Group:	Service Manual Update
Bulletin No.:	SB-15-029
Issue Date:	6/22/2015

SERVICE INFORMATION BULLETIN

Subject: CORRECTION OF WORKSHOP MANUAL FOR HINO 300 SERIES
(CORRECTION INSPECTING CLUTCH SYSTEM FUNCTION)

The following is to inform you of the above caption. This service data should be attached to the relevant pages of the workshop manuals for maintenance and to use for servicing.

RELEVANT MODEL:
HINO 300 series with a clutch system

CONTENTS:
Correction of inspecting clutch system function

RELEVANT MANUALS:

LANGUAGE	MANUAL No.	CHAPTER
ENGLISH	S1-LXZE05G	CLUTCH (300), CLUTCH (325)

Vendor Ref.:	SB-L-31-003

CLUTCH CONTROL

CLUTCH PEDAL CONTROL

EN01E05300010701002001

STANDARD VALUE, LIMIT AND ACTION

Unit: mm {in.}

Inspection item		Standard value	Repair limit	Action
Clutch pedal height	Regular cab	160.5-170.5 {6.319-6.712}	–	Adjustment
	Wide cab	169.5-182.5 {6.674-7.185}	–	Adjustment
Clutch pedal stoke		150 {5.906}	–	Adjustment
Release cylinder stroke		16 {0.630} or more	–	Adjustment
Stopper bolt height		2.5-3.0 {0.0985-0.1181}	–	Adjustment
Play of push rod		1-5 {0.0394-0.1968}	–	Adjustment
Play of clutch pedal		5-16 {0.1969-0.6299}	–	Adjustment
Allowance after pedal cut-off		25 {0.984} or more	–	Adjustment

ADD

TIGHTENING TORQUE

Unit: N·m {kgf·cm, lbf·ft}

Tightening part		Tightening torque	Remarks
Lock nut	For clutch switch part	24 {245, 18}	—
	For push rod part	8.4-15.6 {85-159, 6.2-11.5}	—
Stopper bolt lock nut		9.6-14.4 {98-146, 7.1-10.6}	—
Master cylinder push rod lock nut		11.8 {120, 9}	—
Clutch pedal mounting bolts and nuts		35 {357, 26}	—

ADD

CHANGE

CLUTCH STROKE SENSOR

EN01E05300010701002002

TIGHTENING TORQUE

Unit: N·m {kgf·cm, lbf·ft}

Tightening part	Tightening torque	Remarks
Clutch stroke sensor mounting bolt	8.5 {87, 6.3}	—

CLUTCH FLUID

EN01E05300010701002003

TIGHTENING TORQUE

Unit: N·m {kgf·cm, lbf·ft}

Tightening part	Tightening torque	Remarks
Bleed screw	7-13 {71-133, 5.2-9.6}	—

INSPECTION AND ADJUSTMENT

EN01E05ZZZ040402010002

INSPECTING CLUTCH SYSTEM FUNCTION

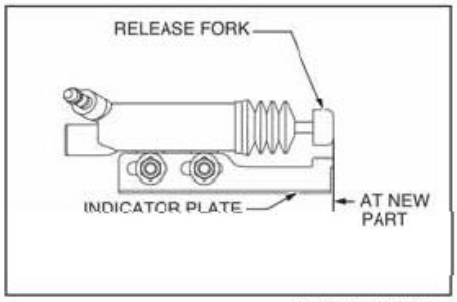
1. **INSPECTING CLUTCH BOOSTER**
   (1) Inspecting clutch booster airtight function
      a. Run the engine in idling for one to two minutes then stop, and inspect the height at stepping on the clutch pedal with pedal effort of normal clutch use

      STANDARD
      The height of pedal will increases as stepping for the first time then the second and the third (interval of each stepping shall be approximately 5 seconds or longer)
   (2) Clutch booster operation check
      a. Leave engine stopped and step on the clutch pedal for several times with the same pedal effort to check to see that height of pedal are same in each time.
      b. Start engine with clutch pedal stepped to check change of height of the pedal.

      STANDARD
      The pedal steps in some deeper when engine starts with pedal stepped.
   (3) Inspecting clutch booster load airtight function
      a. Step clutch pedal while engine is running then stop the engine with the pedal kept stepped for 30 seconds to check height of the pedal

      STANDARD
      No change in the height of pedal.

2. **INSPECTING THE CLUTCH DISC ASSEMBLY**
   (1) The figure shows relationship of release fork and indicator plate with new clutch disc.



