

# BRAKE SYSTEM

## SECTION **BR**

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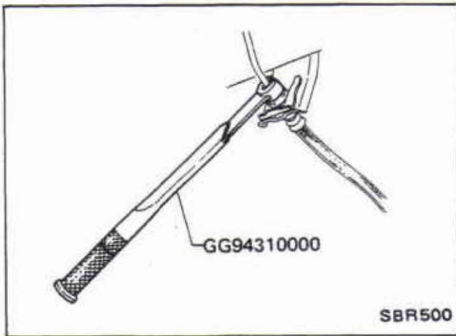
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**BR**

## PRECAUTIONS AND PREPARATION

### Precautions

- Recommended fluid is brake fluid "DOT 3".
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.
- To clean or wash all parts of master cylinder, disc brake caliper and wheel cylinder, use clean brake fluid.
- Never use mineral oils such as gasoline or kerosene. They will ruin rubber parts of the hydraulic system.



- Use Tool when removing and installing brake tube.

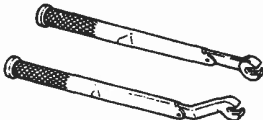
### WARNING:

- Clean brake pads and shoes with a waste cloth, then wipe with a dust collector.

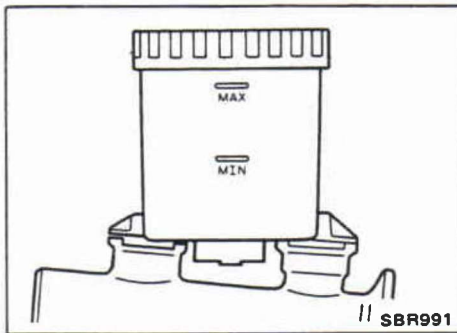
### Preparation

#### SPECIAL SERVICE TOOL

\*: Special tool or commercial equivalent

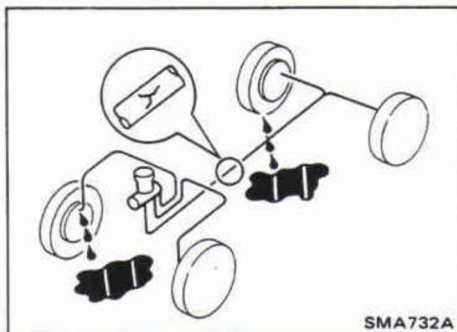
Tool number Tool name	Description	
GG94310000* Flare nut torque wrench		Removing and installing each brake piping

## CHECK AND ADJUSTMENT



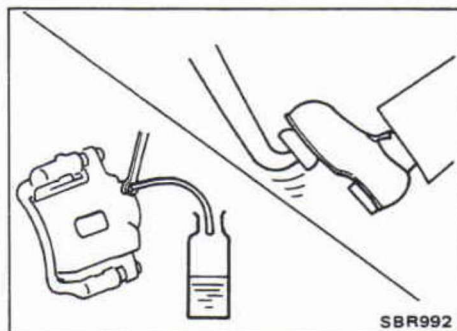
### Checking Brake Fluid Level

- Check fluid level in reservoir tank. It should be between Max. and Min. lines on reservoir tank.
- If fluid level is extremely low, check brake system for leaks.



### Checking Brake System

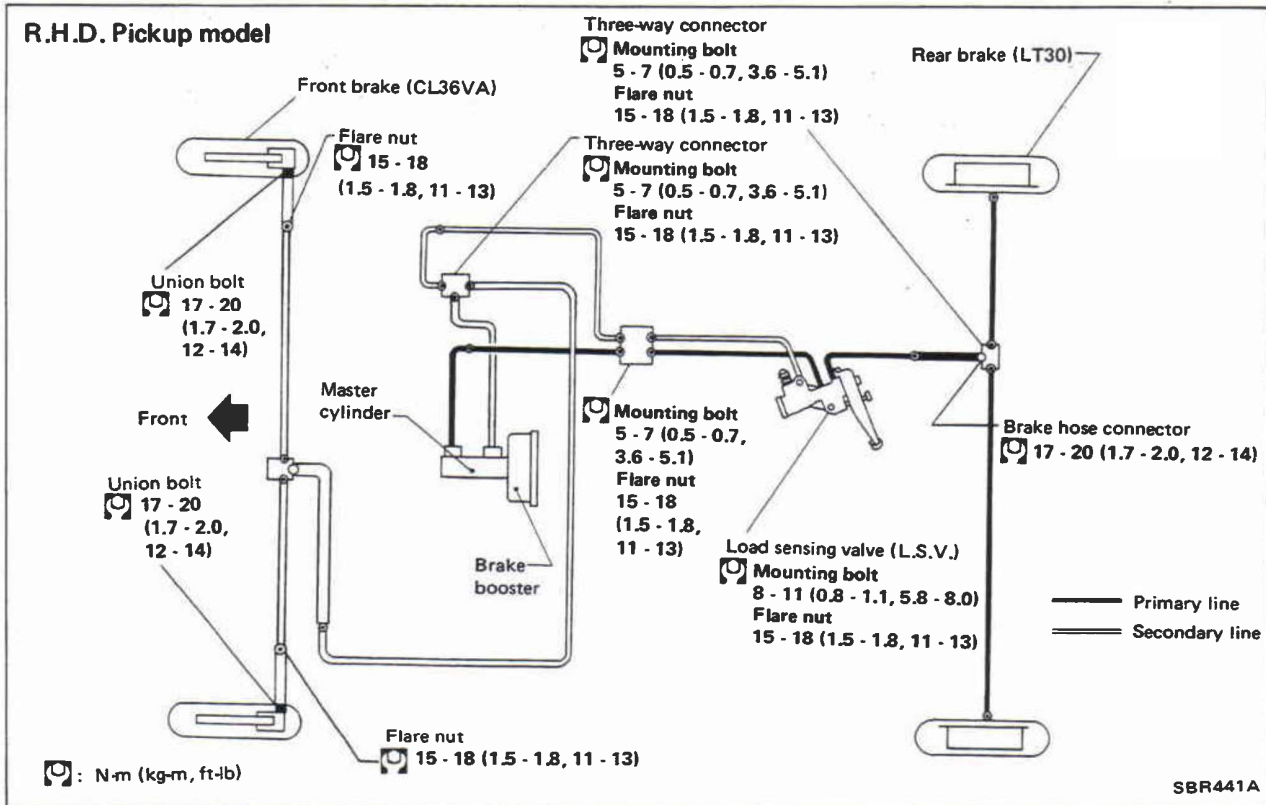
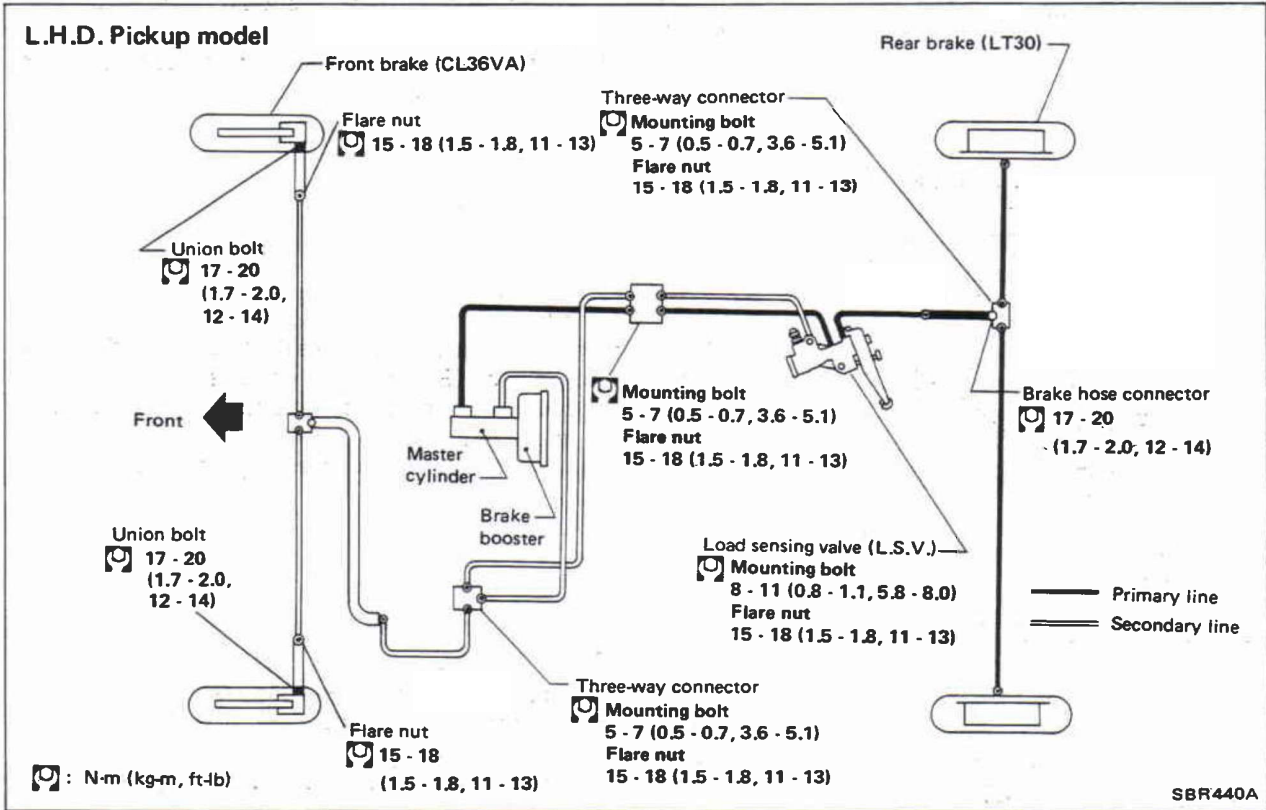
- Check brake lines (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts. If leakage occurs around joints, retighten or, if necessary, replace damaged parts.
- Check for oil leakage by fully depressing brake pedal.



