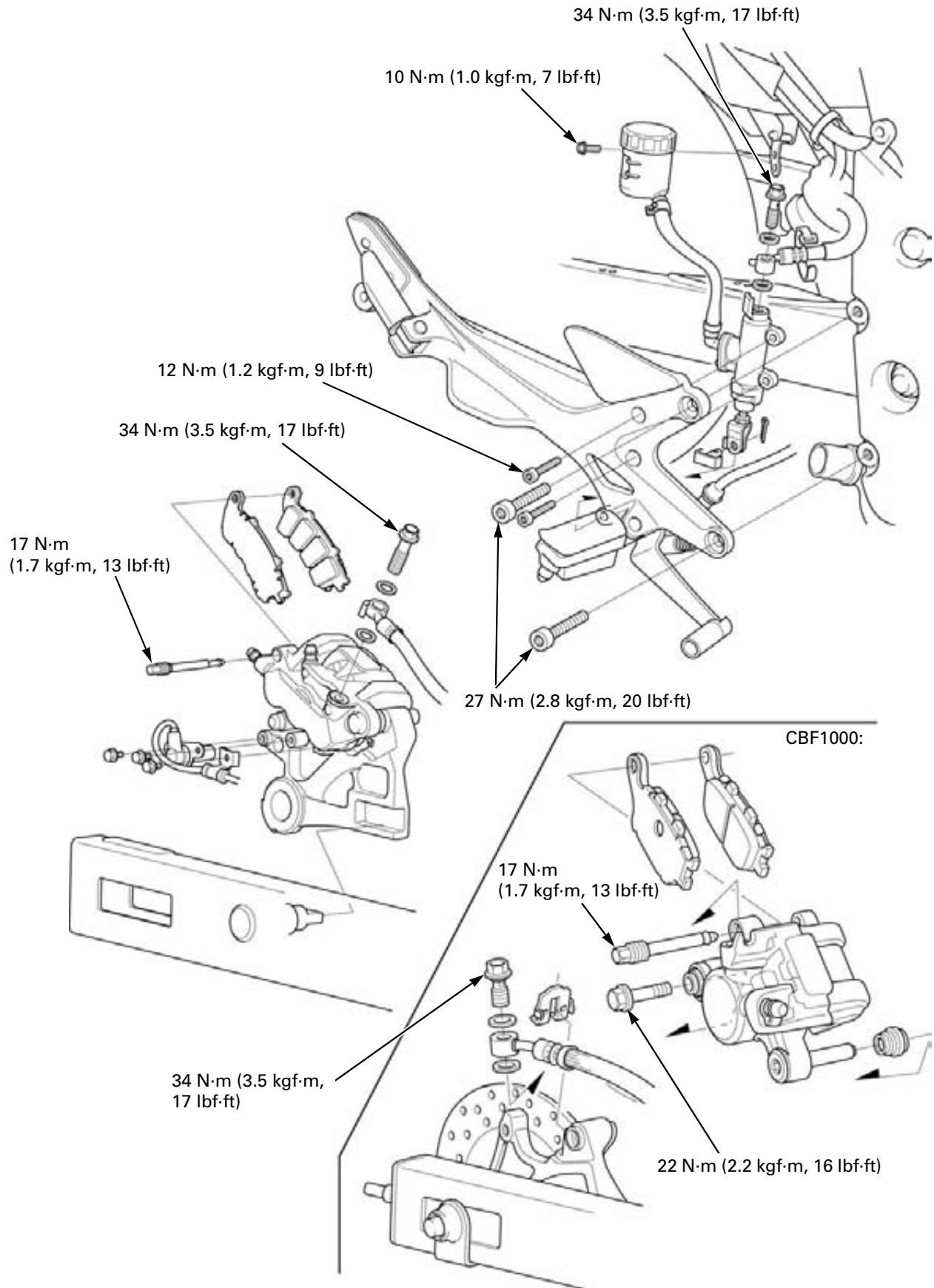
16. HYDRAULIC BRAKE

SYSTEM COMPONENTS	16-2	FRONT MASTER CYLINDER.....	16-20
SERVICE INFORMATION	16-4	REAR MASTER CYLINDER/ BRAKE PEDAL	16-25
TROUBLESHOOTING	16-6	FRONT BRAKE CALIPER (CBF1000A) ...	16-31
BRAKE FLUID REPLACEMENT/ AIR BLEEDING (CBF1000A)	16-7	FRONT BRAKE CALIPER (CBF1000).....	16-35
BRAKE FLUID REPLACEMENT/ AIR BLEEDING (CBF1000)	16-13	REAR BRAKE CALIPER (CBF1000A).....	16-39
BRAKE PAD/DISC.....	16-15	REAR BRAKE CALIPER (CBF1000)	16-43

HYDRAULIC BRAKE

SYSTEM COMPONENTS





HYDRAULIC BRAKE

SERVICE INFORMATION

GENERAL

⚠ CAUTION

Frequent inhalation of brake pad dust, regardless of material composition could be hazardous to your health.

- Avoid breathing dust particles.
- Never use an air hose or brush to clean brake assemblies. Use and OSHA-approved vacuum cleaner.

NOTICE

Spilled brake fluid will severely damage instrument lenses and painted surfaces. It is also harmful to some rubber parts. Be careful whenever you remove the reservoir cap; make sure the front reservoir is horizontal first.

- This section covers service of the conventional brake components of the brake system. For Anti-lock Brake System (ABS) service, see page 17-4.
- A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.
- Never allow contaminants (e.g., dirt, water) to get into an open reservoir.
- Once the hydraulic system has been opened, or if the brake feels spongy, the system must be bled.
- Always use fresh DOT 4 brake fluid from a sealed container when servicing the system. Do not mix different types of fluid as they may not be compatible.
- Always check brake operation before riding the motorcycle.

SPECIFICATIONS

Unit: mm (in)

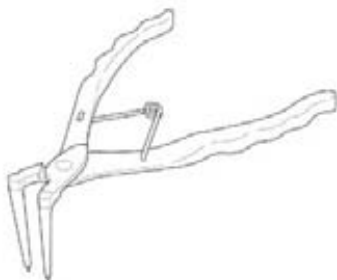
ITEM		STANDARD	SERVICE LIMIT	
Front	Specified brake fluid	DOT 4	–	
	Brake disc thickness	4.5 (0.18)	3.5 (0.14)	
	Brake disc runout	–	0.30 (0.012)	
	Master cylinder I.D.	12.700 – 12.743 (0.5000 – 0.5017)	12.755 (0.5022)	
	Master piston O.D.	12.657 – 12.684 (0.4983 – 0.4994)	12.650 (0.4980)	
	Caliper cylinder I.D.	CBF1000A:	22.650 – 22.700 (0.8917 – 0.8937)	22.710 (0.8941)
		CBF1000:	25.400 – 25.450 (1.0000 – 1.0020)	25.460 (1.0024)
	Caliper piston O.D.	CBF1000A:	22.585 – 22.618 (0.8892 – 0.8905)	22.560 (0.8882)
CBF1000:		25.318 – 25.368 (0.9968 – 0.9987)	25.310 (0.9965)	
Rear	Specified brake fluid	DOT 4	–	
	Brake disk thickness	CBF1000A:	6.0 (0.24)	5.0 (0.20)
		CBF1000:	5.0 (0.20)	4.0 (0.16)
	Brake disc runout	–	0.30 (0.012)	
	Master cylinder I.D.	CBF1000A:	17.460 17.503 (0.6874 0.6891)	17.515 (0.6896)
		CBF1000:	14.000 – 14.043 (0.5512 – 0.5529)	14.055 (0.5533)
	Master piston O.D.	CBF1000A:	17.417 – 17.444 (0.6857 – 0.6868)	17.405 (0.6852)
		CBF1000:	13.957 – 13.984 (0.5495 – 0.5506)	13.945 (0.5490)
	Caliper cylinder I.D.	CBF1000A:	25.400 – 25.450 (1.0000 – 1.0020)	25.460 (1.0024)
		CBF1000:	38.180 – 38.230 (1.5031 – 1.5051)	38.24 (1.506)
	Caliper piston O.D.	CBF1000A:	25.318 – 25.368 (0.9968 – 0.9987)	25.310 (0.9965)
		CBF1000:	38.098 – 38.148 (1.4999 – 1.5019)	38.09 (1.500)

TORQUE VALUES

Brake hose oil bolt	34 N·m (3.5 kgf·m, 25 lbf·ft)	
Front brake caliper mounting bolt	30 N·m (3.1 kgf·m, 22 lbf·ft)	ALOC bolt
Caliper bleed valve	5.4 N·m (0.6 kgf·m, 4.0 lbf·ft)	
Brake pad pin	17 N·m (1.7 kgf·m, 13 lbf·ft)	
Pad pin plug (CBF1000)	2.5 N·m (0.3 kgf·m, 1.8 lbf·ft)	
Front brake caliper slide pin	22 N·m (2.2 kgf·m, 16 lbf·ft)	Apply a locking agent to the threads.
Front brake caliper bracket pin	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Rear brake caliper slide pin	27 N·m (2.8 kgf·m, 20 lbf·ft)	
Rear brake caliper bracket pin (CBF1000A)	12 N·m (1.2 kgf·m, 9 lbf·ft)	Apply a locking agent to the threads.
Rear brake caliper bolt (CBF1000)	22 N·m (2.2 kgf·m, 16 lbf·ft)	
Front master cylinder holder bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Front master cylinder reservoir cap screw	1.5 N·m (0.2 kgf·m, 1.1 lbf·ft)	
Brake lever pivot bolt	1 N·m (0.1 kgf·m, 0.7 lbf·ft)	Apply silicone grease to the sliding surface.
Brake lever pivot nut	5.9 N·m (0.6 kgf·m, 4.4 lbf·ft)	
Front brake light switch screw	1.2 N·m (0.1 kgf·m, 0.9 lbf·ft)	
Rear master cylinder mounting bolt	12 N·m (1.2 kgf·m, 9 lbf·ft)	
Rear master cylinder reservoir hose joint screw	1.5 N·m (0.2 kgf·m, 1.1 lbf·ft)	Apply a locking agent to the threads.
Rear master cylinder push rod lock nut	17 N·m (1.7 kgf·m, 13 lbf·ft)	
Rear master cylinder reservoir mounting bolt	10 N·m (1.0 kgf·m, 7 lbf·ft)	
Front brake hose clamp bolt	10 N·m (1.0 kgf·m, 7 lbf·ft)	
Front brake hose stay mounting bolt (CBF1000A)	10 N·m (1.0 kgf·m, 7 lbf·ft)	
Rear brake hose guide screw	4.2 N·m (0.4 kgf·m, 3.1 lbf·ft)	

TOOL

Snap ring pliers
07914-SA50001



HYDRAULIC BRAKE

TROUBLESHOOTING

Brake lever/pedal soft or spongy

- Air in hydraulic system
- Leaking hydraulic system
- Contaminated brake pad/disc
- Worn caliper piston seals
- Worn master cylinder piston cups
- Worn brake pad/disc
- Contaminated caliper
- Contaminated master cylinder
- Caliper not sliding properly
- Low brake fluid level
- Clogged fluid passage
- Warped/deformed brake disc
- Sticking/worn caliper piston
- Sticking/worn master piston
- Bent brake lever/pedal

Brake lever/pedal hard

- Clogged/restricted fluid passage
- Sticking/worn caliper piston
- Sticking/worn master piston
- Caliper not sliding properly
- Worn caliper piston seals
- Bent brake lever/pedal

Brake drag

- Contaminated brake pad/disc
- Misaligned wheel
- Warped/deformed brake disc
- Caliper not sliding properly
- Clogged/restricted fluid passage
- Sticking caliper piston

BRAKE FLUID REPLACEMENT/AIR BLEEDING (CBF1000A)

BRAKE FLUID DRAINING

NOTICE

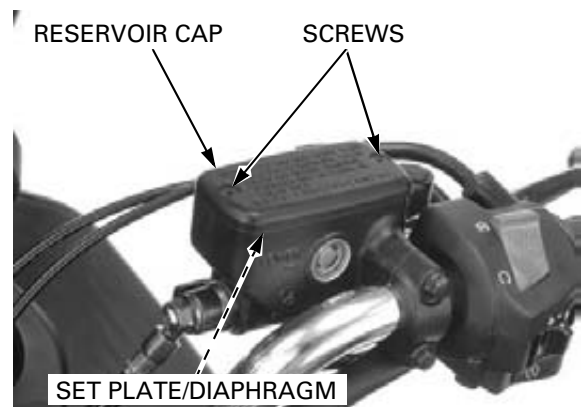
Spilled fluid can damage painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.

NOTE:

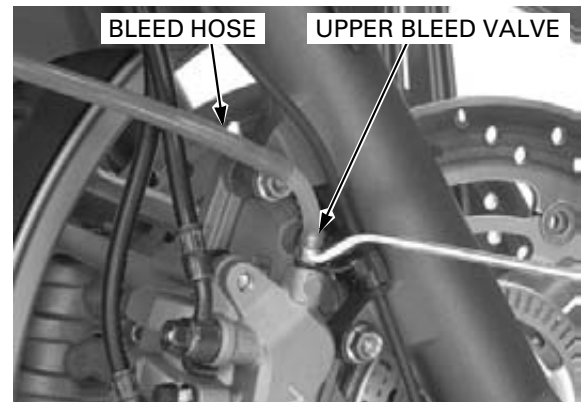
- Do not allow foreign material to enter the system when filling the reservoir.
- When using a commercially available brake bleeder, follow the manufacturer's operating instructions.

Lever Brake Line:

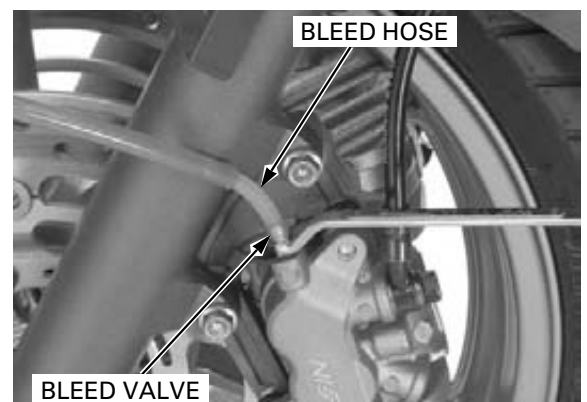
Turn the handlebar to the left until the front master cylinder reservoir is level before removing the reservoir cap.
Remove the screws, reservoir cap, set plate and diaphragm.



Connect a bleed hose to the right front caliper upper bleed valve.
Loosen the upper bleed valve and pump the brake lever until no more fluid flows out of the bleed valve.



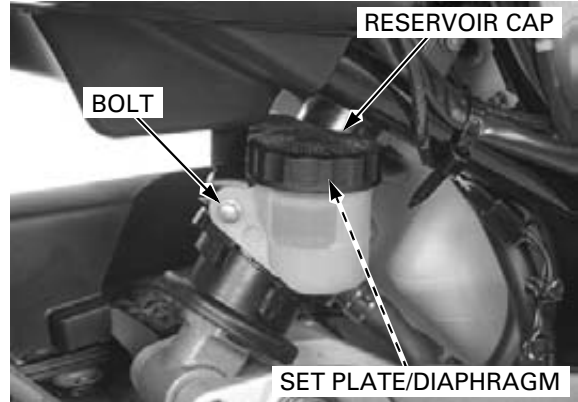
Connect a bleed hose to the left front caliper bleed valve.
Loosen the bleed valve and pump the brake lever until no more fluid flows out of the bleed valve.



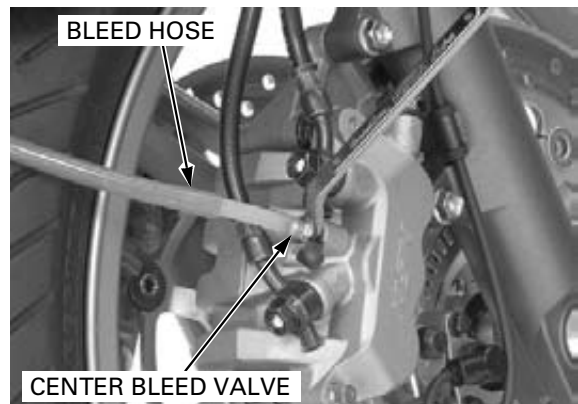
HYDRAULIC BRAKE

Pedal (Combined) Brake Line:

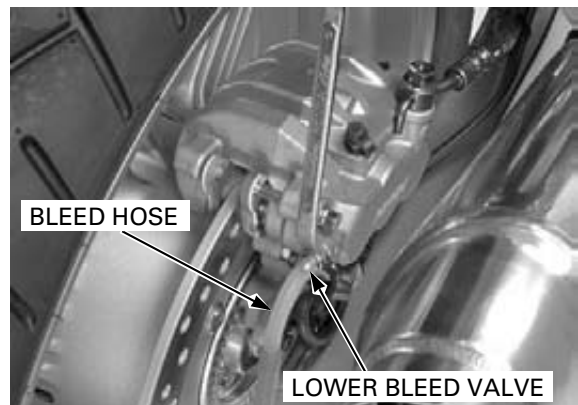
Remove the reservoir mounting bolt.
Remove the reservoir cap, set plate and diaphragm.
Secure the reservoir with the mounting bolt.



Connect a bleed hose to the right front caliper center bleed valve.
Loosen the bleed valve and pump the brake pedal until no more fluid flows out of the bleed valve.



Connect a bleed hose to the rear caliper lower bleed valve.
Loosen the bleed valve and pump the brake pedal until no more fluid flows out of the bleed valve.



FRONT BRAKE FLUID FILLING/AIR BLEEDING

Close the bleed valves.
Fill the reservoir with DOT 4 brake fluid from a sealed container.



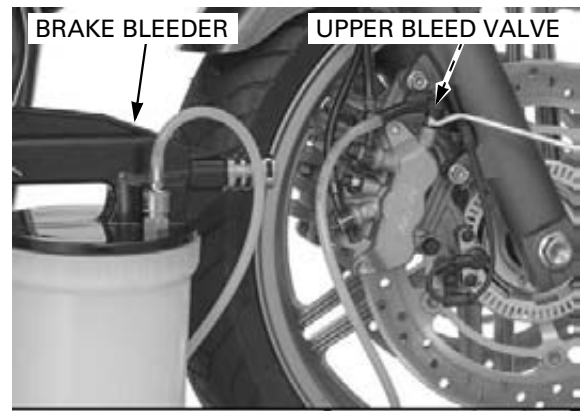
Connect a commercially available brake bleeder to the right caliper upper bleed valve. Operate the brake bleeder and loosen the bleed valve.

NOTE:

- If an automatic refill system is not used, add brake fluid when the fluid level in the reservoir is low.
- Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.
- When using a brake bleeding tool, follow the manufacturer's operating instructions.
- If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.