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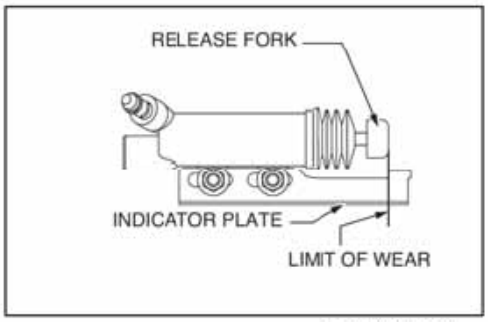
   (2) The figure shows relationship of the release fork and the indicator plate with the clutch disc at wearing limit.



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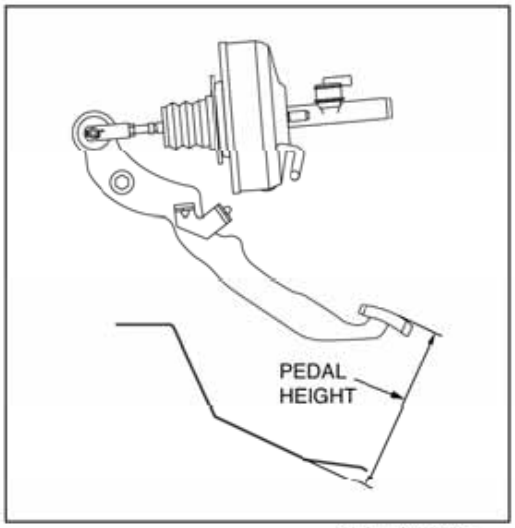
NOTICE
If the permissible limit is reached, replace the clutch disc with new one.

INSPECTION AND ADJUSTMENT OF CLUTCH PEDAL



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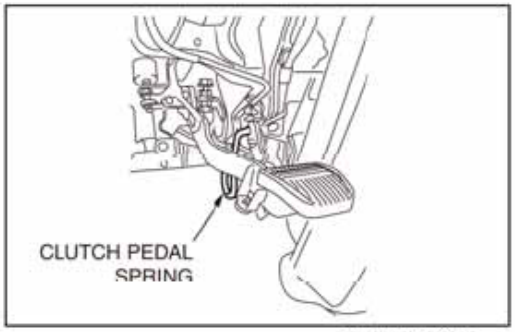
1. INSPECTION AND ADJUSTMENT OF CLUTCH PEDAL

(1) Remove the front door scuff plate.
(2) Flip up the floor carpet to show the floor panel under the clutch pedal.
(3) Measure height of the clutch pedal.

Pedal height (mm {in.})	**Regular cab**	**160.5-170.5 {6.319-6.712}**
	Wide cab	**169.5-182.5 {6.674 7.185}**

(4) If the pedal height does not comply with the standard value, use one of the following methods to make adjustment.

ADD



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NOTICE
If a clutch pedal spring is not equipped, apply procedure A only.

Procedure A

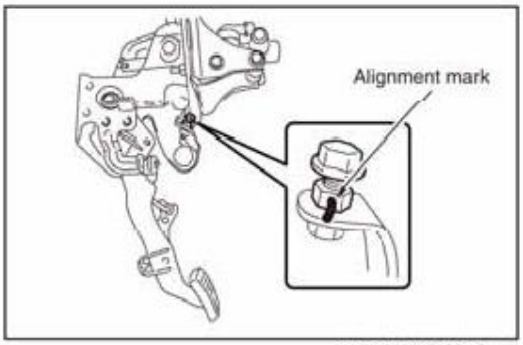
a. Loosen the mounting bolts of the pedal assembly to make an installation adjustment of the pedal assembly.
b. Loosen the lock nut of the clutch switch 1 (exhaust switch) and then the lock nut of the pedal stopper part and rotate the stopper bolt to adjust pedal height. If the pedal height does not go up, loosen the lock nut of the booster push rod part and rotate the rod to make an adjustment again.

CHANGE

Tightening Torque:
24 N·m {245 kgf·cm, 18 lbf·ft}
Lock nut for clutch switch part
8.4-15.6 N·m {85-159 kgf·cm, 6.2-11.5 lbf·ft}
Lock nut for push rod part

Procedure B

a. Check the alignment mark on the stopper bolt and lock nut.



