

Last Modified: 5-25-2010	6.4 G	From: 200907
Model Year: 2010	Model: HS250H	Doc ID: RM0000040TP002X
Title: BRAKE SYSTEM (OTHER): BRAKE FLUID: ON-VEHICLE INSPECTION (2010 HS250H)		

ON-VEHICLE INSPECTION

NOTICE:

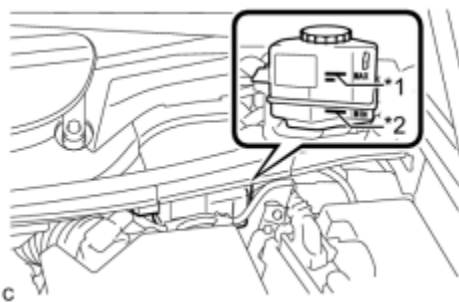
If using a dropper to adjust the fluid amount, make sure that the dropper has not been used with mineral oils, water or deteriorated brake fluid. Sealed areas may deteriorate and lead to fluid leaks, or the fluid may deteriorate and lead to decreased efficiency.

HINT:

If the brake fluid level is lower than the MIN line, inspect for brake fluid leaks and brake pad wear. After repair or replacement, adjust the brake fluid level in the reservoir as specified below.

1. INSPECT AND ADJUST FLUID LEVEL IN RESERVOIR (for Using the Techstream)

- (a) Connect the Techstream to the DLC3 with the power switch off.
- (b) Check that park (P) is selected and the parking brake is applied, and turn the power switch on (IG).
- (c) Turn the Techstream on and enter the following menus: Chassis / ABS/VSC/TRC / Utility / ECB (Electronically Controlled Brake system) utility / Zero Down.
- (d) Select "Next" and wait for 10 seconds.
- (e) After the booster pump stopped, inspect that the fluid level is between the MAX and MIN lines.



If necessary, add brake fluid to the MAX line.

Text in Illustration	
*1	MAX Line
*2	MIN Line

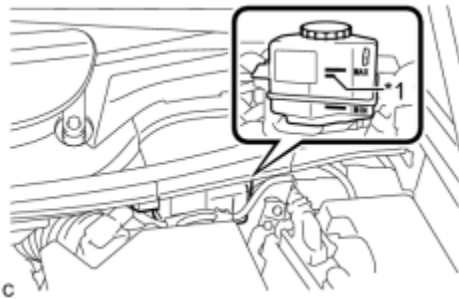
Brake fluid:

SAE J1703 or FMVSS No. 116 DOT3

2. INSPECT AND ADJUST FLUID LEVEL IN RESERVOIR (for not Using the Techstream)

(a) Inspect that the fluid level is above the MIN line with the power switch on (IG).

If necessary, add brake fluid to the fluid level support line with the power switch on (IG).



Text in Illustration

*1

Fluid Level Support Line

Brake fluid:

SAE J1703 or FMVSS No. 116 DOT3



Last Modified: 5-25-2010	6.4 N	From: 200907
Model Year: 2010	Model: HS250H	Doc ID: RM0000040TN002X
Title: BRAKE SYSTEM (OTHER): BRAKE FLUID: BLEEDING (2010 HS250H)		

BLEEDING

CAUTION:

The Techstream must be used for air bleeding. If not used, the air bleeding will be incomplete, which is hazardous and may lead to an accident.

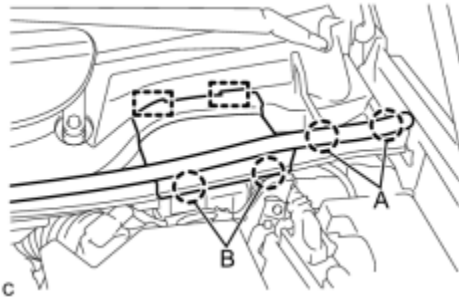
NOTICE:

- Perform air bleeding with park (P) selected and the parking brake applied.
- As brake fluid may overflow when bleeding, do not place the fluid can on the reservoir filler opening.
- Perform air bleeding while maintaining the brake fluid level between the MIN and MAX lines on the brake fluid reservoir.
- Air bleeding will be difficult if the following occurs:
 - a. The brake actuator hose (the hose between the brake booster pump assembly and brake fluid reservoir) is higher than the fluid level and air enters the hose.
 - b. During the air bleeding procedure, air enters the brake booster pump assembly while the pump motor is operating.
- While performing air bleeding, the accumulator pressure drop may cause a buzzer to sound. As there is no problem, continue with the operation.
- During air bleeding, DTCs for pressure sensor malfunctions, etc. may be stored. After air bleeding and if instructed in the procedures, clear the DTCs.
- Release the parking brake before performing the linear valve offset calibration.
- Do not allow brake fluid to adhere to any painted surface such as the vehicle body. If brake fluid leaks onto any painted surface, immediately clean it off.
- When bleeding air, select the suitable procedure according to the table below.

