BRAKE MASTER LESS RESERVOIR TANK CYLINDER SUB–ASSY

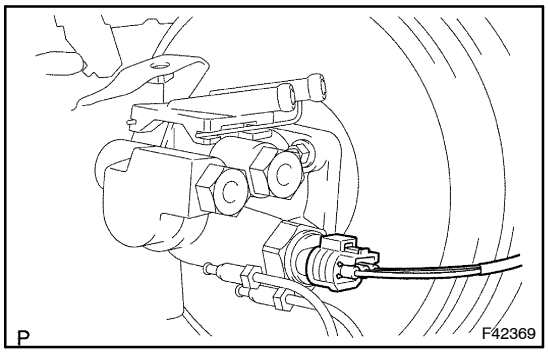
320TT–01

OVERHAUL

1. REMOVE OIL RESERVOIR TANK COVER LH (LHD STEERING POSITION TYPE)
2. REMOVE OIL RESERVOIR TANK COVER RH (RHD STEERING POSITION TYPE)
3. DRAIN BRAKE FLUID
4. REMOVE STEERING COLUMN ASSY (See page 50–8)
5. REMOVE INSTRUMENT CLUSTER FINISH PANEL
6. REMOVE COMBINATION METER ASSEMBLY

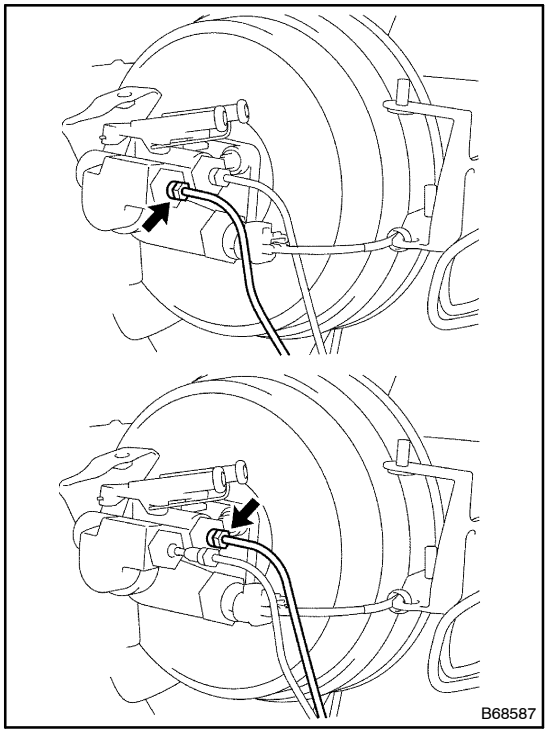
(a) Remove the 3 screws from the combination meter.

(b) Disconnect the 4 connectors, and remove the combination meter.

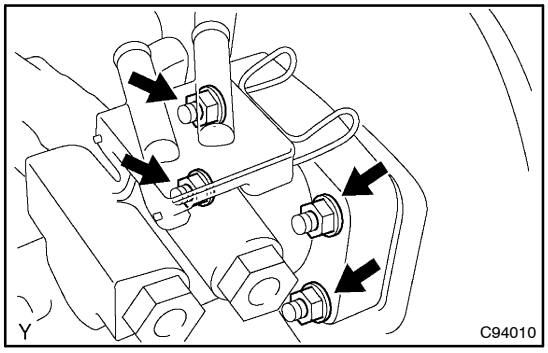


7. REMOVE BRAKE MASTER LESS RESERVOIR TANK CYLINDER SUB–ASSY

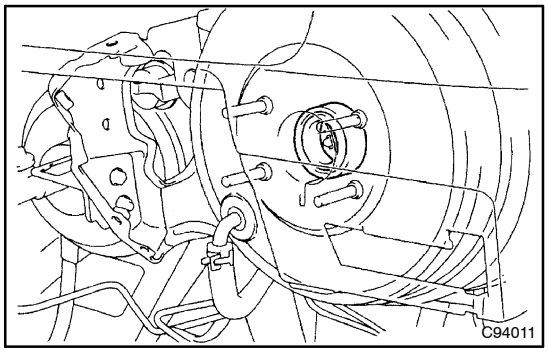
(a) ABS Type only:
Disconnect the oil pressure sensor connector.