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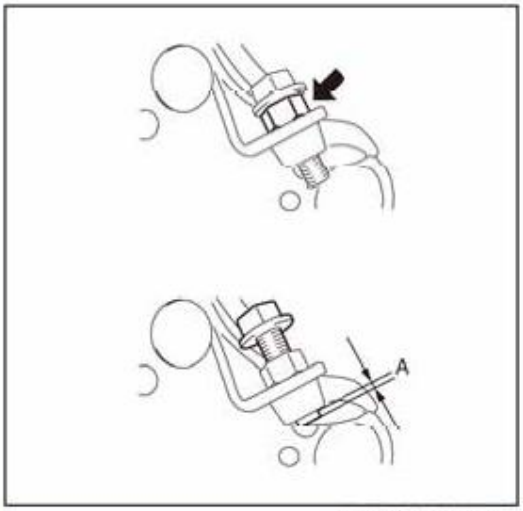
b. If alignment marks are not matching, loosen the lock nut and adjust the stopper bolt height "A".

Unit: mm {in.}

Standard value	**2.5-3.0 {0.0985-0.1181}**



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c. Tighten the lock nut.

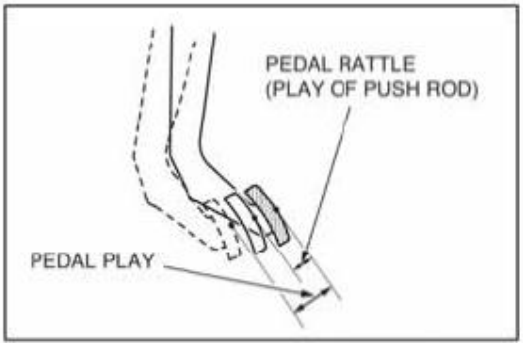
Tightening Torque:
9.6-14.4 N·m {98-146 kgf·cm, 7.1-10.6 lbf·ft}

ADD

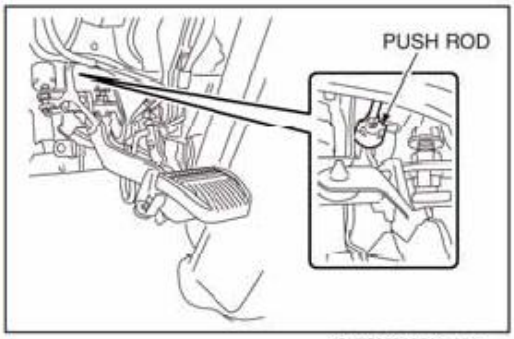
(5) Depress the pedal firmly with the engine stopped to make the clutch booster free from negative pressure.

HINT
This work is not required for a vehicle equipped with turn over type clutch pedal.

(6) Measure the play of pedal by lightly pressing the pedal with fingers.



Pedal rattle (Play of push rod) (mm {in.})	**1-5 {0.0394-0.1968}**
Pedal play (mm {in.})	**5-16 {0.1969-0.6299} (reference value)**



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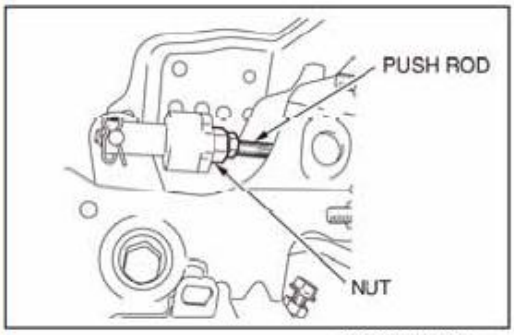
(7) If difficult to check pedal rattle, move the push rod by hand to the right and left. If it moves smoothly, inspect the clutch pedal play while moving push rod.



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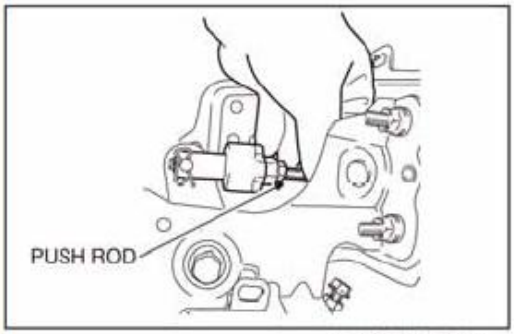
a. Loosen the nut.



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b. Adjust the push rod rattle (play of push rod).