Replaced/Installed Item	Work Procedure
Flexible hose (front/rear)	Bleed brake line
Disc brake cylinder assembly (front/rear)	
Brake booster pump assembly	Bleed brake system
Brake booster with master cylinder assembly	
Brake master cylinder reservoir assembly	

1. BLEED BRAKE LINE

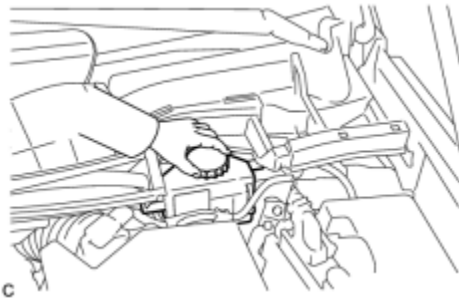
- (a) Remove the center No. 1 cowl top ventilator louver.



(1) Disengage 2 claws A and separate the hood to cowl top seal.

(2) Disengage 2 claws B and the 2 guides to remove the center No. 1 cowl top ventilator louver.

(b) Bleed the brake line.



(1) Remove the brake master cylinder reservoir filler cap assembly.

(2) Add brake fluid into the reservoir between the MAX and MIN lines on the brake fluid reservoir.

Brake fluid:

SAE J1703 or FMVSS No. 116 DOT3

(3) Connect the Techstream to the DLC3 and turn the power switch on (IG).

(4) Turn the Techstream on and enter the following menus: Chassis / ABS/VSC/TRC / Air Bleeding.

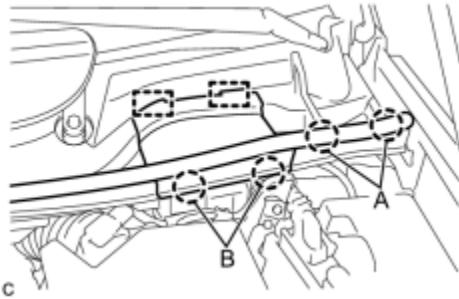
(5) Select "Usual air bleeding" on the Techstream display, and bleed air from the brake fluid following the instructions on the Techstream.

(6) After air bleeding, tighten each bleeder plug.

Torque: **8.3 N·m (85 kgf·cm, 73in·lbf)**

(7) Clear the DTCs INFO.

- (8) Turn the Techstream off and turn the power switch off.
- (c) Inspect for brake fluid leaks.
- (d) Install the brake master cylinder reservoir filler cap.
- (e) Install the center No. 1 cowl top ventilator louver.



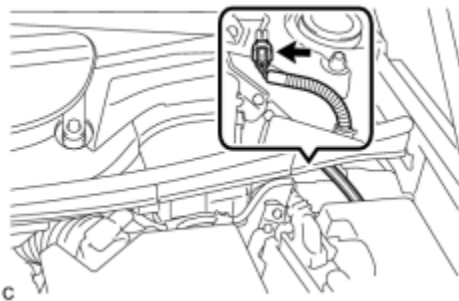
(1) Engage the 2 guides and 2 claws B to install the center No. 1 cowl top ventilator louver.

(2) Engage 2 claws A to install the hood to cowl top seal.

2. BLEED BRAKE SYSTEM

- (a) Remove the outer cowl top panel sub-assembly INFO.
- (b) Bleed the brake system.

(1) Wait at least 2 minutes with the power switch off, and disconnect the reservoir level switch connector.



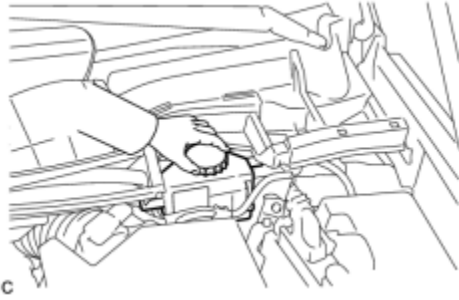
NOTICE:

Do not depress the brake pedal or open/close the doors until the reservoir level switch connector is disconnected.

