15. Brake System

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Service Information

⚠ WARNING

- **A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**
- **Brake dust may contain asbestos, inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard of airborne asbestos fibers.**

- Spilled brake fluid will severely damage instrument lenses and painted surfaces. It is also harmful to some rubber parts. Be very careful whenever you remove the reservoir cap: make sure the front reservoir is horizontal first.
- Never allow contaminants (dirt, water, etc.) to get into an open reservoir.
- Once the hydraulic system has been opened, or if the brakes feel spongy, the system must be bled.
- The brake fluid air bleeding procedure on the ABS/TCS ('92-95) model must be performed in the same manner as in the ordinal air bleeding procedure. Note that replacement and bleeding air from the brake fluid in the modulator is not necessary, as it is sealed in the modulator. On the LBS-ABS/TCS model (After '95), refer to page 15-2.
- 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.

15

Troubleshooting

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

Brake lever/pedal hard
- Clogged/restricted brake system
- Sticking/worn caliper piston
- Caliper not sliding properly
- Clogged/restricted fluid passage
- Worn caliper piston seal
- Sticking/worn master cylinder piston
- Bent brake lever/pedal

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

Brake Fluid Filling/Bleeding (LBS-ABS/TCS model)

⚠ WARNING

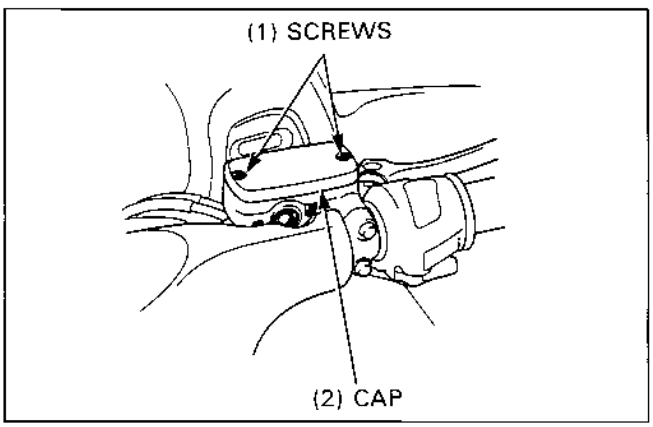
- **A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**

CAUTION

- **Do not allow foreign material to enter the system when filling the reservoir.**
- **Avoid spilling fluid on painted, plastic or rubber parts. Place a rag over these parts whenever the system is serviced.**

NOTE

- On the LBS-ABS/TCS model, note that there is no brake fluid in the modulator (except in the modulator head), because the modulator is the motor-driven hydraulic pressure type. Therefore, brake fluid replacement and bleeding air from the modulator body is not necessary.
- Once the hydraulic system has been opened, or if the brake feels spongy, the system must be bled.
- When using a commercially available brake bleeder, follow the manufacturer's operating instructions.



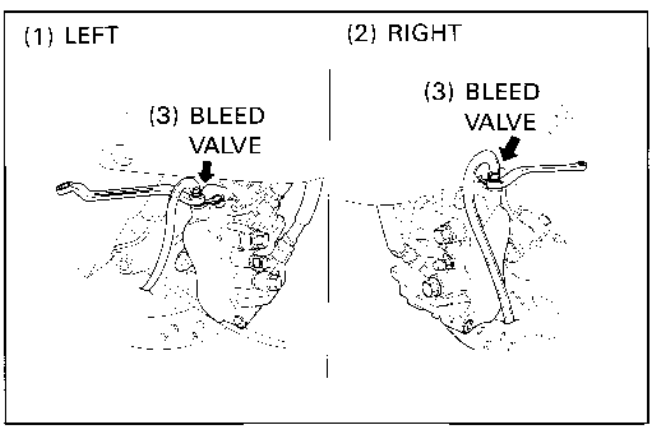
Lever Brake Line

FLUID FEEDING

Support the motorcycle on its center stand.
Turn the handlebar to the left until the reservoir is level before removing the reservoir cap.

Remove the reservoir cap, set plate and diaphragm.

Connect a commercially available brake bleeder (example, Mityvac P/N 6826) to the outer bleed valve (upper side of the each front caliper).

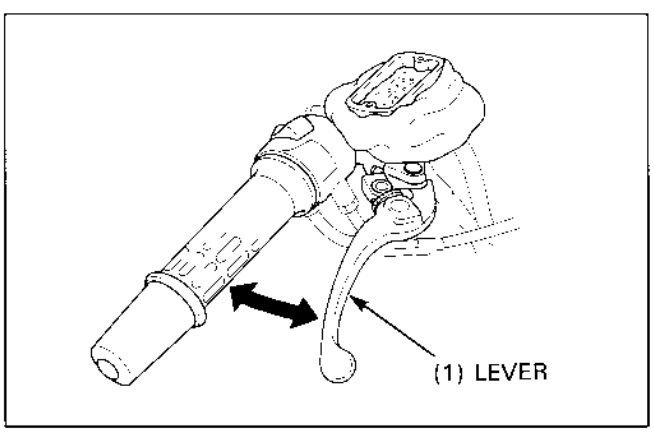


Fill the reservoir with DOT 4 brake fluid from a sealed container.

CAUTION

- **Use only DOT 4 brake fluid from a sealed container.**
- **Do not mix different types of fluid. They are not compatible.**

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



1. Pump the brake bleeder and loosen the bleed valve. Add brake fluid when the fluid level in the reservoir is low.

NOTE

- Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.

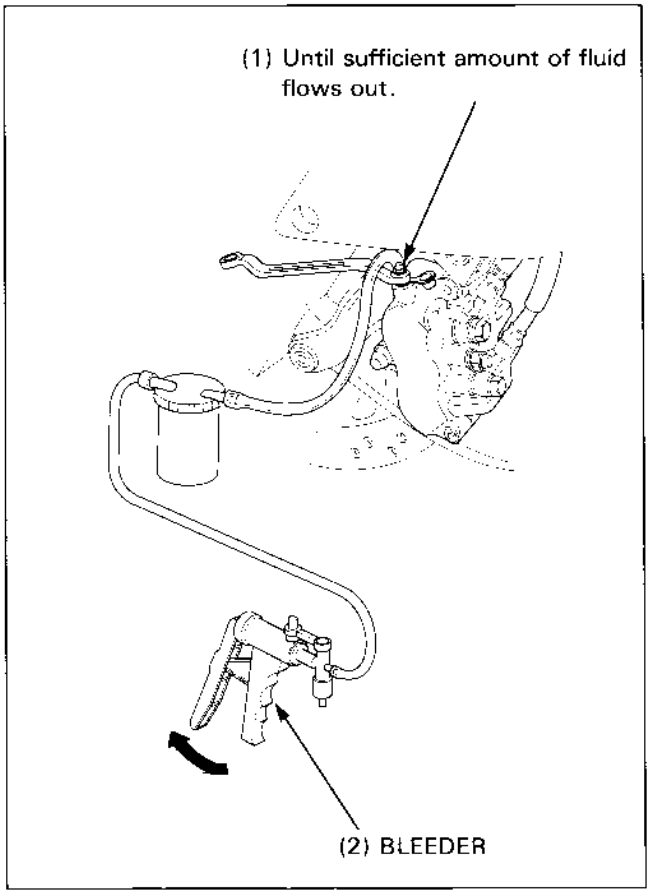
Repeat the above procedure until sufficient amount of the fluid flows out from the bleed valve.
Close the bleed valve.

NOTE

- It is not a problem if the fluid flowing out from the bleed valve contains air bubbles because the lines will be bled in later steps.
- If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.

2. Perform step 1 for the other side bleed valve.

Next, perform the air bleeding from the system (page 15-4).



If a commercial brake bleeder is not available, use the following procedure:
Connect a transparent bleed hose to the bleed valve and place the other end of the hose in a container.

1. Pump the brake lever several (5-10) times quickly, then squeeze the brake lever all the way and loosen the bleed valve 1/4 turn. Wait several seconds and close the bleed valve.

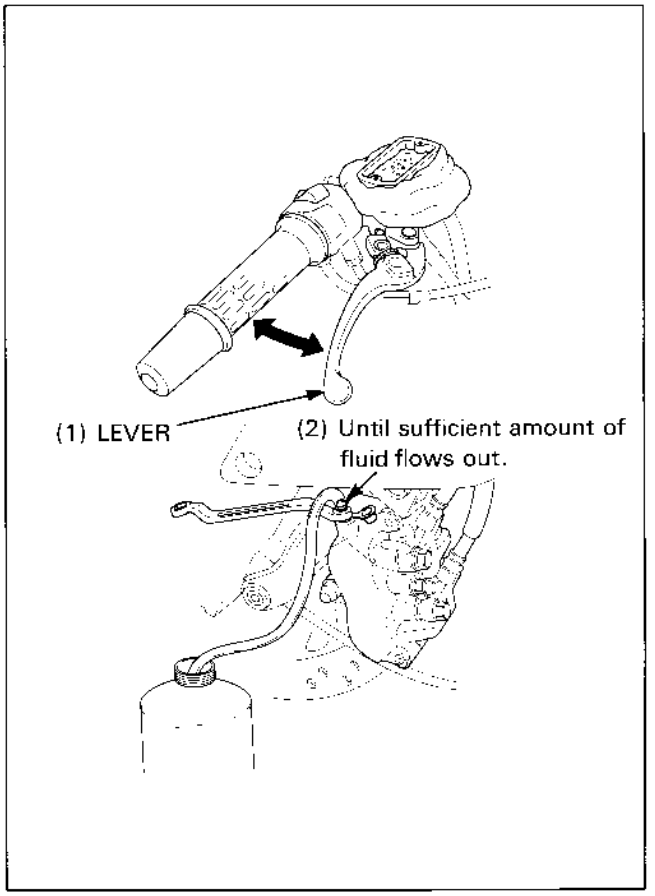
NOTE

- It is not a problem if the fluid flowing out from the bleed valve contains air bubbles because the lines will be bled in later steps.
- Do not release the brake lever until the bleed valve has been closed.

Release the brake lever slowly and wait several seconds after it reaches the end of its travel.
Repeat steps 1–2 until sufficient amount of the fluid flows out from the bleed valve.

2. Perform step 1 for the other side bleed valve.

Next, perform the air bleeding from the system (page 15-4).



AIR BLEEDING

1. Connect a transparent bleed hose to the bleed valve.

   Pump the brake lever several (5-10) times quickly, then squeeze the brake lever all the way and loosen the bleed valve 1/4 turn. Wait several seconds and close the bleed valve.