Close the bleed valve to the specified torque.

TORQUE: 5.4 N-m (0.6 kgf-m, 4.0 lbf-ft)



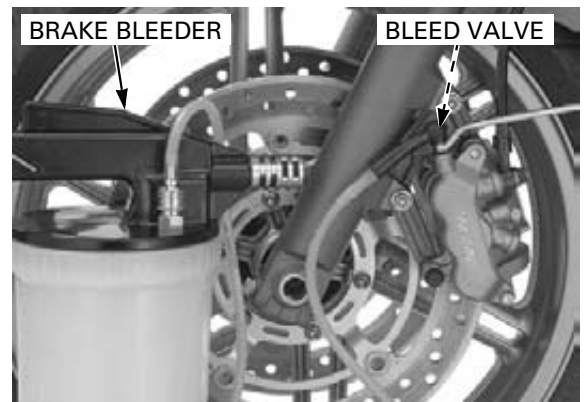
Connect a commercially available brake bleeder to the left caliper bleed valve. Operate the brake bleeder and loosen the bleed valve.

Close the bleed valve to the specified torque.

TORQUE: 5.4 N-m (0.6 kgf-m, 4.0 lbf-ft)

Perform the bleeding procedure until the system is completely flushed/bled.

Operate the brake lever. If it is still spongy, bleed the system again.

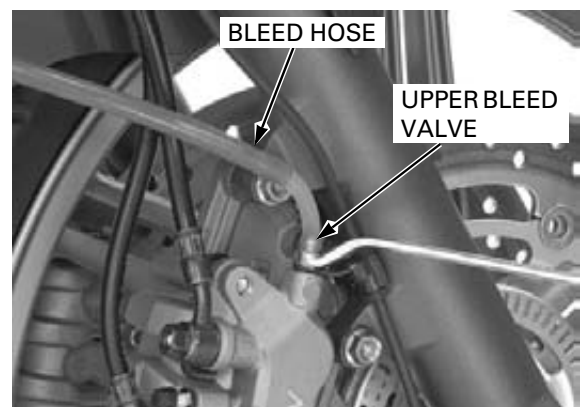


If a brake bleeder is not available, use the following procedure:

Fill the reservoir with DOT 4 brake fluid from a sealed container.

Connect a bleed hose to the right caliper upper bleed valve.

Pressurize the system with the brake lever until lever resistance is felt.



HYDRAULIC BRAKE

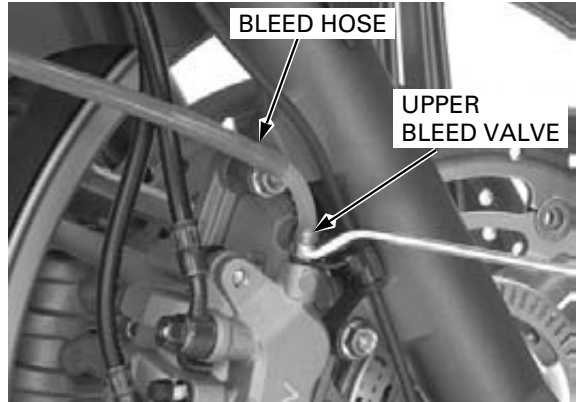
1. Squeeze the brake lever, open the bleed valve 1/4 of a turn and then close it.
 2. Release the brake lever slowly and wait several seconds after it reaches the end of its travel.
- Do not release the lever until the bleed valve has been closed.



Repeat steps 1. and 2. until air bubbles do not appear in the bleed hose.

After bleeding the air completely, tighten the bleed valve to the specified torque.

TORQUE: 5.4 N·m (0.6 kgf·m, 4.0 lbf·ft)



Fill the reservoir with DOT 4 brake fluid from a sealed container.

Connect a bleed hose to the left caliper bleed valve.

1. Squeeze the brake lever, open the bleed valve 1/4 of a turn and then close it.
 2. Release the brake lever slowly and wait several seconds after it reaches the end of its travel.
- Do not release the lever until the bleed valve has been closed.

Repeat steps 1. and 2. until air bubbles do not appear in the bleed hose.

After bleeding the air completely, tighten the bleed valve to the specified torque.

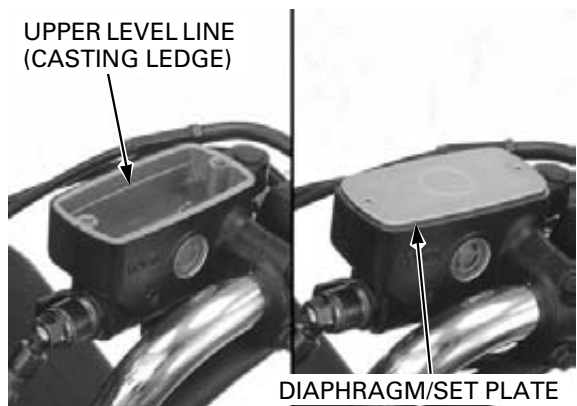
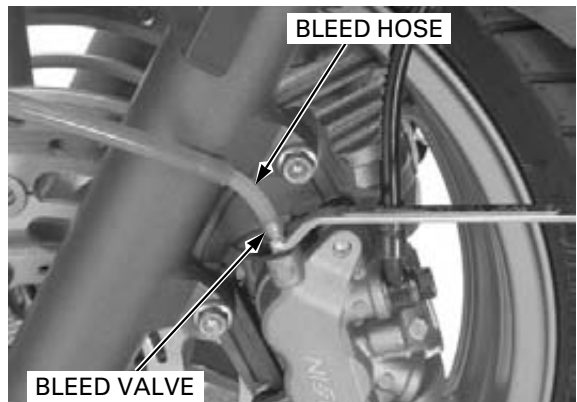
TORQUE: 5.4 N·m (0.6 kgf·m, 4.0 lbf·ft)

Fill the reservoir to the upper level line (casting ledge) with DOT 4 brake fluid.

Install the diaphragm and set plate.

Install the reservoir cap and tighten the screws to the specified torque.

TORQUE: 1.5 N·m (0.2 kgf·m, 1.1 lbf·ft)



REAR (COMBINED) BRAKE FLUID FILLING/AIR BLEEDING

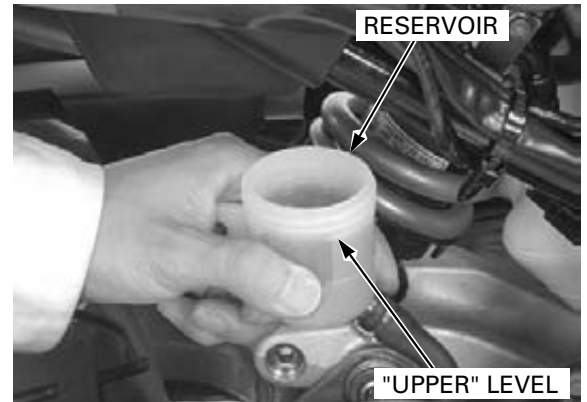
Brake Fluid Feeding:

Add fluid and bleed any air from the pedal brake line in the sequence as follow:

1. Right front brake caliper center bleed valve
2. Rear brake caliper lower bleed valve

Fill the reservoir with DOT 4 brake fluid from a sealed container.

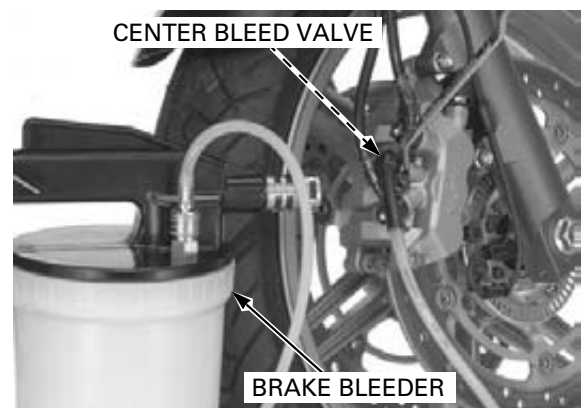
Operate the brake pedal several times to bleed any air from the master cylinder.



Connect a commercially available brake bleeder to the right front caliper center bleed valve.

NOTE:

- If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.
1. Operate the brake bleeder and loosen the right front caliper center bleed valve. Add fluid when the fluid level in the master cylinder is low to prevent drawing air into the system.
 2. Repeat the above procedures until a sufficient amount of fluid flows out of the caliper center bleed valve.

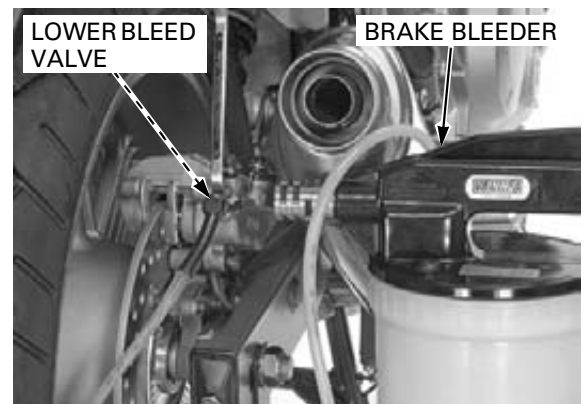


It is not problem if the fluid flowing out from the center bleed valve contains air bubbles because the lines will be bled later (page 16-12).

Connect a commercially available brake bleeder to the rear caliper lower bleed valve.

Repeat above step 1. and 2. for rear caliper lower bleed valve.

Bleed the hydraulic system (page 16-12).



HYDRAULIC BRAKE

If a brake bleeder is not available, perform the following procedure.

Connect a bleed hose to the right front caliper center bleed valve.

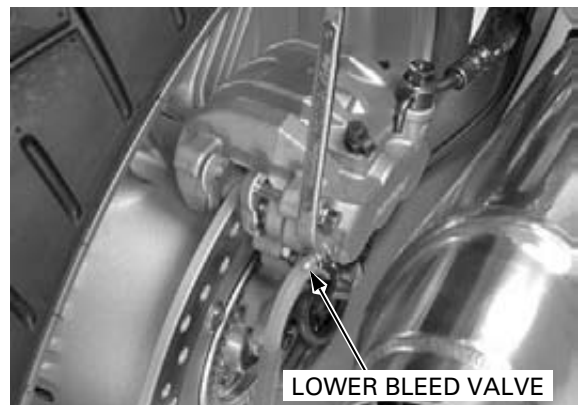
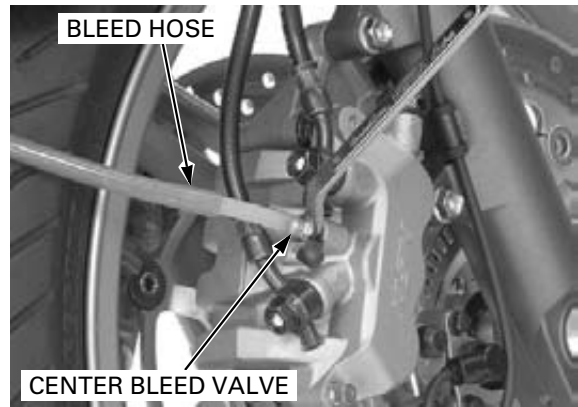
1. Pump the brake pedal several (5 – 10) times quickly, then push the brake pedal all the way down, loosen the right front caliper center bleed valve 1/4 of a turn.
Wait several seconds and close the bleed valve.
Release the brake pedal slowly and wait several seconds after it reaches the end of its travel.
2. Repeat the above procedures until a sufficient amount of the fluid flows out from the right front caliper center bleed valve.

It is not a problem if the fluid flowing out from the right front caliper center bleed valve contains air bubbles because the lines will be bled later (page 16-12).

Connect a bleed hose to the rear caliper lower bleed valve.

Repeat above steps 1. and 2. for the rear caliper lower bleed valve.

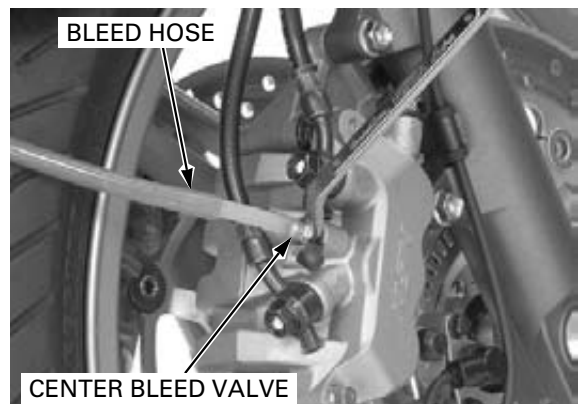
Bleed the hydraulic system (page 16-12).



Air Bleeding:

Connect a bleed hose to the right front caliper center bleed valve.

1. Pump the brake pedal several (5 – 10) times quickly, then push the brake pedal all the way down, loosen the right front caliper center bleed valve 1/4 of a turn.
Wait several seconds and close the bleed valve.
Release the brake pedal slowly and wait several seconds after it reaches the end of its travel.
2. Repeat the above procedures until air bubbles do not appear in the transparent hose.

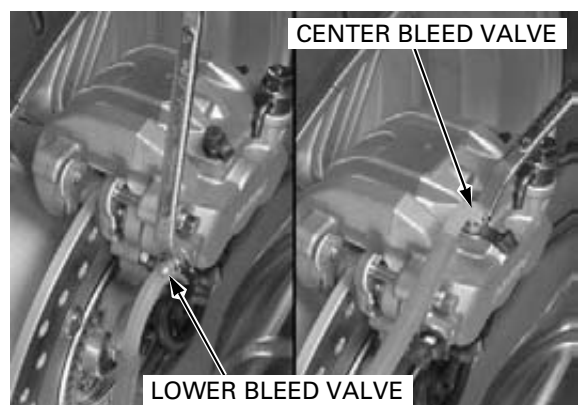


Connect a bleed hose to the rear caliper lower bleed valve.

Repeat above step 1. and 2. for the rear caliper lower bleed valve.

Connect a bleed hose to the rear caliper center bleed valve and bleed the air in the same manner as the lower bleed valve.

Note that you may feel strong resistance on the rear (combined) brake pedal during pumping when bleeding air from the caliper. This symptom is caused by the PCV (Proportional Control Valve) function. Be sure to apply the brake pedal fully.



After there are no more air bubbles in the fluid, repeat the air bleeding procedure about two or three times at each bleed valve.

Make sure the bleed valves are closed and operate the brake pedal. If it still feels spongy, bleed the system again.

After bleeding the air completely, tighten the bleed valves to the specified torque.

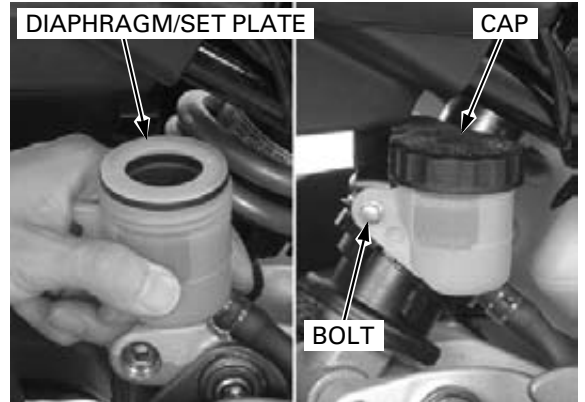
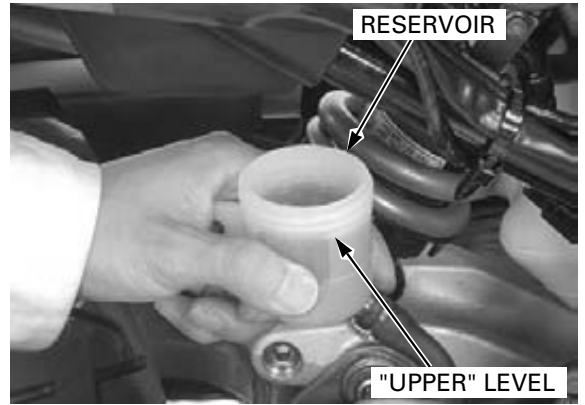
TORQUE: 5.4 N·m (0.6 kgf·m, 4.0 lbf·ft)

Fill the reservoir to the "UPPER" level with DOT 4 brake fluid.

Install the diaphragm, set plate and reservoir cap.

Install the reservoir onto the frame and tighten the mounting bolt to the specified torque.

TORQUE: 10 N·m (1.0 kgf·m, 7 lbf·ft)

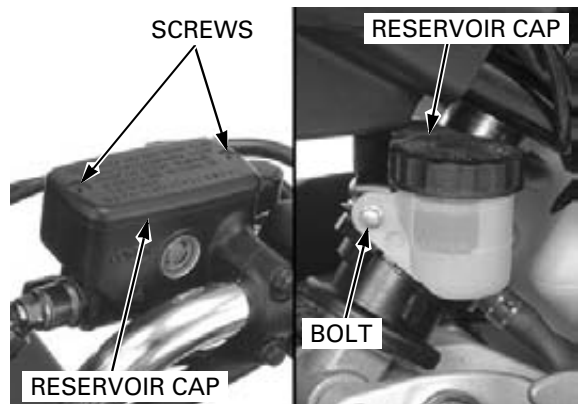


BRAKE FLUID REPLACEMENT/AIR BLEEDING (CBF1000)

BRAKE FLUID DRAINING

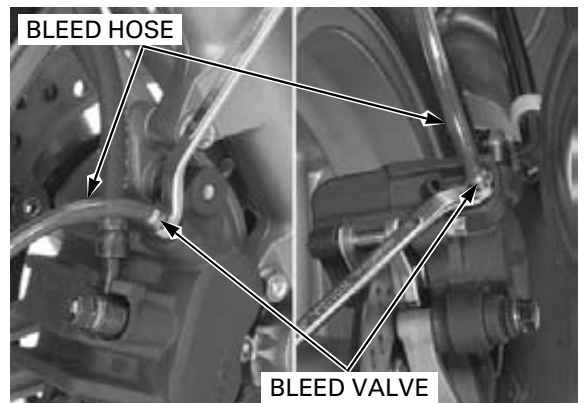
Front brake: Turn the handlebar to the left until the front master cylinder reservoir is level before removing the reservoir cap. Remove the screws, reservoir cap, set plate and diaphragm.

Rear brake: Remove the reservoir mounting bolt. Remove the reservoir cap, set plate and diaphragm. Secure the reservoir with the mounting bolt.



Connect a bleed hose to the brake caliper bleed valve.

Loosen the bleed valve and pump the brake lever (pedal) until no more fluid flows out of the bleed valve.



HYDRAULIC BRAKE

BRAKE FLUID FILLING/AIR BLEEDING

Close the bleed valve.

Fill the reservoir with DOT 4 brake fluid from a sealed container.

Connect a commercially available brake bleeder to the bleed valve.

Operate the brake bleeder and loosen the bleed valve.