HINT:

This procedure is not required if the reservoir level switch connector has been disconnected.

(2) Remove the brake master cylinder reservoir filler cap assembly.



(3) Add brake fluid into the reservoir between the MAX and MIN lines on the brake fluid reservoir.

Brake fluid:

SAE J1703 or FMVSS No. 116 DOT3

(4) Connect the Techstream to the DLC3 and turn the power switch on (IG).

(5) Turn the Techstream on and enter the following menus: Chassis / ABS/VSC/TRC / Air Bleeding.

(6) Select "ABS actuator has been replaced" on the Techstream display, and bleed air from the brake fluid following the instructions on the Techstream.

NOTICE:

Before following the instructions on the Techstream to perform linear valve offset calibration, release the parking brake. When calibration is complete, immediately apply the parking brake.

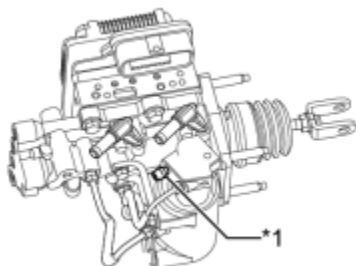
(7) After air bleeding, tighten each bleeder plug.

disc brake cylinder bleeder plug - Torque: **8.3 N·m (85 kgf·cm, 73in·lbf)**

stroke simulator bleeder plug - Torque: **8.5 N·m (87 kgf·cm, 75in·lbf)**

HINT:



The stroke simulator bleeder plug is positioned as shown in the illustration.

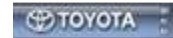


Text in	Stroke Simulator Bleeder Plug
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Illustration

*1

- (8) Clear the DTCs .
- (9) Turn the Techstream off and turn the power switch off.
- (c) Install the brake master cylinder reservoir filler cap.
- (d) Inspect for brake fluid leaks.
- (e) Install the outer cowl top panel sub-assembly .



Last Modified: 5-25-2010	6.4 A	From: 200907
Model Year: 2010	Model: HS250H	Doc ID: RM0000040TO002X
Title: BRAKE SYSTEM (OTHER): BRAKE FLUID: REPLACEMENT (2010 HS250H)		

REPLACEMENT

HINT:

There are 2 ways of brake fluid replacement: using the Techstream or not using the Techstream.

NOTICE:

- Perform fluid replacement with park (P) selected and the parking brake applied.
- As brake fluid may overflow when replacing brake fluid, do not place the fluid can on the reservoir filler opening.
- Perform fluid replacement while maintaining the brake fluid level between the MIN and MAX lines on the brake fluid reservoir.
- Replacing brake fluid will be difficult if the following occurs:
 - a. The brake actuator hose (the hose between the brake booster pump assembly and brake fluid reservoir) is higher than the fluid level and air enters the hose.
 - b. During the fluid replacement procedure, air enters the brake booster pump assembly while the pump motor is operating.
- While performing fluid replacement, the accumulator pressure drop may cause a buzzer to sound. As there is no problem, continue with the fluid replacement.
- During fluid replacement, DTCs for pressure sensor malfunctions, etc. may be stored. After fluid replacement and if instructed in the procedures, clear the DTCs.
- Do not allow brake fluid to adhere to any painted surface such as the vehicle body. If brake fluid leaks onto any painted surface, immediately clean it off.

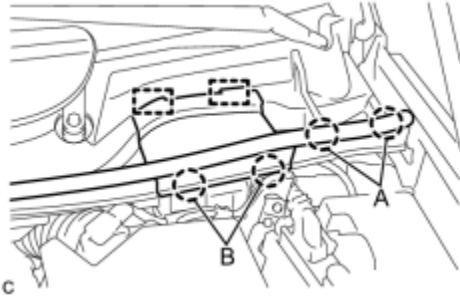
1. REPLACE BRAKE FLUID (for Using the Techstream)

NOTICE:

- Add brake fluid carefully and check that the fluid level remains between the MIN and MAX lines on the brake fluid reservoir.
- Do not stand the fluid can on the reservoir inlet. Doing so will cause brake fluid to overflow.