NOTE

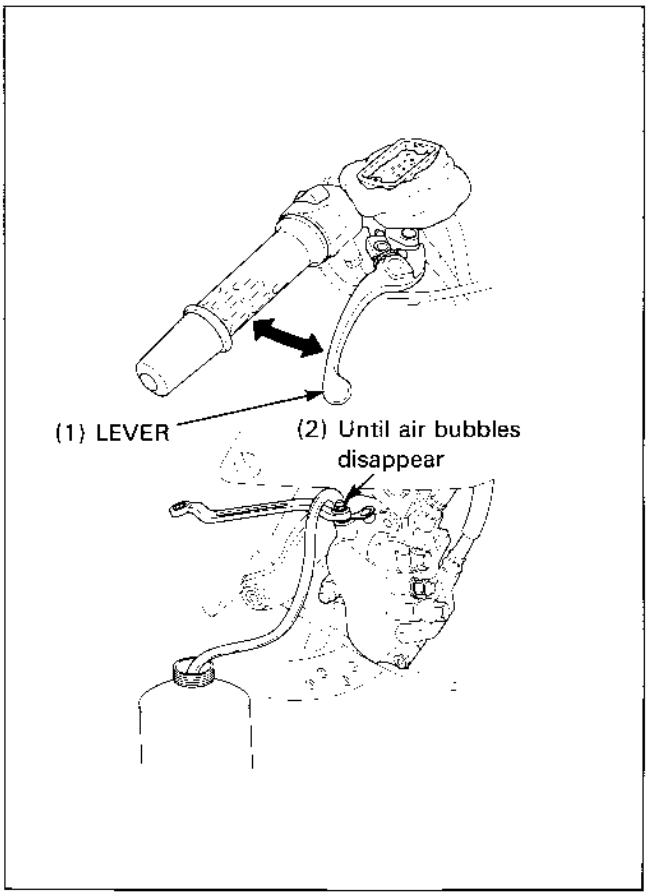
- Do not release the brake lever until the bleed valve has been closed.

   Release the brake lever slowly and wait several seconds after it reaches the end of its travel.

   Repeat above procedure until air bubbles do not appear in the transparent hose.

2. Perform step 1 for the other side bleed valve.

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



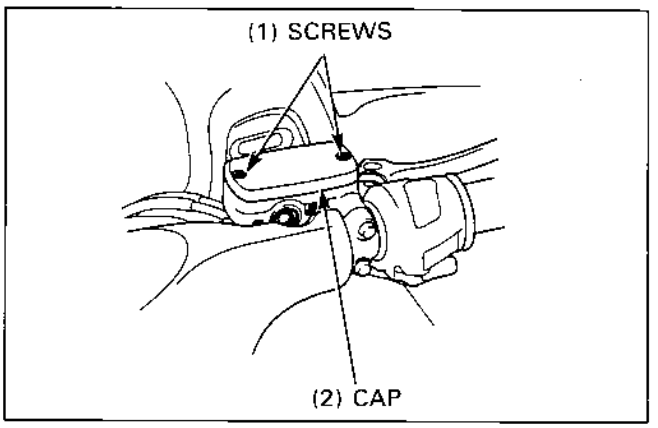
After bleeding air completely, tighten the bleed valves to the specified torque.

Torque: 5.5 N·m (0.55 kg-m, 4.0 ft-lb)

Fill the reservoir to the casting ledge with DOT 4 brake fluid from a sealed container.
Install the diaphragm, set plate and reservoir cap and tighten the cap screws.

Torque: 1.5 N·m (0.15 kg-m, 1.1 ft-lb)

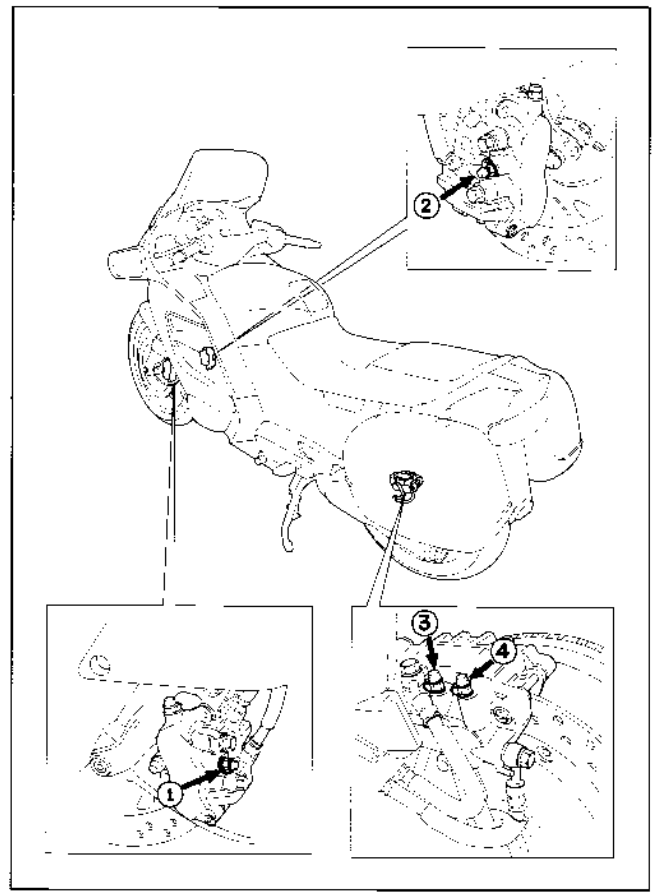
Check the front brake operation (page 3-13).



Pedal Brake Line

NOTE

- Refer to the Technical Features (Section 23) for additional informaition pertaining to the pedal brake line.
- Before performing this service, have at least 500 cc (16.9 US oz, 14.1 Imp oz) of brake fluid.
- Insert fluid and bleed air from the pedal brake line in the following sequence:
  1. Left front caliper lower side bleed valve (from the rear brake pedal master cylinder–front modulator–delay valve line)
  2. Right front caliper lower side bleed valve (from the rear brake pedal master cylinder–front modulator–delay valve line)
  3. Rear caliper front side bleed valve (from the rear brake pedal master cylinder–rear modulator line)
  4. Rear caliper rear side bleed valve (from the secondary master cylinder–PCV–rear modulator line)



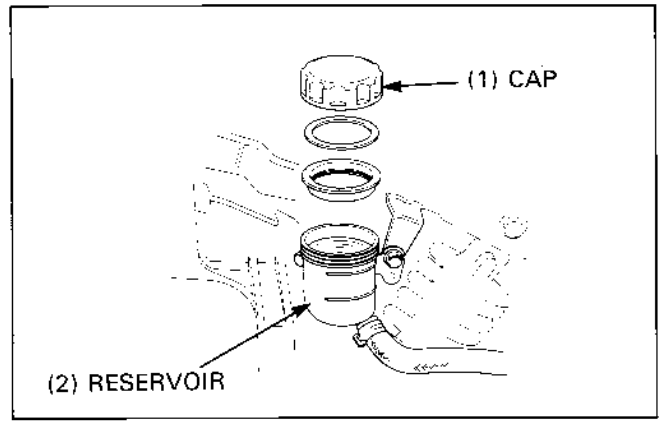
FLUID FEEDING

Support the motorcycle on its center stand.
Remove the right side cover (page 2-2).

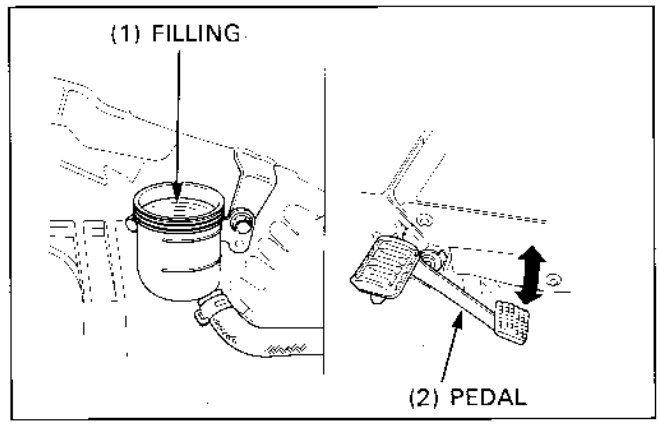
Remove the reservoir cap.
Fill the reservoir with DOT 4 brake fluid from a sealed container.

CAUTION

- **Use only DOT 4 brake fluid from a sealed container.**
- **Do not mix different types of fluid. They are not compatible.**



Operate the brake pedal several times until brake fluid level in the reservoir goes down.



NOTE

- Check the fluid level often while bleeding the brake to prevent air from being pumped into the system.

1. Connect a commercially available brake bleeder (example, Mityvac P/N 6826) to the left front caliper lower side bleed valve.

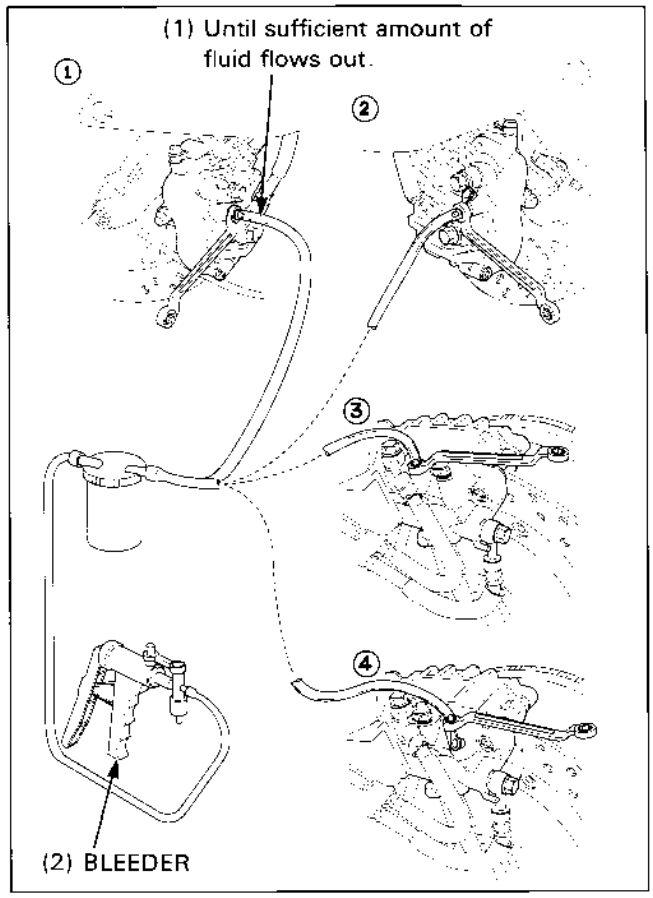
   Pump the brake bleeder and loosen the bleed valve.
   Add brake fluid when the fluid level in the reservoir is low.
   Repeat the above procedure until sufficient amount of the fluid flows out from the bleed valve.
   Close the bleed valve.

NOTE

- It is not a problem if the fluid flowing out from the bleed valve contains air bubbles because the lines will be bled in later steps.
- If air is entering the bleeder from around the bleed valve threads, seal the threads with teflon tape.

2. Repeat step 1 for each valve in the sequence as follows:
   - the right front caliper lower-side bleed valve
   - the rear caliper front-side bleed valve
   - the rear caliper rear-side bleed valve

Next, perform the air bleeding from the system (page 15-7).



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

1. Connect a transparent bleed hose to the left front caliper lower–side bleed valve.

   Pump the brake pedal several (5–10) times quickly, then depress the brake pedal all the way and loosen the bleed valve 1/4 turn. Wait several seconds and close the bleed valve.