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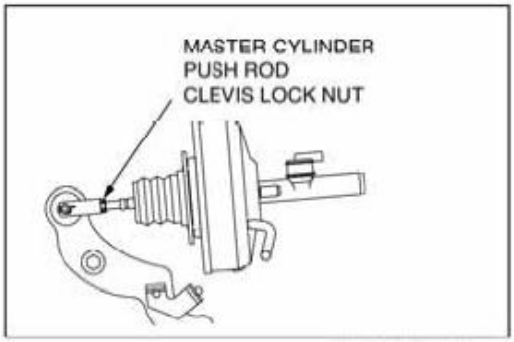
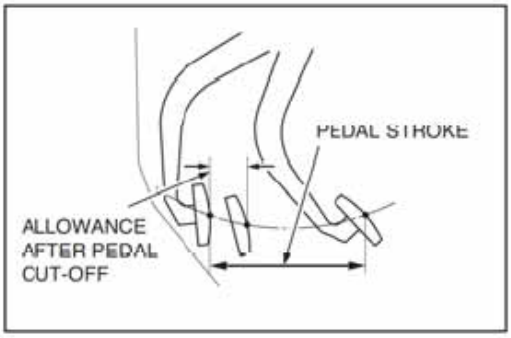


(8) Loosen the lock nut for master cylinder push rod clevis and rotate the master cylinder push rod to adjust pedal rattle.

Tightening Torque:
11.8 N·m {120 kgf·cm, 9 lbf·ft}

(9) After adjustment of pedal rattle, check pedal height.



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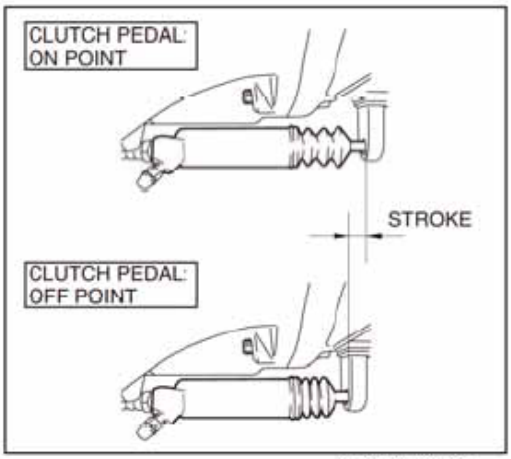
(10) Measure allowance after pedal cut-off.

Allowance after pedal cut-off (mm {in.})	**25 {0.984} or more**

NOTICE
Inspect and adjust the pedal height and pedal play again in the case of value at or less than standard value to check the pedal stroke.

Pedal stroke (mm {in.})	**150 {5.906} (reference value)**



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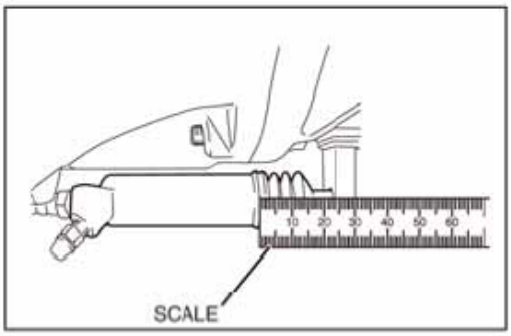
(11) Measure the stroke of release cylinder and check that the clutch pedal can be return smoothly.

Release cylinder stroke (mm {in.})	**16 {0.630} or more**

If release cylinder stroke is 16mm {0.630 in.} or less, air bleeding the release cylinder and measure the release cylinder stroke again. If it is remain unchanged, replace the master cylinder.

HINT
When measuring the release cylinder stroke, set the scale to center of release cylinder piston and measure the release cylinder piston stroke.



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(12) Install the floor carpet.
(13) Install the front door scuff plate.

CLUTCH FLUID

REPLACEMENT

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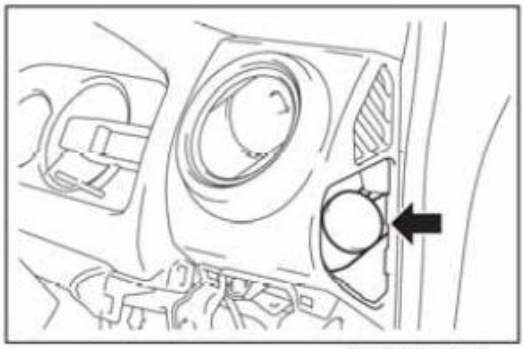