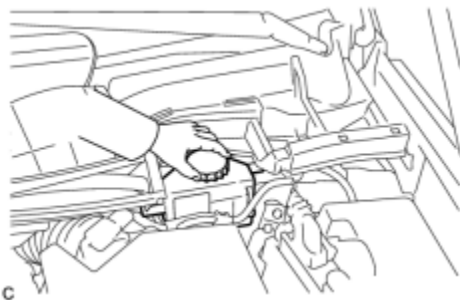
(a) Remove the center No. 1 cowl top ventilator louver.

(1) Disengage 2 claws A and separate the hood to cowl top seal.



(2) Disengage 2 claws B and the 2 guides to remove the center No. 1 cowl top ventilator louver.

(b) Replace brake fluid.



(1) Remove the brake master cylinder reservoir filler cap assembly.

(2) Add brake fluid into the reservoir between MAX and MIN lines on the brake fluid reservoir.

Brake fluid:

SAE J1703 or FMVSS No. 116 DOT3

(3) Connect the Techstream to the DLC3 and turn the power switch on (IG).

(4) Turn the Techstream on and enter the following menus: Chassis / ABS/VSC/TRC / Air Bleeding.

(5) Select "Usual air bleeding" on the Techstream display, and replace the brake fluid following the instructions on the Techstream.

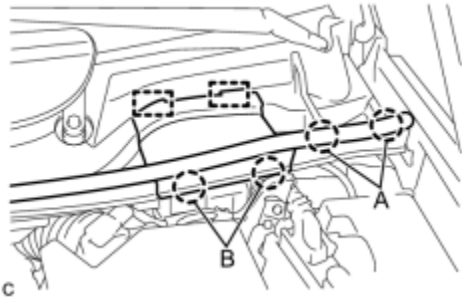
(6) After replacing brake fluid, tighten each bleeder plug.

Torque: **8.3 N·m (85 kgf·cm, 73in·lbf)**

(c) Clear the DTCs INFO.

(d) Turn the Techstream off and turn the power switch off.

- (e) Inspect for brake fluid leaks.
- (f) Install the brake master cylinder reservoir filler cap.
- (g) Install the center No. 1 cowl top ventilator louver.



(1) Engage the 2 guides and 2 claws B to install the center No. 1 cowl top ventilator louver.

(2) Engage 2 claws A to install the hood to cowl top seal.

2. REPLACE BRAKE FLUID (for not Using the Techstream)

NOTICE:

- Performing the following procedure will select ECB (Electronically Controlled Brake system) Invalid Mode without using the Techstream.
- ECB (Electronically Controlled Brake system) Invalid Mode allows the brake fluid to be replaced without using the Techstream.
- The brake warning light / yellow (minor malfunction) will blink to indicate when ECB (Electronically Controlled Brake system) Invalid Mode is selected.
- Be sure to inspect that the brake warning light / yellow (minor malfunction) is blinking while replacing the brake fluid.
- When one of the following conditions is met, ECB (Electronically Controlled Brake system) Invalid Mode is canceled, and then DTCs may be stored. Do not cancel the ECB (Electronically Controlled Brake system) Invalid Mode while replacing brake fluid.

The shift lever is moved to select a shift state other than park (P).

The power switch is turned on (READY).
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The power switch is turned off.

The parking brake is released.

The vehicle velocity is not 0 km/h (0 mph).

- Do not rotate the brake disc while ECB (Electronically Controlled Brake system) Invalid Mode is selected.
- When replacing the brake fluid from the brake line, do not depress the brake pedal to

operate the brake booster pump more than 100 seconds. If the brake booster pump is operated more than 100 seconds, ECB (Electronically Controlled Brake system) Invalid Mode is automatically finished and DTCs may be stored.

- Add brake fluid carefully and check that the fluid level remains between the MIN and MAX lines on the brake fluid reservoir.
- Do not stand the fluid can on the reservoir inlet. Doing so will cause brake fluid to overflow.

(a) Remove the 4 wheels.

(b) Select ECB (Electronically Controlled Brake system) Invalid Mode.

(1) Perform the procedure listed below in 1 minute.

1. Turn the power switch on (IG) with park (P) selected and the parking brake applied.
2. Move the shift lever to N and then depress the brake pedal more than 8 times in 5 seconds.
3. Push the P position switch (transmission shift main switch) and then depress the brake pedal more than 8 times in 5 seconds.
4. Move the shift lever to N and then depress the brake pedal more than 8 times in 5 seconds.
5. Push the P position switch (transmission shift main switch).

