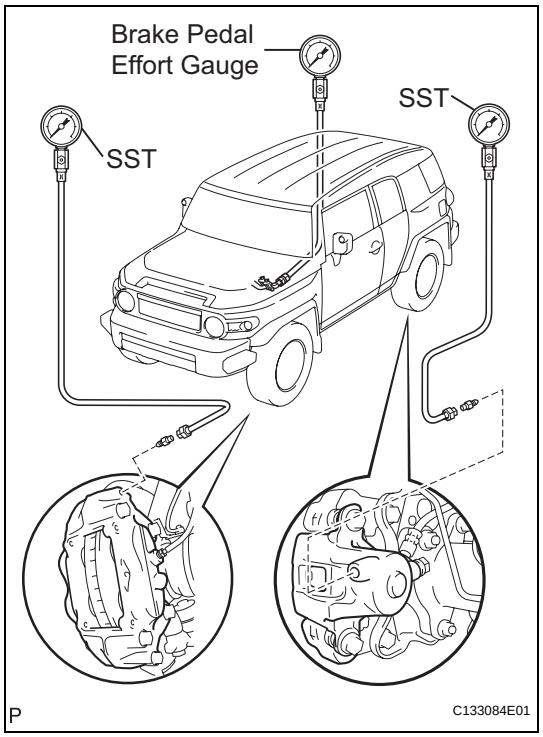
ON-VEHICLE INSPECTION

1. INSPECT BRAKE MASTER CYLINDER FLUID PRESSURE CHANGE

(a) Inspect the positive battery voltage.
Standard voltage:
11 to 14 V

(b) Turn the ignition switch to OFF, and depress the brake pedal more than 20 times.
HINT:
When pressure in the accumulator is released, the reaction force becomes lighter and the stroke becomes longer.



(c) Install a LSPV gauge (SST) and brake pedal effort gauge, and bleed the air.
SST 09709-29018

(d) When the booster does not operate:

(1) Depress the brake pedal and check the fluid pressure.
At 245 N (25 kgf, 55 lbf)

Front brake pressure	Rear brake pressure
3,150kPa (32.1 kgf/cm^2, 457 psi) or more	0 kPa (0 kgf/cm^2, 0 psi)

At 343 N (35 kgf, 77 lbf)

Front brake pressure	Rear brake pressure
4,540 kPa (46.3 kgf/cm^2, 659 psi) or more	0 kPa (0 kgf/cm^2, 0 psi)

(e) When the booster operates:

(1) Turn the ignition switch to ON, and wait until the pump motor has stopped (step A).
HINT:
Pump operating sound can be heard.

(2) Turn the ignition switch to OFF, and depress the brake pedal more than 20 times (step B).
HINT:
When the pressure in the accumulator is released, the reaction force becomes lighter and the stroke becomes longer.

(3) Repeat steps A and B 5 times (step C).

(4) Turn the ignition switch to ON, and check that the pump stops after approximately 8 to 14 seconds.
NOTICE:
If the pump does not stop, repeat step C again.

(5) Depress the brake pedal and check the fluid pressure.
At 49 N (5 kgf, 11 lbf)

Front brake pressure	Rear brake pressure
1,120 to 2,320 kPa (11.4 to 23.7 kgf/cm^2, 162 to 337 psi)	1,220 to 2,420 kPa (12.4 to 24.7kgf/cm^2, 177 to 351 psi)

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At 98 N (10 kgf, 22 lbf)

Front brake pressure	Rear brake pressure
3,840 to 5,040 kPa (39.2 to 51.4 kgf/cm^2, 557 to 731 psi)	3,990 to 5,190 kPa (40.7 to 52.9 kgf/cm^2, 579 to 753 psi)

At 147 N (15 kgf, 33 lbf)

Front brake pressure	Rear brake pressure
6,460 to 7,660 kPa (65.9 to 78.1 kgf/cm^2, 937 to 1,111 psi)	6,660 to 7,860 kPa (67.9 to 80.1 kgf/cm^2, 966 to 1,140 psi)

At 196 N (20 kgf, 44 lbf)

Front brake pressure	Rear brake pressure
8,720 to 9,920 kPa (88.9 to 101.2 kgf/cm^2, 1,265 to 1,439 psi)	11,330 to 12,530 kPa (115.5 to 127.8 kgf/cm^2, 1,644 to 1,818 psi)