(b) Using SST, disconnect the 2 brake tubes from the master cylinder.
SST 09023–00100



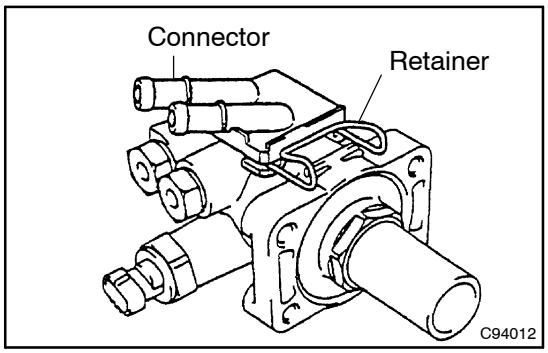
(c) Remove the 4 nuts, and pull out the master cylinder together with brake master cylinder support.



(d) Remove the piston seal.

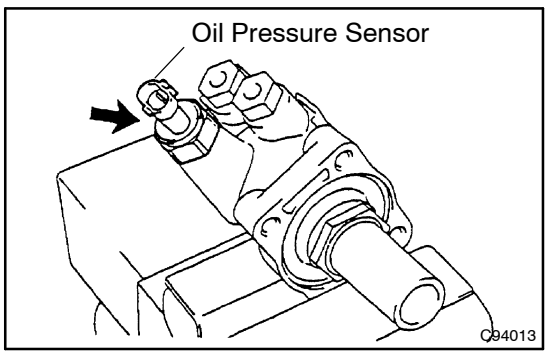
NOTICE:

Projection volume of the push rod in the brake booster can be adjusted, however, do not move the push rod when only the cup and others are replaced. If it is moved, adjustment of the projection length of the booster push rod will be necessary.



8. REMOVE BRAKE MASTER CYLINDER RESERVOIR CONNECTOR

(a) Pull out the retainer, and remove the connector and 2 grommets.



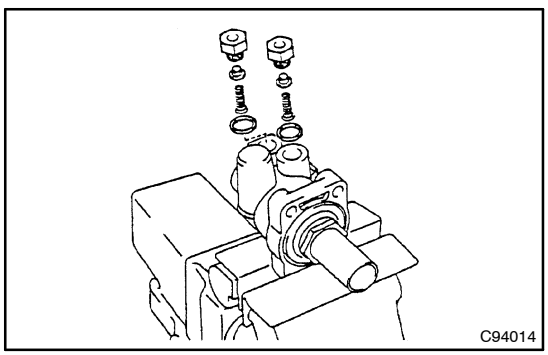
9. REMOVE OIL PRESSURE SENSOR

(a) Carefully mount the master cylinder in a soft jaw vise.

(b) Remove the oil pressure sensor, back–up ring and O–ring.

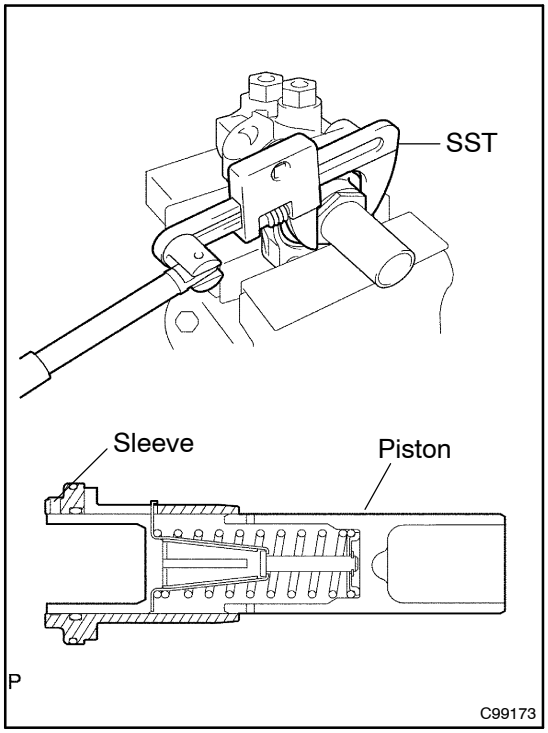
NOTICE:

Remove the oil pressure sensor only if it is faulty and it has to be replaced.