NOTE:

- If an automatic refill system is not used, add brake fluid when the fluid level in the reservoir is low.
- Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.
- When using a brake bleeding tool, follow the manufacturer's operating instructions.
- If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.

Perform the bleeding procedure until the system is completely flushed/bled.

Close the bleed valve and operate the brake lever (pedal). If it still feels spongy, bleed the system again.

If a brake bleeder is not available, use the following procedure:

Connect a bleed hose to the bleed valve.

Pressurize the system with the brake lever (pedal) until resistance is felt.

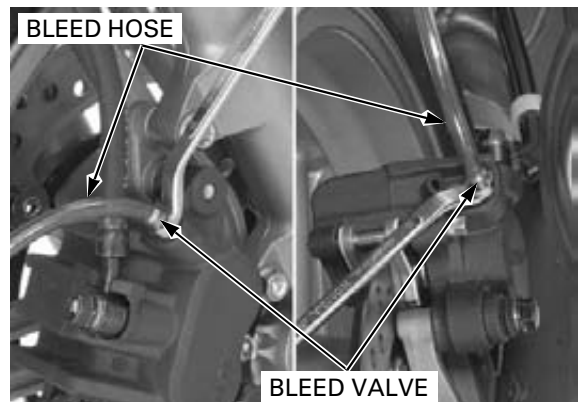
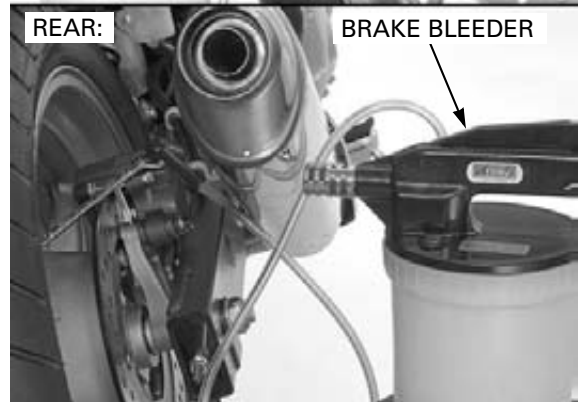
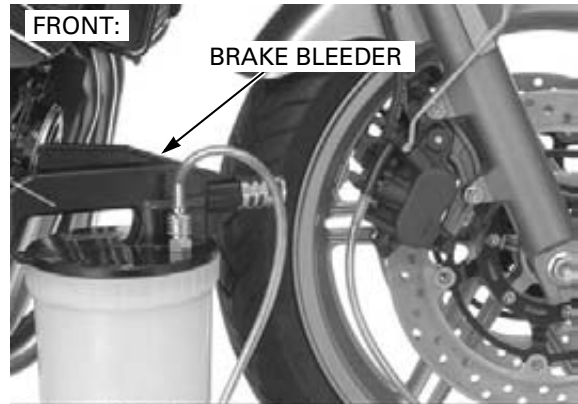
1. Squeeze the brake lever (depress the brake pedal), open the bleed valve 1/4 of a turn and then close it.
2. Release the brake lever (pedal) slowly and wait several seconds after it reaches the end of its travel.
3. Repeat steps 1. and 2. until air bubbles do not appear in the bleed hose.

After there are no more air bubbles in the fluid, repeat the air bleeding procedure about two or three times at each bleed valve.

Make sure the bleed valves are closed and operate the brake pedal. If it still feels spongy, bleed the system again.

After bleeding the air completely, tighten the bleed valves to the specified torque.

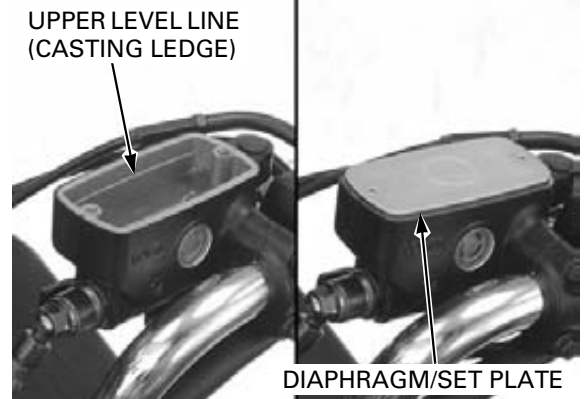
TORQUE: 5.4 N·m (0.6 kgf·m, 4.0 lbf·ft)



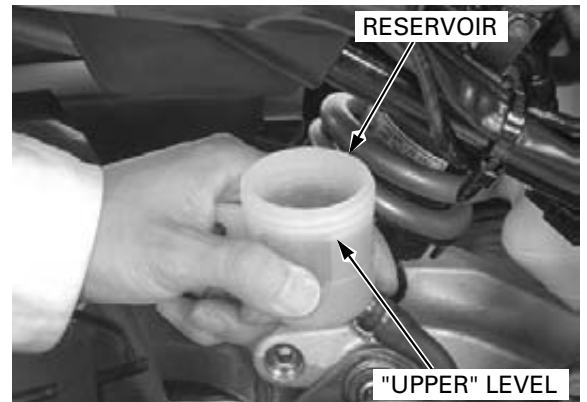
Fill the front brake reservoir to the upper level line (casting ledge) with DOT 4 brake fluid.

Install the diaphragm, set plate and reservoir cap, then tighten the screws to the specified torque.

TORQUE: 1.5 N-m (0.2 kgf-m, 1.1 lbf-ft)



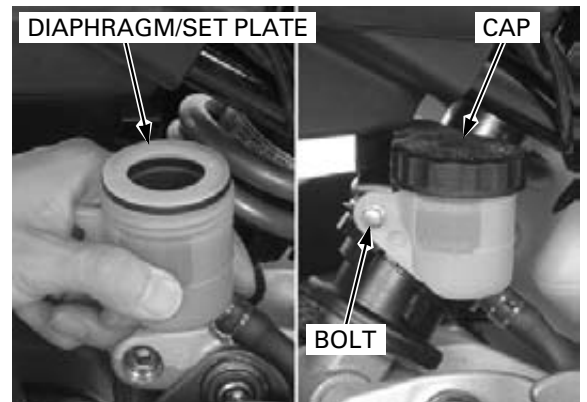
Fill the rear brake reservoir to the upper level line with DOT 4 brake fluid.



Install the diaphragm, set plate and reservoir cap.

Install the reservoir onto the frame and tighten the mounting bolt to the specified torque.

TORQUE: 10 N-m (1.0 kgf-m, 7 lbf-ft)



BRAKE PAD/DISC

FRONT BRAKE PAD REPLACEMENT (CBF1000A)

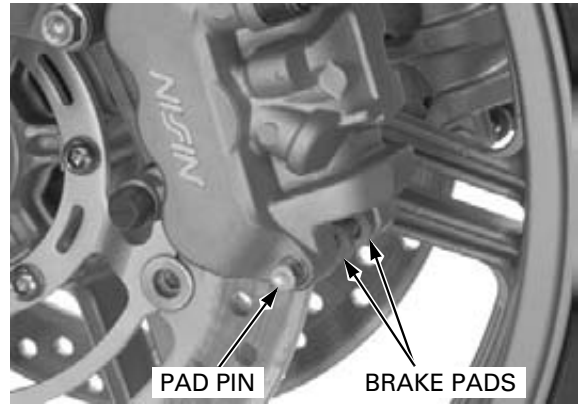
Check the brake fluid level in the reservoir as this operation causes the level to rise.

Push the caliper piston all the way in to allow installation of new brake pads by pushing the caliper body inward.



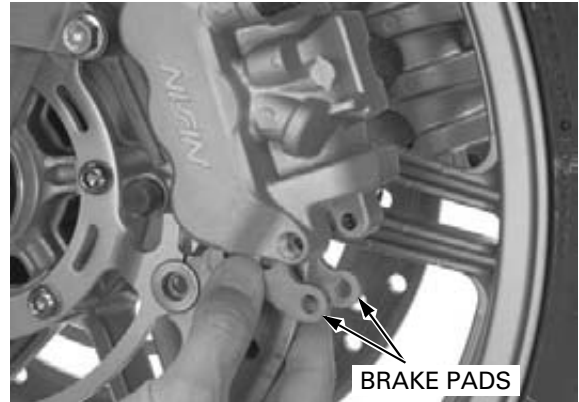
HYDRAULIC BRAKE

Loosen the pad pin.
Pull the pad pin out of the caliper body while holding the brake pads.



Remove the brake pads.

Make sure that the pad spring is in place.



Always replace the brake pads in pairs to ensure even disc pressure.

Install new brake pads into the caliper so their ends rest into the pad retainer on the bracket properly.

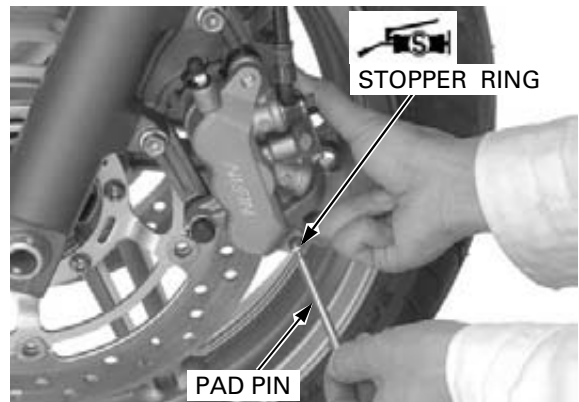
Coat the stopper ring on the pad pin end with the silicone grease.

Install the pad pin by pushing in the pads against the pad spring to align the pad pin holes in the pads and caliper body.

Tighten the pad pin to the specified torque.

TORQUE: 17 N·m (1.7 kgf·m, 13 lbf·ft)

Operate the brake lever to seat the caliper piston against the pads.



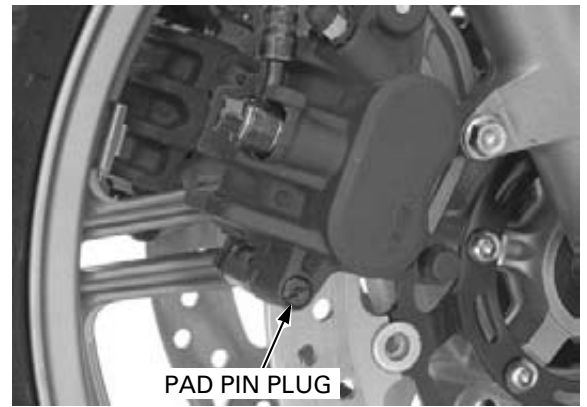
FRONT BRAKE PAD REPLACEMENT (CBF1000)

Check the brake fluid level in the reservoir as this operation causes the level to rise.

Push the caliper piston all the way in to allow installation of new brake pads by pushing the caliper body inward.



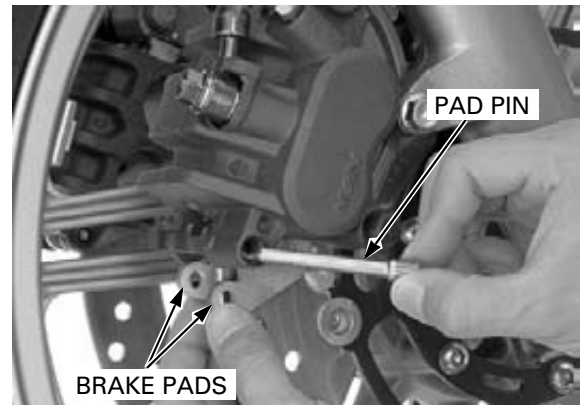
Remove the pad pin plug.



Remove the pad pin and brake pads.
Make sure that the pad spring is in place.

Always replace the brake pads in pairs to assure even disc pressure.

Install the new brake pads.
Push the brake pads against the pad spring, then install the pad pin.

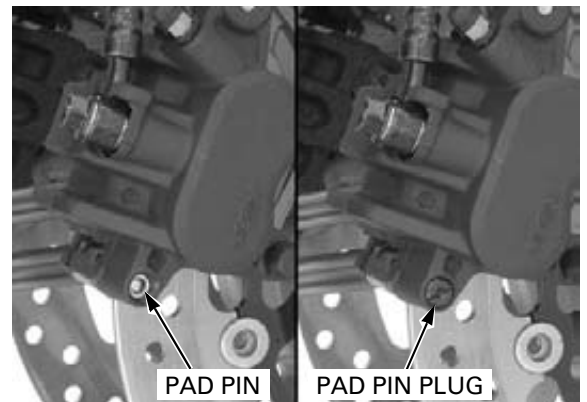


Tighten the pad pin to the specified torque.

TORQUE: 17 N·m (1.7 kgf·m, 13 lbf·ft)

Install the pad pin plug and tighten it to the specified torque.

TORQUE: 2.5 N·m (0.3 kgf·m, 1.8 lbf·ft)



REAR BRAKE PAD REPLACEMENT (CBF1000A)

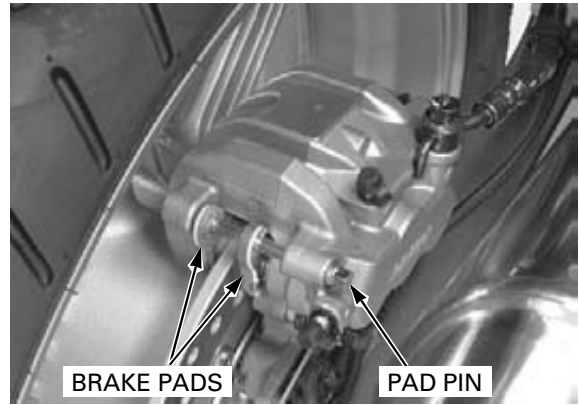
Check the brake fluid level in the reservoir as this operation causes the level to rise.

Push the caliper piston all the way in to allow installation of new brake pads by pushing the caliper body inward.



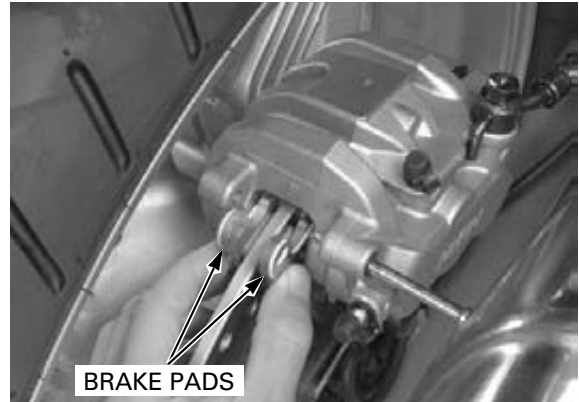
HYDRAULIC BRAKE

Loosen the pad pin.
Pull the pad pin out of the caliper body while holding the brake pads.



Remove the brake pads.

Make sure that the pad spring is in place.



Always replace the brake pads in pairs to assure even disc pressure.

Install new brake pads into the caliper so their ends rest into the pad retainer on the bracket properly.

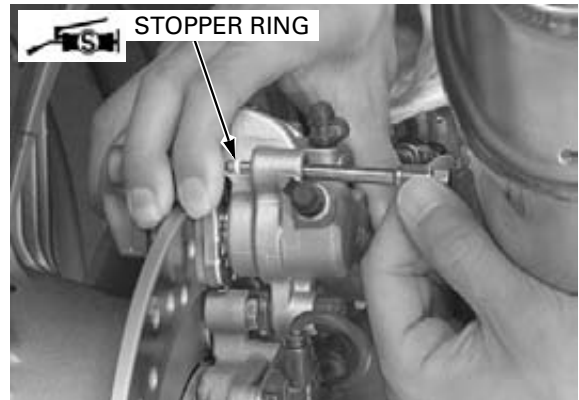
Coat the stopper ring on the pad pin end with the silicone grease.

Install the pad pin by pushing in the pads against the pad spring to align the pad pin holes in the pads and caliper body.

Tighten the pad pin to the specified torque.

TORQUE: 17 N·m (1.7 kgf·m, 13 lbf·ft)

Operate the brake pedal to seat the caliper piston against the pads.



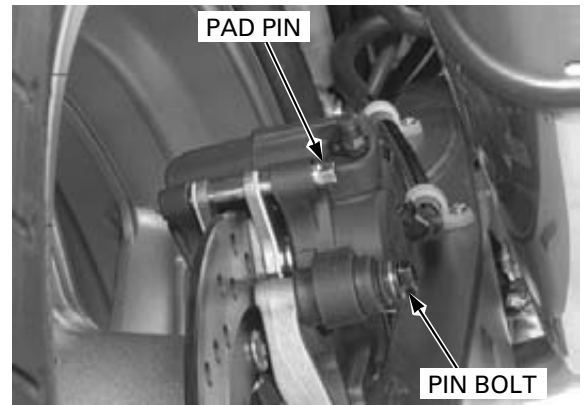
REAR BRAKE PAD REPLACEMENT (CBF1000)

Check the brake fluid level in the reservoir as this operation causes the level to rise.

Push the caliper piston all the way in to allow installation of new brake pads by pushing the caliper body inward.



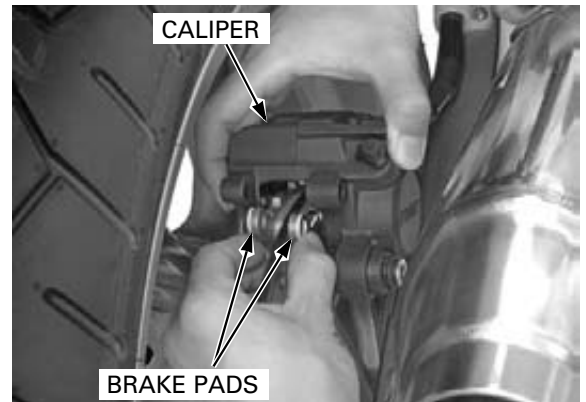
Remove the pad pin.
Remove the caliper sub slide pin bolt.



Pivot the caliper up and remove the brake pads.
Make sure that the brake pad spring is in place.

Always replace the brake pads in pairs to assure even disc pressure.

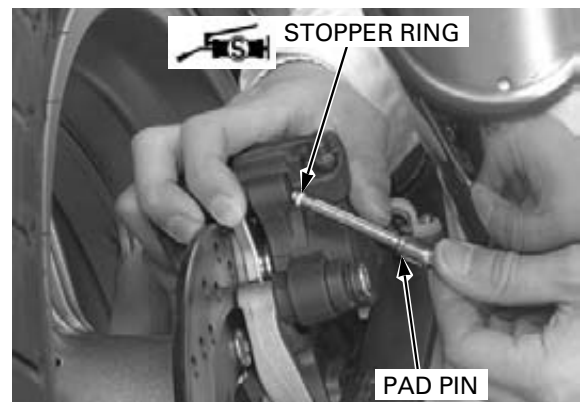
Install the new brake pads.



Coat the stopper ring on the pad pin end with the silicone grease.