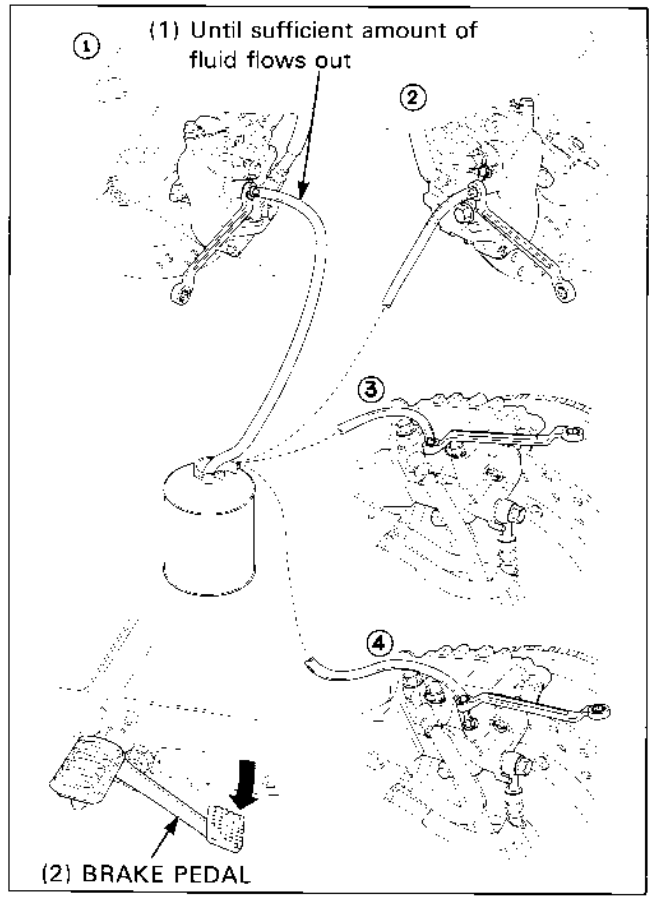
NOTE

- It is not a problem if the fluid flowing out from the bleed valve contains air bubbles because the lines will be bled later, steps.
- Do not release the brake pedal until the bleed valve has been closed.

   Release the brake pedal slowly and wait several seconds after it reaches the end of its travel.
   Repeat the above procedure until sufficient amount of the fluid flows out from the bleed valve.

2. Repeat step 1 for each valve in the sequence as follows:
   - the right front caliper lower-side bleed valve
   - the rear caliper front-side bleed valve
   - the rear caliper rear-side bleed valve

Next, perform the air bleeding from the system (page 15-7).



AIR BLEEDING

1. Connect a transparent bleed hose to the left front caliper lower-side bleed valve.

   Pump the brake pedal several (5–10) times quickly, then depress the brake pedal all the way and loosen the bleed valve 1/4 turn. Wait several seconds and close the bleed valve.

NOTE

- Do not release the brake pedal until the bleed valve has been closed.

   Release the brake pedal slowly and wait several seconds after it reaches the end of its travel.

   Repeat above procedure until air bubbles do not appear in the transparent hose.

After the air bubbles cease to appear in the fluid, repeat air bleeding procedure about 2–3 times.

NOTE

- Note that you may feel strong resistance on the brake pedal during pumping to bleed air from the right front caliper. This symptom is caused by the delay valve function. Be sure to depress the brake pedal fully to the bottom.

2. Repeat step 1 for each valve in the sequence as follows:
   - the right front caliper lower-side bleed valve
   - the rear caliper front-side bleed valve
   - the rear caliper rear-side bleed valve

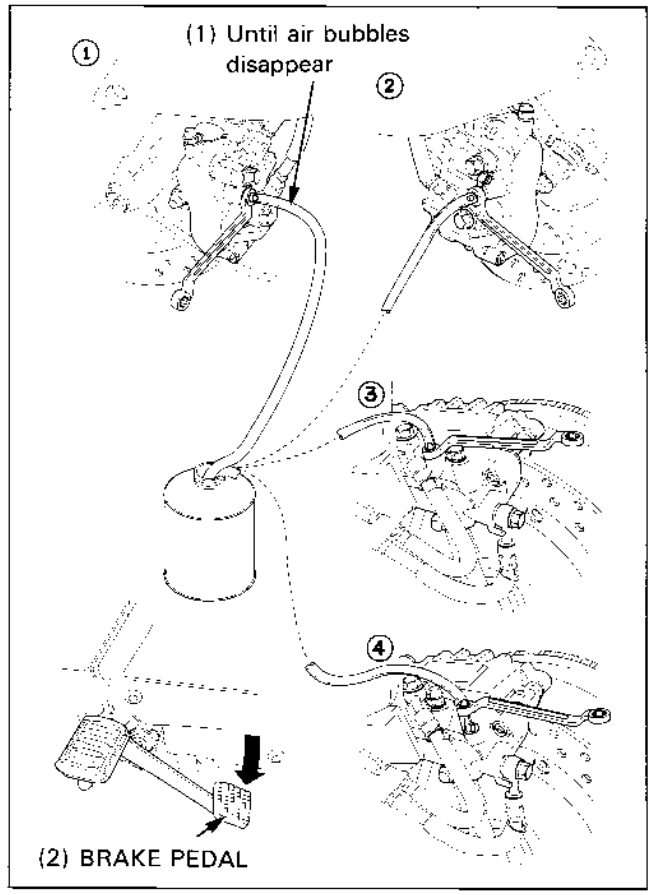
Make sure the bleed valves are closed and operate the brake pedal. If it still feels spongy, bleed the system again.

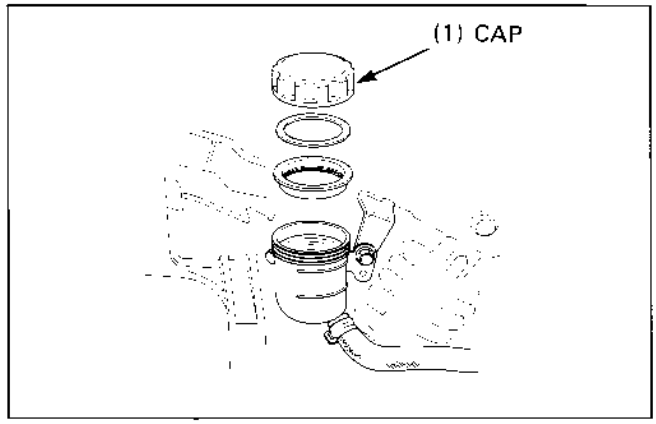
After bleeding air completely, tighten the bleed valves to the specified torque.

Torque: 5.5 N·m (0.55 kg-m, 4.0 ft-lb)

Fill the reservoir to the upper level line with DOT 4 brake fluid from a sealed container.
Install the diaphragm, set plate and reservoir cap.

Check the pedal line brake operation (page 3-13).

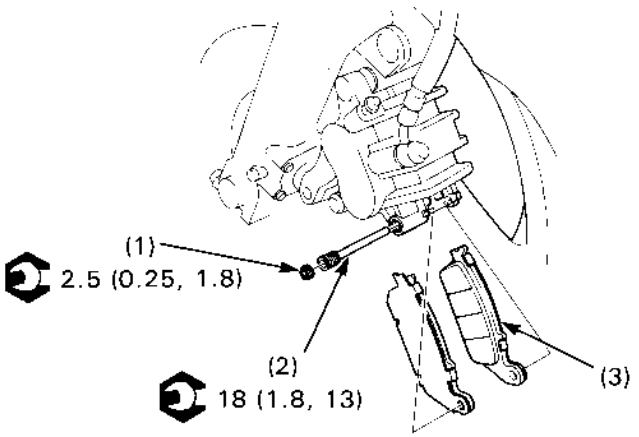


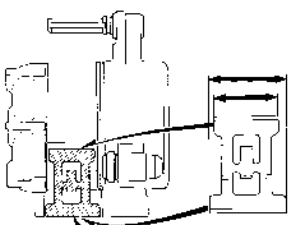


Brake Pad Replacement

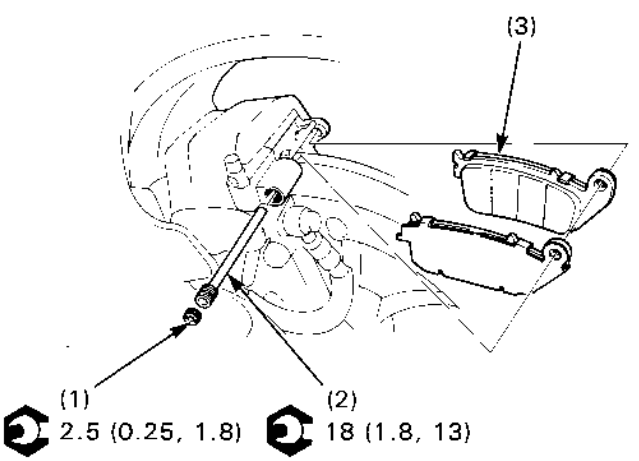
Standard and ABS/TCS Model

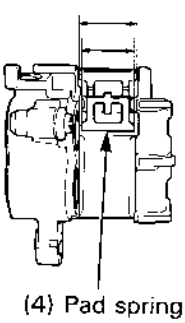
Front





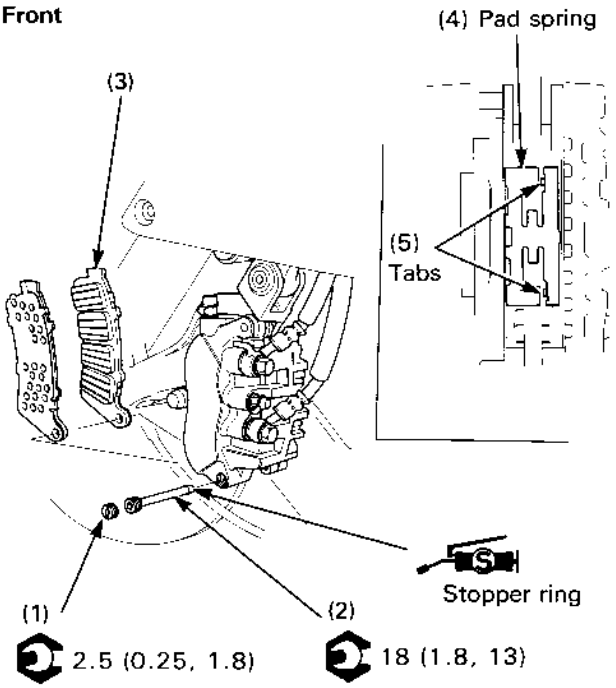
Rear



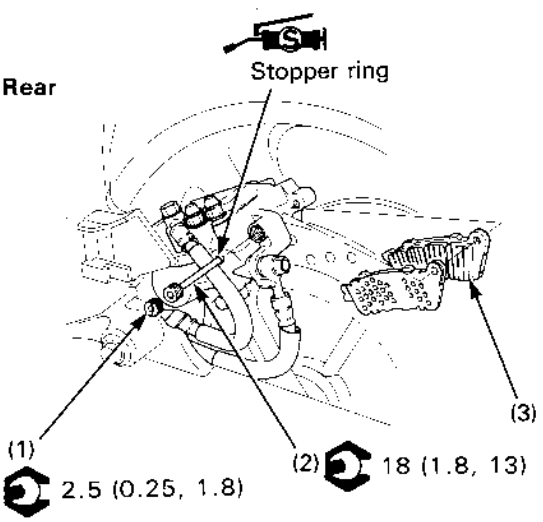


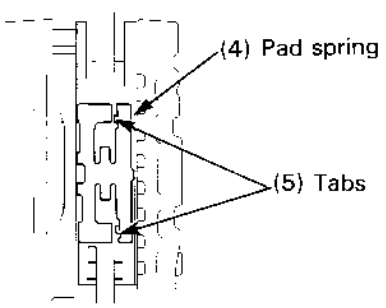
LBS-ABS/TCS Model

Front



Rear





⚠ WARNING

- **A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**
- **Brake dust may contain asbestos. Inhaled asbestos fibers have been found to cause respiratory disease and cancer.**
- **After replacement, operate the brake lever or pedal to seat the caliper pistons against the pads and check the brake operation [For front brake pad of the LBS-ABS/TCS model, operate the lever and pedal (page 3-13)].**

- Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard of airborne asbestos fibers.