2. INSPECT BRAKE MASTER CYLINDER OPERATION

(a) Inspect the positive battery voltage.
Standard voltage:
11 to 14 V

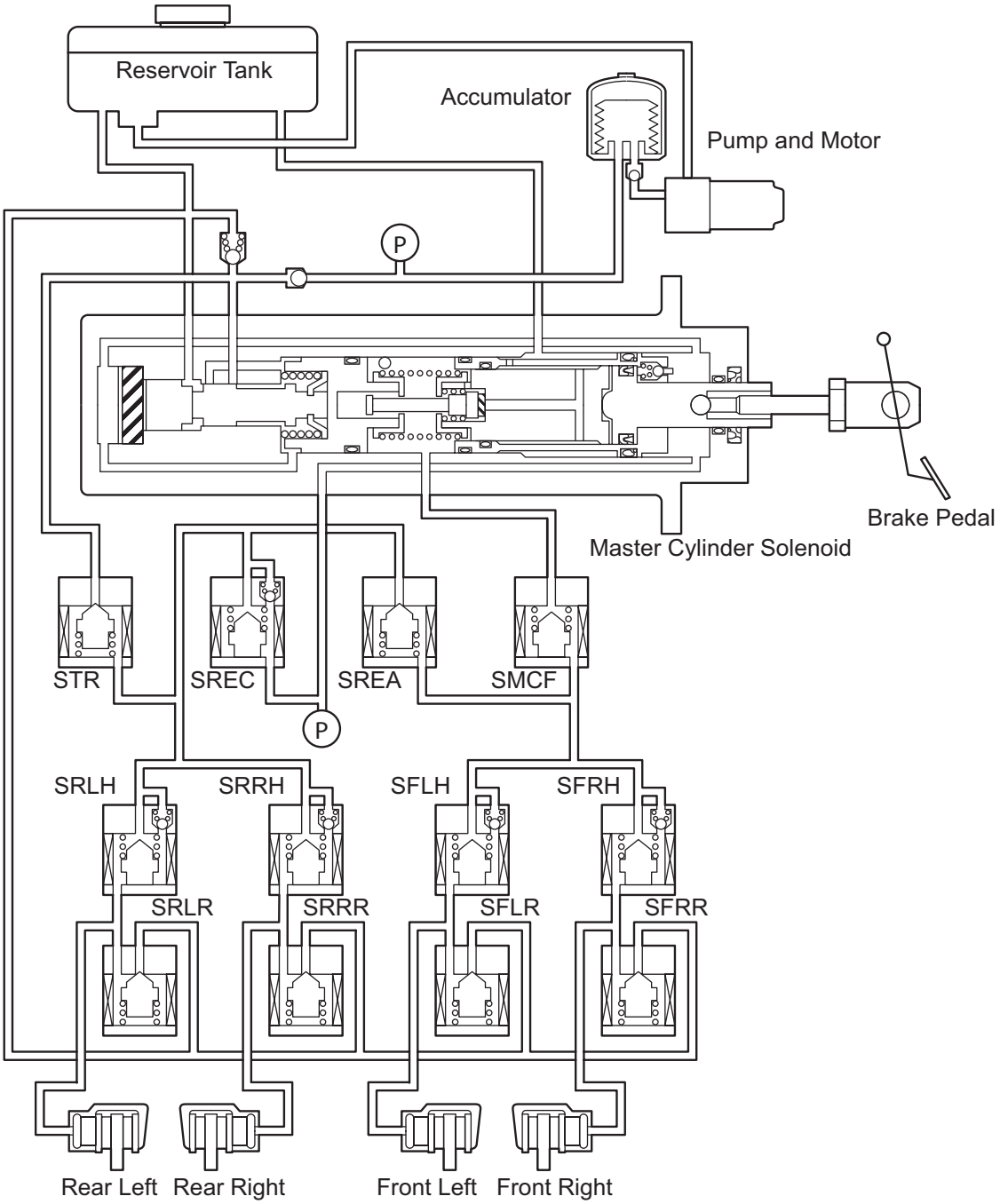
(b) Turn the ignition switch to OFF, and depress the brake pedal more than 20 times.
HINT:
When pressure in the accumulator is released, the reaction force becomes lighter and the stroke becomes longer.

(c) Check that the brake pedal becomes easy to depress.
If the pedal does not become easy to depress, check and replace the brake line and hydraulic brake booster.

(d) Turn the ignition switch to ON and check the pump motor operation noise.
If the pump motor does not operate, check and replace the wire harness and pump motor (see page BR-34).