Lower the caliper while pushing the pads against the pad spring so that the pad ends are positioned onto the retainer on the caliper bracket.

Install the pad pin.

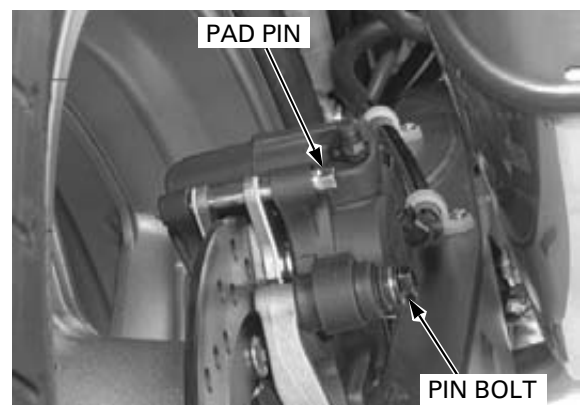


Install the caliper sub slide pin bolt and tighten it to the specified torque.

TORQUE: 22 N·m (2.2 kgf·m, 16 lbf·ft)

Tighten the pad pin to the specified torque.

TORQUE: 17 N·m (1.7 kgf·m, 13 lbf·ft)



HYDRAULIC BRAKE

BRAKE DISC INSPECTION

Visually inspect the disc for damage or cracks.

Measure the brake disc thickness at several points.

SERVICE LIMITS: Front: 3.5 mm (0.14 in)

Rear:

CBF1000A: 5.0 mm (0.20 in)

CBF1000: 4.0 mm (0.16 in)



Measure the brake disc warpage with a dial indicator.

SERVICE LIMIT: Front/Rear: 0.30 mm (0.012 in)

Check the wheel bearing for excessive play, if the warpage exceeds the service limit.

Replace the brake disc if the bearings are normal.

Refer to brake disc replacement:

- Front brake disc (page 14-13)
- Rear brake disc (page 15-6)



FRONT MASTER CYLINDER

REMOVAL

NOTE:

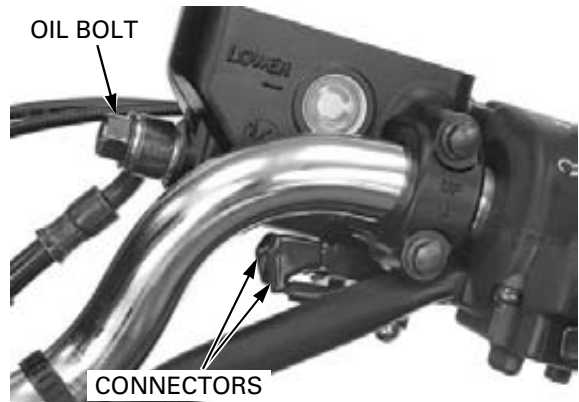
- Avoid spilling fluid on painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.

Drain the brake fluid from the front brake hydraulic system (page 16-7).

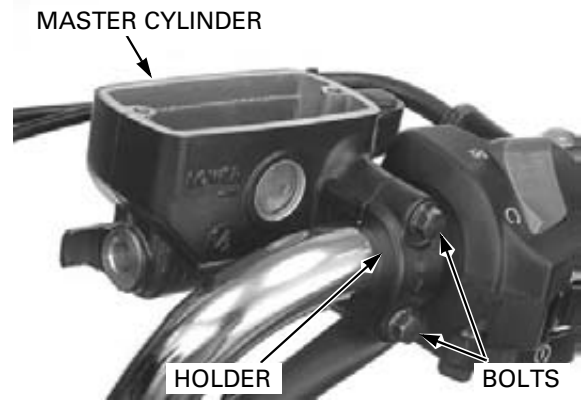
Disconnect the brake light switch wire connectors.

Remove the brake hose oil bolt and sealing washers.

When removing the oil bolt, cover the end of the hose to prevent contamination.

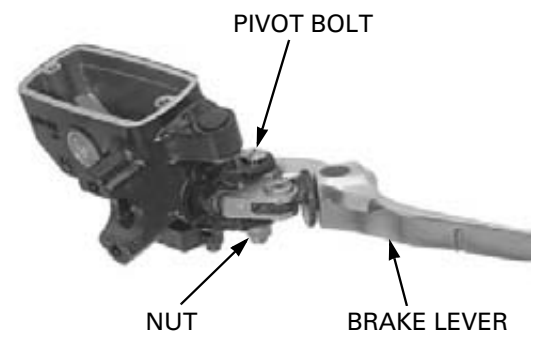


Remove the bolts from the master cylinder holder and remove the master cylinder assembly.

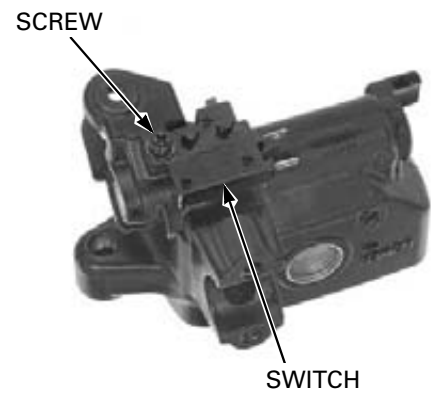


DISASSEMBLY

Remove the nut, pivot bolt and brake lever.



Remove the screw and brake light switch.



Remove the boot.



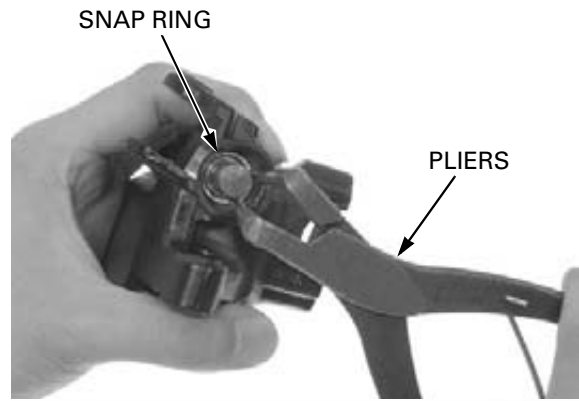
HYDRAULIC BRAKE

Remove the snap ring from the master cylinder body using the special tool.

TOOL:

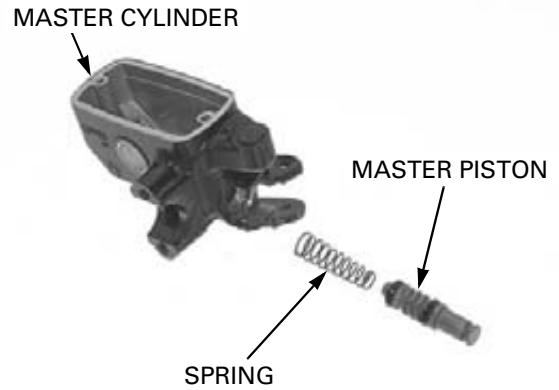
Snap ring pliers

07914-SA50001



Remove the master piston and spring.

Clean the inside of the master cylinder, reservoir and the master piston in clean brake fluid.



INSPECTION

Check the piston cups and boot for wear, deterioration or damage.

Check the spring for fatigue or damage.

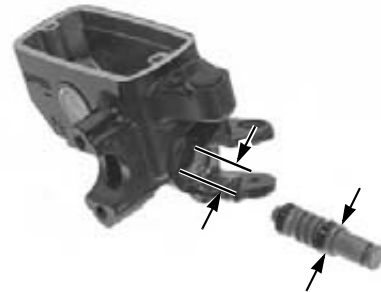
Check the master cylinder and piston for scoring, scratches or damage.

Measure the master cylinder I.D.

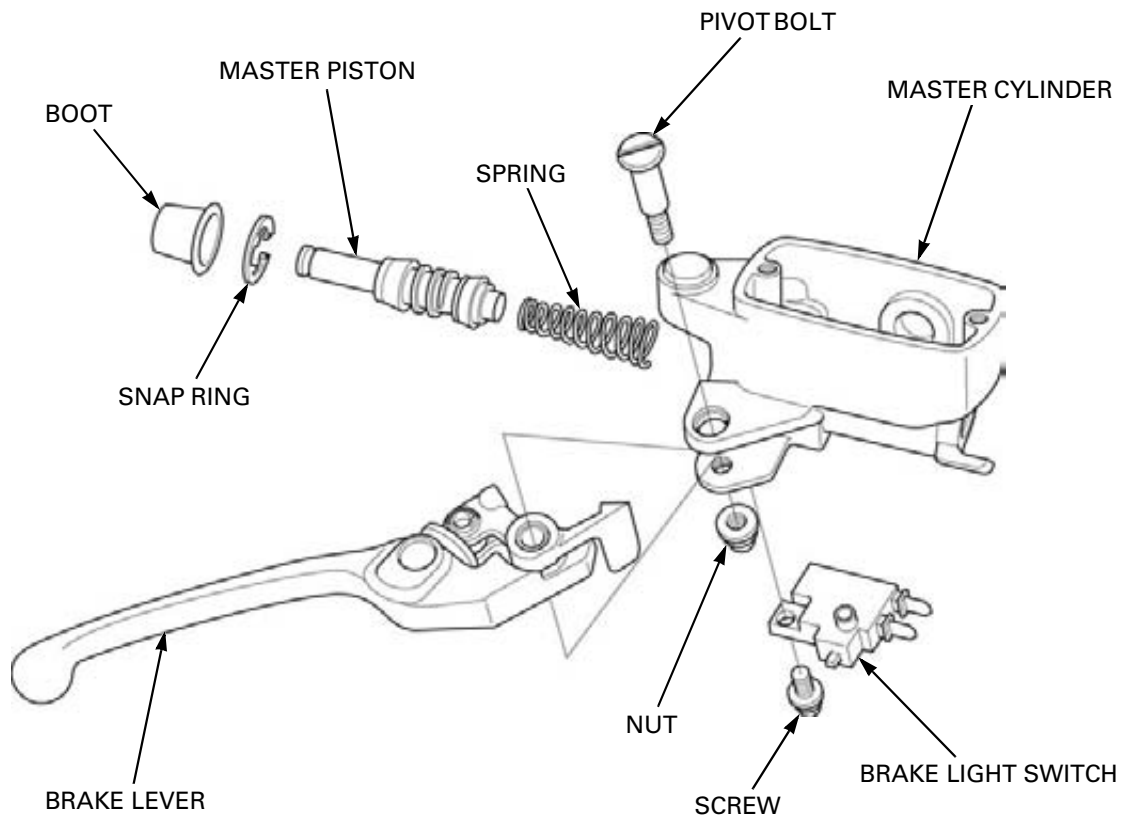
SERVICE LIMIT: 12.755 mm (0.5022 in)

Measure the master piston O.D.

SERVICE LIMIT: 12.650 mm (0.4980 in)



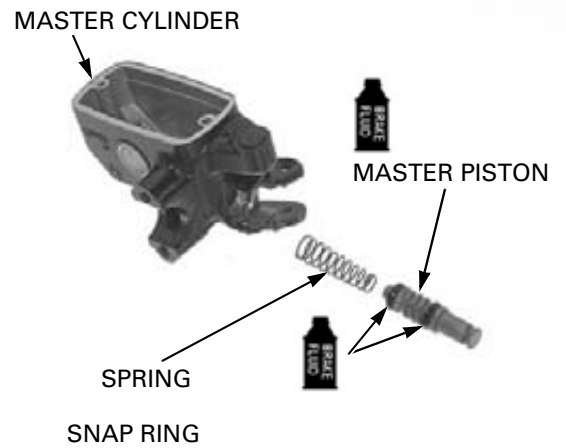
ASSEMBLY



Coat the master piston and piston cups with clean brake fluid.
Install the spring onto the piston end.

Do not allow the piston cup lips to turn inside out.

Install the master piston with the spring into the master cylinder.

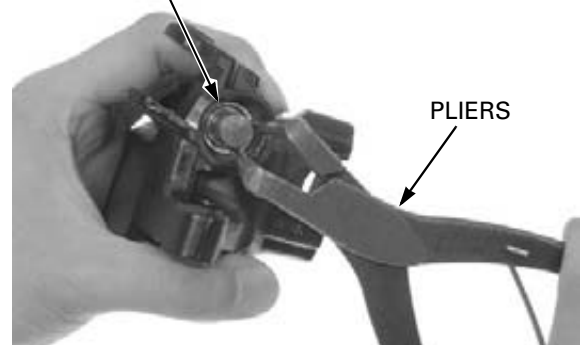


Make sure the snap ring is firmly seated in the groove.

Install the snap ring into the groove in the master cylinder.

TOOL:
Snap ring pliers

07914-SA50001

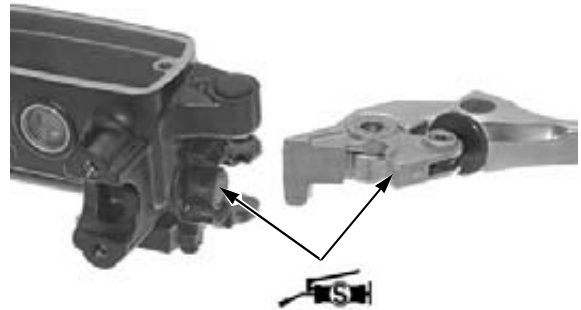


HYDRAULIC BRAKE

Apply silicone grease inside the boot.
Install the boot into the master cylinder and the piston groove.



Apply silicone grease to the brake lever contacting surface of the master piston.

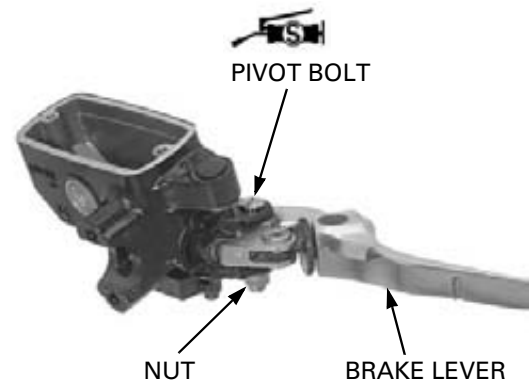


Apply silicone grease to the brake lever pivot bolt sliding surface.
Install the brake lever and pivot bolt, and tighten it.

TORQUE: 1 N·m (0.1 kgf·m, 0.7 lbf·ft)

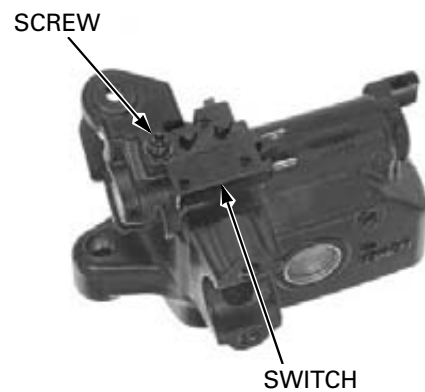
Install the nut and tighten it while holding the pivot bolt.

TORQUE: 5.9 N·m (0.6 kgf·m, 4.4 lbf·ft)



Install the brake light switch and tighten the screw.

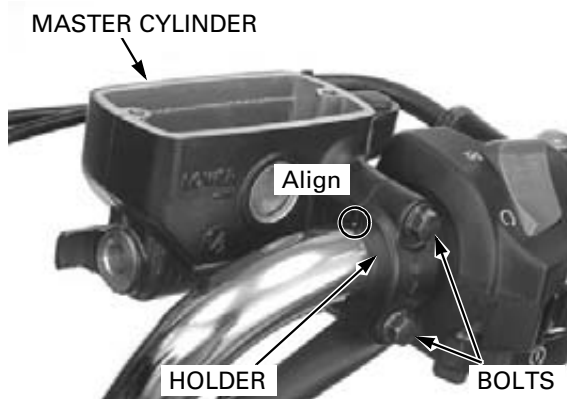
TORQUE: 1.2 N·m (0.1 kgf·m, 0.9 lbf·ft)



Install the master cylinder holder with its "UP" mark facing up.

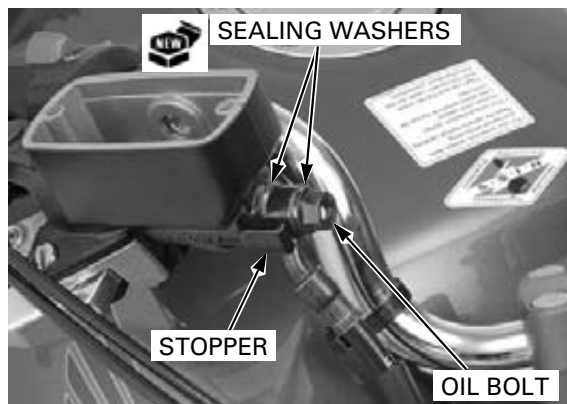
Install the master cylinder, holder and bolts. Align the edge of the master cylinder with the punch mark on the handlebar, and tighten the upper bolt first, then the lower bolt.

TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



Connect the brake hose to the master cylinder with the oil bolt and new sealing washers. Tighten the oil bolt while holding the hose eyelet against the stopper.

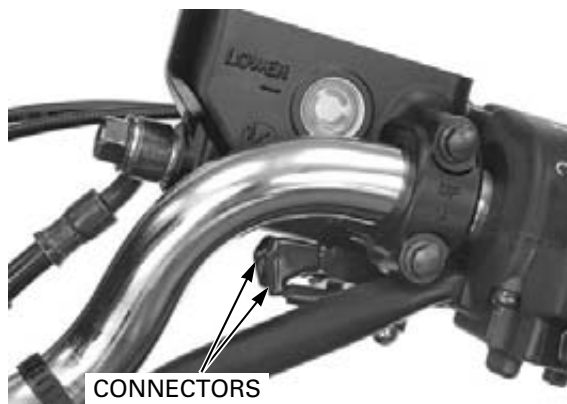
TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)



Connect the brake light switch wire connectors.

Fill and bleed the hydraulic system:

- CBF1000A (page 16-7)
- CBF1000 (page 16-13)

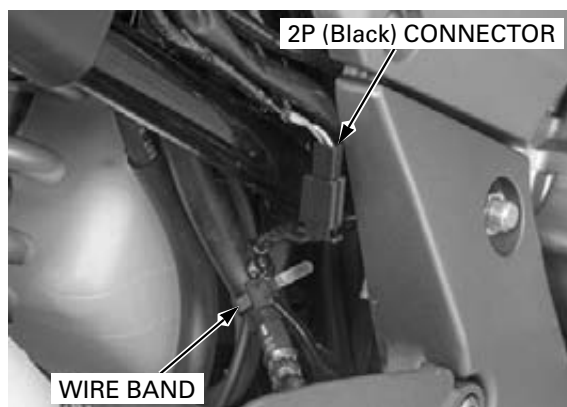


REAR MASTER CYLINDER/BRAKE PEDAL

REMOVAL

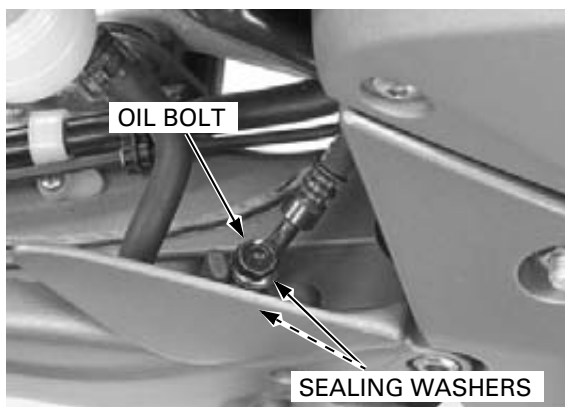
Drain the fluid from the brake hydraulic system (page 16-7).