NOTE

- The brake pads can be replaced without disconnecting the hydraulic system.
- Replace the brake pads as a set.
- Apply a thin coat of grease onto the pad pin and pad pin plug threads to prevent rust.

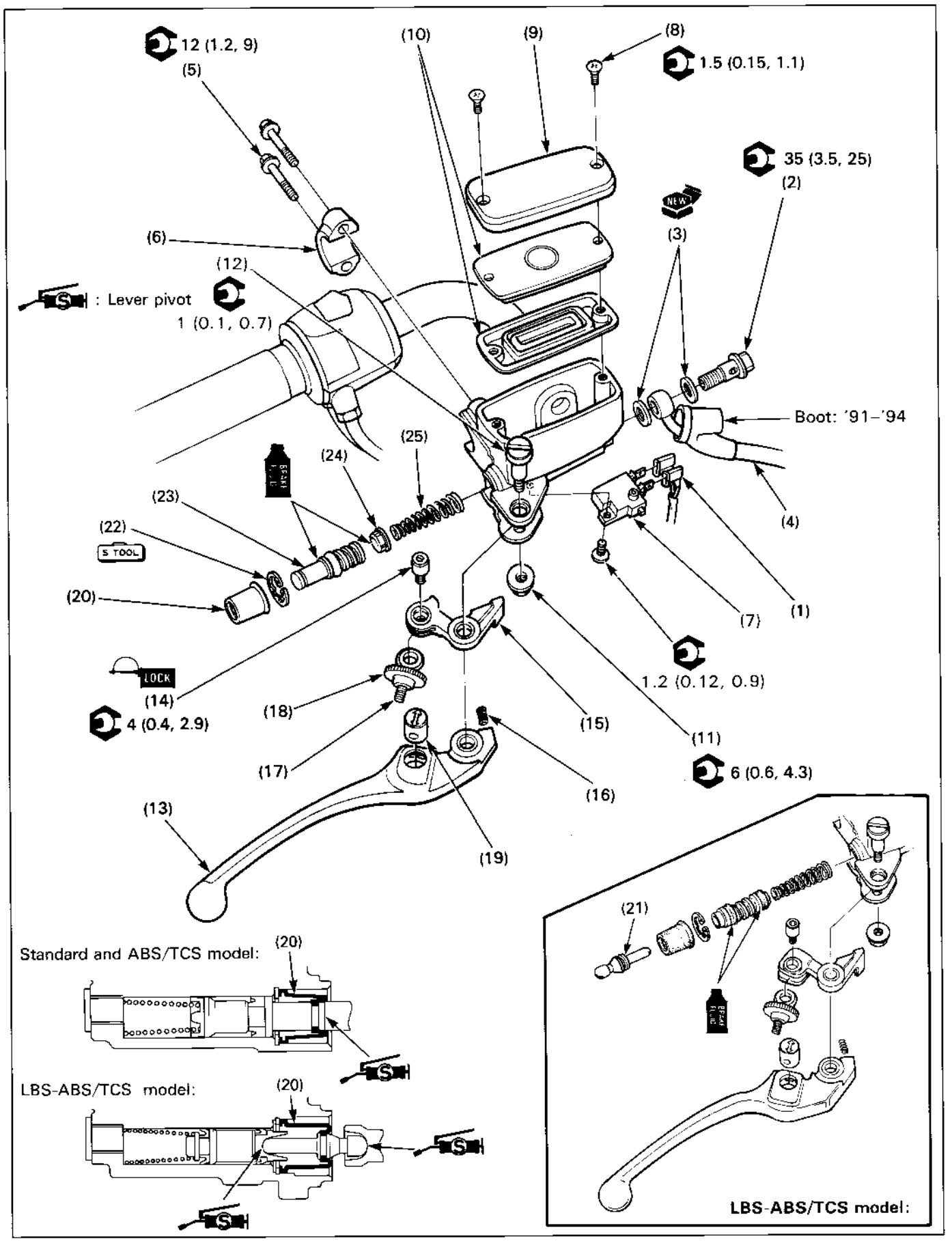
Standard and ABS/TCS model:

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Pad pin plug	1	
(2)	Pad pin	1	
(3)	Pad	2	NOTE • Push the pistons all the way in to provide clearance for the new pads. • Before installing the pads, make sure that the pad spring is positioned properly as shown.

LBS-ABS/TCS model:

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Pad pin plug	1	
(2)	Pad pin	1	
(3)	Pad	2	NOTE • Push the piston all the way in to provide clearance for the new pads. • On the rear pad, be careful not to scratch the rear wheel hub. • When installing the inside pad, insert between the tabs (retainers) of the pad spring and caliper body.

Front Master Cylinder Disassembly/Assembly



⚠ WARNING

- **Check the brake system by applying the lever brake after air bleeding.**

CAUTION

- **Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system is serviced.**
- **When removing the oil bolt, cover the end of the brake hose to prevent contamination. Do not allow foreign material to enter the system.**
- **Do not allow the lips of the master cylinder piston cups to be turned inside out and be certain the snap ring is firmly seated in the groove.**

NOTE

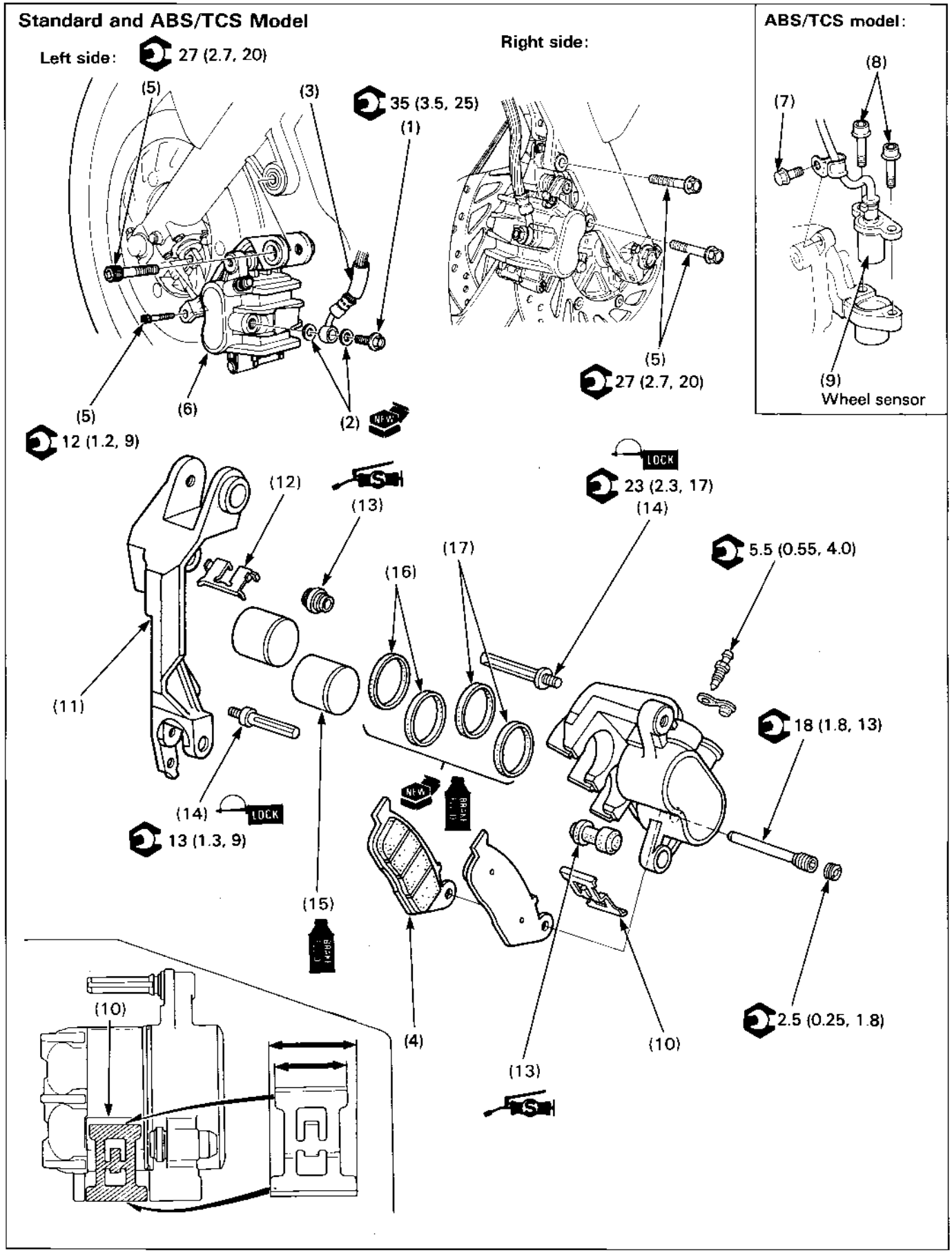
- Use only DOT 4 brake fluid from a sealed container.
- After assembly, align the index mark on the adjuster with the arrow mark on the joint pin.

Requisite Service

- Handlever cover removal/installation (page 13-2)
- Front brake fluid draining/air bleeding (Standard and ABS/TCS model: section 17 in Common Service Manual)
- Lever brake line fluil draining/air bleeding (LBS-ABS/TCS model: page 15-2)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly. At assembly, check the brake system by applying the brake after bleeding air from the system.
(1)	Brake switch wires	2	
(2)	Oil bolt	1	
(3)	Sealing washer	2	
(4)	Brake hose	1	
(5)	Master cylinder holder bolt	2	
(6)	Master cylinder holder	1	Remove the master cylinder assembly from the handlebar.
(7)	Brake switch	1	
(8)	Reservoir cap screw	2	
(9)	Reservoir cap	1	
(10)	Set plate/diaphragm	1/1	
(11)	Brake lever pivot nut	1	
(12)	Brake lever pivot bolt	1	
(13)	Brake lever assembly	1	
(14)	Socket bolt	1	
(15)	Adjuster arm	1	
(16)	Brake lever spring	1	
(17)	Adjuster rod	1	At installation, apply silicone grease.
(18)	Adjuster	1	
(19)	Joint pin	1	
(20)	Boot	1	
(21)	Push rod	1	LBS-ABS/TCS model
(22)	Snap ring	1	Use snap ring pliers (07914-3230001).
(23)	Master piston	1	
(24)	Primary cup	1	On the LBS-ABS/TCS model, it is installed onto the piston.
(25)	Spring	1	

Front Brake Caliper Disassembly/Assembly



⚠ WARNING

- **A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**
- **Brake dust may contain asbestos. Inhaled asbestos fibers have been found to cause respiratory disease and cancer.**
- **Check the brake system by applying the brake after air bleeding.**

- Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard of airborne asbestos fibers.