(e) Connect the intelligent tester.
(1) Connect the intelligent tester to the DLC3.
(2) Turn the ignition switch to ON.
(3) Select "ACTIVE TEST" mode on the intelligent tester.
HINT:
- Refer to the intelligent tester operator manual for further details.
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.

(f) Check the master cylinder solenoid operation.



Inspection Order (Step)	SOL Selected By Active Test	SOL To Be Activated
D	SRCF (SA1)	SMCF
E	SFRH	SFRH

Inspection Order (Step)	SOL Selected By Active Test	SOL To Be Activated
F	SFLH	SFLH
G	SFRR	SFRR
H	SFLR	SFLR
I	SRMF (SMCF, SA3)	SREC
J	SRMR (SMCR, STR)	STR
K	SRRH	SRRH
L	SRLH	SRLH
M	SRRR	SRRR
N	SRLR	SRLR

(g) Prepare the vehicle.
  (1) Jack up and support the vehicle.
  (2) Release the parking brake lever.
  (3) Shift the shift lever to the "N" position and check the rear wheels by rotating them by hand.

(h) Inspect front VSC solenoid (SMCF) operation (step D).
  HINT:
  - ON: Activate SMCF and check that the brake pedal cannot be depressed (the pedal feels tight).
  - OFF: Deactivate SMCF and check that the brake pedal can be depressed.

  (1) Select "SRCF (SA1)" on the intelligent tester.
  (2) Turn the "SRCF (SA1)" on by the intelligent tester, then depress the brake pedal with stable force and check that the pedal cannot be depressed.
    If the pedal can be depressed, replace the hydraulic brake booster.
    HINT:
    To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
    NOTICE:
    When operating it continuously, set the interval of more than 20 seconds.
  (3) Release the brake pedal.
  (4) When the solenoid is off, depress the brake pedal again and check that the brake pedal can be depressed.
    If the pedal cannot be depressed, replace the hydraulic brake booster.

(i) Inspect front ABS solenoid (SFRH) operation (step E).
  HINT:
  - ON: Activate SFRH, depress the brake pedal, and then check that the right front wheel rotates.
  - OFF: Deactivate SFRH, depress the brake pedal, and then check that the right front wheel does not rotate.

(1) Select "SFRH" on the intelligent tester.
(2) Turn the "SFRH" on by the intelligent tester, then depress the brake pedal with stable force.
(3) When the solenoid is on, check the right front wheel by rotating it by hand.
If the right front wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoid, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the right front wheel does not rotate by hand.
If the right front wheel rotates, replace the hydraulic brake booster.

(j) Inspect front ABS solenoid (SFLH) operation (step F).
HINT:
- ON: Activate SFLH, depress the brake pedal, and then check that the left front wheel rotates.
- OFF: Deactivate SFLH, depress the brake pedal, and then check that the front left wheel does not rotate.

(1) Select "SFLH" on the intelligent tester.
(2) Turn the "SFLH" on by the intelligent tester, then depress the brake pedal with stable force.
(3) When the solenoid is on, check the left front wheel by rotating it by hand.
If the left front wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoid, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the left front wheel does not rotate by hand.
If the left front wheel rotates, replace the hydraulic brake booster.

(k) Inspect front ABS solenoid (SFRR) operation (step G).
HINT:
- ON: Depress the brake pedal, activate SFRR, and then check that the right front wheel rotates.
- OFF: Deactivate SFRR, depress the brake pedal, and then check that the right front wheel does not rotate.

(1) Select "SFRR" on the intelligent tester.
(2) Depress the brake pedal with stable force, then turn the "SFRR" on by the intelligent tester.
(3) When the solenoid is on, check the right front wheel by rotating it by hand.
If the right front wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the right front wheel does not rotate by hand.
If the right front wheel rotates, replace the hydraulic brake booster.

(l) Inspect front ABS solenoid (SFLR) operation (step H).
HINT:
- ON: Depress the brake pedal, activate SFLR, and then check that the left front wheel rotates.
- OFF: Deactivate SFLR, depress the brake pedal, and then check that the left front wheel does not rotate.

(1) Select "SFLR" on the intelligent tester.
(2) Depress the brake pedal with stable force, then turn the "SFLR" on by the intelligent tester.
(3) When the solenoid is on, check the left front wheel by rotating it by hand.
If the left front wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the left front wheel does not rotate by hand.
If the left front wheel rotates, replace the hydraulic brake booster.