Remove the wire band and disconnect the rear brake light switch 2P (black) connector.

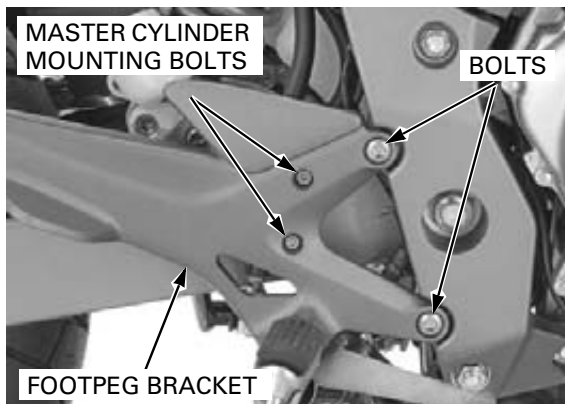


HYDRAULIC BRAKE

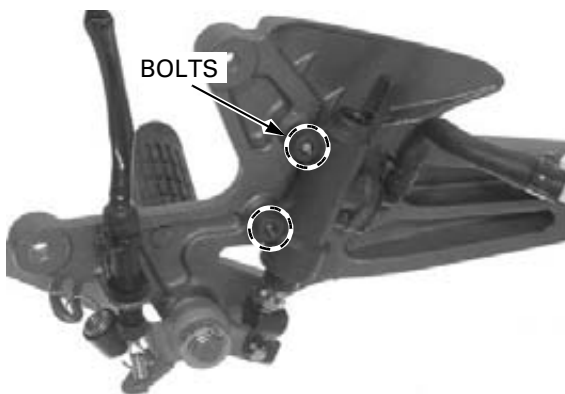
Remove the oil bolt and sealing washers.



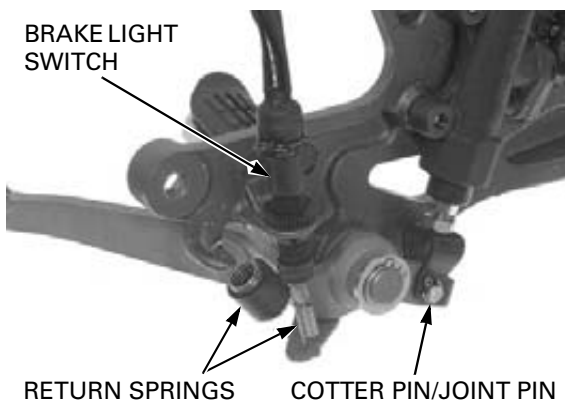
Remove the right muffler (page 3-12).
Loosen the rear master cylinder mounting bolts.
Remove the bolts and footpeg bracket.



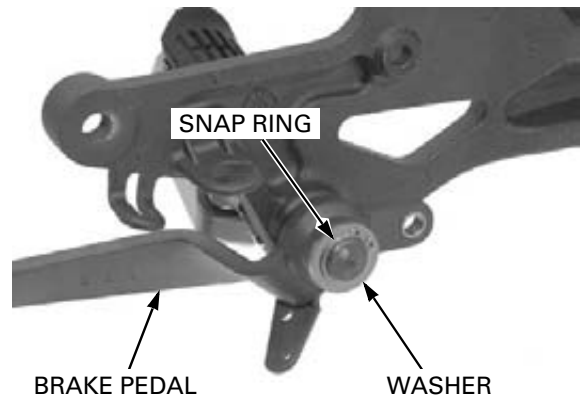
Remove the rear master cylinder mounting bolt.



Remove the return springs.
Remove the rear brake light switch.
Remove the cotter pin, joint pin and rear master cylinder.

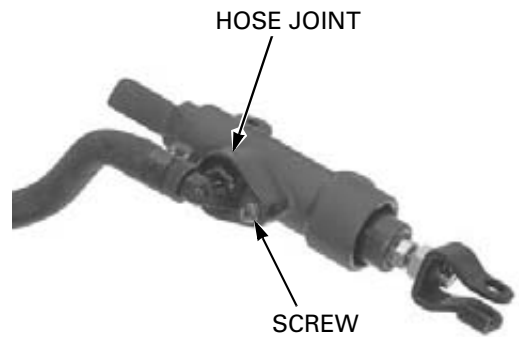


Remove the snap ring, washer and brake pedal.



MASTER CYLINDER DISASSEMBLY

Remove the screw and reservoir hose joint.



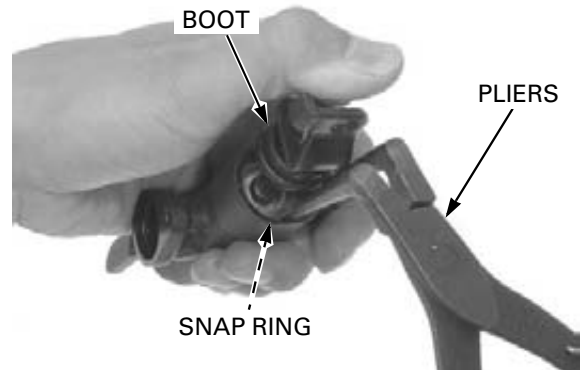
Pull the boot out of the master cylinder and remove the snap ring using the special tool.

TOOL:

Snap ring pliers

07914-SA50001

Remove the push rod, master piston, primary cup and spring.



INSPECTION

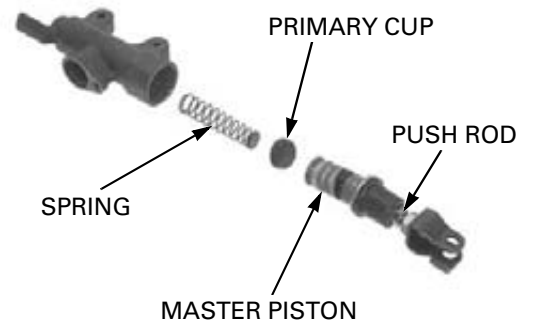
Clean inside of the master cylinder and the master piston with clean brake fluid.

Check the piston cups and boot for wear, deterioration or damage.

Check the spring for damage.

Check the master cylinder and piston for scoring, scratches or damage.

CBF1000A Shown:



HYDRAULIC BRAKE

CBF1000A: Measure the master cylinder I.D.

SERVICE LIMIT: 17.515 mm (0.6896 in)

Measure the master piston O.D.

SERVICE LIMIT: 17.405 mm (0.6852 in)



CBF1000: Measure the master cylinder I.D.

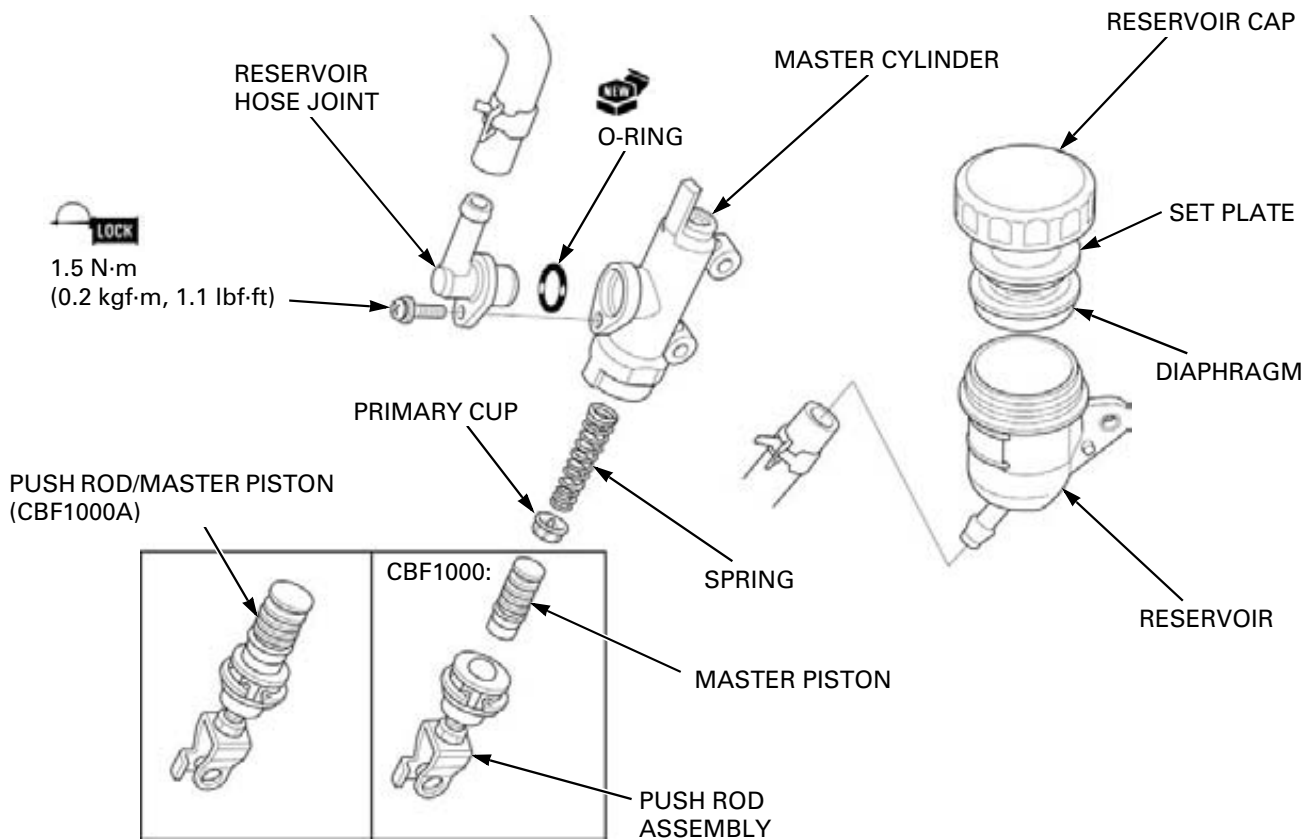
SERVICE LIMIT: 14.055 mm (0.5533 in)

Measure the master piston O.D.

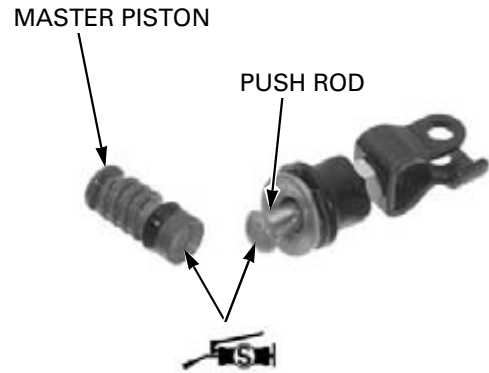
SERVICE LIMIT: 13.945 mm (0.5490 in)



MASTER CYLINDER ASSEMBLY



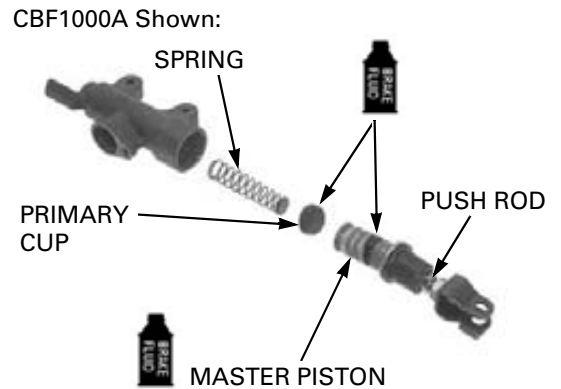
CBF1000: Apply silicone grease to the piston contacting surface of the push rod.



Coat the master piston and piston cups with clean brake fluid.
Install the primary cup onto the spring.

Do not allow the piston cup lips to turn inside out.

Install the spring and master piston with the push rod into the master cylinder.

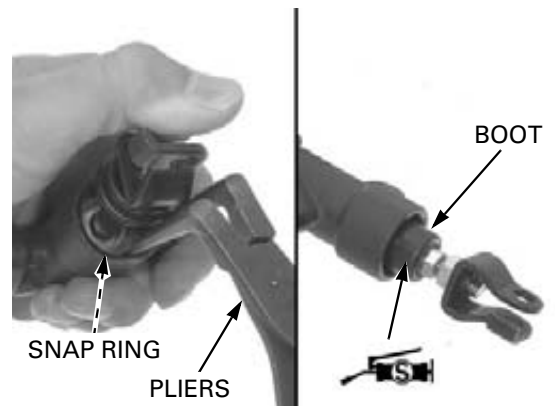


Make sure the snap ring is firmly seated in the groove.

Install the snap ring into the groove in the master cylinder.

TOOL:
Snap ring pliers 07914-SA50001

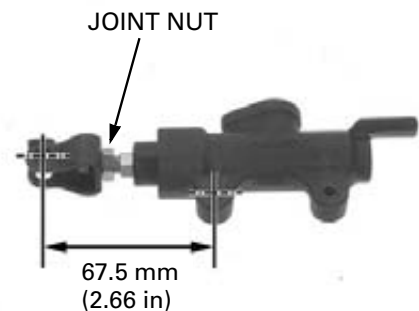
Apply silicone grease to the boot inside, and install the boot into the master cylinder.



If the push rod joint is reinstalled, adjust the push rod length so that the distance between the centers of the master cylinder lower mounting bolt hole and joint pin hole is 67.5 mm (2.66 in).

After adjustment, tighten the joint nut to the specified torque.

TORQUE: 17 N·m (1.7 kgf·m, 13 lbf·ft)

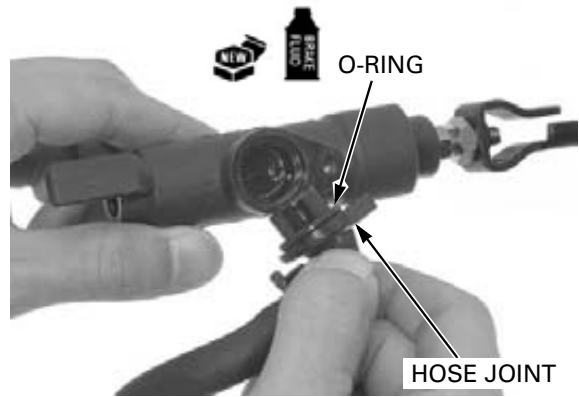


HYDRAULIC BRAKE

Coat a new O-ring with brake fluid and install it onto the reservoir hose joint. Install the hose joint into the master cylinder.

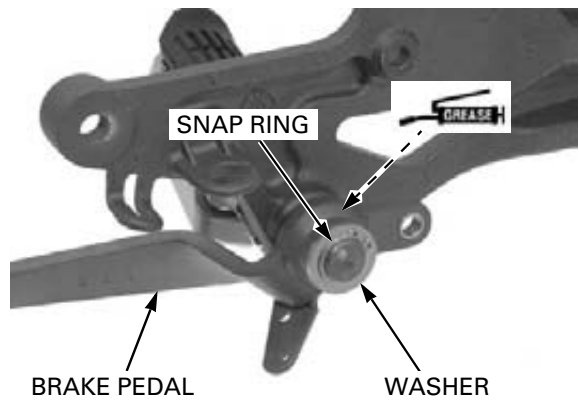
Apply a locking agent to the hose joint screw threads. Install the screw and tighten it.

TORQUE: 1.5 N·m (0.2 kgf·m, 1.1 lbf·ft)

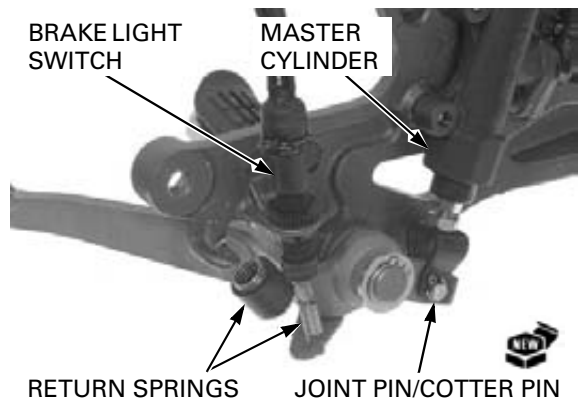


INSTALLATION

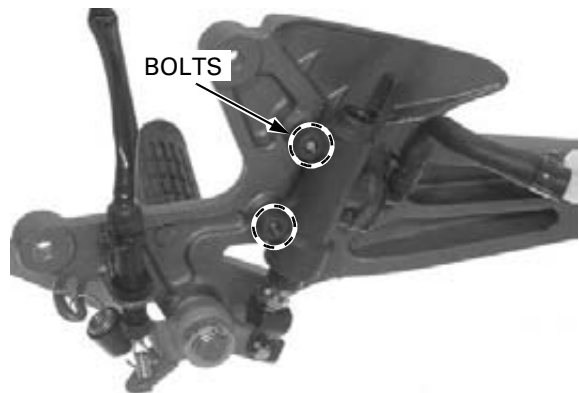
Apply grease to the groove in the pedal pivot. Install the brake pedal and secure it with the washer and snap ring.



Install the master cylinder onto the pedal with the joint pin and a new cotter pin. Install the rear brake light switch into the stay on the bracket. Install the switch spring and brake pedal return spring in the direction as shown.



Install the rear master cylinder mounting bolts.

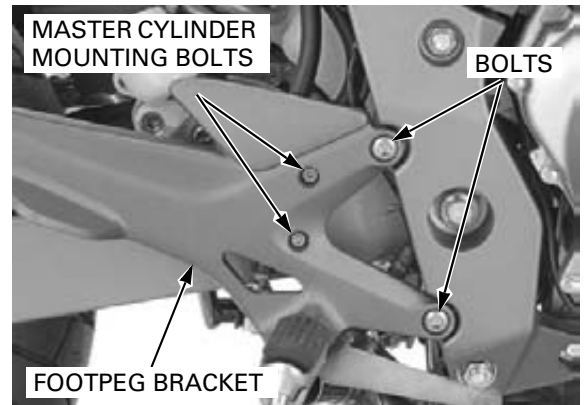


Install the right footpeg bracket and mounting bolts, then tighten the bolts to the specified torque.

TORQUE: 27 N·m (2.8 kgf·m, 20 lbf·ft)

Tighten the master cylinder mounting bolts to the specified torque.