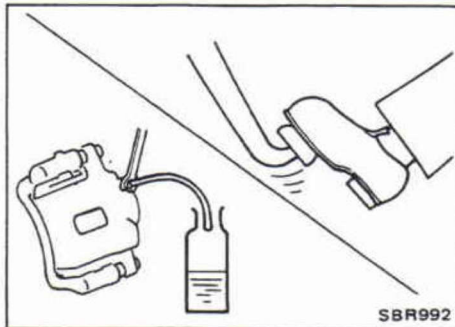
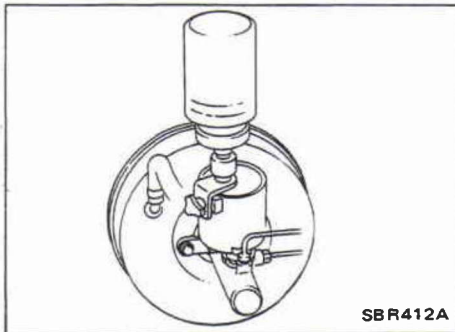
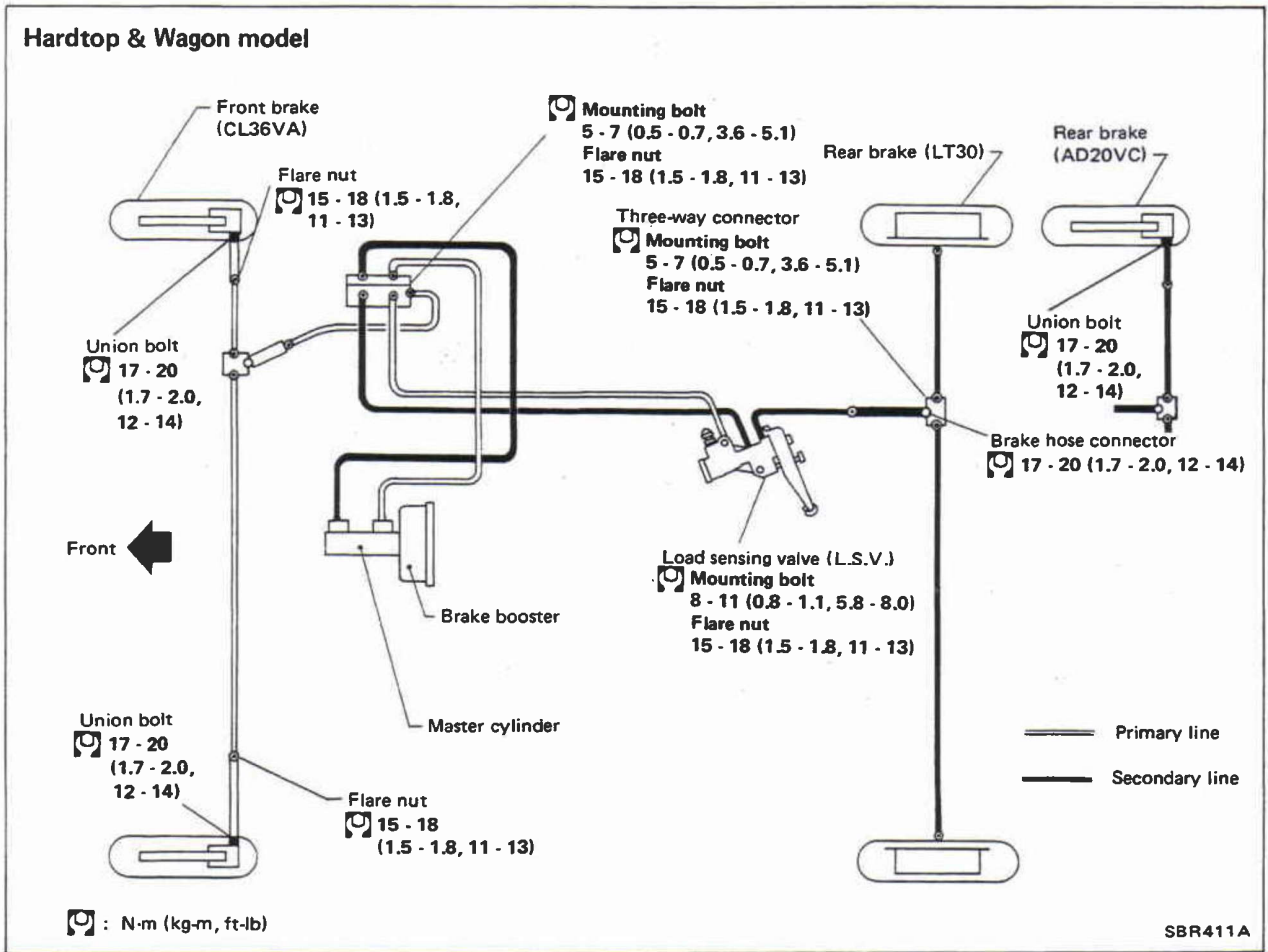
### Changing Brake Fluid

1. Drain brake fluid from each air bleeder valve.
  2. Refill until new brake fluid comes out of each air bleeder valve.
- Use same procedure as in bleeding hydraulic system to refill brake fluid.  
Refer to Bleeding Procedure.
- Refill with recommended brake fluid "DOT 3".
  - Never reuse drained brake fluid.
  - Be careful not to splash brake fluid on painted areas.

# BRAKE HYDRAULIC LINE



## BRAKE HYDRAULIC LINE



### Bleeding Procedure

#### CAUTION:

- Carefully monitor brake fluid level at master cylinder during bleeding operation.
- Fill reservoir with recommended brake fluid. Make sure it is full at all times while bleeding air out of system.

- Bleed air according to the following procedure:  
L.S.V. air bleeder → Left rear wheel cylinder → Right rear wheel cylinder → Left front caliper → Right front caliper

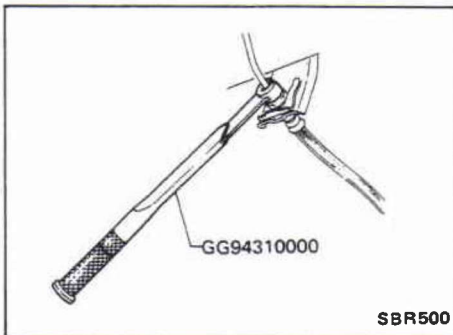
## BRAKE HYDRAULIC LINE

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### Bleeding Procedure (Cont'd)

● To bleed air from lines, wheel cylinders and calipers, use the following procedure.

- 1) Connect a transparent vinyl tube to air bleeder valve.
- 2) Fully depress brake pedal several times.
- 3) With brake pedal depressed, open air bleeder valve to release air.
- 4) Close air bleeder valve.
- 5) Release brake pedal slowly.
- 6) Repeat steps 2) through 5) until clear brake fluid comes out of air bleeder valve.



### Removal and Installation

1. To remove brake hose, first remove flare nut securing brake tube to hose, then withdraw lock spring.
2. Cover openings to prevent entrance of dirt whenever disconnecting hydraulic line.
3. All hoses must be free from excessive bending, twisting and pulling.
4. After installing brake lines, check for oil leakage by fully depressing brake pedal.

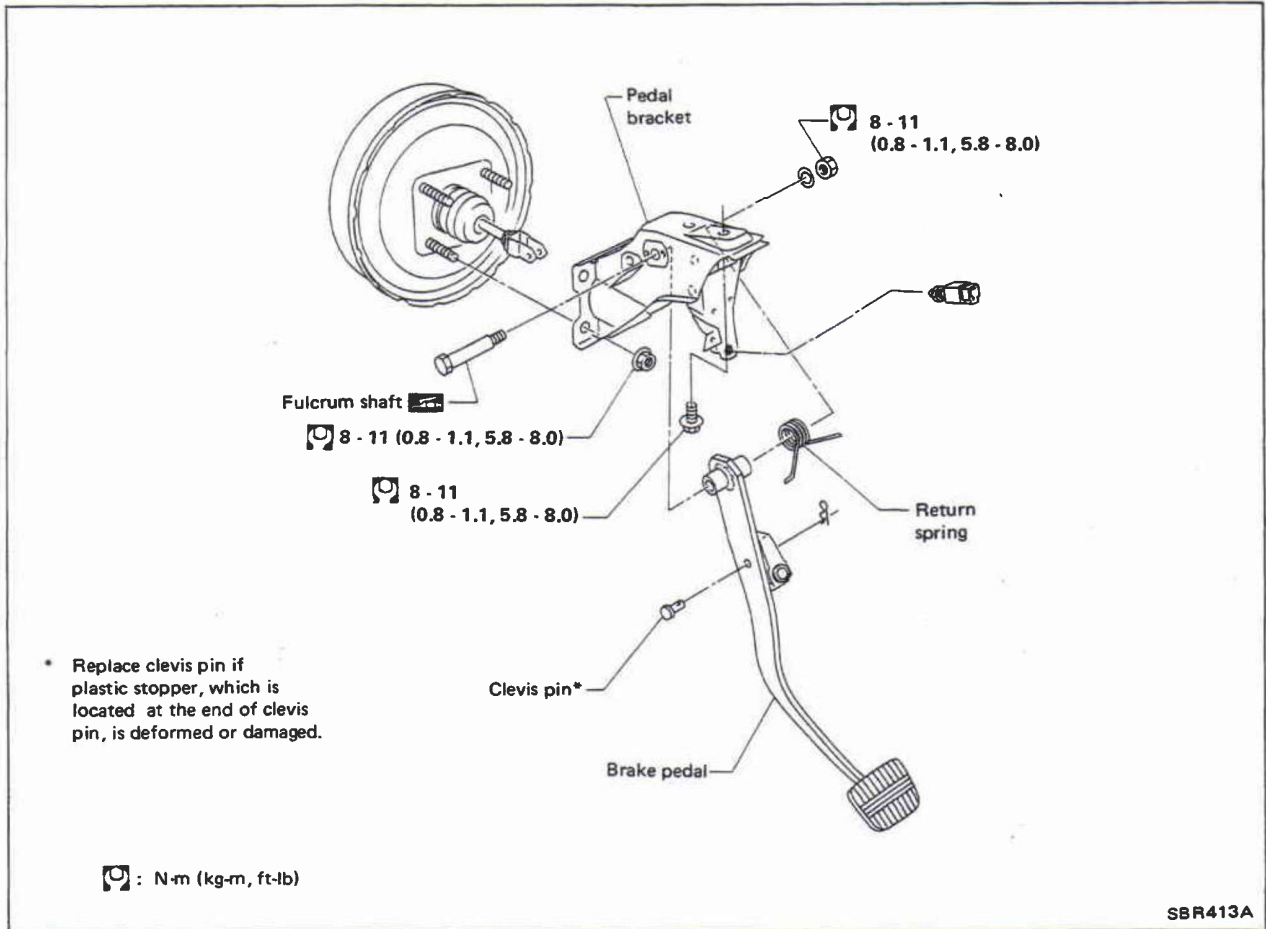
### Inspection

Check brake lines (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.

If leakage occurs around joints, retighten or, if necessary, replace damaged parts.

## BRAKE PEDAL AND BRACKET

### Removal and Installation

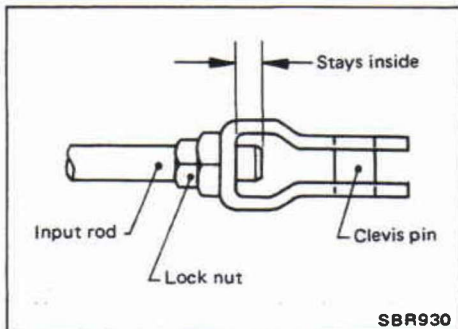
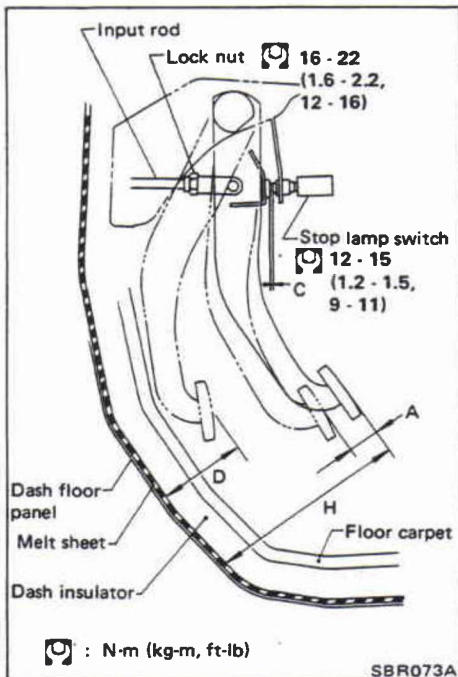


### Inspection

Check brake pedal for the following items.