CAUTION

- **Spilled brake fluid will damage painted, plastic, or rubber parts.**

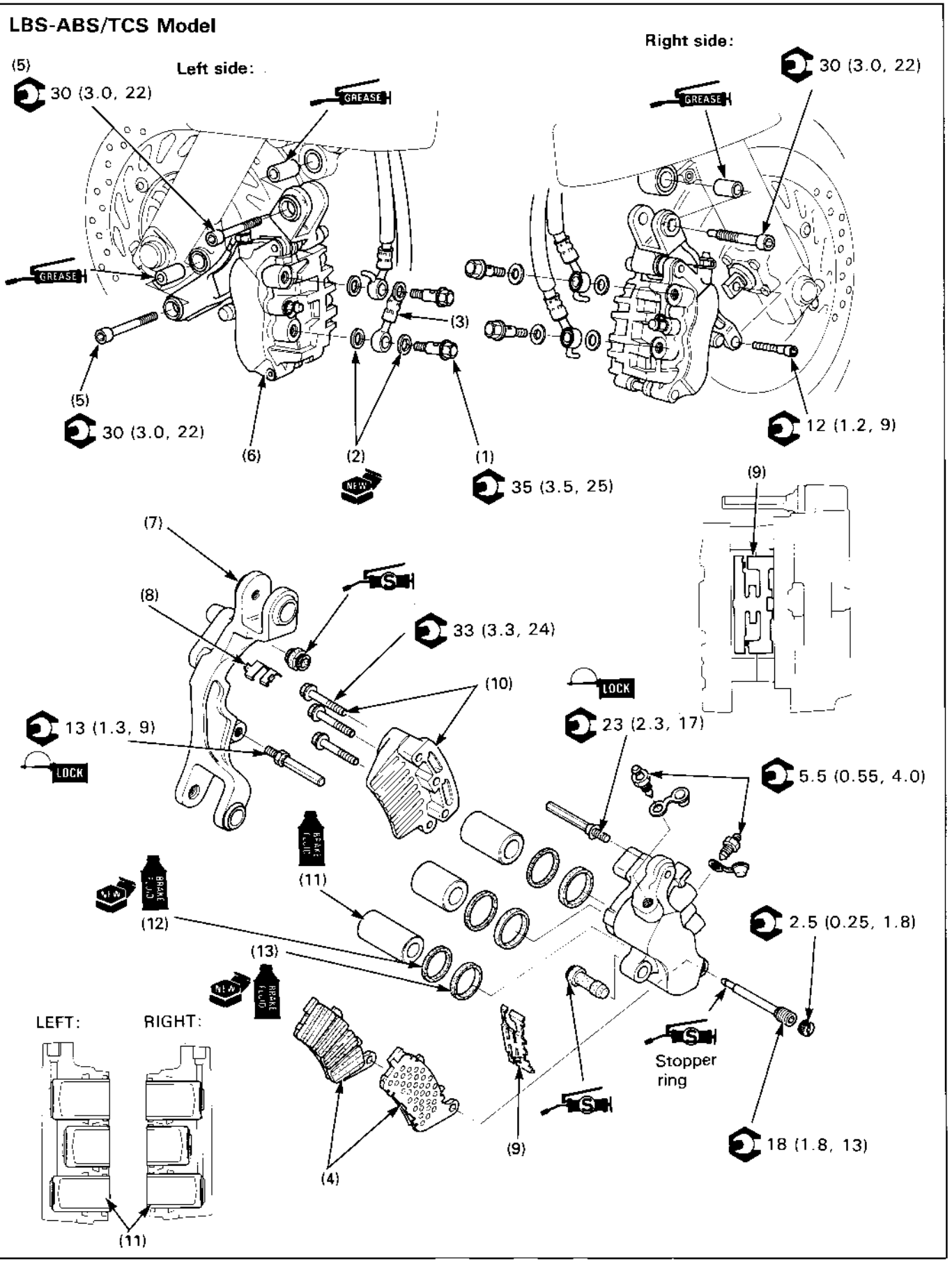
NOTE

- Do not remove the bleed valve unless it is replaced.

Requisite Service

- Front brake fluid draining/air bleeding (section 17 in Common Service Manual)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly. At assembly , check the brake system by applying the brake after bleeding air from the system.
(1)	Brake oil bolt	1	
(2)	Sealing washer	2	
(3)	Brake hose	1	
(4)	Pad	2	Removal/installation (page 15-8)
(5)	Caliper mounting bolt	2	Install the bolt with longer threads at the upper side.
(6)	Brake caliper assembly	1	
(7)	Wheel sensor wire clamp bolt	1	
(8)	Wheel sensor mounting bolt	2	
(9)	Wheel sensor	1	**CAUTION** • **Be careful not to damage the wheel sensor.**
(10)	Pad spring	1	Install as shown.
(11)	Caliper bracket	1	
(12)	Pad retainer	1	
(13)	Caliper pin bolt boot	2	
(14)	Caliper pin bolt	2	Do not remove unless necessary.
(15)	Caliper piston	2	
(16)	Dust seal	2	**CAUTION**
(17)	Piston seal	2	• **Be careful not to damage the piston sliding surface.**


LBS-ABS/TCS Model
Left side:
Right side:
(5)
30 (3.0, 22)
GREASE
(3)
(6)
(2)
(1)
NEW
35 (3.5, 25)
12 (1.2, 9)
(9)
(7)
(8)
33 (3.3, 24)
(10)
LOCK
13 (1.3, 9)
23 (2.3, 17)
5.5 (0.55, 4.0)
BRAKE FLUID
(11)
(12)
(13)
2.5 (0.25, 1.8)
LEFT:
RIGHT:
Stopper ring
18 (1.8, 13)
(4)

⚠ WARNING

- **A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**
- **Brake dust may contain asbestos. Inhaled asbestos fibers have been found to cause respiratory disease and cancer.**
- **Check the brake system by applying the lever and pedal brake after air bleeding (page 3-13).**

- Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard of airborne asbestos fibers.

CAUTION

- **Spilled brake fluid will damage painted, plastic, or rubber parts.**

NOTE

- Do not remove the bleed valve unless it is replaced.
- Reinstall the removed pistons and seals in the original position securely.
- After installing the right caliper, check the wheel speed sensor air gap (page 16-B-34).

Requisite Service

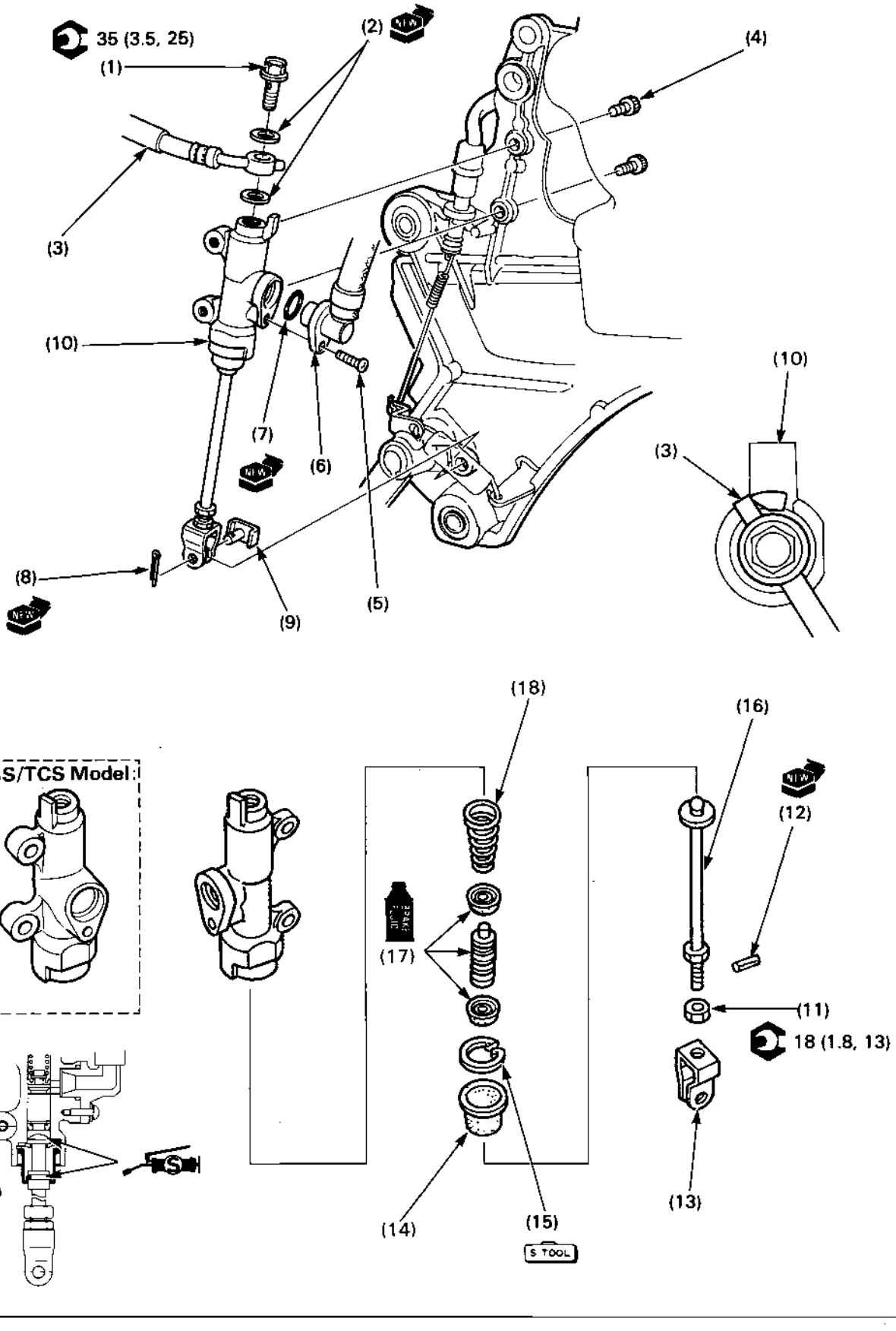
- Lever and pedal brake lines fluid draining/air bleeding (page 15-2)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly.
(1)	Brake oil bolt	2	
(2)	Sealing washer	4	
(3)	Brake hose	2	
(4)	Pad	2	Removal/installation (page 15-8)
(5)	Caliper mounting bolt	2	On the left side, install the bolt with longer threads at the lower side.
(6)	Brake caliper assembly	1	
(7)	Caliper bracket	1	
(8)	Pad retainer	1	
(9)	Pad spring	1	Install as shown.
(10)	Assembly bolt/caliper body	3/1	
(11)	Caliper piston	3	
(12)	Dust seal	3	**CAUTION**
(13)	Piston seal	3	• **Be careful not to damage the piston sliding surface.**

Rear Master Cylinder Disassembly/Assembly

Standard and ABS/TCS Model

Standard model shown:



⚠ WARNING

- **Check the brake system by applying the brake after bleeding air from the system.**

CAUTION

- **Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system is serviced.**
- **When removing the oil bolt, cover the end of the brake hose to prevent contamination. Do not allow foreign material to enter the system.**
- **Do not allow the lips of the master cylinder piston cups to be turned inside out and be certain the snap ring is firmly seated in the groove.**