(m) Inspect rear VSC solenoid (SREC) operation (step I).
HINT:
- ON: Depress the brake pedal, activate SREC. Release the brake pedal and check that the rear wheels do not rotate.
- OFF: Deactivate SREC and check that the rear wheels rotate.

(1) Select "SRMF (SMCF, SA3)" on the intelligent tester.
(2) Depress the brake pedal with stable force, then turn the "SRMF (SMCF, SA3)" on by the intelligent tester.
(3) Release the brake pedal when the solenoid is on, and check that the rear wheels do not rotate by hand.
If the rear wheels rotate, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheels fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheels as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, check the rear wheels by rotating them by hand.
If the rear wheels stop, replace the hydraulic brake booster.

(n) Inspect rear VSC solenoid (STR) operation (step J).
HINT:
- ON: Activate STR, depress the brake pedal, and then check that the rear wheels rotate.
- OFF: Deactivate STR, depress the brake pedal, and then check that the rear wheels do not rotate.

(1) Select "SRMR (SMCR, STR)" on the intelligent tester.
(2) Turn the "SRMR (SMCR, STR) on by the intelligent tester.

(3) When the solenoid is on, check that the rear wheels rotate by hand.
If the rear wheels do not rotate, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheels fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheels as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the "SRMR (SMCR, STR)" is off, depress the brake pedal again and check that the rear wheels do not rotate by hand.
If the rear wheels rotate, replace the hydraulic brake booster.

(o) Inspect rear ABS solenoid (SRRH) operation (step K).
HINT:
- ON: Activate SRRH, depress the brake pedal, and then check that the right rear wheel rotates.
- OFF: Deactivate SRRH, depress the brake pedal, and then check that the right rear wheel does not rotate.

(1) Select "SRRH" on the intelligent tester.
(2) Turn the "SRRH" on by the intelligent tester, then depress the brake pedal with stable force.
(3) When the solenoid is on, check the right rear wheel by rotating it by hand.
If the right rear wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the right rear wheel does not rotate by hand.
If the right rear wheel rotates, replace the hydraulic brake booster.

(p) Inspect rear ABS solenoid (SRLH) operation (step L).
HINT:
- ON: Activate SRLH, depress the brake pedal, and then check that the left rear wheel rotates.
- OFF: Deactivate SRLH, depress the brake pedal, and then check that the left rear wheel does not rotate.

(1) Select "SRLH" on the intelligent tester.
(2) Turn the "SRLH" on by the intelligent tester, then depress the brake pedal with stable force.
(3) When the solenoid is on, check the left rear wheel by rotating it by hand.
If the left rear wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoid, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the left rear wheel does not rotate by hand.
If the left rear wheel rotates, replace the hydraulic brake booster.

(q) Inspect rear ABS solenoid (SRRR) operation (step M).
HINT:
- ON: Depress the brake pedal, activate SRRR, and then check that the right rear wheel rotates.
- OFF: Deactivate SRRR, depress the brake pedal, and then check that the right rear wheel does not rotate.

(1) Select "SRRR" on the intelligent tester.
(2) Depress the brake pedal with stable force, then turn the "SRRR" on by the intelligent tester.
(3) When the solenoid is on, check the right rear wheel by rotating it by hand.
If the right rear wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the right rear wheel does not rotate by hand.
If the right rear wheel rotates, replace the hydraulic brake booster.

(r) Inspect rear ABS solenoid (SRLR) operation (step N).
HINT:
- ON: Depress the brake pedal, activate SRLR, and then check that the left rear wheel rotates.
- OFF: Deactivate SRLR, depress the brake pedal, and then check that the left rear wheel does not rotate.

(1) Select "SRLR" on the intelligent tester.
(2) Depress the brake pedal with stable force, then turn the "SRLR" on by the intelligent tester.
(3) When the solenoid is on, check the left rear wheel by rotating it by hand.
If the left rear wheel stops, replace the hydraulic brake booster.
HINT:
- To protect the solenoids, intelligent tester turns off automatically 2 seconds after every solenoid has been turned on.
- When rotating the wheel fast, the fail-safe function is activated and judgement cannot be made properly. So rotate the wheel as slowly as possible.

NOTICE:
When operating it continuously, set the interval of more than 20 seconds.

(4) When the solenoid is off, depress the brake pedal again and check that the left rear wheel does not rotate by hand.
If the left rear wheel rotates, replace the hydraulic brake booster.

(s) Lower the vehicle.
(t) Disconnect the intelligent tester.