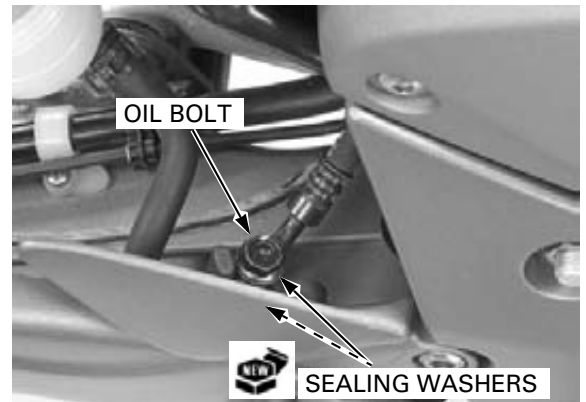
TORQUE: 12 N·m (1.2 kgf·m, 9 lbf·ft)



Connect the brake hose to the rear master cylinder with the oil bolt and new sealing washers.

Tighten the oil bolt while holding the stopper of the hose eyelet against the master cylinder.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

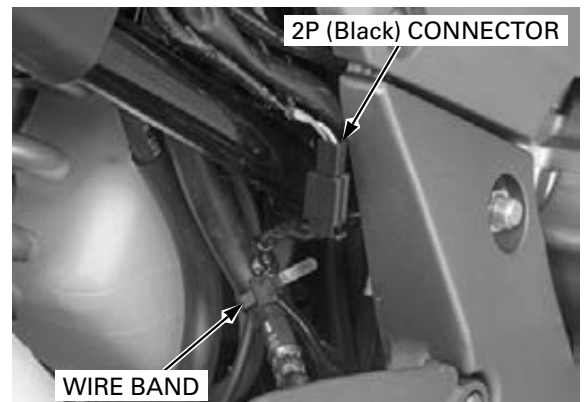


Connect the rear brake light switch 2P (black) connector.

Secure the brake light switch wire and brake hose with the wire band.

Fill and bleed the hydraulic system:

- CBF1000A (page 16-7)
- CBF1000 (page 16-13)



FRONT BRAKE CALIPER (CBF1000A)

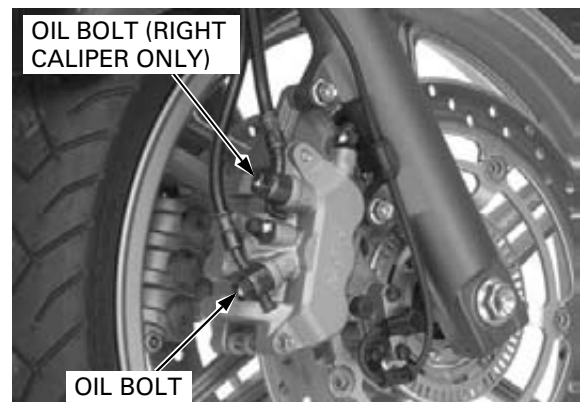
REMOVAL

Drain the brake fluid from the hydraulic system (page 16-7).

Remove the brake pads (page 16-15).

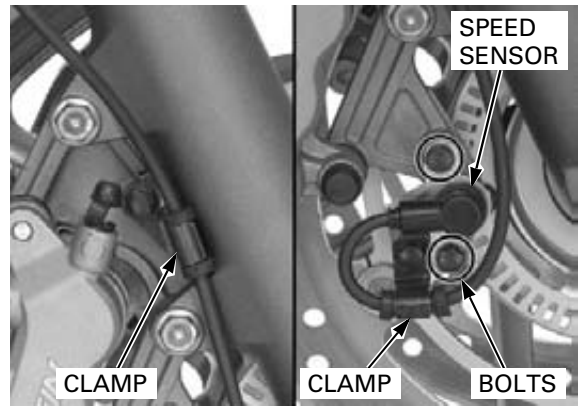
Remove the oil bolts and sealing washers.

When removing the oil bolt, cover the end of the hose to prevent contamination.

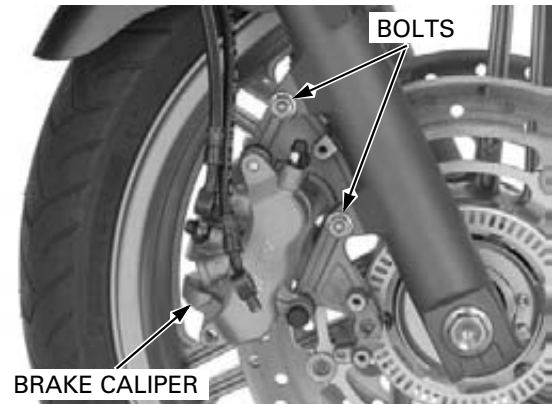


HYDRAULIC BRAKE

Right caliper only: Remove the bolts and sensor wire clamps. Remove the mounting bolts and wheel speed sensor from the caliper bracket.



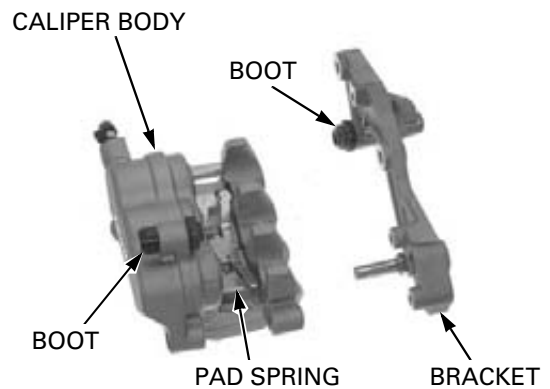
Remove the mounting bolts and brake caliper.



DISASSEMBLY

Remove the caliper bracket from the caliper body. Remove the pad spring and bracket pin boot from the caliper body. Remove the caliper pin boot from the caliper bracket.

If the caliper pin boot and bracket pin boot are hard, damaged or deteriorated, replace them with new ones.



Place a shop towel over the pistons.

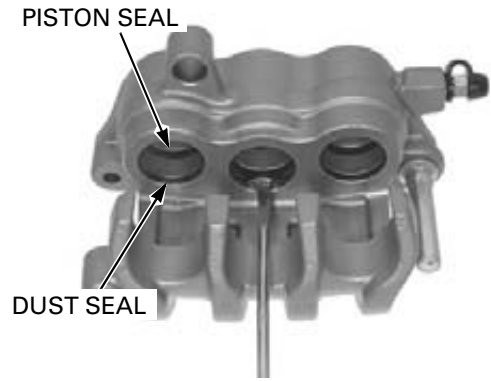
Do not use high pressure air or bring the nozzle too close to the inlet. Position the caliper body with the pistons facing down and apply small squirts of air pressure to the fluid inlet to remove the pistons.



Be careful not to damage the piston sliding surface.

Push the dust seals and piston seals in and lift them out.

Clean the seal grooves, caliper cylinders and pistons with clean brake fluid.



INSPECTION

Check the caliper cylinders and pistons for scoring, scratches or damage.

Measure each caliper cylinder I.D.

SERVICE LIMIT: 22.710 mm (0.8941 in)



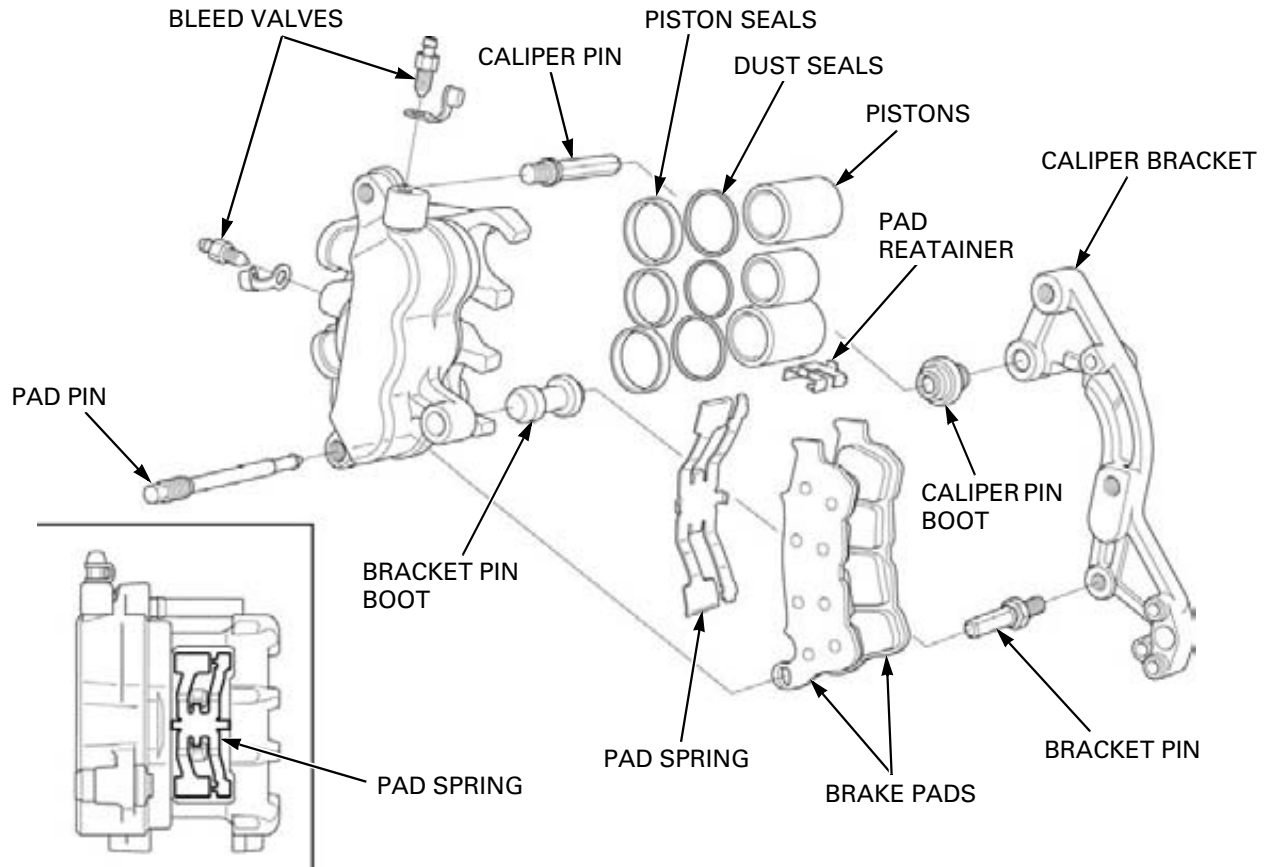
Measure each caliper piston O.D.

SERVICE LIMIT: 22.560 mm (0.8882 in)



HYDRAULIC BRAKE

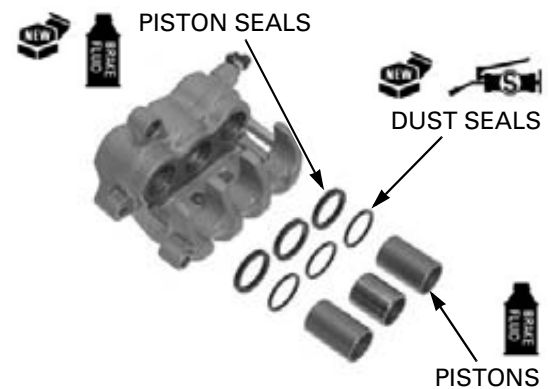
ASSEMBLY



Coat new piston seals with clean brake fluid and install them into the seal grooves in the caliper. Coat new dust seals with silicone grease and install them into the seal grooves in the caliper.

Install the shorter piston into the center cylinder.

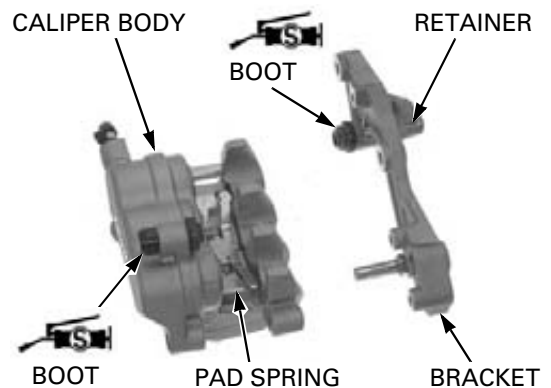
Coat the caliper pistons with clean brake fluid and install them into the caliper cylinders with the opening toward the pads.



Install the boots into the caliper and bracket.

Note the installation direction of the pad spring.

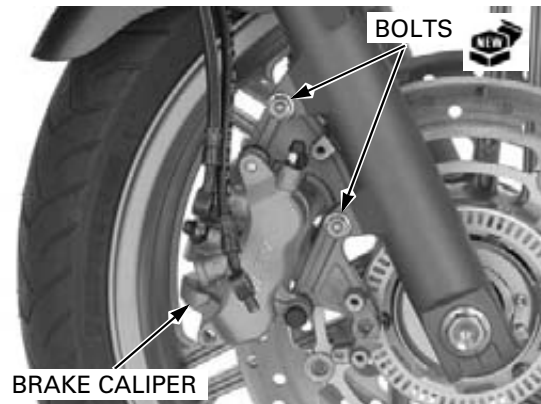
Install the pad spring onto the caliper body properly. Check that the pad retainer is in place on the caliper bracket. Apply silicone grease to the inside of the boots and the slide pins. Install the caliper bracket over the caliper body.



INSTALLATION

Install the brake caliper with new mounting bolts. Tighten the mounting bolts to the specified torque.

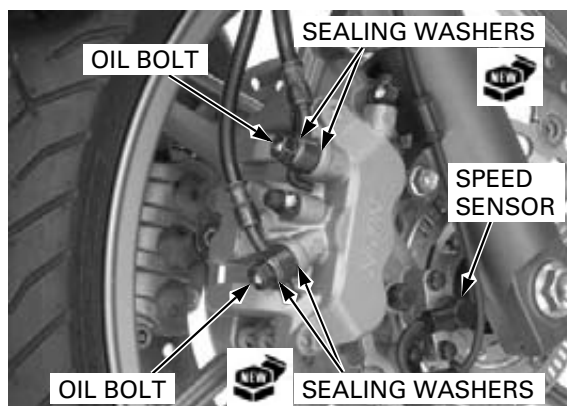
TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)



Connect the brake hose to the caliper with the oil bolt and new sealing washers, and tighten the oil bolt.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

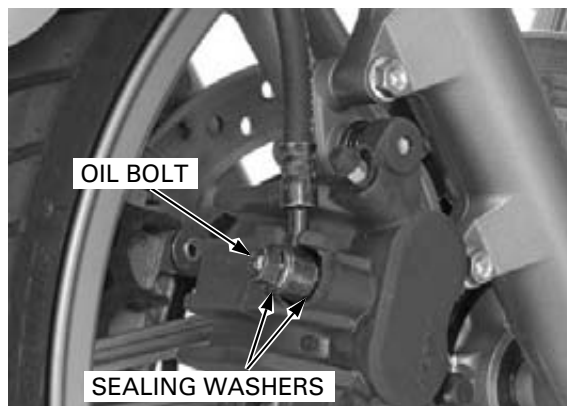
Install the brake pads (page 16-15).
Install the wheel speed sensor (page 17-25).
Fill and bleed the hydraulic system (page 16-7).



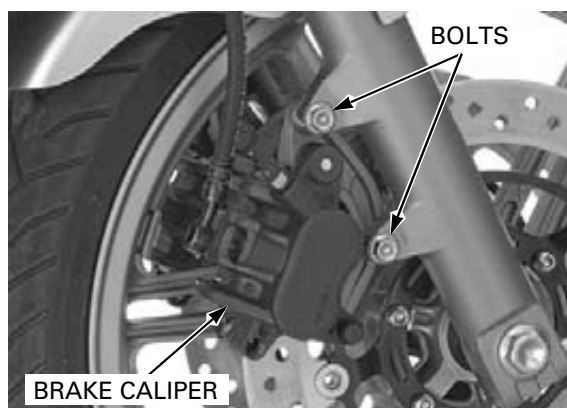
FRONT BRAKE CALIPER (CBF1000)

REMOVAL

Drain the brake fluid from the front brake hydraulic system (page 16-13).
Remove the brake pads (page 16-16).
Remove the oil bolt and sealing washers.



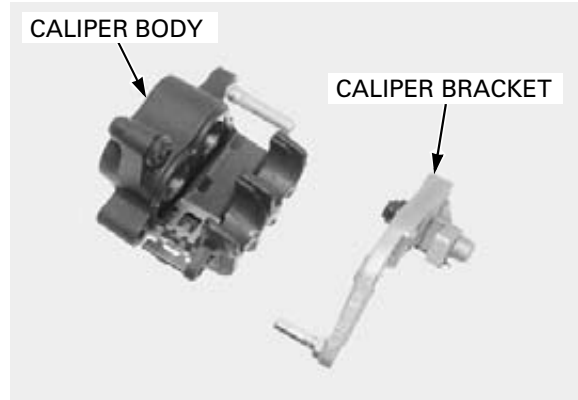
Remove the mounting bolts and brake caliper.



HYDRAULIC BRAKE

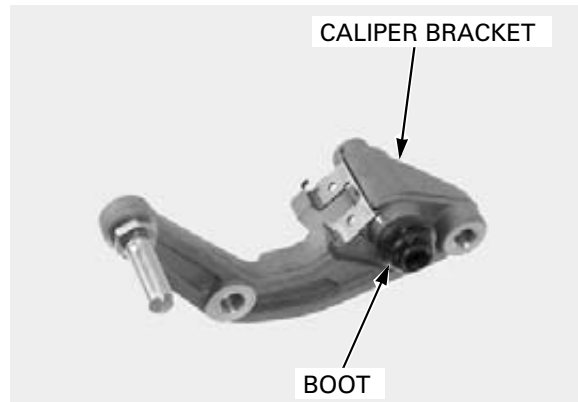
DISASSEMBLY

Remove the caliper bracket from the caliper body.



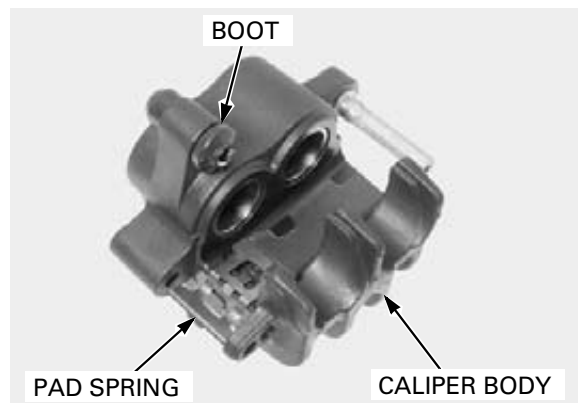
Remove the caliper pin boot from the caliper bracket.