- Brake pedal bend
- Clevis pin deformation
- Crack of any welded portion

## BRAKE PEDAL AND BRACKET



### Adjustment

Check brake pedal free height from melt sheet. Adjust if necessary.

**H: Free height**

Refer to S.D.S.

**D: Depressed height**

Refer to S.D.S.

Under force of 490 N (50 kg, 110 lb)  
with engine running

**C: Clearance between pedal stopper and threaded end of stop lamp switch**

0.3 - 1.0 mm (0.012 - 0.039 in)

**A: Pedal free play**

1 - 3 mm (0.04 - 0.12 in)

1. Adjust pedal free height with brake booster input rod. Then tighten lock nut.

**Make sure that tip of input rod stays inside.**

2. Adjust clearance "C" with stop lamp switch. Then tighten lock nut.

3. Check pedal free play.

**Make sure that stop lamp is off when pedal is released.**

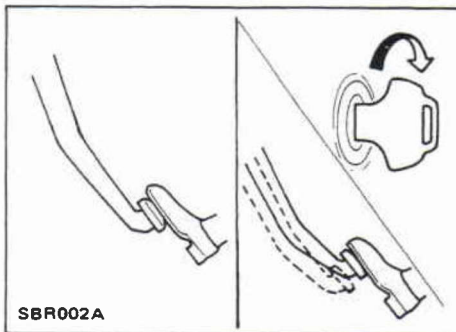
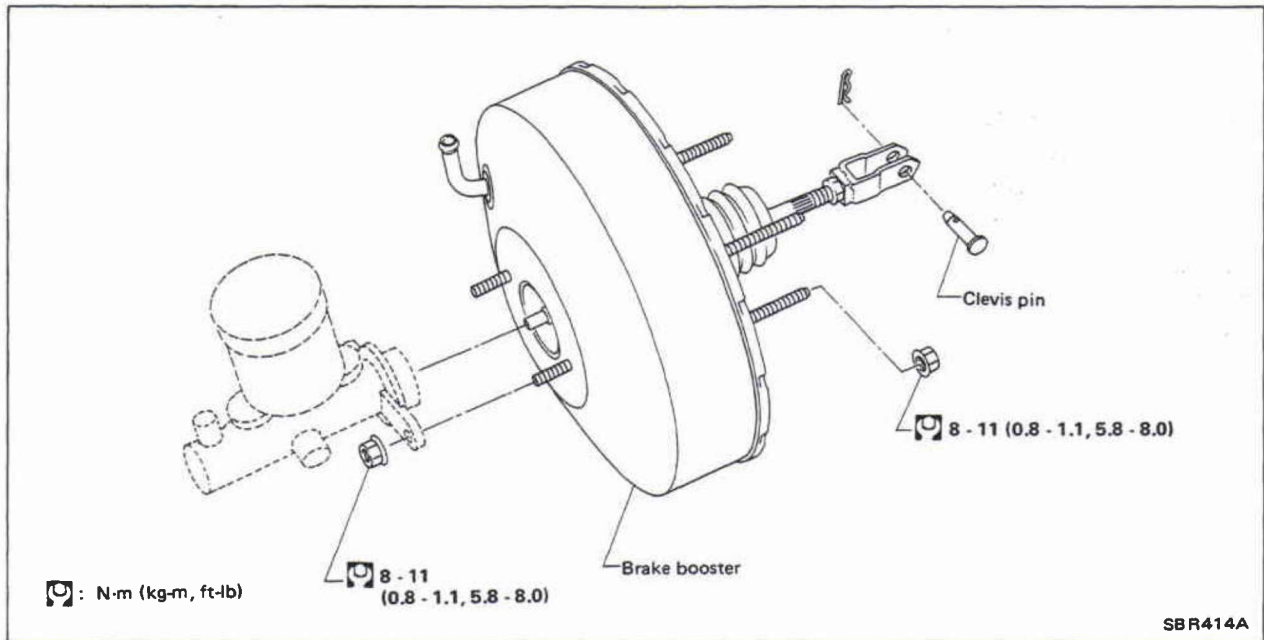
4. Check brake pedal's depressed height while engine is running.

If depressed height is below specified value, check brake system for leaks, accumulation of air or any damage to components (master cylinder, wheel cylinder, etc.); then make necessary repairs.



# BRAKE BOOSTER

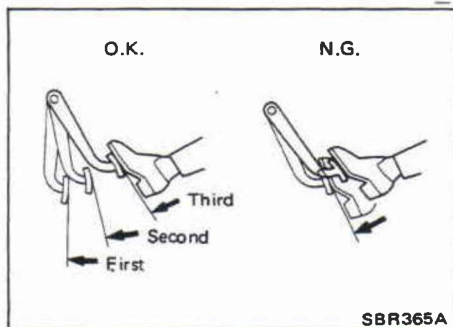
## Removal and Installation



## Inspection

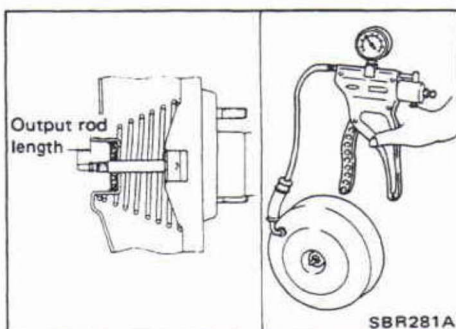
### OPERATING CHECK

- Depress brake pedal several times with engine off, and check that there is no change in pedal stroke.
- Depress brake pedal, then start engine. If pedal goes down slightly, operation is normal.



### AIRTIGHT CHECK

- Start engine, and stop it after one or two minutes. Depress brake pedal several times slowly. If pedal goes further down the first time and gradually rises after second or third time, booster is airtight.
- Depress brake pedal while engine is running, and stop engine with pedal depressed. If there is no change in pedal stroke after holding pedal down **30 seconds**, brake booster is airtight.



### OUTPUT ROD LENGTH CHECK

1. Supply brake booster with vacuum of  $-66.7$  kPa ( $-667$  mbar,  $-500$  mmHg,  $-19.69$  inHg) using a handy vacuum pump.
2. Check output rod length.

#### Specified length:

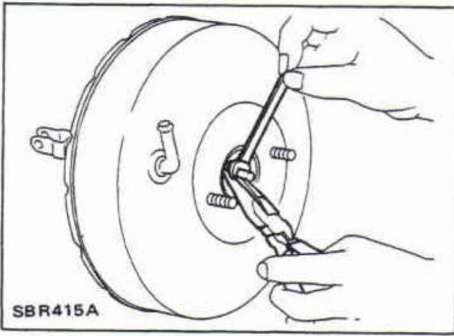
10.275 - 10.525 mm (0.4045 - 0.4144 in)

## BRAKE BOOSTER

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### Inspection (Cont'd)

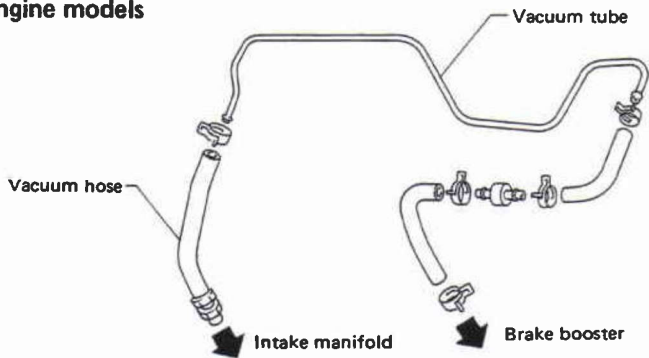
3. Adjust rod length if necessary.
4. If rod length is without specification, replace brake booster.