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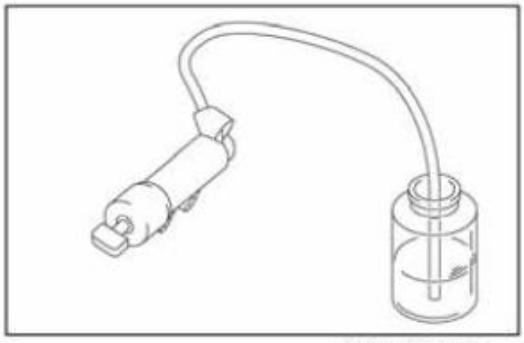
1. PREPARATION BEFORE WORK

(1) Park the vehicle on a flat surface.
(2) Place the wheel stop at the front and back of the front tire or rear tire.
(3) Set the starter key to the "LOCK" position.
(4) Fill the reservoir tank with clutch fluid.
(5) Required Items
- Reservoir to keep the liquid (Capacity about 2 liters)
- Transparent Vinyl tube (ϕ5 to ϕ6)
- brake and clutch fluid

⚠ CAUTION

- **Keep the reservoir clean from dirt and dust.**
- **The container must be washed if it contained any mineral oil (such as gear oil and diesel fuel) before.**
- **Immediately wipe off the clutch fluid if it is spilt on paint surface, resin parts or nylon tubes when filling clutch fluid. It may cause peeling of paint or discoloration if left unattained.**
- **Dispose of the clutch fluid in accordance with the regulation of disposal specified in each region.**



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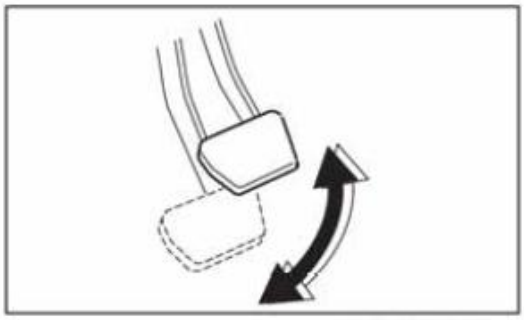
2. REPLACEMENT OF CLUTCH FLUID

(1) Remove the cap of the bleeder screw of release cylinder.
(2) Attach the vinyl tube for air bleeding to the bleeder screw end and put the tube end inside the reservoir.
(3) Fill clutch fluid in the reservoir tank.

⚠ CAUTION

Always have clutch fluid filled in the reservoir tank while working to prevent intrusion of air.



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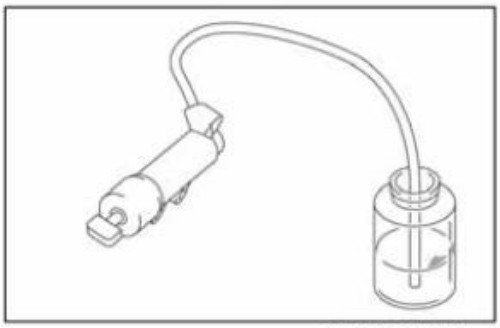
(4) Step on the clutch pedal, loosen the bleeder screw and discharge the old fluid from the clutch system. Tighten the bleeder screw before releasing the clutch pedal.
(5) Repeat the operation above until the oil fluid is replaced with new fluid.

⚠ CAUTION

- **Observe the fluid color inside the tube carefully since the color of the clutch fluid will slightly change when replacing the clutch fluid.**
- **The amount of clutch fluid will decrease. Continue filling the clutch fluid in the reservoir tank not to be empty.**



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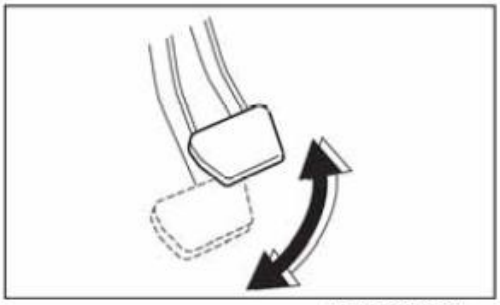
3. AIR BLEEDING OF CLUTCH SYSTEM (BY STEPPING ON THE CLUTCH PEDAL)

(1) Remove the cap of the bleeder screw of release cylinder.

(2) Attach the vinyl tube for air bleeding to the bleeder screw end and put the tube end into the transparent reservoir filled with about 1/3 clutch fluid.

⚠ CAUTION

This procedure may not bleed air when there is an intrusion of air in the master cylinder. Use an air bleeder in such a case.