If the caliper pin boot is hard or deteriorated, replace it with a new one.



Remove the pad spring and bracket pin boot from the caliper body.

If the bracket pin boot is hard or deteriorated, replace it with a new one.



Place a shop towel over the pistons.

Do not use high pressure air or bring the nozzle too close to the inlet.

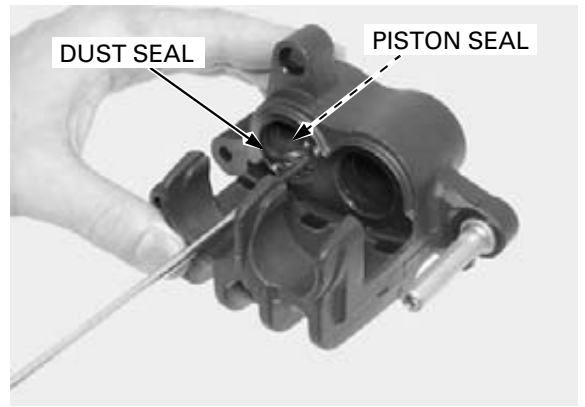
Position the caliper body with the pistons facing down and apply small squirts of air pressure to the fluid inlet to remove the pistons.



Be careful not to damage the piston sliding surface.

Push the dust seals and piston seals in and lift them out.

Clean the seal grooves, caliper cylinders and pistons with clean brake fluid.



INSPECTION

Check the caliper cylinders and pistons for scoring, scratches or damage.

Measure each caliper cylinder I.D.

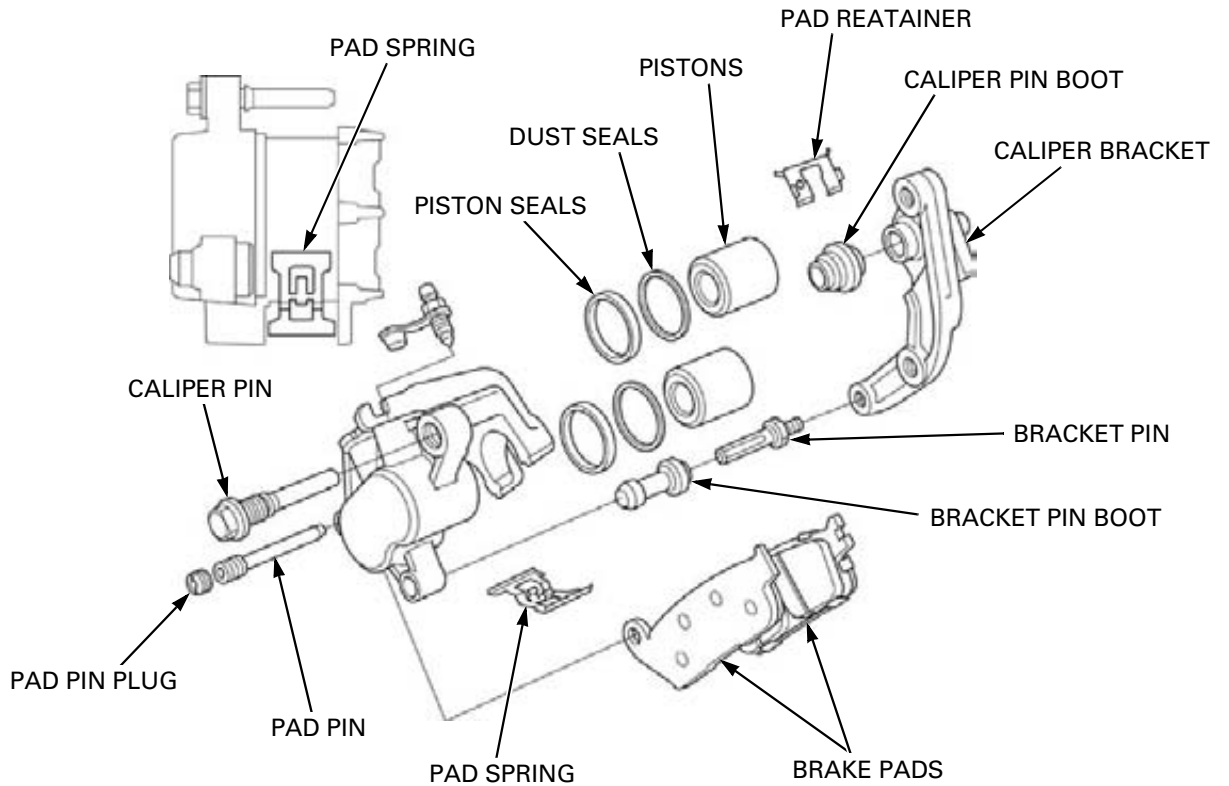
SERVICE LIMIT: 25.460 mm (1.0024 in)

Measure each caliper piston O.D.

SERVICE LIMIT: 25.310 mm (0.9965 in)



ASSEMBLY

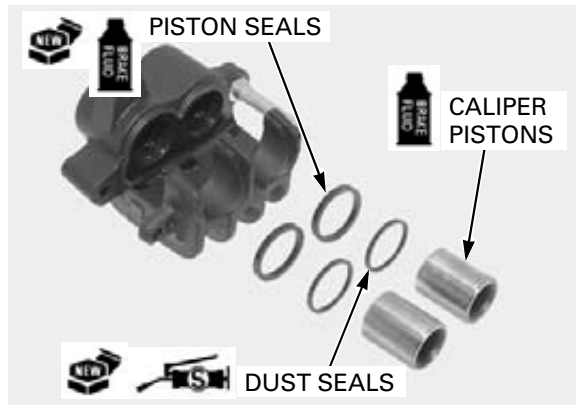


HYDRAULIC BRAKE

Coat new piston seals with clean brake fluid and install them into the seal grooves in the caliper. Coat new dust seals with silicone grease and install them into the seal grooves in the caliper.

Install the shorter piston into the center cylinder.

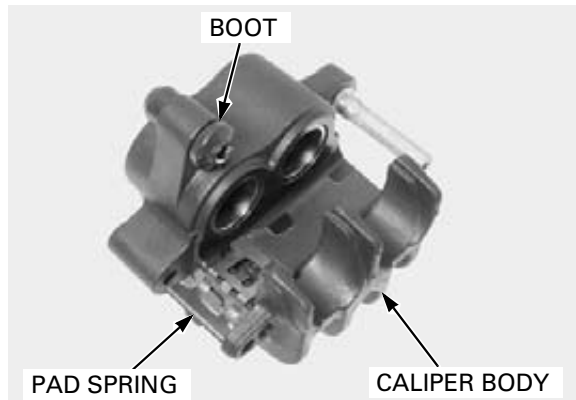
Coat the caliper pistons with clean brake fluid and install them into the caliper cylinders with the opening toward the pads.



Note the installation direction of the pad spring.

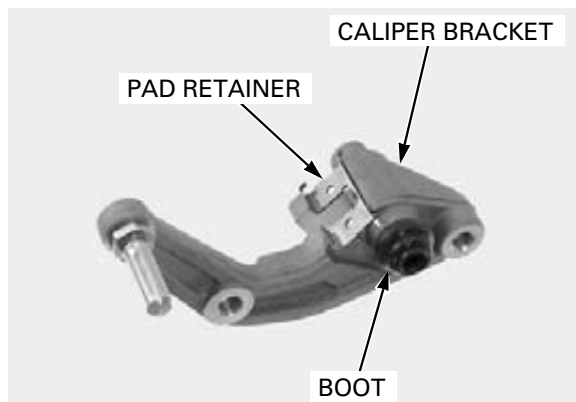
Install the pad spring in the caliper body.

Install the bracket pin boot into the caliper body.



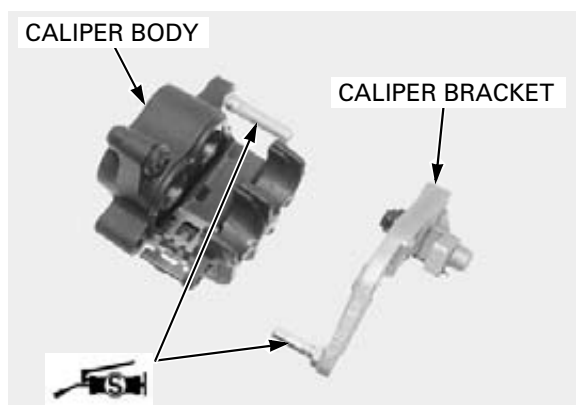
Check that the pad retainer is in place on the caliper bracket.

Install the caliper pin boot into the caliper bracket.



Apply silicone grease to the inside of the boots and the slide pins.

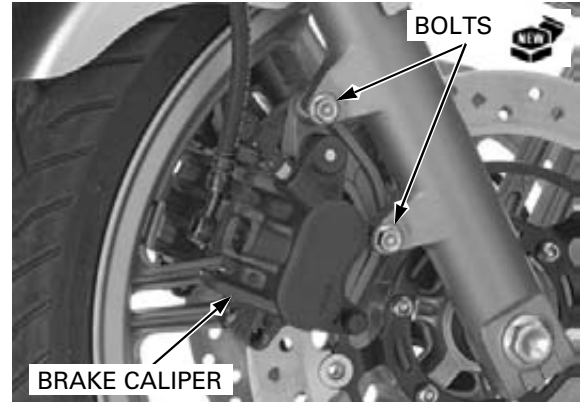
Install the caliper bracket over the caliper body.



INSTALLATION

Install the brake caliper with new mounting bolts. Tighten the mounting bolts to the specified torque.

TORQUE: 30 N·m (3.1 kgf·m, 22 lbf·ft)

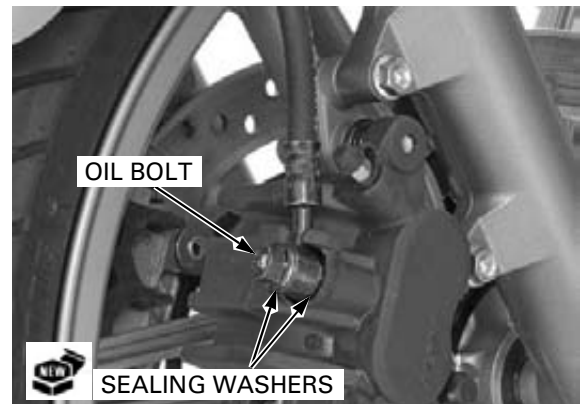


Hold the brake hose in the stopper groove on the caliper.

Connect the brake hose to the caliper with the oil bolt and new sealing washers.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

Fill and bleed the hydraulic system (page 16-14).



REAR BRAKE CALIPER (CBF1000A)

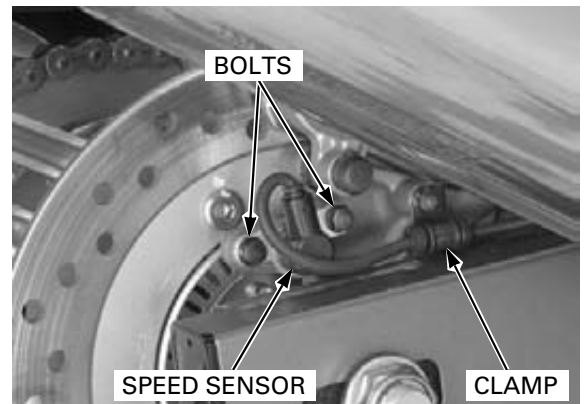
REMOVAL

Drain the brake fluid from the hydraulic system (page 16-7).

Remove the rear brake pads (page 16-17).

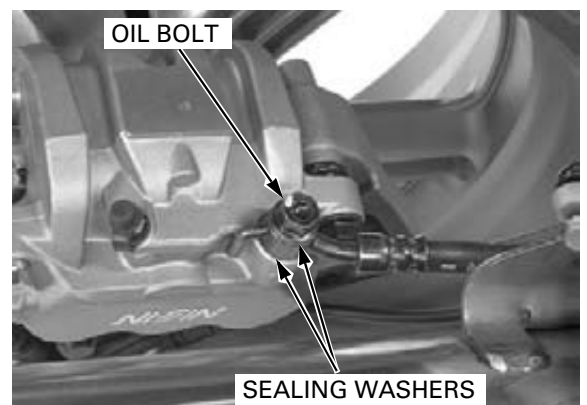
Remove the bolt and sensor wire clamp.

Remove the mounting bolts and speed sensor from the caliper bracket.



When removing the oil bolt, cover the end of the hose to prevent contamination.

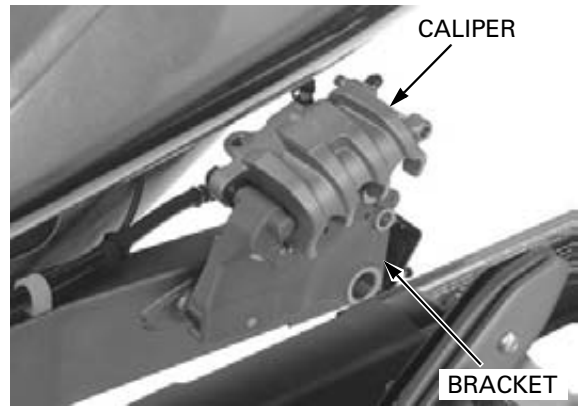
Remove the brake hose oil bolt and sealing washers.



HYDRAULIC BRAKE

Remove the rear wheel (page 15-6).

Remove the rear brake caliper with the caliper bracket.



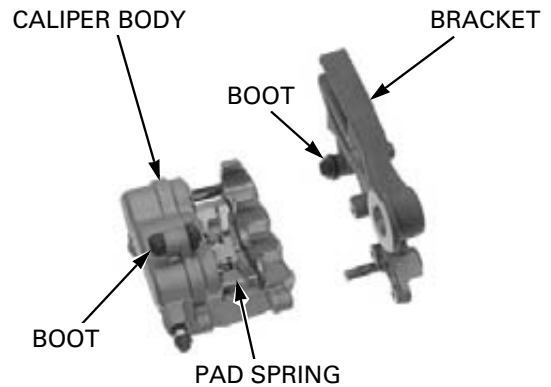
DISASSEMBLY

Remove the caliper bracket from the caliper body.

Remove the pad spring and bracket pin boot from the caliper body.

Remove the caliper pin boot from the caliper bracket.

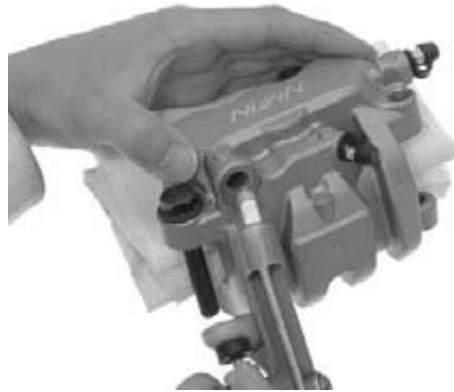
If the boots are hard, damaged or deteriorated, replace them with new ones.



Place a shop towel over the pistons.

Do not use high pressure air or bring the nozzle too close to the inlet.

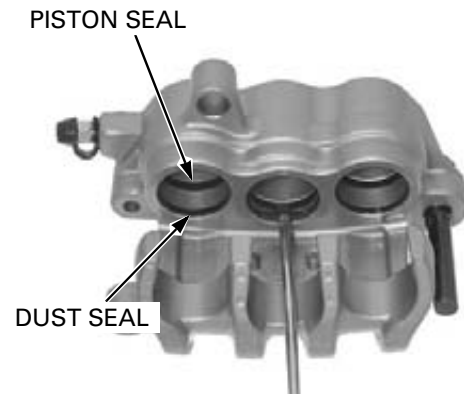
Position the caliper body with the piston facing down and apply small squirts of air pressure to the fluid inlet to remove the piston.



Be careful not to damage the piston sliding surface.

Push the dust seals and piston seals in and lift them out.

Clean the seal grooves, caliper cylinders and pistons with clean brake fluid.



INSPECTION

Check the caliper cylinders and pistons for scoring, scratches or damage.

Measure each caliper cylinder I.D.

SERVICE LIMIT: 25.460 mm (1.0024 in)

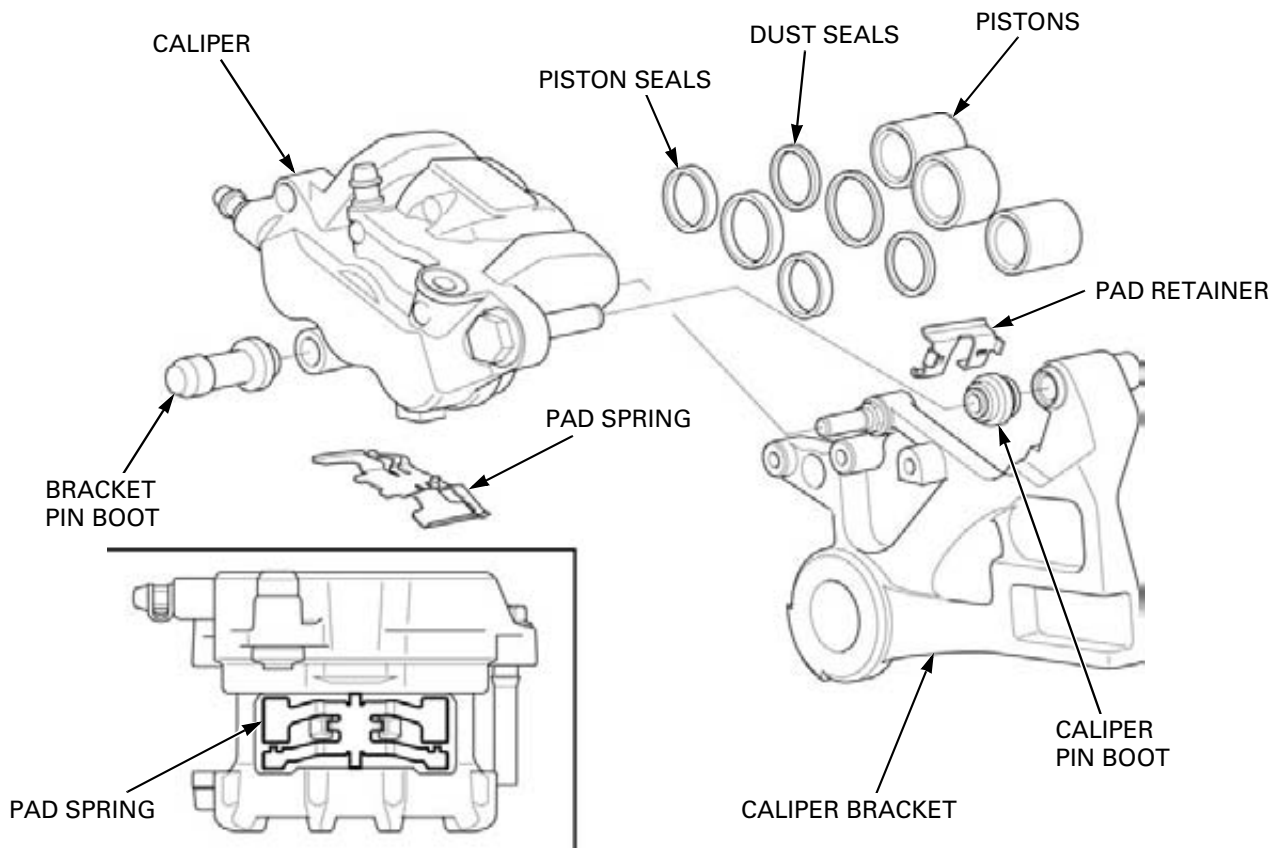


Measure each caliper piston O.D.