# VACUUM PIPING

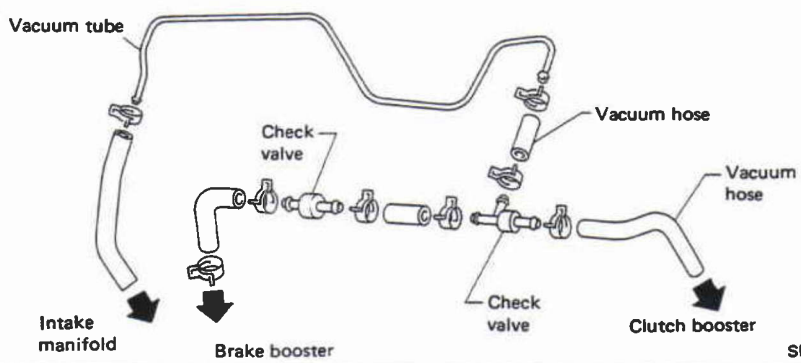
## Removal and Installation

### Gasoline engine models



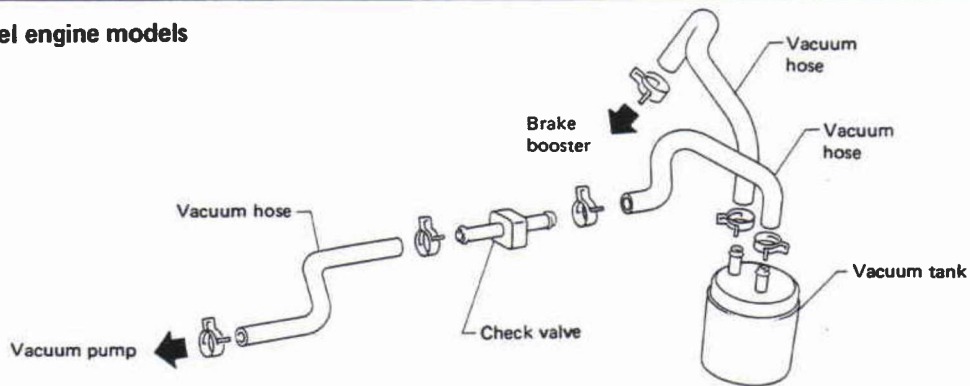
### With clutch booster

**CAUTION:**  
Do not apply any oil or lubricants to vacuum hoses and check valve.



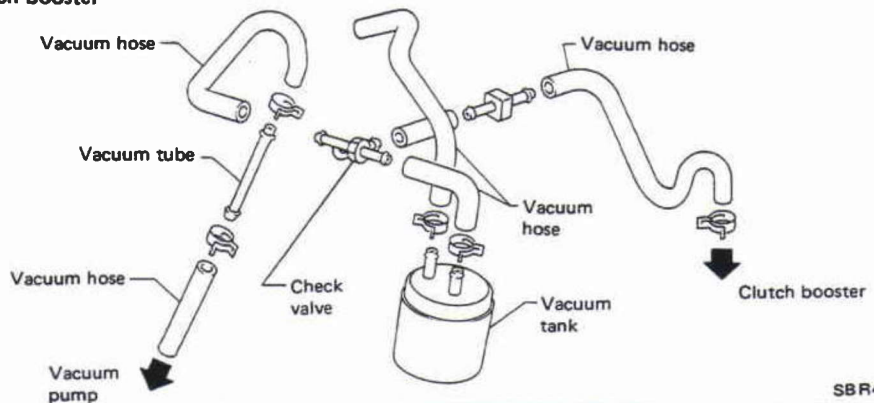
SBR416A

### Diesel engine models



### L.H.D. with clutch booster

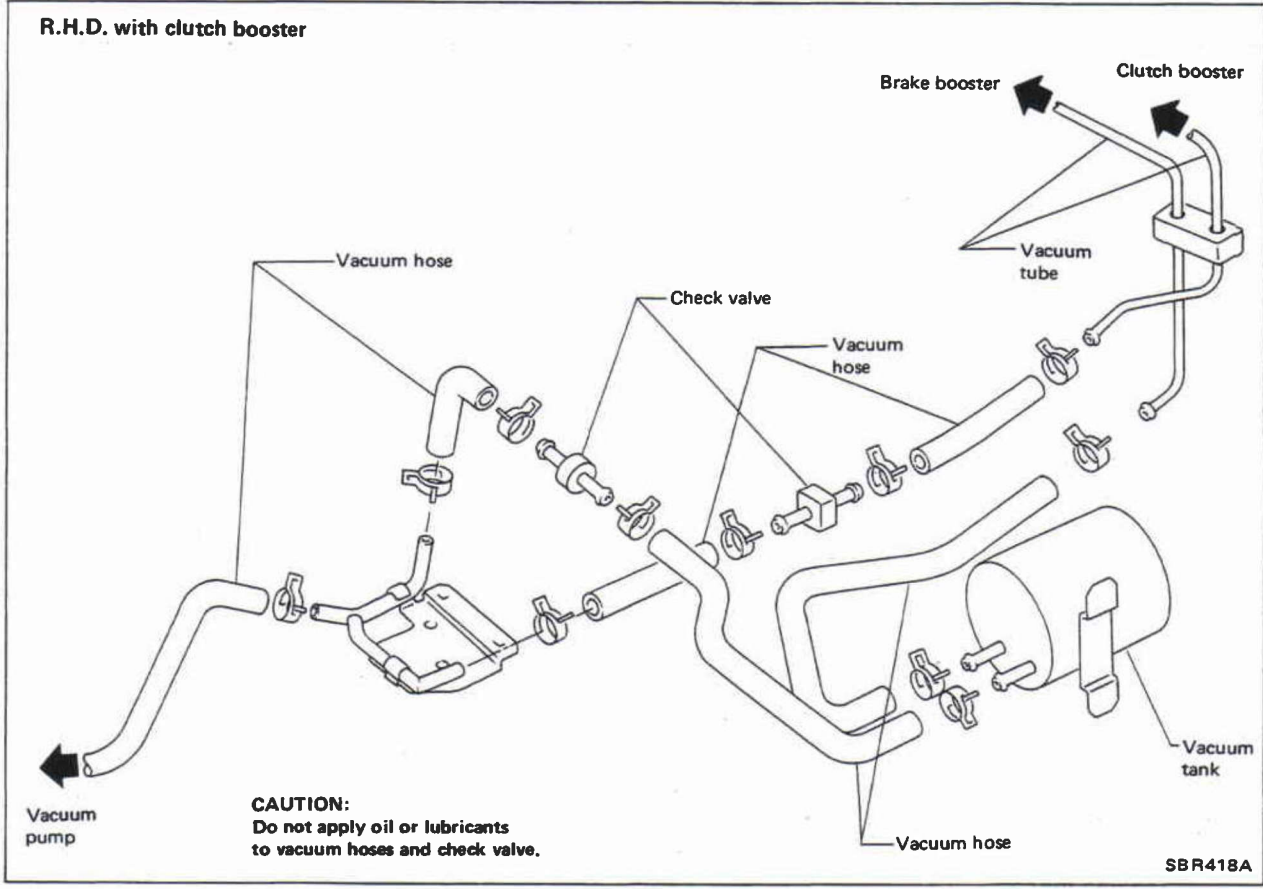
**CAUTION:**  
Do not apply any oil or lubricants to vacuum hoses and check valve.



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# VACUUM PIPING

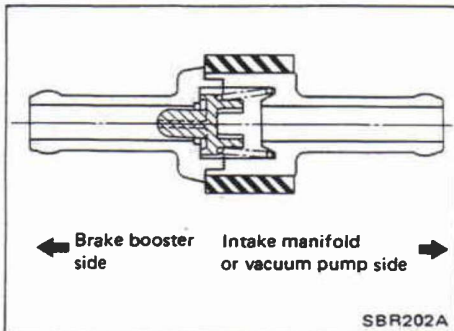
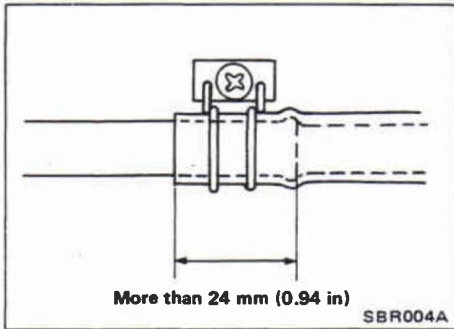
## Removal and Installation (Cont'd)



## VACUUM PIPING

### Removal and Installation (Cont'd)

- Insert vacuum tube into vacuum hose more than 24 mm (0.94 in).

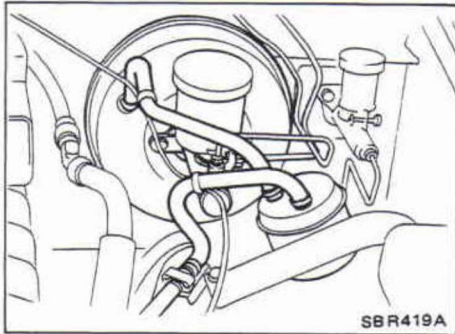


- Install check valve, paying attention to its direction.

### Inspection

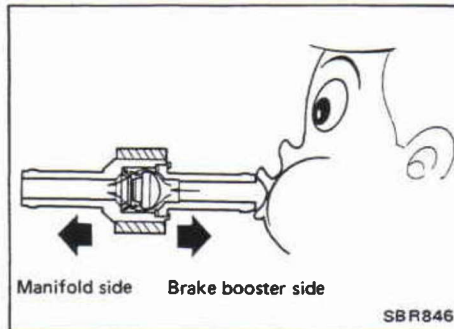
#### HOSES AND CONNECTORS

- Check vacuum lines, connections and check valve using for air tightness, chafing and deterioration.



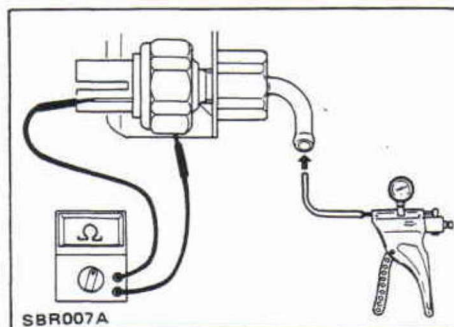
#### CHECK VALVE

- When pressure is applied to brake booster side of check valve and valve does not open, replace check valve with a new one.



#### VACUUM WARNING SWITCH\*

- Test continuity through vacuum warning switch with an ohmmeter and vacuum pump.



Vacuum	Less than 26.7 kPa (267 mbar, 200 mmHg, 7.87 inHg)	0Ω
	33.3 kPa (333 mbar, 250 mmHg, 9.84 inHg) or more	∞Ω

\* Except for Australia

## VACUUM PIPING

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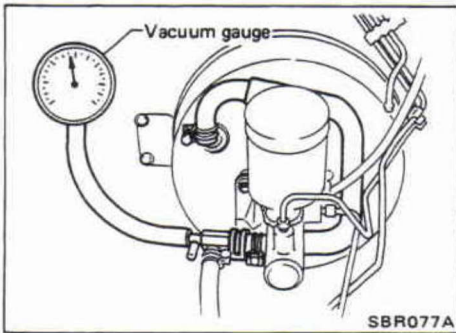
### Inspection (Cont'd)

#### VACUUM PUMP

1. Install vacuum gauge.
2. Run engine at 1,000 rpm or more.
3. Check vacuum.

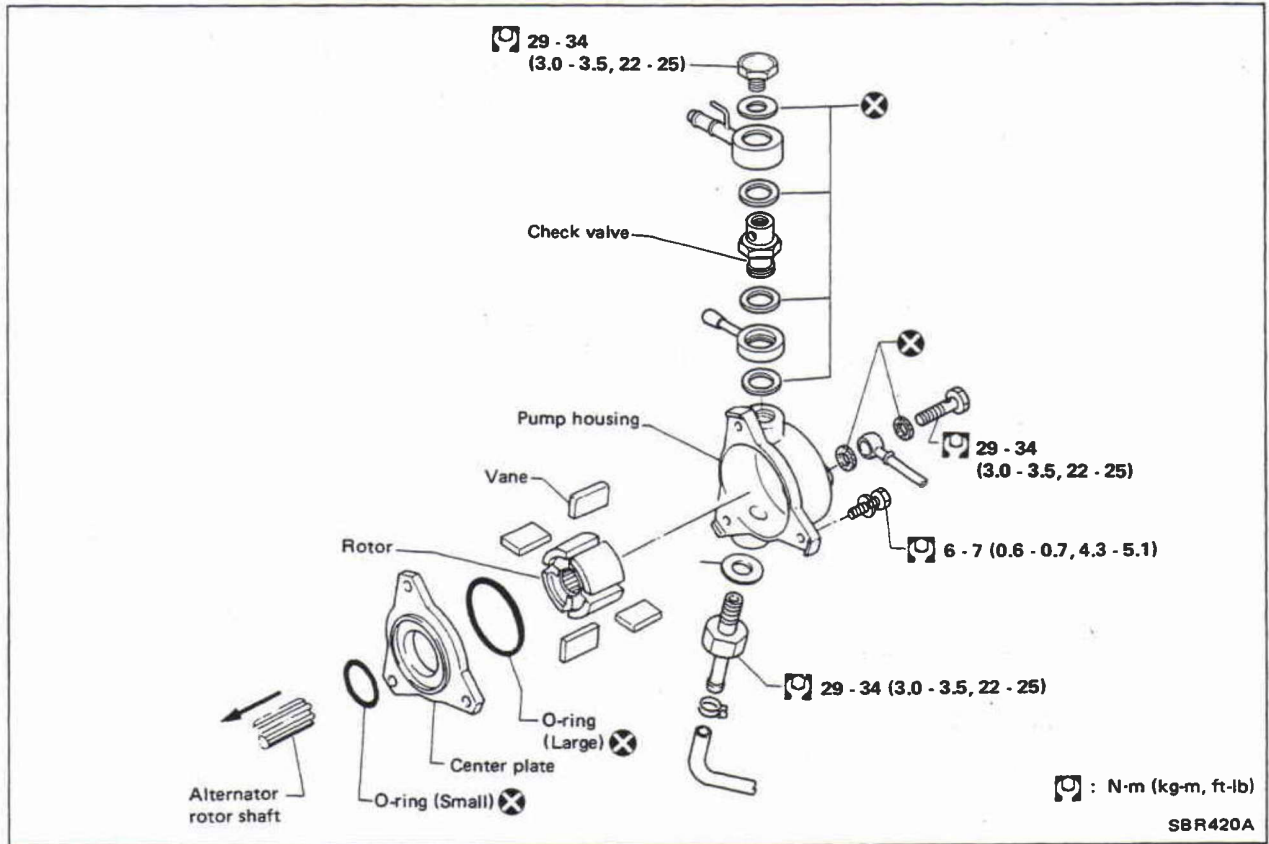
#### Specified vacuum:

**93.3 kPa (933 mbar, 700 mmHg, 27.56 inHg) or more**



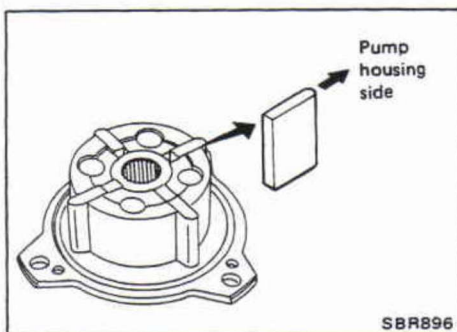
## VACUUM PUMP (Diesel engine model)

### Removal and Installation



- Drain oil from vacuum pump before removal. **Manually rotate fan belt clockwise to discharge any oil which may have accumulated in vacuum pump.**

- Install vane so that its round surface faces pump housing.
- After installing vacuum pump assembly on alternator, apply 5 mℓ (0.2 Imp fl oz) of engine oil into vacuum pump assembly. Then, make sure that pulley of alternator can be smoothly rotated by hand.