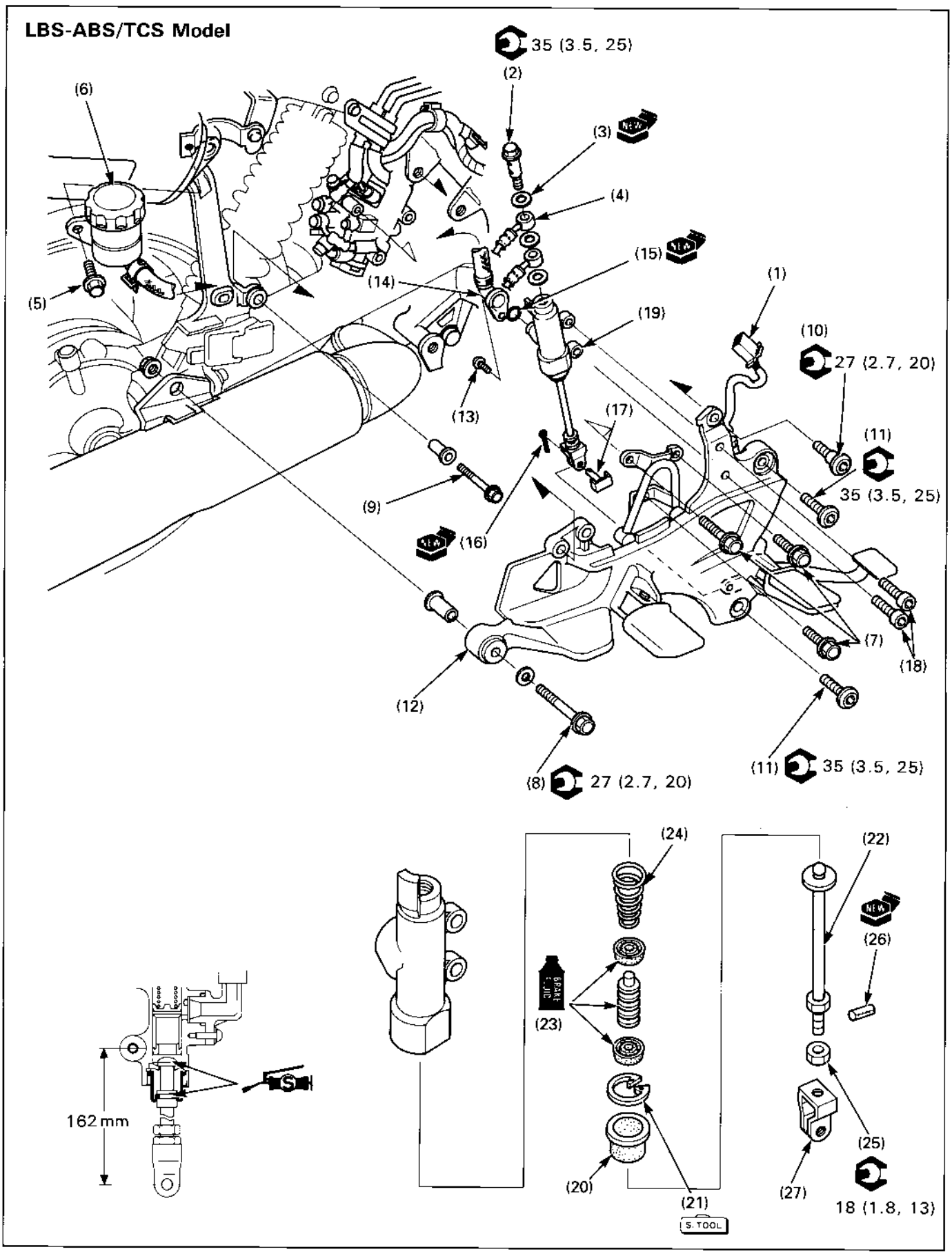
NOTE

- Use only DOT 4 brake fluid from a sealed container.
- Loosen and tighten the oil bolt and master cylinder mounting bolts with the step holder installed.
- The master piston, piston cups and spring must be replaced as a set.

Requisite Service

- Rear brake fluid draining/air bleeding (section 17 in Common Service Manual)
- Right step holder removal/installation (page 2-13)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly.
(1)	Oil bolt	1	
(2)	Sealing washer	2	
(3)	Brake hose	1	
(4)	Mounting bolt	2	
(5)	Reservoir hose joint screw	1	
(6)	Reservoir hose joint	1	
(7)	O-ring	1	
(8)	Cotter pin	1	
(9)	Joint pin	1	
(10)	Master cylinder assembly	1	
(11)	Lock nut	1	Loosen the nut.
(12)	Spring pin	1	
(13)	Push rod joint	1	
(14)	Boot	1	
(15)	Snap ring	1	Use snap ring pliers (07914—3230001).
(16)	Push rod	1	
(17)	Master piston/piston cup	1/2	
(18)	Spring	1	


LBS-ABS/TCS Model
35 (3.5, 25)
(2)
(3)
(4)
(6)
(5)
(14)
(15)
(1)
(19)
(10)
27 (2.7, 20)
(13)
(17)
(11)
35 (3.5, 25)
(9)
(16)
(7)
(18)
(12)
(8)
27 (2.7, 20)
(11)
35 (3.5, 25)
(24)
(22)
(26)
(23)
BRAKE FLUID
(25)
(20)
(21)
S. TOOL
(27)
18 (1.8, 13)
162 mm

⚠ WARNING

- **Check the brake system by applying the brake after air bleeding (page 3-13).**

CAUTION

- **Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system serviced.**
- **When removing the oil bolt, cover the end of the brake hose to prevent contamination. Do not allow foreign material to enter the system.**
- **Do not allow the lips of the cups to be turned inside out and be certain the snap ring is firmly seated in the groove.**

NOTE

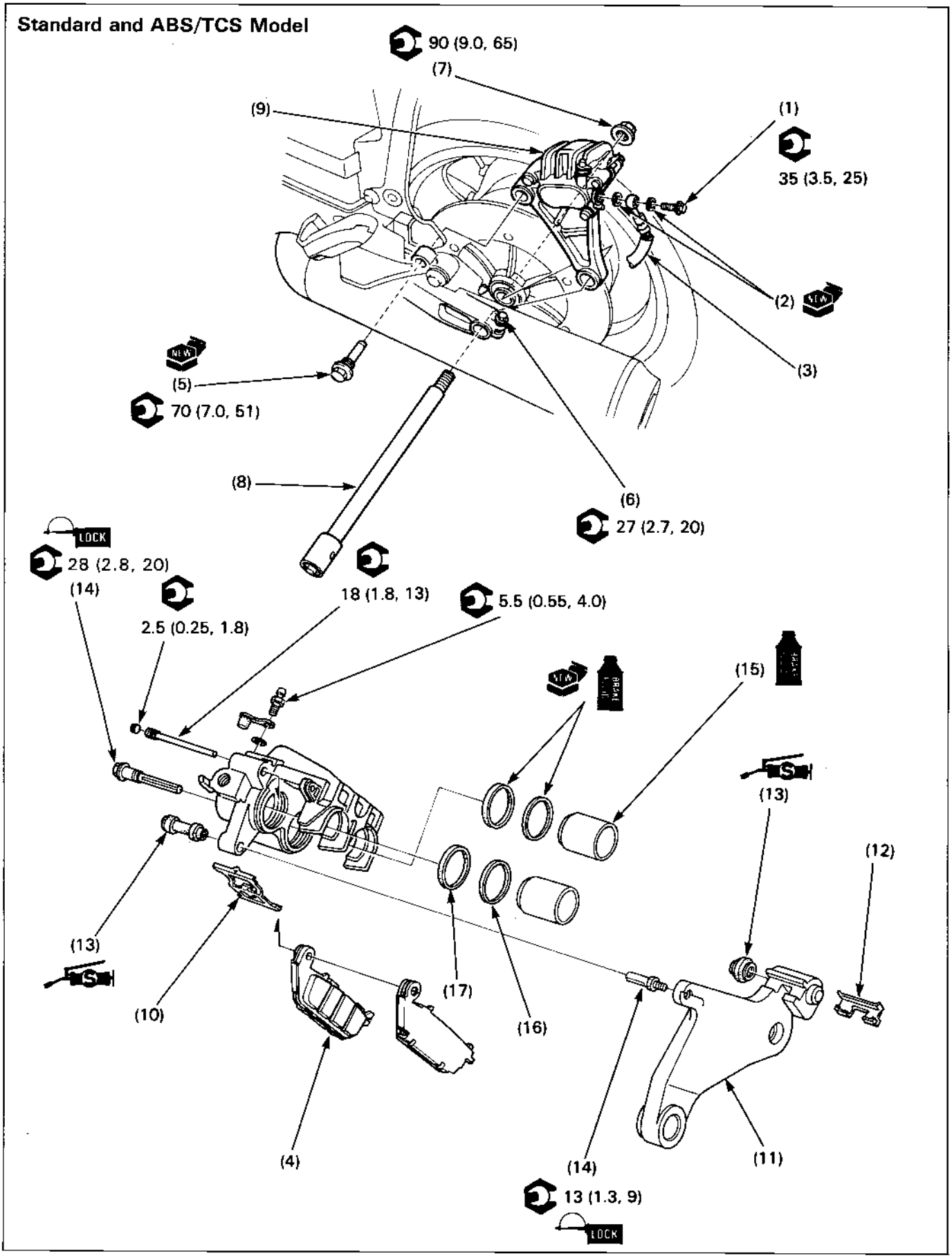
- The master piston, piston cups and spring must be replaced as a set.
- Use only DOT 4 brake fluid from a sealed container.

Requisite Service

- Pedal brake line fluid draining/air bleeding (page 15-2).
- Right pivot cover removal/installation (page 2-5).

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly. Before removing the step holder, loosen the master cylinder mounting bolts.
(1)	Brake light switch 2P (Black) connector	1	
(2)	Oil bolt	1	
(3)	Sealing washer	3	
(4)	Brake hose	2	
(5)	Reservoir bolt	1	
(6)	Master cylinder reservoir	1	
(7)	Modulator mounting bolt	3	
(8)	Muffler mounting bolt	1	
(9)	Right step holder bolt 6 mm	1	
(10)	8 mm	1	
(11)	10 mm	2	
(12)	Right step holder	1	
(13)	Hose joint screw	1	
(14)	Reservoir hose joint	1	
(15)	O-ring	1	
(16)	Cotter pin	1	
(17)	Joint pin	1	
(18)	Mounting bolt	1	
(19)	Master cylinder assembly	1	
(20)	Boot	1	
(21)	Snap ring	1	Use snapring pliers (07914-3230001).
(22)	Push rod	1	
(23)	Master piston/cup	1/2	
(24)	Spring	1	
(25)	Lock nut	1	Loosen the nut.
(26)	Spring pin	1	
(27)	Push rod joint	1	

Rear Brake Caliper Disassembly/Assembly



⚠ WARNING

- **A contaminated brake disc or pad reduces stopping power. Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**
- **Check the brake system by applying the brake after air bleeding.**
- **Brake dust may contain asbestos. Inhaled asbestos fibers have been found to cause respiratory disease and cancer.**

- Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA, designed to minimize the hazard of airborne asbestos fibers.