SERVICE LIMIT: 25.310 mm (0.9965 in)



ASSEMBLY

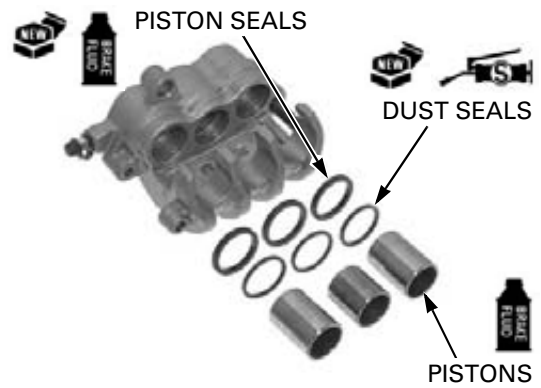


HYDRAULIC BRAKE

Coat new piston seals with clean brake fluid and install them in the seal grooves in the caliper.
Coat new dust seals with silicone grease and install them in the seal grooves in the caliper.

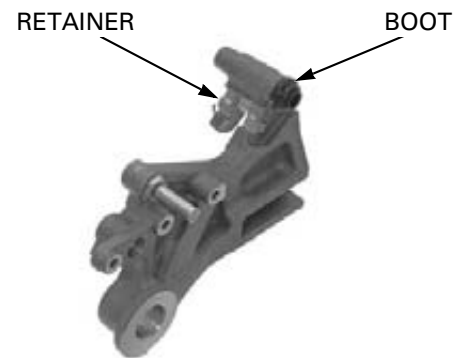
Install the shorter piston into the center cylinder.

Coat the caliper pistons with clean brake fluid and install them into the caliper cylinders with the opening toward the pads.

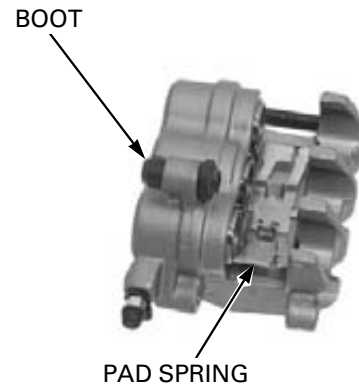


Check that the pad retainer is in place on the caliper bracket.

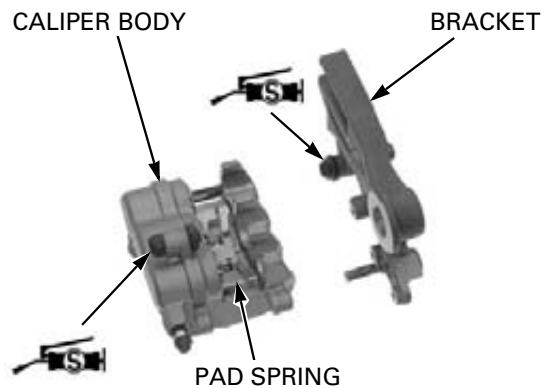
Install the boot into the caliper bracket.



Install the boot into the caliper.
Install the pad spring onto the caliper body properly as shown.

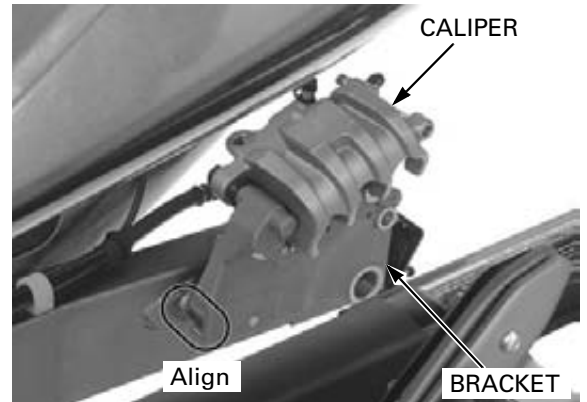


Apply silicone grease to the inside of the boots and the slide pins.
Install the caliper bracket over the caliper body.
Install the caliper body onto the bracket.



INSTALLATION

Install the rear brake caliper by aligning the caliper bracket groove with the lug on the swingarm.



Install the rear wheel (page 15-12).

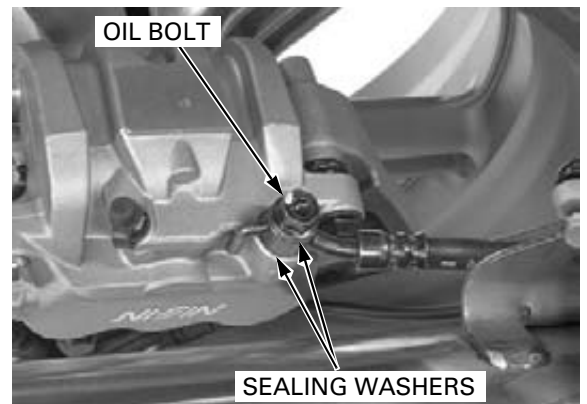
Connect the brake hose to the caliper with the oil bolt and new sealing washers, and tighten the oil bolt.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

Install the rear brake pads (page 16-17).

Install the rear wheel speed sensor (page 17-26).

Fill and bleed the brake hydraulic system (page 16-7).

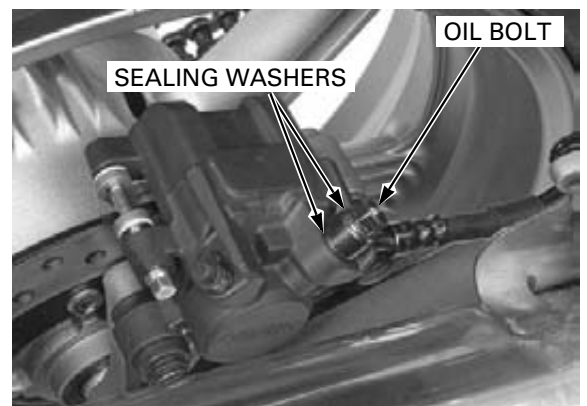


REAR BRAKE CALIPER (CBF1000)

REMOVAL

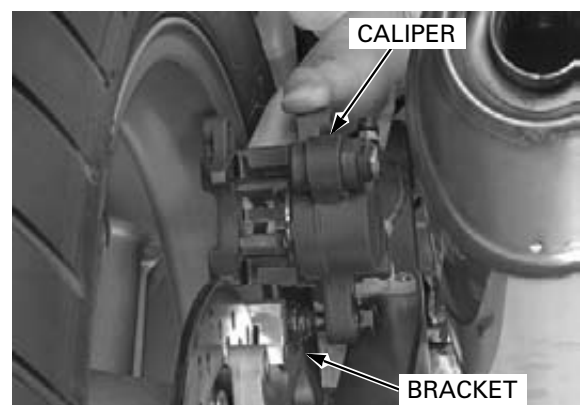
Drain the rear brake hydraulic system (page 16-13).

Remove the oil bolt and sealing washers.



Remove the rear brake pads (page 16-18).

Pivot the caliper up and slide it outward, then remove it from the caliper bracket.



HYDRAULIC BRAKE

DISASSEMBLY

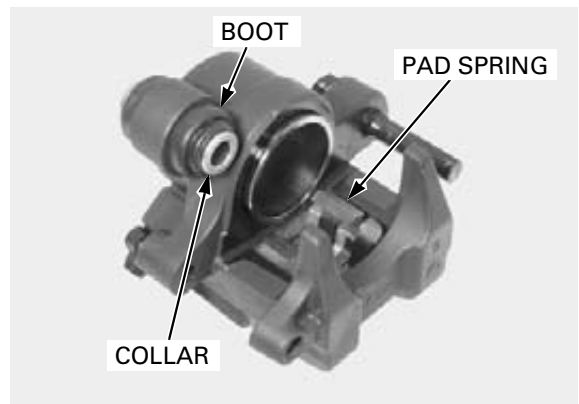
Remove the caliper main slide pin boot from the caliper bracket.

If the caliper main slide pin boot is hard or deteriorated, replace it with new one.



Remove the pad spring, collar and caliper sub slide pin boot from the caliper body.

If the caliper sub slide pin boot is hard or deteriorated, replace it with a new one.



Place a shop towel over the piston.

Do not use high pressure air or bring the nozzle too close to the inlet.

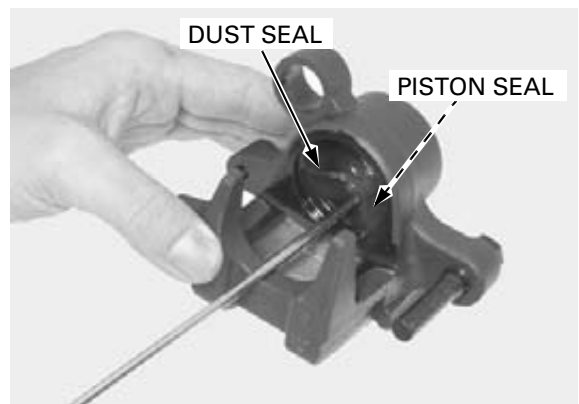
Position the caliper body with the piston down and apply small squirts of air pressure to the fluid inlet to remove the piston.



Be careful not to damage the piston sliding surface.

Push the dust seal and piston seal in and lift them out.

Clean the seal grooves, caliper cylinder and piston with clean brake fluid.



INSPECTION

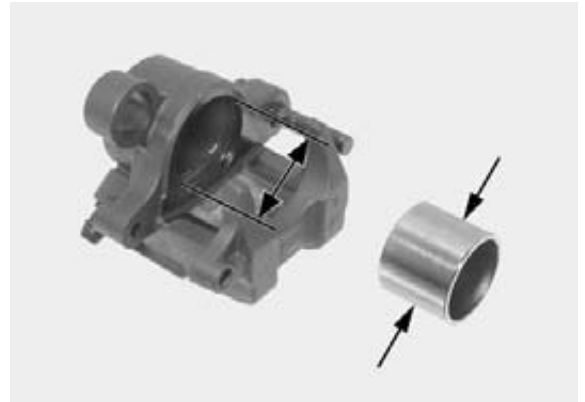
Check the caliper cylinder and piston for scoring, scratches or damage.

Measure the caliper cylinder I.D.

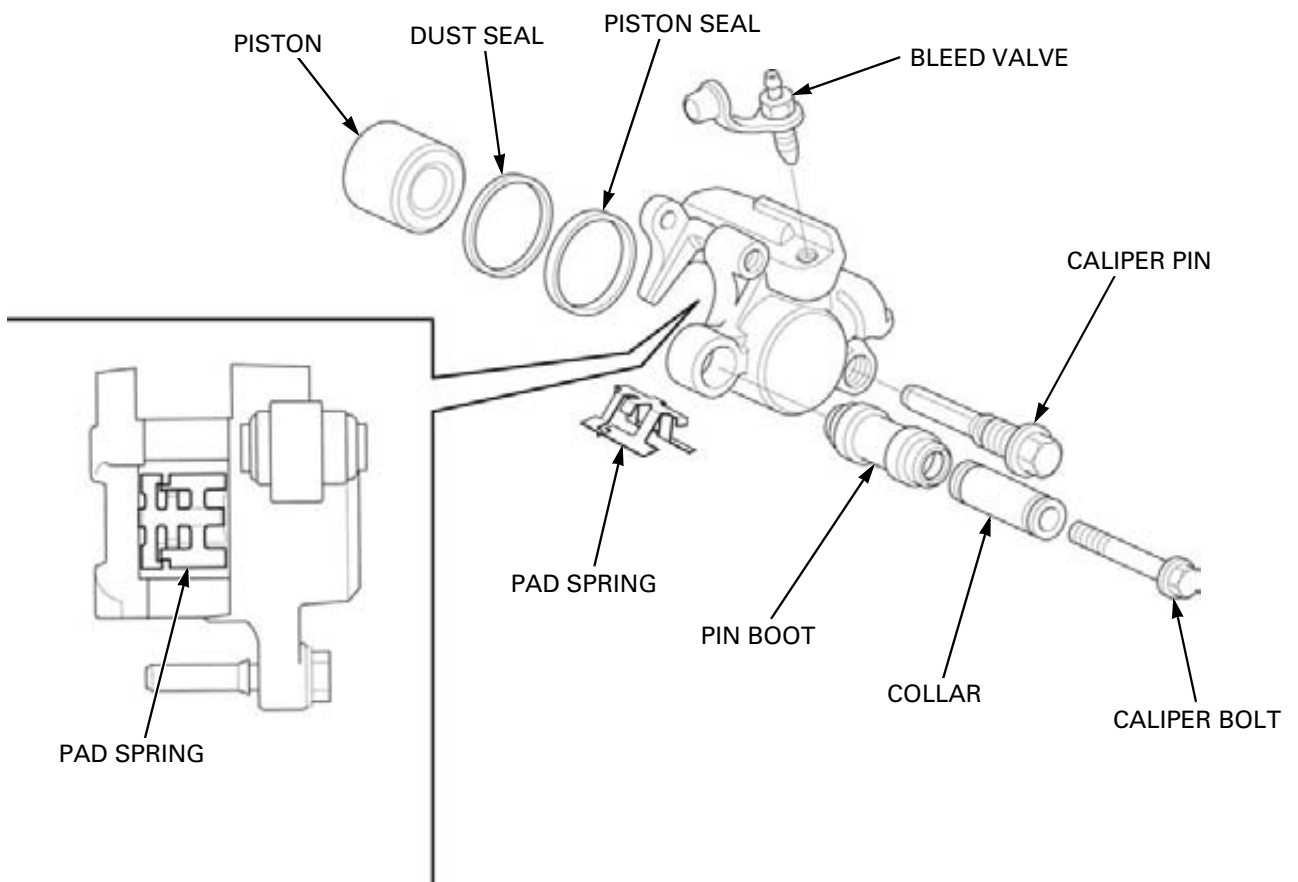
SERVICE LIMIT: 38.24 mm (1.506 in)

Measure the caliper piston O.D.

SERVICE LIMIT: 38.09 mm (1.500 in)



ASSEMBLY

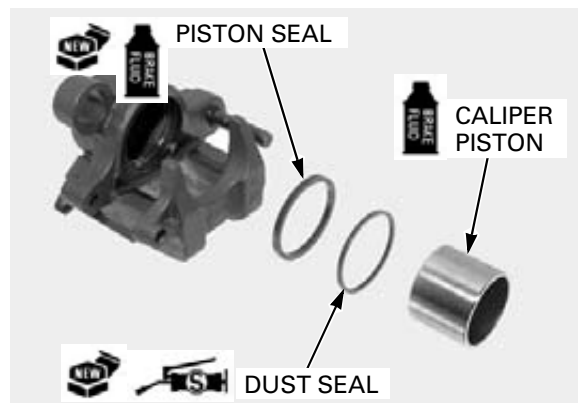


Coat new piston seal with clean brake fluid and install it in the seal groove in the caliper.

Coat new dust seal with silicone grease and install it in the seal groove in the caliper.

Install the shorter piston into the center cylinder.

Coat the caliper piston with clean brake fluid and install it into the caliper cylinder with the opening toward the pads.

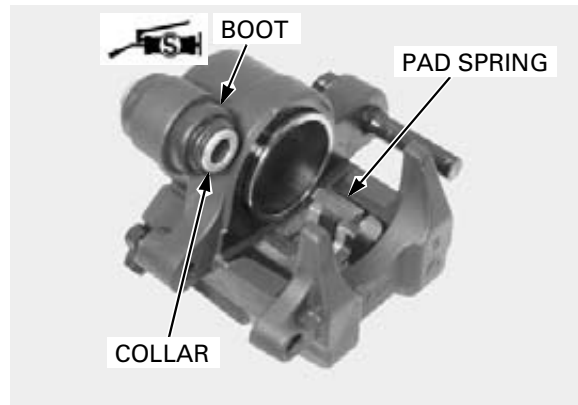


HYDRAULIC BRAKE

Install the pad spring onto the caliper body.

Apply silicone grease to the inside of the caliper sub slide pin boot.

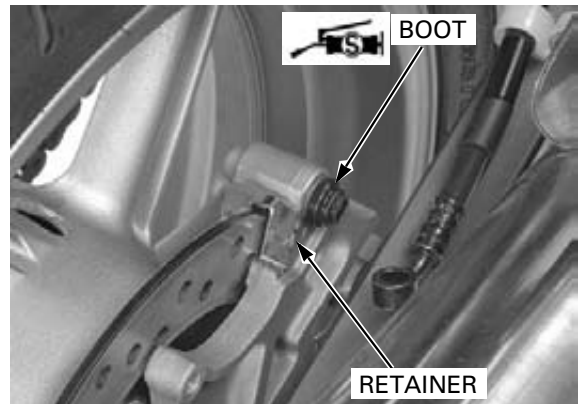
Install the caliper sub slide pin boot and collar into the caliper body.



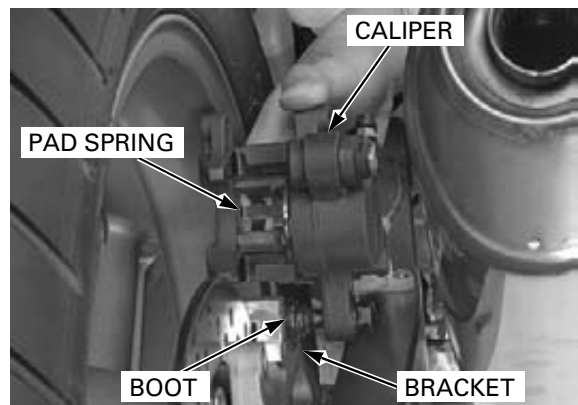
INSTALLATION

Check that the pad retainer is in place on the caliper bracket.

Apply silicone grease to the inside of the boot and install the boot into the bracket.



Be careful not to come the pad spring off from the caliper. Install the caliper main slide pin into the boot on the caliper bracket.



Hold the brake hose in the stopper groove on the caliper. Connect the brake hose to the rear caliper with the oil bolt and new sealing washers. Tighten the oil bolt to the specified torque.

TORQUE: 34 N·m (3.5 kgf·m, 25 lbf·ft)

Fill and bleed the rear hydraulic system (page 16-14).