Unit: mm (in)	
Vane length "A"	14.0 - 15.0 (0.551 - 0.591)
Vane width "H"	39 (1.54)

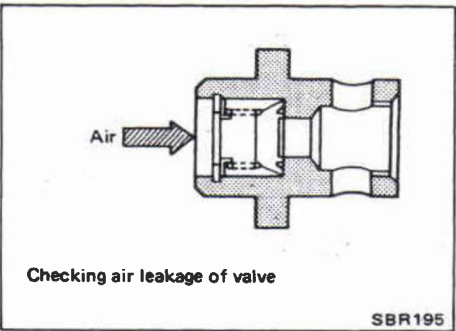
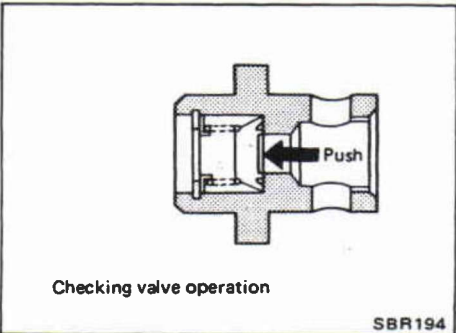
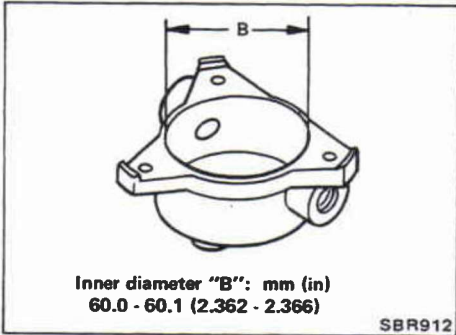
SBR193

### Inspection

**Clean all parts and check them as follows:**

- Check for wear or scratches on mating surfaces of rotor and vacuum pump housing and of rotor and center plate. If wear or scratches are noted, replace those parts.
- Check for wear or scratches on vanes. If necessary, replace.

## VACUUM PUMP (Diesel engine model)



### Inspection (Cont'd)

- Check inner wall of vacuum pump housing for wear. If necessary, replace.
- Check rotor shaft for wear. If necessary, replace.
- Check valve locations and copper washers for bends or deformation. If necessary, replace.

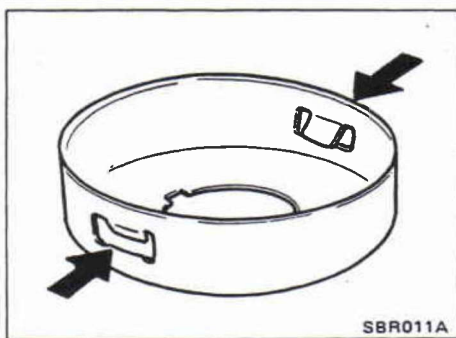
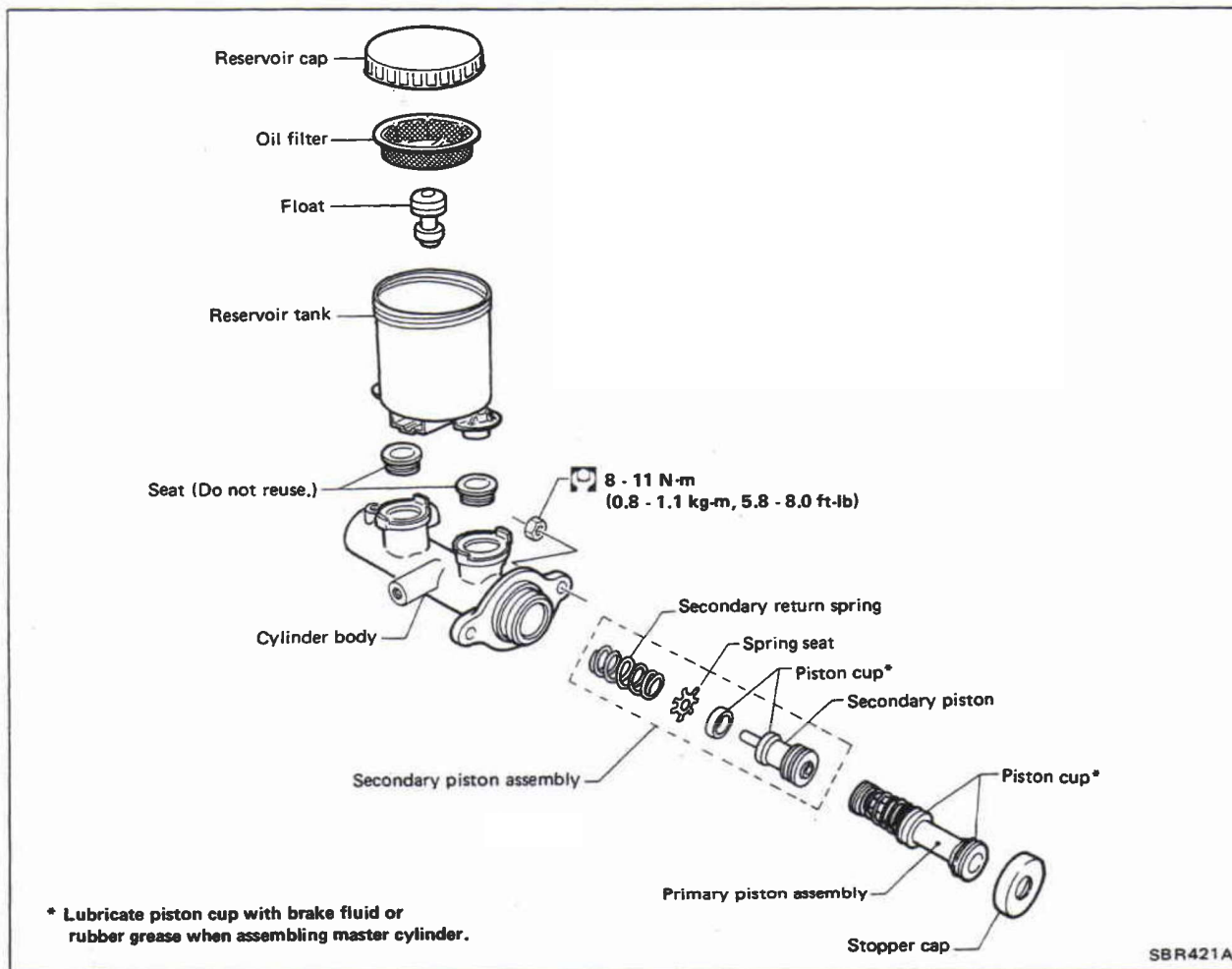
- Check that valve operates smoothly when slightly pushed. Replace if necessary.

Check for air leakage with 98 to 490 kPa (1.0 to 4.9 bar, 1 to 5 kg/cm<sup>2</sup>, 14 to 71 psi) of air pressure. Replace if necessary.

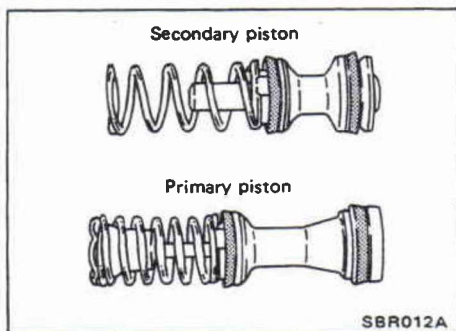


# MASTER CYLINDER

## Removal and Installation



- Replace stopper cap if claw is damaged or deformed.
- Bend claws inward when installing stopper cap.

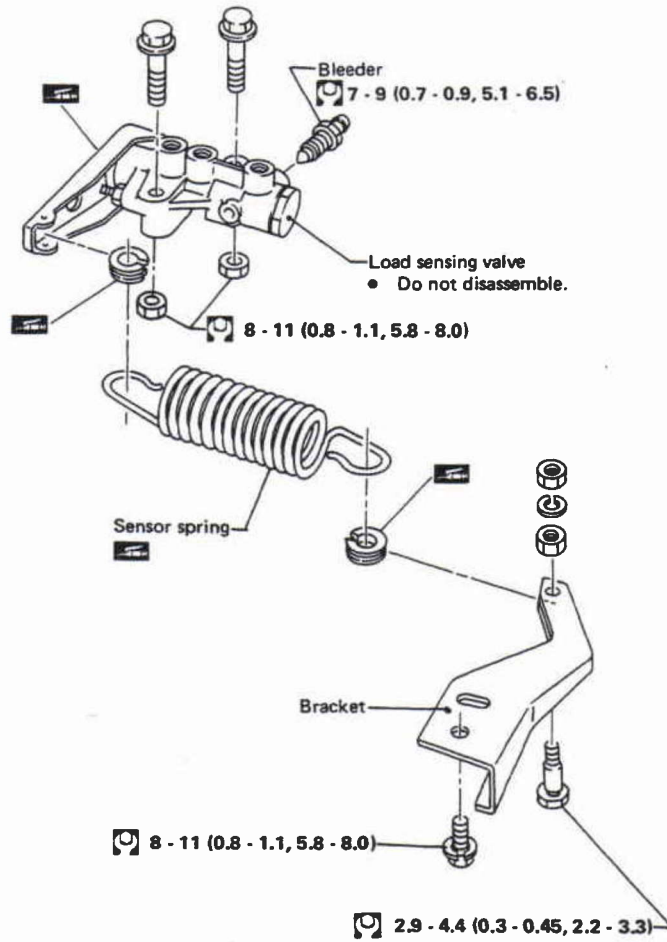


- Pay attention to direction of piston cups in figure at left.
- Check parts for wear or damage. Replace if necessary.