(2) Check that the brake warning light / yellow (minor malfunction) is blinking.

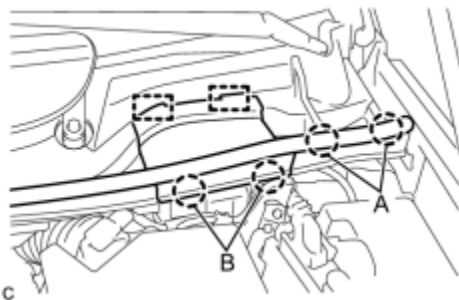


N

Text in Illustration	Brake Warning Light / Yellow (Minor Malfunction)
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*a

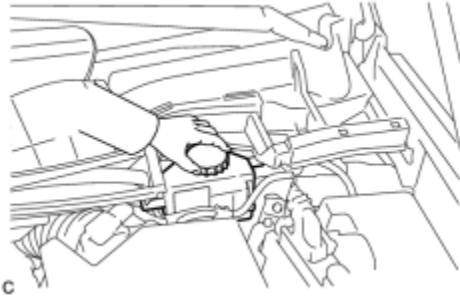
(c) Remove the center No. 1 cowl top ventilator louver.



(1) Disengage 2 claws A and separate the hood to cowl top seal.

(2) Disengage 2 claws B and the 2 guides to remove the center No. 1 cowl top ventilator louver.

(d) Replace the brake fluid.



(1) Remove the brake master cylinder reservoir filler cap assembly.

(2) Add brake fluid into the reservoir between MAX and MIN lines on the brake fluid reservoir.

Brake fluid:

SAE J1703 or FMVSS No. 116 DOT3

(3) Connect a vinyl tube to the bleeder plug of the front disc brake cylinder assembly RH.

(4) Depress the brake pedal several times, and then loosen the bleeder plug with the pedal depressed.*1

(5) When fluid stops coming out, tighten the bleeder plug, and then release the brake pedal.*2

(6) Repeat steps *1 and *2 until all the air in the brake fluid is completely bled out and new brake fluid comes out.

(7) Tighten the bleeder plug completely.

Torque: **8.3 N·m (85 kgf·cm, 73in·lbf)**

(8) Replace the brake fluid from the front disc brake cylinder assembly LH using the same procedure as for RH.

(9) Connect a vinyl tube to the bleeder plug of the rear disc brake cylinder assembly LH.

(10) Loosen the bleeder plug while depressing and holding the brake pedal, and replace the brake fluid while the brake booster pump assembly and solenoid operation.*3

NOTICE:

- Be sure to keep the brake pedal depressed.
- Do not depress the brake pedal to operate the brake booster pump more than 100 seconds. When performing this procedure continuously, release the brake pedal to stop the brake booster pump operating and depress the brake pedal again.

(11) Tighten the bleeder plug, then release the brake pedal.*4

(12) Repeat steps *3 and *4 until all the air in the brake fluid is completely bled out and new brake fluid comes out.

(13) Tighten the bleeder plug completely.

Torque: **8.3 N·m (85 kgf·cm, 73in·lbf)**

(14) Replace the brake fluid from the rear disc brake cylinder assembly RH using the same procedure as for LH.

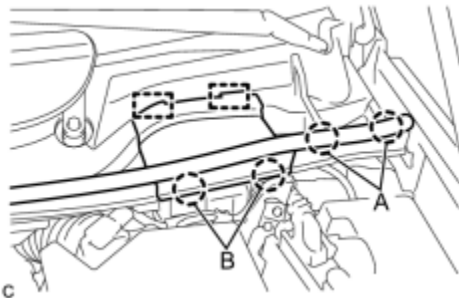
(15) Turn the power switch off.

(e) Inspect for brake fluid leaks.

(f) Adjust the brake fluid level in the reservoir .

(g) Install the brake master cylinder reservoir filler cap.

(h) Install the center No. 1 cowl top ventilator louver.



(1) Engage the 2 guides and 2 claws B to install the center No. 1 cowl top ventilator louver.

(2) Engage 2 claws A to install the hood to cowl top seal.

(i) Install the 4 wheels.

Torque: **103 N·m (1050 kgf·cm, 76ft·lbf)**