10. REMOVE MASTER CYLINDER FLUID OUTLET PLUG

(a) Remove the 2 plugs, 2 check valve seats, 2 springs and 2 gaskets.



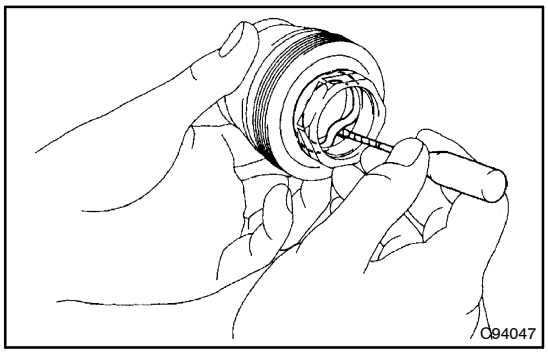
11. REMOVE BRAKE MASTER CYLINDER KIT

(a) Using SST, remove the cap.

(b) Take out both the piston and sleeve as a unit from the master cylinder body, tilting the sleeve forward and backward, and right and left.

NOTICE:

- **Do not take out the piston only from the master cylinder body.**
- **Do not damage the inside of the master cylinder body.**



(c) Using a small screwdriver, remove the secondary cup from the cap.

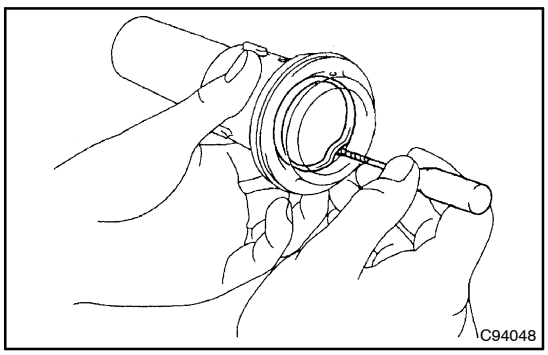
HINT:

Tape the screwdriver tip before use.

NOTICE:

Do not damage the inside of the cap.

(d) Remove the secondary piston.



(e) Using a small screwdriver, remove the pressure cup from the sleeve.

HINT:

Tape the screwdriver tip before use.

NOTICE:

- **Do not damage the inside and outside of the sleeve.**
- **Do not pull the piston.**

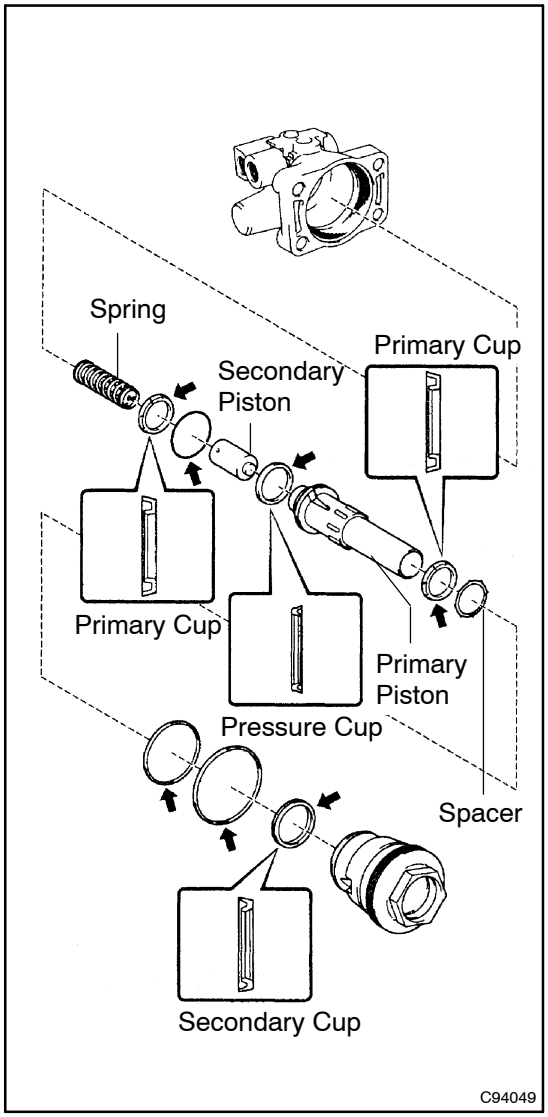
12. INSPECT BRAKE MASTER CYLINDER

(a) Check the cylinder bore for rust or scoring.