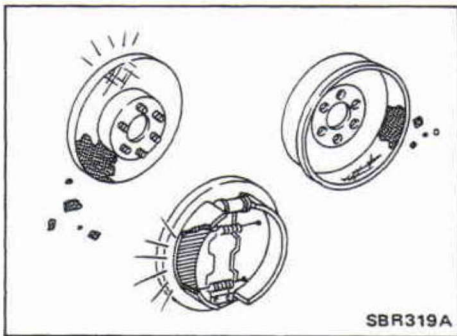
## LOAD SENSING VALVE (L.S.V.) — Linkage type

### Removal and Installation

#### Load sensing valve

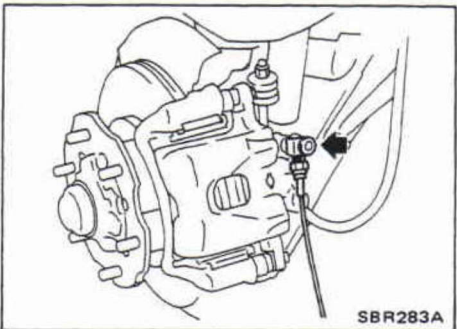


SBR123A



#### Inspection

1. Before checking load sensing valve, inspect front and rear brake shoes and pads for abnormal wear and improper installation.

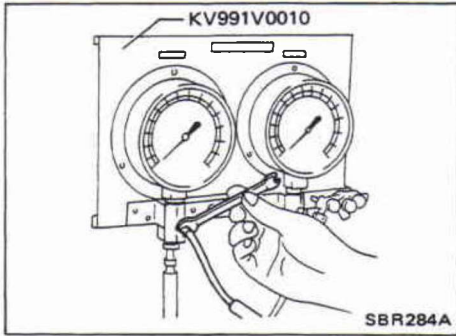


2. Remove air bleeder on front brake wheel cylinder/caliper, and install pressure gauge into air bleed hole.

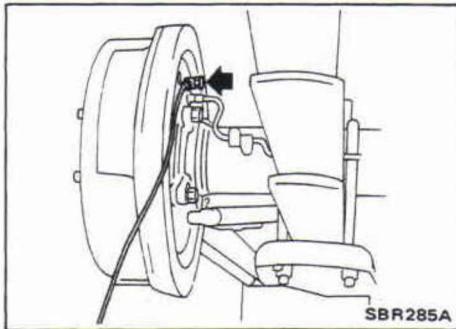
## LOAD SENSING VALVE (L.S.V.) — Linkage type

### Inspection (Cont'd)

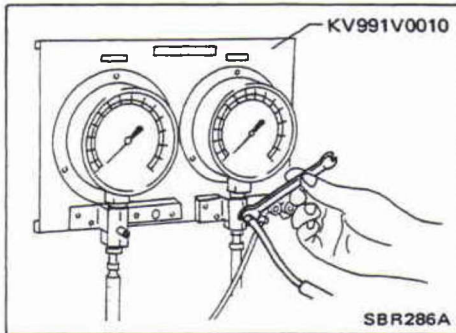
3. Bleed air from front brake line.



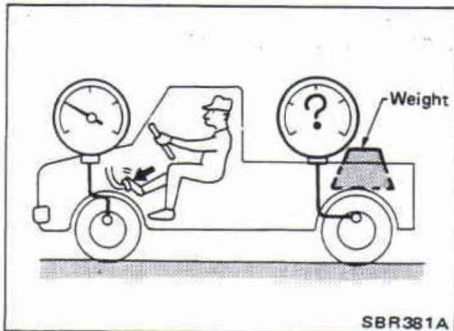
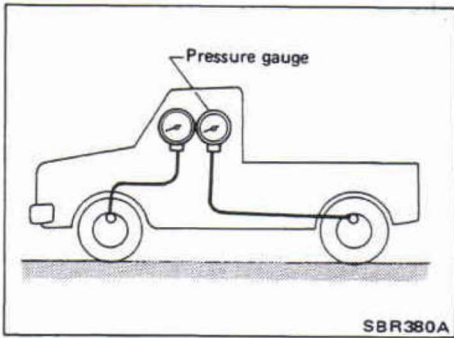
4. Remove air bleeder on rear brake wheel cylinder/caliper, and install pressure gauges into air bleed holes.



5. Bleed air from rear brake line.



## LOAD SENSING VALVE (L.S.V.) — Linkage type



### Inspection (Cont'd)

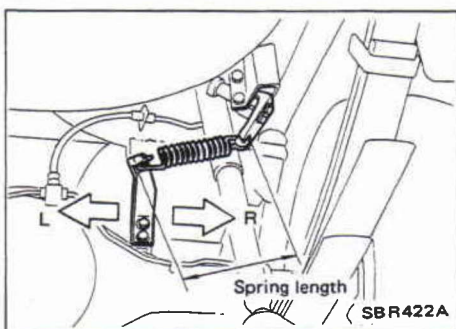
A linkage type L.S.V. (load sensing valve) is located in front of the rear axle. To properly adjust L.S.V., proceed as follows:

6. With someone in the driver's seat, have a helper ride on rear center of deck and then slowly get off.
7. Depress brake pedal. While depressing brake pedal, measure length of sensor spring to ensure it is as indicated below.
 

**Sensor spring length: 207 mm (8.15 in)**
8. If spring length is not as specified, loosen and move bracket until specified spring length is obtained.
9. Slowly depress brake pedal.
10. Ensure the relationship between master cylinder pressure and rear wheel cylinder pressure is within specified range. Refer to specified range as shown in table below.
11. Place a suitable weight on rear center of deck, above rear axle, so that spring length is 220 mm (8.66 in) when brake pedal is depressed.
12. Recheck that the relationship between master cylinder pressure and rear wheel cylinder pressure is within specified range as shown in table below.

Unit: kPa (bar, kg/cm<sup>2</sup>, psi)

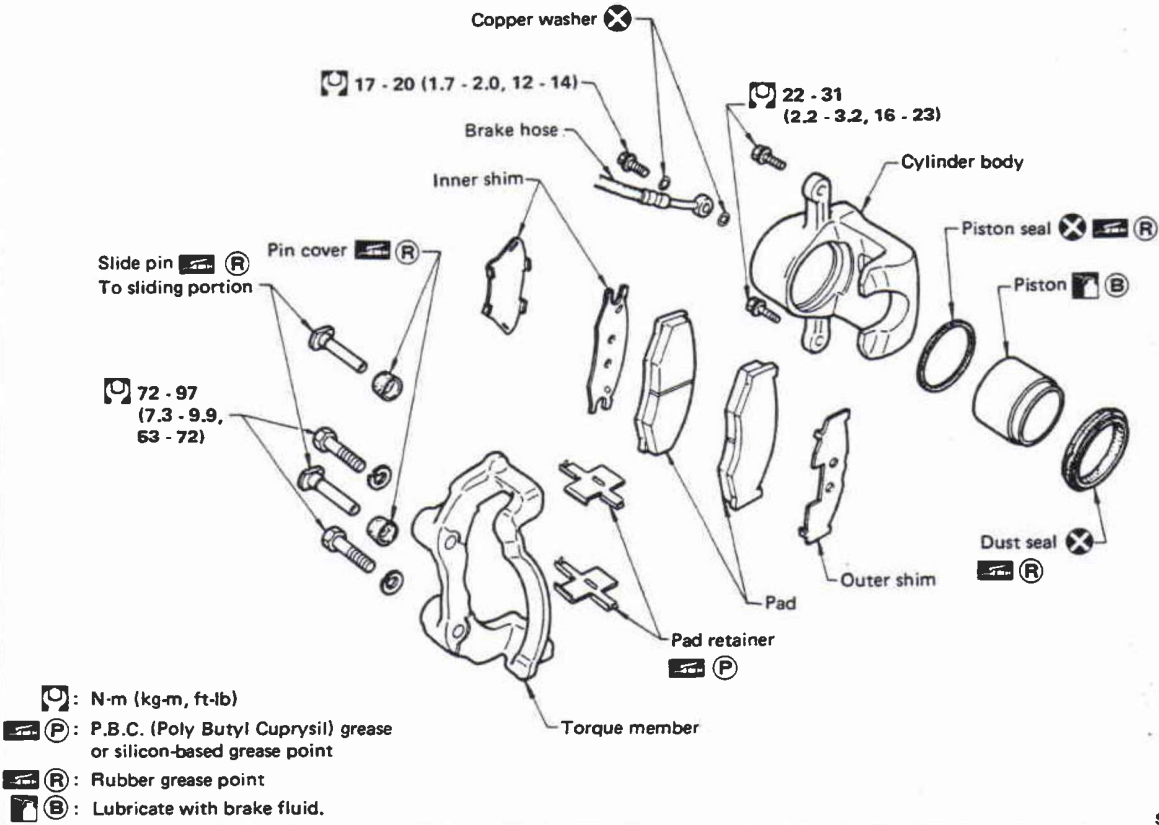
Master cylinder pressure	Rear wheel cylinder pressure			
	Pickup model		Except for Pickup model	
	Spring length 207 mm (8.15 in)	Spring length 220 mm (8.66 in)	Spring length 207 mm (8.15 in)	Spring length 220 mm (8.66 in)
4,904 (49.0, 50, 711)	981 - 1,961 (9.8 - 19.6, 10 - 20, 142 - 284)	4,413 - 5,394 (44.1 - 53.9, 45 - 55, 640 - 782)	1,569 - 2,550 (15.7 - 25.5, 16 - 26, 228 - 370)	3,629 - 4,609 (36.3 - 46.1, 37 - 47, 526 - 668)
9,807 (98.1, 100, 1,422)	1,863 - 3,236 (18.6 - 32.4, 19 - 33, 270 - 469)	6,473 - 7,846 (64.7 - 78.5, 66 - 80, 939 - 1,138)	2,452 - 3,825 (24.5 - 38.2, 25 - 39, 356 - 555)	4,609 - 5,982 (46.1 - 59.8, 47 - 61, 668 - 867)



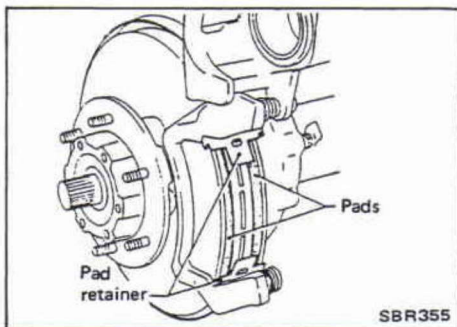
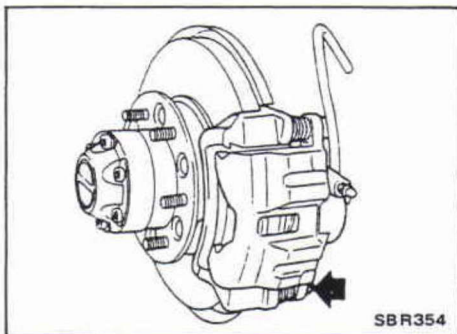
13. If pressure is outside specified range after spring length is adjusted, replace L.S.V. assembly.

## FRONT DISC BRAKE (CL36VA) — Caliper

CL36VA



SBR423A



### Pad Replacement

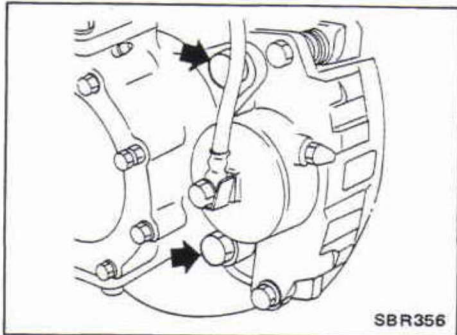
1. Remove pin bolt.