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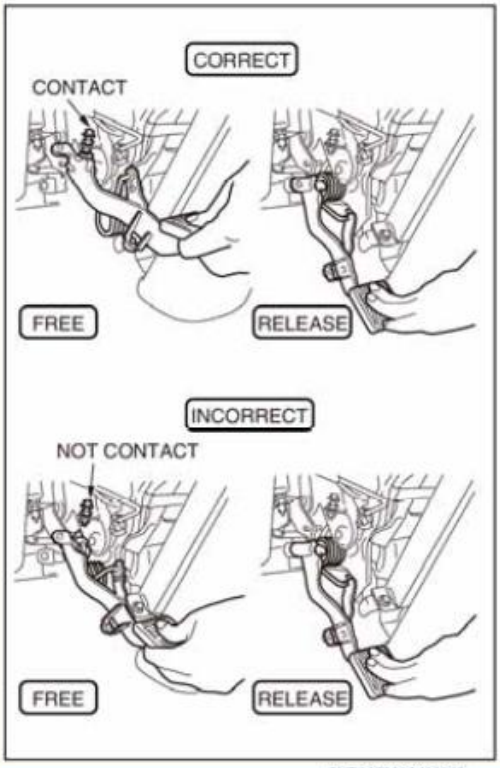
(3) Loosen the bleeder screw and step on the clutch pedal repeatedly. Tighten the bleeder screw when the pedal feels heavier.

⚠ CAUTION

Perform air bleeding with the engine in stopped condition.



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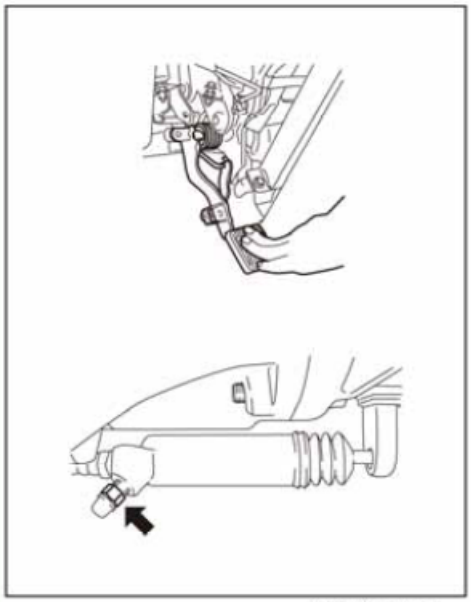
(4) Breed the air from clutch system.

a. Step on the clutch pedal repeatedly 5 times.

NOTICE

Check that when clutch pedal is FREE position, it is in contact with the stopper bolt. Check that when clutch pedal is RELEASE position, it is contact with floor surface.

CHANGE



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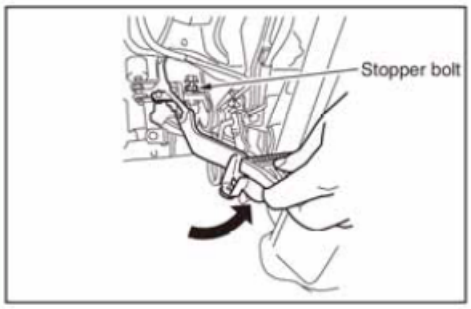

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b. Fix the clutch pedal to RELEASE position.
c. Hold the clutch pedal to RELEASE position. And loosen the nut and drain the clutch fluid from release cylinder, and tighten the breeder plug before piston is return.

Tightening Torque:
7-13 N·m {71-133 kgf·cm, 5.2-9.6 lbf·ft}

d. Return the clutch pedal to FREE position.

e. Repeat to procedure above 5 times or more and check the release cylinder stroke.

NOTICE

- **While working, clutch pedal is certainly stop on RELEASE position. Therefore, hold the clutch pedal by hand and return to the FREE position slowly.**
- **Note that clutch pedal may pop out.**

CHANGE

(5) Fill fluid in the reservoir tank to "MAX" line.
(6) Remove the vinyl tube from the release cylinder.
(7) Check the condition of the clutch pedal when stepped. Check that no leakage of fluid is observed.

4. AIR BLEEDING OF CLUTCH SYSTEM (WHEN USING AIR BLEEDER)

(1) Attach the feeding pipe of the air bleeder to the bleeder screw of the release cylinder.
(2) Operate the air bleeder, pressure feed the clutch fluid from the bleeder screw and bleed air to the oil reservoir.