HINT:

Clean the disassembled parts with compressed air.

If necessary, clean or replace the cylinder.



13. INSTALL BRAKE MASTER CYLINDER KIT

NOTICE:

Before reassembly, apply lithium soap base glycol grease to the rubber parts indicated by the arrows in the illustration.

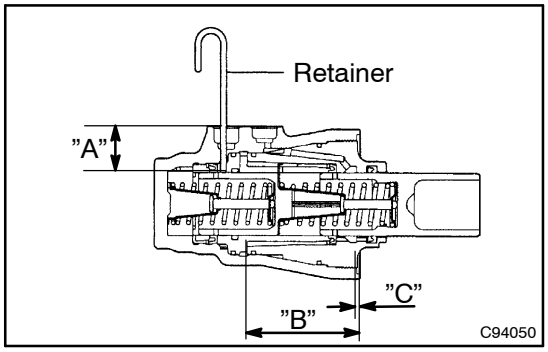
(a) Install the pressure cup, secondary piston and secondary cup.

(b) Equip the secondary piston with the primary cup, and then install it into the master cylinder body (check that the cup does not turn over).

(c) Match the primary piston with the positioning mark of the master cylinder body, and install it straightforward (at this time,securely push in the sleeve).

NOTICE:

- **In order not to damage the inside of the cylinder body, be sure to match the projection with the hollow of the master cylinder body and insert it straightly.**
- **Be sure to check that there is a spacer.**
- **Check the cup and spring direction.**

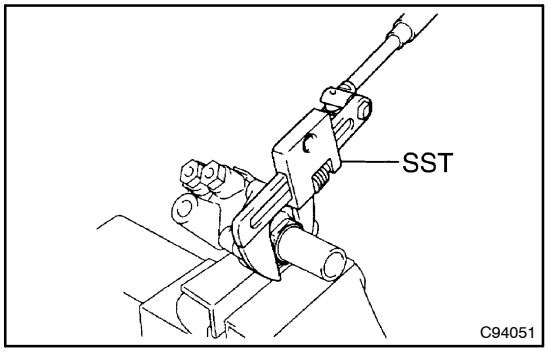


(d) Insert the retainer for fixing the connector into the hole in order to check whether the sleeve has been securely set to the depth, and then check the dimensions "A" and "B" as shown in the illustration.

Dimension:

"A"	Front and rear drum brake w/o ABS	21.1 – 21.5 mm (0.830 – 0.846)
	Front disc brake or w/ ABS	22.7 – 23.1 mm (0.894 – 0.909 in.)
"B"		57.5 – 58.1 mm (2.264 – 2.287 in.)

(e) Check that there is nothing attached in the screw groove.



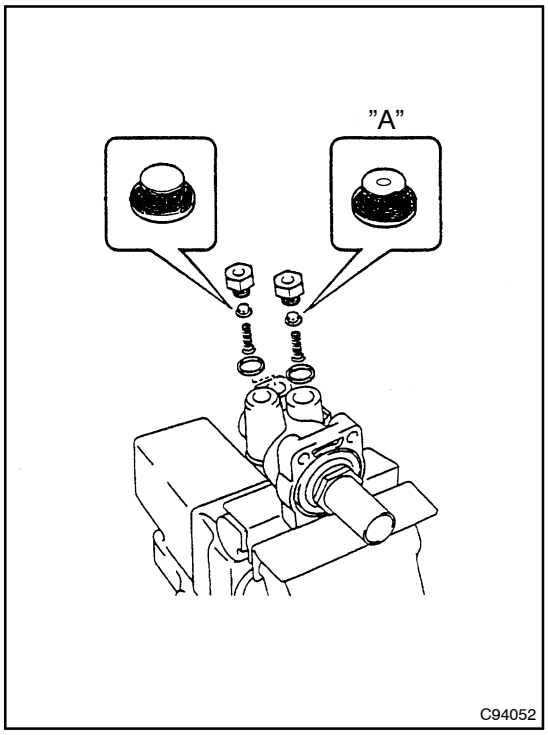
(f) Using SST, tighten the cap with the retainer inserted into the hole.
Torque:
7.8 N·m (80 kgf·cm, 69 in.·lbf) for use with SST
11.8 N·m (120 kgf·cm, 8.68 ft·lbf)