2. Swing cylinder body upward. Then remove pad retainer, and inner and outer shims.

#### CAUTION:

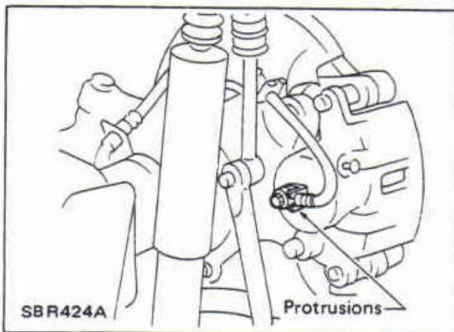
- When cylinder body is swung up, do not depress brake pedal because piston will pop out.
- Be careful not to damage dust seal or get oil on rotor. Always replace shims when replacing pads.

## FRONT DISC BRAKE (CL36VA) — Caliper

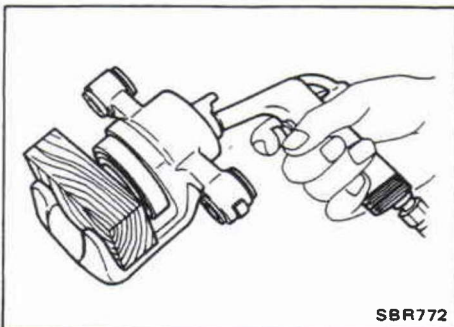


### Removal and Installation

- Remove torque member fixing bolts and union bolt.

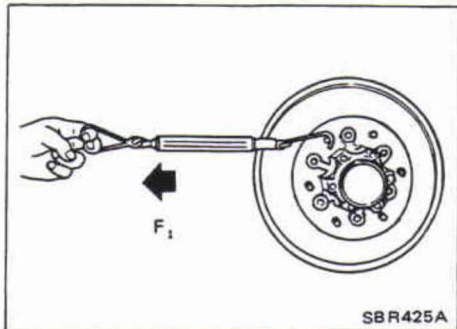


- Install brake hose to caliper at protrusions securely.



### Disassembly

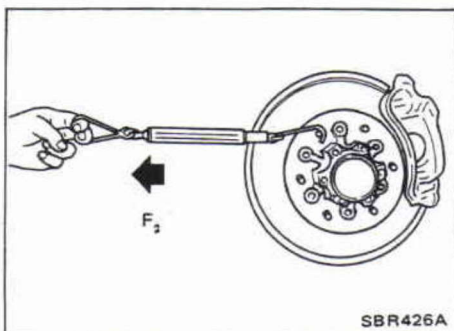
Push out piston with dust seal using compressed air.



### Inspection

#### INSPECTION OF BRAKE DRAG FORCE

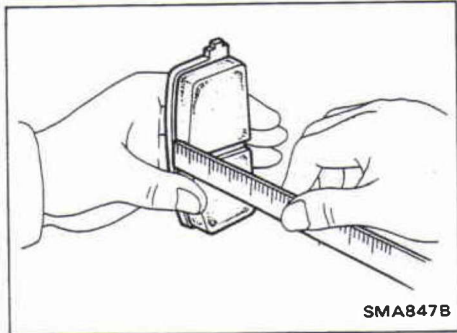
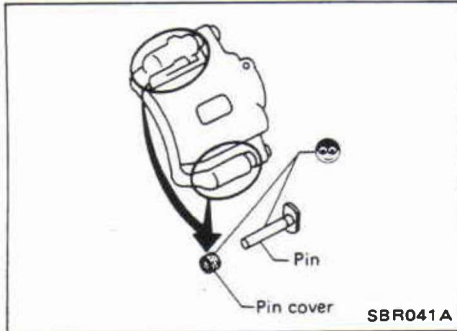
- (1) Swing cylinder body upward.
- (2) Make sure that wheel bearing is adjusted properly. Refer to section FA.
- (3) Measure rotating force ( $F_1$ ).



- (4) Install caliper with pads to the original position.
- (5) Depress brake pedal for 5 seconds.
- (6) Release brake pedal and rotate disc rotor 10 revolutions.
- (7) Measure rotating force ( $F_2$ ).
- (8) Calculate brake drag force by subtracting  $F_1$  from  $F_2$ .

**Maximum brake drag force ( $F_2 - F_1$ ):**  
**70.6 N (7.2 kg, 15.9 lb)**

## FRONT DISC BRAKE (CL36VA) — Caliper



### Inspection (Cont'd)

If it is not within specification, check main pins and retainer boots in caliper.

### DISC PAD

Check disc pad for wear or damage.

**Pad standard thickness (A):**

**11.5 mm (0.453 in)**

**Pad wear limit (A):**

**2.0 mm (0.079 in)**

### CYLINDER BODY

- Check inside surface of cylinder for scoring, rust, wear, damage or foreign materials. Replace if any such condition exists.
- Eliminate minor damage from rust or foreign materials by polishing surface with fine emery paper.

#### CAUTION:

Use brake fluid to clean.

### PISTON

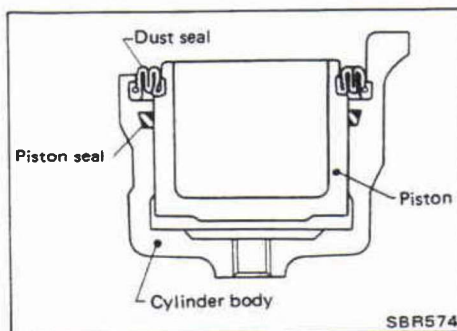
Check piston for scoring, rust, wear, damage or foreign materials. Replace if any condition exists.

#### CAUTION:

**Piston sliding surface is plated. Do not polish with emery paper even if rust or foreign materials are stuck to sliding surface.**

### PIN, PIN BOLT AND PIN BOOT

Check for wear, cracks or other damage. Replace if any condition exists.



### Assembly

- Insert piston seal into groove on cylinder body.
- With dust seal fitted to piston, install piston into cylinder body.

#### CAUTION:

- Secure dust seal properly.

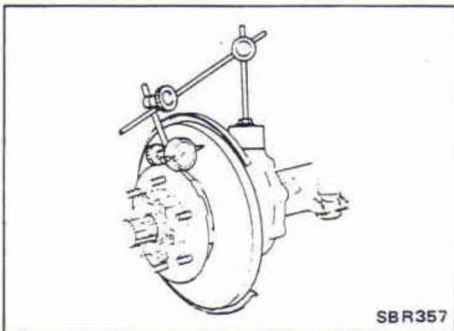
## FRONT DISC BRAKE (CL36VA) — Rotor

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### Inspection

#### RUBBING SURFACE

Check rotor for roughness, cracks or chips.



#### RUNOUT

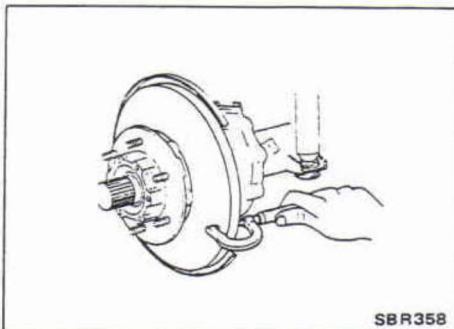
Adjust wheel bearing preload. Check runout using a dial indicator.

**Rotor repair limit:**

**Maximum runout**

**(Total indicator reading at center of rotor pad contact surface)**

**0.07 mm (0.0028 in)**



#### THICKNESS

**Rotor repair limit:**

**Standard thickness**

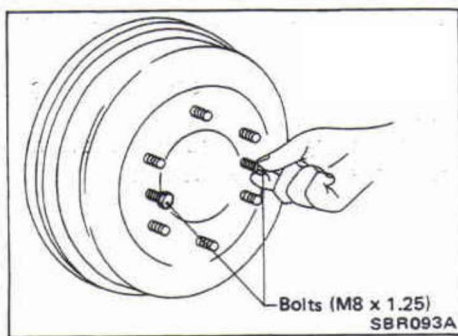
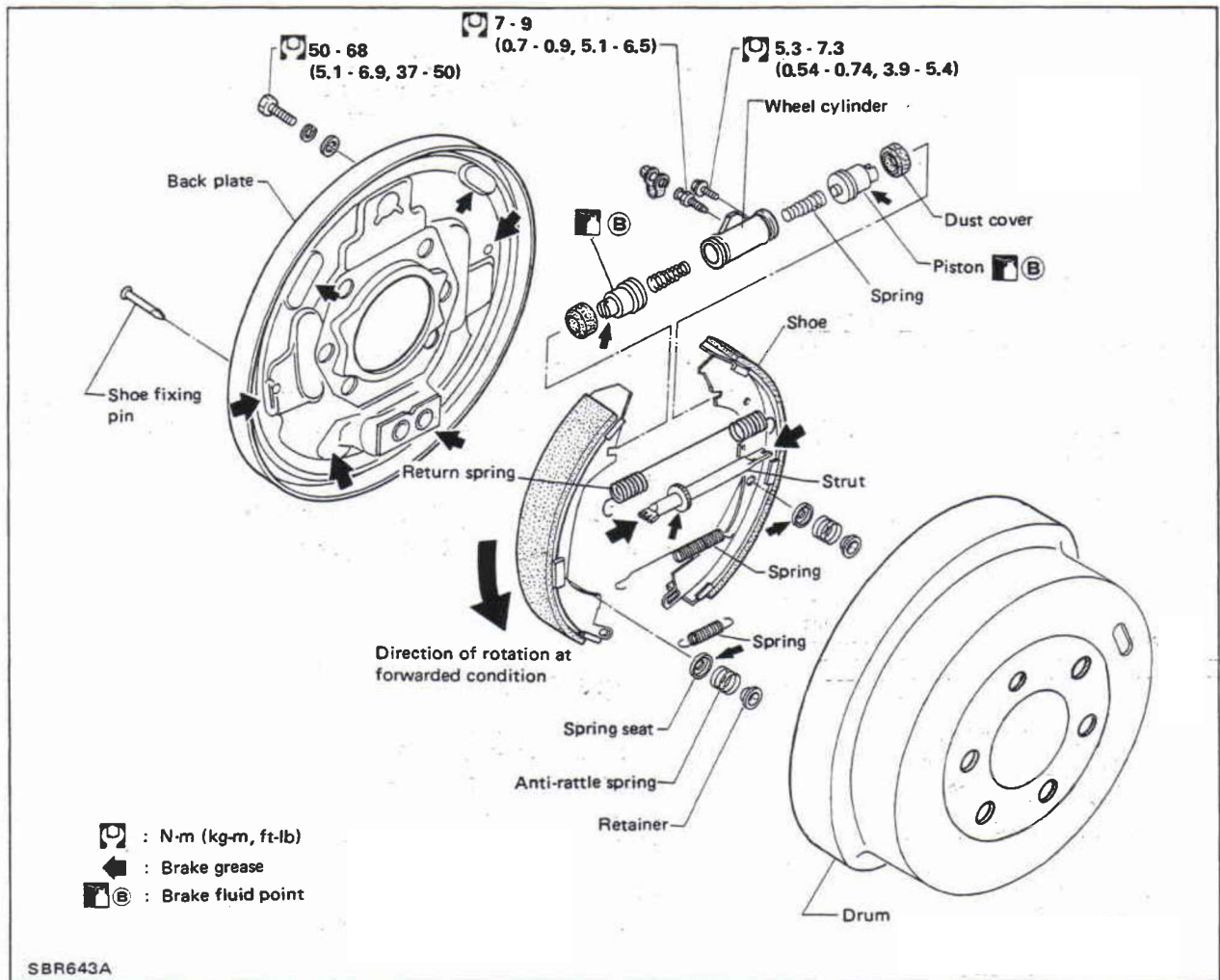
**20 mm (0.79 in)**

**Minimum thickness**

**18 mm (0.71 in)**

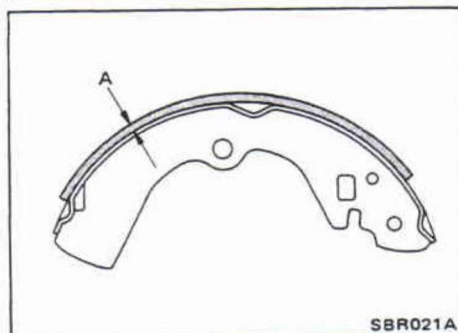


## REAR DRUM BRAKE (LT30)



### Brake Drum Removal

- Tighten two bolts gradually if brake drum is hard to remove.



