

Checks and Tests

On completion of installation of the SIBS[®] check for:

- Brake fluid leakages
- Differential oil levels, topping up if necessary
- Effective performance confirmed by a series of low speed stops
- Correct functioning of the PECB

Testing of Service Brake

Ensure that the foot pedal's travel is firm with the correct amount of movement (refer to Standard Toyota Manual). Starting from low speeds (~10 Kph) test the service brake operation, bringing the vehicle to a complete stop. Ensure there is no binding of the service brake (vehicle should roll).

Bed the brakes in over an initial period of 500 km. The brakes should be used only with a moderate amount of pressure. At the conclusion of the bedding in period, the SIBS[®] fluid MUST be drained and replaced (refer to the procedure on page 55).

At this stage a secondary bleed is recommended for optimum performance.

Testing of EMMA Brake

Check for correct engagement of the EMMA[™] brake

- With the EMMA[™] parking brake released use the service brakes to hold the vehicle stationary on an incline/decline.
- Apply the parking brake.
- Release the service brakes. The vehicle should remain stationary. Check for correct release of EMMA[™] brake
- With the EMMA[™] brake engaged and the vehicle held stationary on an incline/decline, release the EMMA[™] brakes
- Ensure that there is no binding and the EMMA[™] brake fully releases (vehicle should begin to roll).
- Use the service brakes to halt the vehicle.

Test for correct function of lights:

LED function (in control box, see **Figure 61**)

RED	Brakes engaged
Green	Brakes released or brake release in operation
No light	Door open Ignition off



FIGURE 61 Control Box

Brake warning light will illuminate when EMMA brake is engaged.

Note: Brake warning light is connected to the pressure switch and the light will go out only when there is sufficient pressure in the system to release the brakes.

The brake warning light in the dashboard still functions when:

- Vacuum pressure is low
- The brake fluid level in the reservoirs is low (when level sensors are fitted).

The EMMA brake is connected to the door open switch. If the door is opened (or power lost) during normal driving conditions, the EMMA control unit will dump pressure to the relief valve setting. The remaining pressure will bleed down via the orifice bringing the vehicle to a gradual stop.

Adjustment of EMMA Relief Valve

The relief valve is initially set to ~ 350psi. If the EMMA brake comes on too quickly, increase the relief valve setting. If there is considerable delay before the EMMA brake applies, reduce the relief valve setting.

Use the following procedure to adjust the relief valve setting:

- Loosen the locking nut
- Turn adjusting screw only ¼ of a turn:
 - **CLOCKWISE** to **INCREASE** Relief Valve Pressure Setting.
 - **ANTI-CLOCKWISE** to **REDUCE** Relief Valve Pressure Setting.
- Re-test the vehicle.

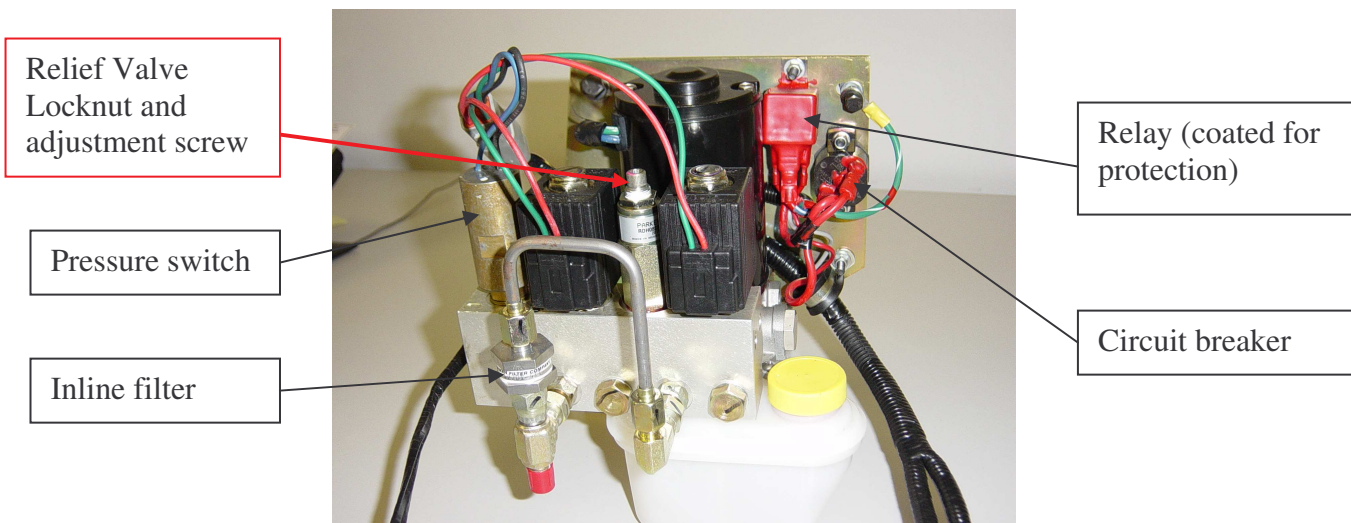


FIGURE 62 Pump assembly installed

Setting of Load Proportioning Valve

Correct operation of SIBS requires a functioning and correctly set Load Sensing Proportioning Valve (LSPV).

For the adjustment procedure, follow that set out in the standard Toyota Manual.

Use the Toyota LSPV Gauge (Toyota P/N: 09709-209017).
As the Toyota manual states:

1. Install LSPV Gauge – into front and rear bleed ports.
2. Raise the front brake pressure to 80 kg/cm² (1138psi)
3. Rear brake pressure on SIBS should read:

HEAVY DUTY:	70 ± 6 kg/cm ² (996 ± 85 psi)
STANDARD DUTY	65 ± 6 kg/cm ² (925 ± 85 psi)

4. If necessary, adjust the position of the shackle located on the axle.
Raise this to increase the pressure.
5. If more coarse adjustment is required, raise or lower the LSPV valve body – increase the pressure lower the valve body. If the valve body is moved too far it may go out of range and no further adjustment gained. (if this occurs peel back rubber boot and check link rod still contacts valve pin and not fouling on valve body).
6. For further details, refer to the Toyota Manual (Note: re-torque the LSPV retaining nuts to 13 Nm when adjustment is complete).

NOTE

- If the vehicle has had a suspension modification (e.g. the suspension has been raised), the mounting position of the shackle bracket on the axle should be raised the same amount. Suspension modified by professional mechanics will account for this. However, if the LSPV is not working correctly during adjustment, check for suspension modification, and the correct position of the shackle bracket on the axle.
- Older vehicles may have non-functioning LSPV's. If this is the case, they **MUST** be repaired or replaced during fitment of SIBS. Failure to do so may result in poor braking performance.

Weight of SIBS Brakes

Additional weight of SIBS brakes per corner

Weight - SIBS Front Brake	42.0kg
Weight - OEM Front Disc Brake	24.5kg
Additional weight of SIBS (Front)	17.5kg

Additional weight of SIBS brakes per corner

Weight - SIBS Rear Brake	52.0kg
Weight - OEM Rear Disc Brake	22.0kg
Additional Weight of SIBS (Rear)	30.0kg