HINT:
Use a torque wrench with a fulcrum length of 250 mm (9.84 in.).

(g) Check dimension ”C” after tightening the cap.
Dimension ”C”: 1.23 – 1.97 mm (0.0484 – 0.0776 in.)

(h) Pull out the retainer from the hole, and insert the 2 grommets into the connector. Then install it to the body, and fix the connector with the retainer.

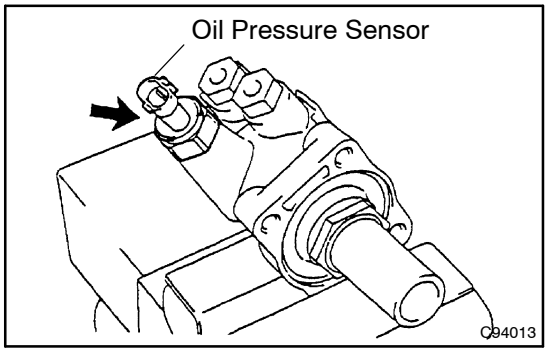
NOTICE:
Take care for the retainer installation direction.



14. INSTALL MASTER CYLINDER FLUID OUTLET PLUG

(a) Install the 2 gaskets, 2 springs, 2 check valve seats and 2 plugs.
Torque: 64 N·m (630 kgf·cm, 46 ft·lbf)

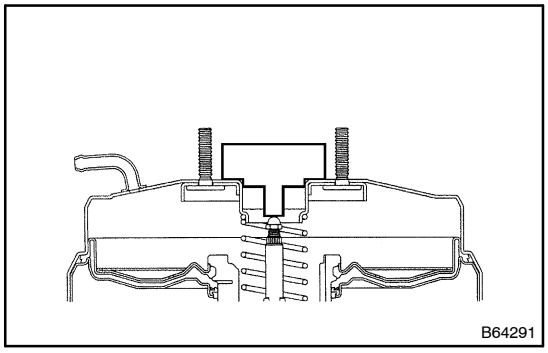
NOTICE:
For vehicles with the front disc brake, use the valve seat with a hole in the upper part as in ”A”; otherwise, brake drag will result.



15. INSTALL OIL PRESSURE SENSOR

(a) w/ ABS system equipped model:
Install a new O–ring, back–up ring and oil pressure sensor.
Torque: 64 N·m (630 kgf·cm, 46 ft·lbf)

16. INSTALL BRAKE MASTER CYLINDER RESERVOIR CONNECTOR



17. INSPECT AND ADJUST BRAKE BOOSTER PUSH ROD

(a) Apply chalk to the tip of the accessary tool belonging to the supply master cylinder subassembly.

(b) Attach the accessory accessary tool to the brake booster and check the gap between the accessary tool and the push rod.

Clearance: 0 mm (0 in.)

NOTICE:

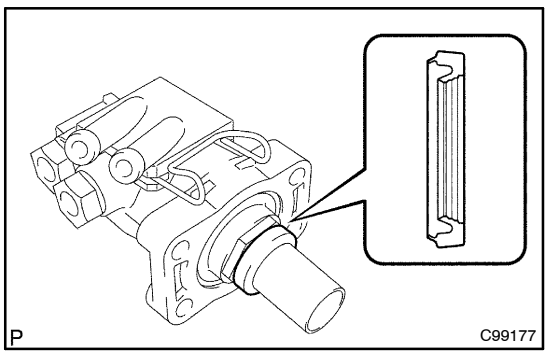
When there is a gap between the accessary tool and the booster shell (when the accessary tool has no contact), the gap is judged as too small, and when no chalk becomes attached to the tip of the push rod, the gap is judged as too large, and gap adjustment is performed.