CAUTION

- **Spilled brake fluid will damage painted, plastic, or rubber parts.**

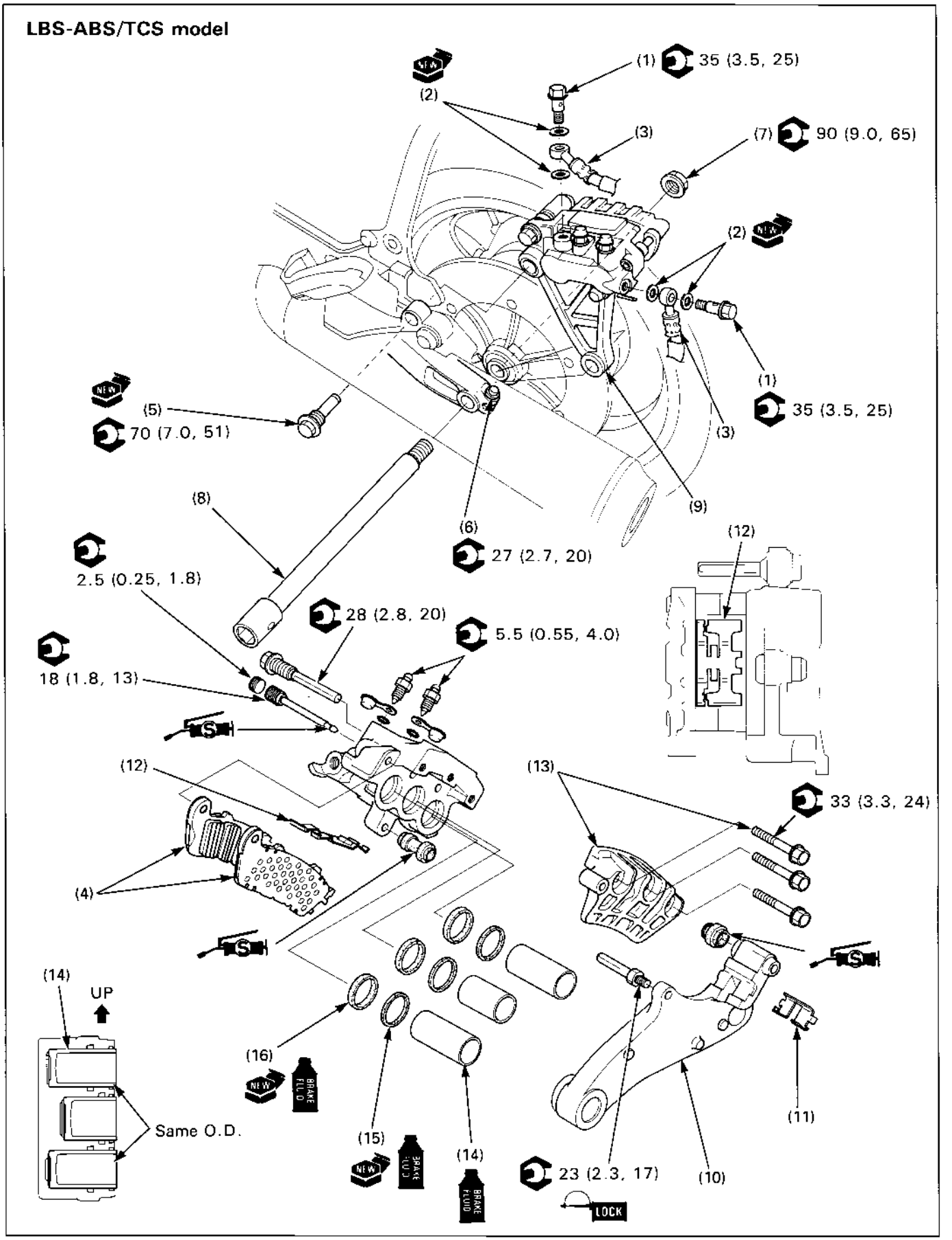
NOTE

- Do not remove the bleed valve unless it is replaced.

Requisite Service

- Rear brake fluid draining/air bleeding (section 17 in Common Service Manual)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly.
(1)	Brake oil bolt	1	
(2)	Sealing washer	2	
(3)	Brake hose	1	
(4)	Pad	2	Removal/installation (page 15-8)
(5)	Caliper stopper pin bolt	1	
(6)	Rear axle pinch bolt	1	Loosen the bolt.
(7)	Rear axle nut	1	
(8)	Rear axle	1	
(9)	Brake caliper assembly	1	After removing the caliper assembly, temporarily install the rear axle and axle nut.
(10)	Pad spring	1	
(11)	Caliper bracket	1	
(12)	Pad retainer	1	
(13)	Caliper pin bolt boot	2	
(14)	Caliper pin bolt	2	Do not remove unless necessary.
(15)	Caliper piston	2	
(16)	Dust seal	2	**CAUTION**
(17)	Piston seal	2	• **Be careful not to damage the piston sliding surface.**


LBS-ABS/TCS model
NEW
(1)
35 (3.5, 25)
(2)
(3)
(7)
90 (9.0, 65)
(2)
NEW
(1)
35 (3.5, 25)
(3)
(5)
70 (7.0, 51)
(8)
(6)
27 (2.7, 20)
(9)
(12)
2.5 (0.25, 1.8)
28 (2.8, 20)
5.5 (0.55, 4.0)
18 (1.8, 13)
S
(12)
(13)
33 (3.3, 24)
(4)
S
S
(14)
UP
(16)
NEW
BRAKE FLUID
Same O.D.
(15)
NEW
BRAKE FLUID
(14)
BRAKE FLUID
23 (2.3, 17)
LOCK
(10)
(11)

⚠ WARNING

- **Discard contaminated pads and clean a contaminated disc with a high quality brake degreasing agent.**
- **Check the brake system by applying the pedal brake after air bleeding (page 3-13).**

CAUTION

- **Spilled brake fluid will damage painted, plastic, or rubber parts.**

NOTE

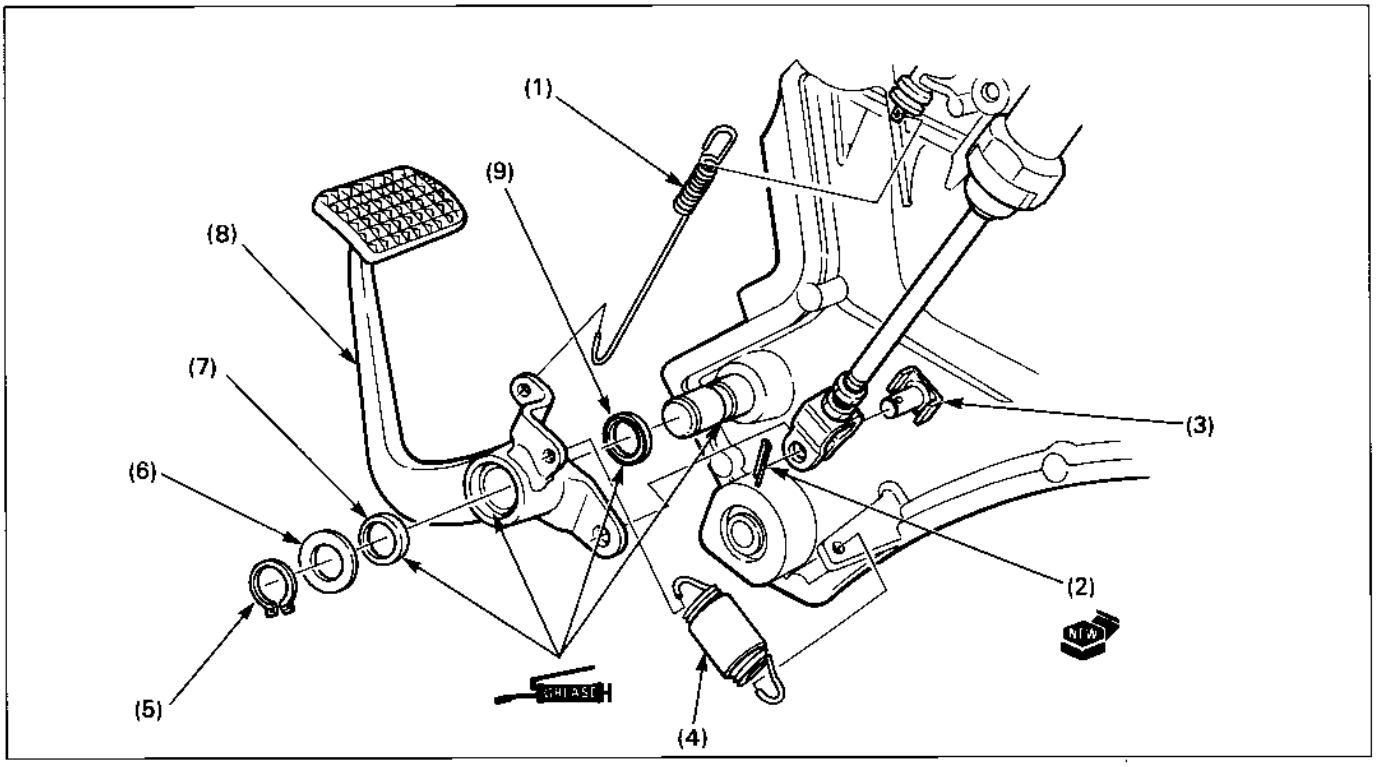
- Do not remove the bleed valve unless it is replaced.

Requisite Service

- Pedal brake line fluid draining/air bleeding (page 15-2)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly.
(1)	Brake oil bolt	2	
(2)	Sealing washer	4	
(3)	Brake hose	2	
(4)	Pad	2	Removal / installation (page 15-8)
(5)	Caliper stopper pin bolt	1	
(6)	Rear axle pinch bolt	1	Loosen the bolt.
(7)	Rear axle nut	1	
(8)	Rear axle	1	
(9)	Brake caliper assembly	1	After removing the caliper assembly, temporarily install the rear axle and axle nut.
(10)	Caliper bracket	1	
(11)	Pad retainer	1	
(12)	Pad spring	1	Install as shown.
(13)	Assembly bolt / caliper body	3/1	
(14)	Caliper piston	3	
(15)	Dust seal	3	**CAUTION**
(16)	Pistson seal	3	• **Be careful not to damage the piston sliding surface.**