18. ADJUST BRAKE BOOSTER PUSH ROD

(a) When the standard is not met, depress the brake pedal and adjust the length of the push rod with the booster push rod in extended condition.

NOTICE:

Perform adjustment when no negative pressure is applied to the booster. (Depress the brake pedal several times with the engine stopped to get rid of the negative pressure of the booster).

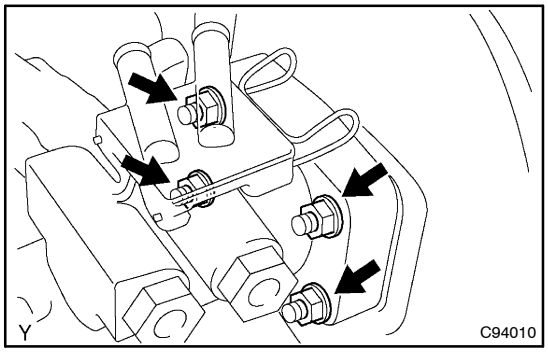


19. INSTALL BRAKE MASTER LESS RESERVOIR TANK CYLINDER SUB–ASSY

(a) Install the seal, which has been removed from the brake booster, to the master cylinder.

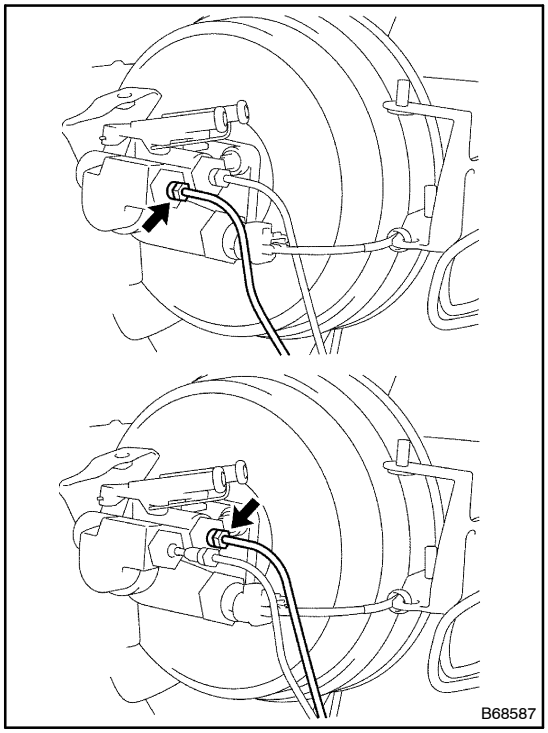
NOTICE:

If the master cylinder is installed with the seal on the booster, the seal might come off. To prevent this, attach the seal should be attached onto the master cylinder first, and then install the master cylinder to the booster finally.



(b) Install the master cylinder, which is equipped with the brake master cylinder support. with the 4 nuts.

Torque: 12.5 N·m (130 kgf·cm, 9 ft·lbf)



(c) Using SST, connect the 2 brake lines to the master cylinder.
SST 09023–00100
Torque:
12.9 N·m (131 kgf·cm, 9.4 ft·lbf) for use with SST
15 N·m (155 kgf·cm, 11 ft·lbf)

(d) Disconnect the oil pressure sensor connector.

20. INSTALL COMBINATION METER ASSEMBLY

(a) Connect the 4 connectors and install the combination meter.

(b) Install the 3 screws to the combination meter.

21. INSTALL INSTRUMENT CLUSTER FINISH PANEL

22. INSTALL STEERING COLUMN ASSY (See page 50–8)

23. FILL RESERVOIR WITH BRAKE FLUID (See page 32–4)

24. BLEED MASTER CYLINDER (See page 32–4)

25. BLEED BRAKE LINE (See page 32–4)

26. CHECK FLUID LEVEL IN RESERVOIR

27. INSTALL OIL RESERVOIR TANK COVER LH (LHD STEERING POSITION TYPE)

28. INSTALL OIL RESERVOIR TANK COVER RH (RHD STEERING POSITION TYPE)

29. CHECK BRAKE FLUID LEAKAGE