Rear Brake Pedal Removal/Installation



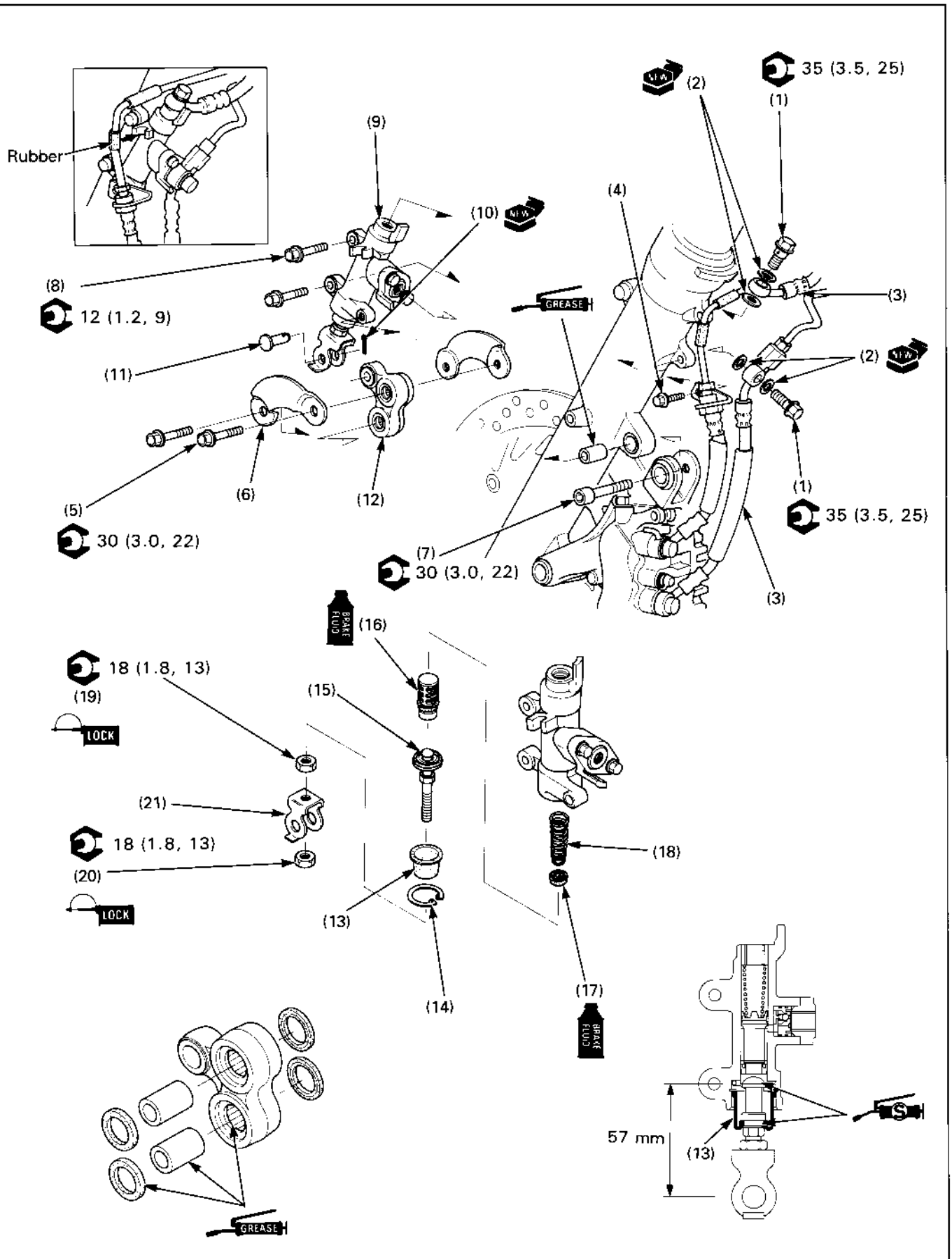
Requisite Service

- Right step holder removal/installation (page 2-13)

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Rear brake light switch spring	1	
(2)	Cotter pin	1	
(3)	Joint pin	1	
(4)	Brake pedal return spring	1	
(5)	Snap ring	1	
(6)	Washer	1	
(7)	Dust seal	1	
(8)	Brake pedal	1	
(9)	Dust seal	1	

MEMO

Secondary Master Cylinder Disassembly / Assembly (LBS-ABS/TCS model)



⚠ WARNING

- **Check the brake system by applying the brake after air bleeding (page 3-13).**

CAUTION

- **Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system is serviced.**
- **When removing the oil bolt, cover the end of the brake hose to prevent contamination. Do not allow foreign material to enter the system.**
- **Do not allow the lips of the cups to be turned inside out and be certain the snap rings is firmly seated in the groove.**

NOTE

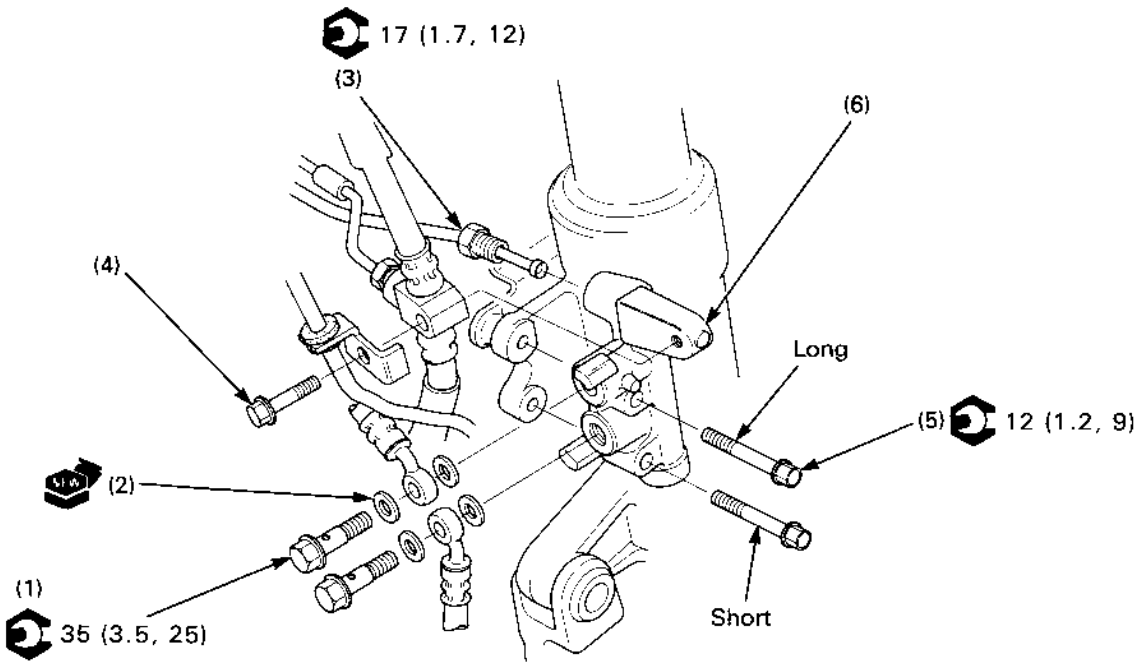
- The master piston, piston cups and spring must be replaced as a set.
- Use only DOT 4 brake fluid from a sealed container.

Requisite Service

- Pedal brake line fluid draining/air bleeding (page 15-2)
- Front fender removal/installation (page 2-11)

	Procedure	Q'ty	Remarks
	Disassembly Order		Assembly is in the reverse order of disassembly.
(1)	Oil bolt	2	
(2)	Sealing washer	4	
(3)	Brake hose	2	
(4)	Oil pipe stay bolt	1	
(5)	Link plate bolt	2	
(6)	Link plate	2	
(7)	Upper caliper pivot bolt	1	
(8)	Master cylinder mounting bolt	2	Install the bolt with longer threads at the upper side.
(9)	Secondary master cylinder & link arm assembly	1	
(10)	Cotter pin	1	
(11)	Joint pin	1	
(12)	Link arm	1	
(13)	Boot	1	
(14)	Snap ring	1	Use snap ring pliers (07914-3230001).
(15)	Push rod	1	
(16)	Master piston	1	
(17)	Primary cup	1	
(18)	Spring	1	
(19)	Lock nut	1	Loosen the nut.
(20)	Push rod nut	1	
(21)	Push rod joint	1	

Delay Valve Removal/Installation (LBS-ABS/TCS model)



⚠ WARNING

- **Check the brake system by applying the pedal brake after air bleeding (page 3-13).**

CAUTION

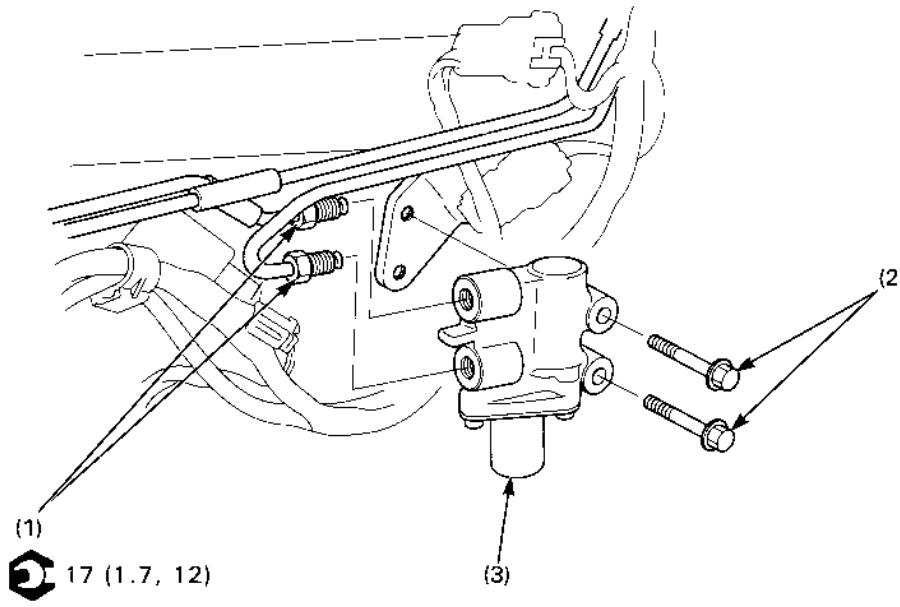
- **Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system is serviced.**
- **When removing the oil bolt or pipe, cover the end of the brake hose and pipe to prevent contamination. Do not allow foreign material to enter the system.**

Requisite Service

- Pedal brake line fluid draining/air bleeding (page 15-2)
- Front fender removal/installation (page 2-11)

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Oil bolt	2	
(2)	Sealing washer	4	
(3)	Oil pipe joint nut	1	
(4)	Wire stay & hose joint bolt	1	
(5)	Mounting bolt	2	Install the bolt with longer threads at the upper side.
(6)	Delay valve	1	

Proportional Control Valve Removal/Installation (LBS-ABS/TCS model)



⚠ WARNING

- **Check the brake system by applying the pedal brake after air bleeding (page 3-13).**

CAUTION

- **Avoid spilling fluid on painted, plastic, or rubber parts. Place a rag over these parts whenever the system is serviced.**
- **When disconnecting the oil pipe, cover the end of the oil pipe to prevent contamination. Do not allow foreign material to enter the system.**

Requisite Service

- Pedal brake line fluid draining/air bleeding (page 15-2)
- Right side cover removal/installation (page 2-2)

	Procedure	Q'ty	Remarks
	Removal Order		Installation is in the reverse order of removal.
(1)	Oil pipe joint nut	2	Be careful not to deform the oil pipe.
(2)	Mounting bolt	2	
(3)	Proportional control valve	1	

Symbols

The symbols used throughout this manual show specific service procedures. If supplementary information is required pertaining to these symbols, it would be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use special tool
	Use optional tool. Use the same procedure you use to order parts.
 10 (1.0, 7.2)	Torque specification. 10 N·m (1.0 kg-m, 7.2 ft-lb)
	Use recommended engine oil, unless otherwise specified.
	Use molybdenum oil solution (mixture of the engine oil and molybdenum grease in a ratio of 1 : 1).
	Use multi-purpose grease (Lithium based multi-purpose grease NLGI #2 or equivalent)
	Use molybdenum disulfide grease (containing more than 3% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® BR-2 plus manufactured by Dow Corning, U.S.A. Multi-purpose M-2 manufactured by Mitsubishi Oil Japan
	Use molybdenum disulfide paste (containing more than 40% molybdenum disulfide, NLGI #2 or equivalent) Example: Molykote® G-n Paste manufactured by Dow Corning, U.S.A. Honda Moly 60 (U.S.A. only) Rocol ASP manufactured by Rocol Limited, U.K. Rocol Paste manufactured by Sumico Lubricant, Japan
	Use silicone grease
	Apply a locking agent. Use a middle strength locking agent unless otherwise specified.
	Apply sealant
	Use brake fluid, DOT 3 or DOT 4. Use the recommended brake fluid, unless otherwise specified.
	Use Fork or Suspension Fluid.