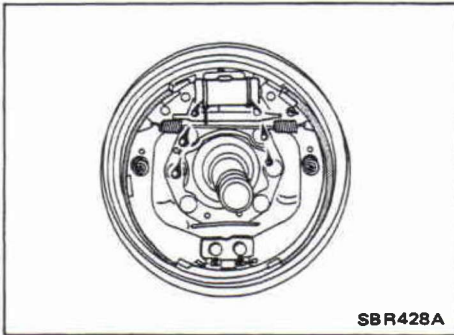
### Shoe Replacement

- Measure lining thickness.  
**Standard thickness:**  
 6.1 mm (0.240 in)  
**Lining wear limit (A):**  
 1.5 mm (0.059 in)

Before installing new shoes, rotate nut until adjuster rod is at its shortest point.

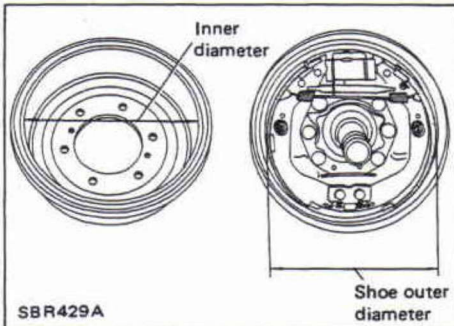
After installation, adjust shoe-to-drum clearance. Refer to Removal and Installation.

## REAR DRUM BRAKE (LT30)



### Wheel Cylinder Inspection

- Check wheel cylinder for leakage.
- Check for wear, damage and loose conditions. Replace if any condition exists.



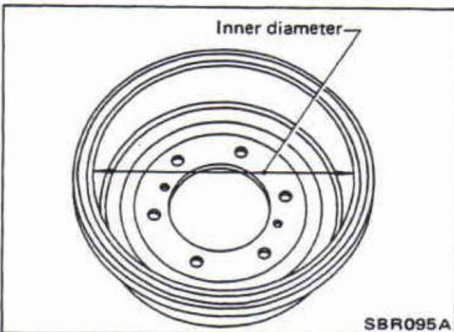
### Removal and Installation

When installing, measure brake drum inside diameter and diameter of brake shoes. Check that difference between diameters is correct shoe clearance.

#### Shoe clearance:

**0.25 - 0.4 mm (0.0098 - 0.0157 in)**

If necessary, adjust by rotating adjuster.



### Drum Inspection

#### Standard inner diameter:

**295.0 mm (11.61 in)**

#### Maximum inner diameter:

**296.5 mm (11.67 in)**

#### Out-of-roundness (Ellipticity):

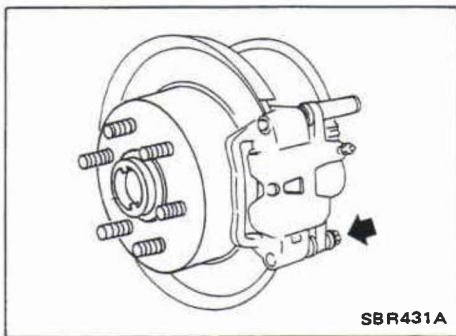
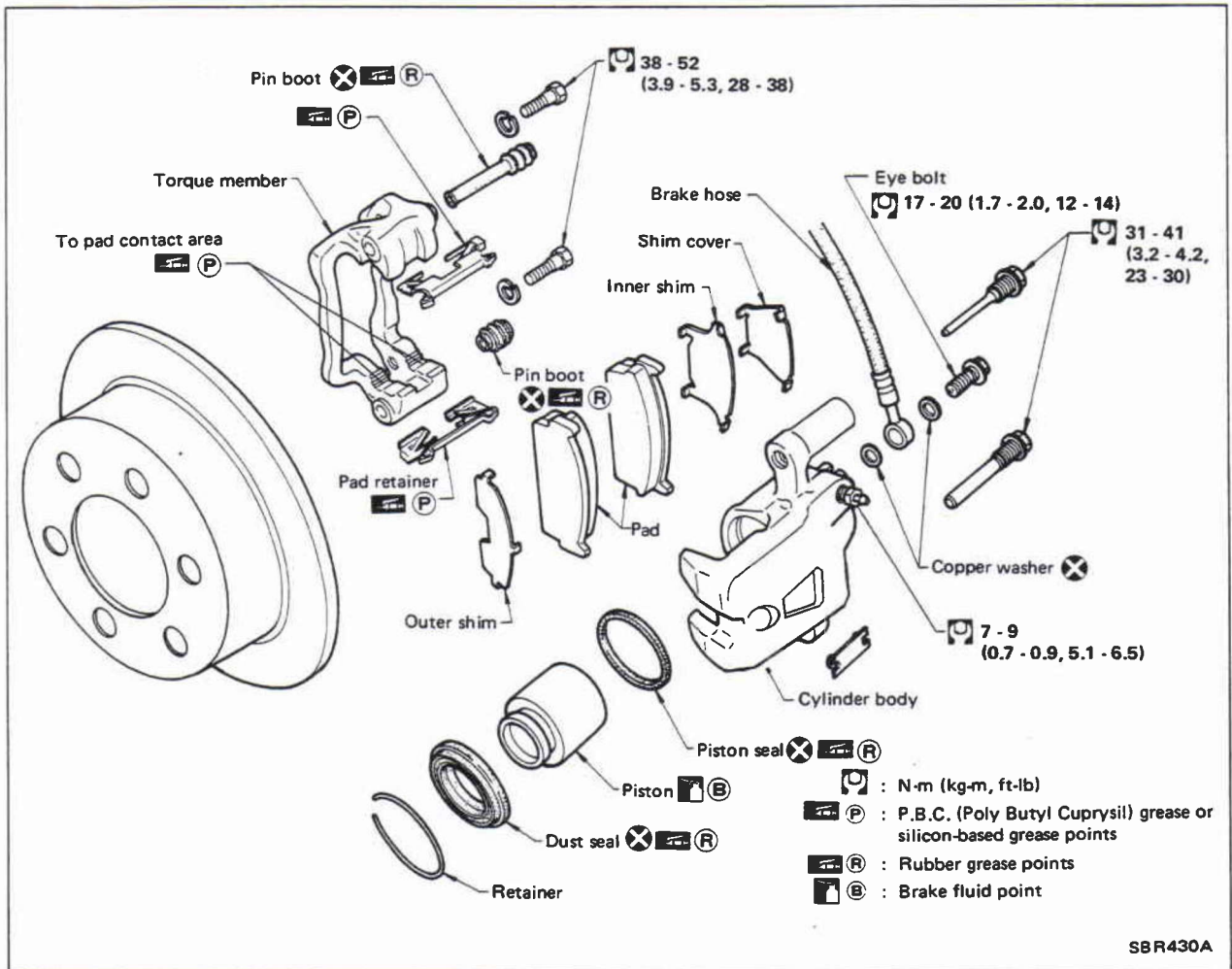
**0.03 mm (0.0012 in) or less**

#### Radial runout (Total indicator reading):

**0.05 mm (0.0020 in) or less**

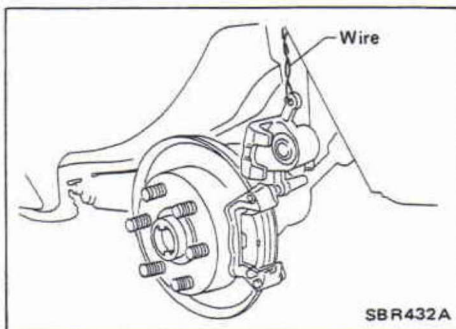
- Contact surface should be finefinished with No. 120 to 150 emery paper.
- Using a drum lathe, lathe brake drum if it shows scoring, partial wear or stepped wear.
- After brake drum has been completely reconditioned or replaced, check drum and shoes for proper contact pattern.

## REAR DISC BRAKE (AD20VC) — Caliper



### Pad Replacement

1. Remove guide pin.

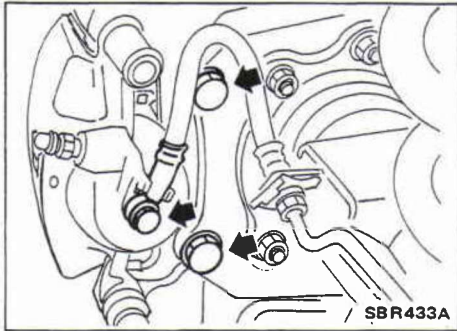


2. Swing cylinder body upward. Then remove pad retainer and inner and outer shims.

#### CAUTION:

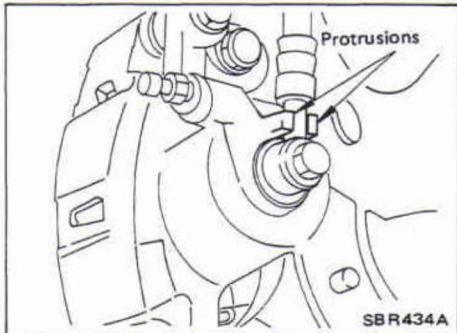
- When cylinder body is swung up, do not depress brake pedal because piston will pop out.
- Be careful not to damage dust seal or get oil on rotor. Always replace shims when replacing pads.

## REAR DISC BRAKE (AD20VC) — Caliper

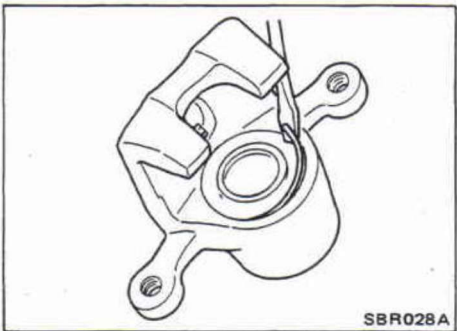


### Removal and Installation

- Remove torque member fixing bolts and union bolt.

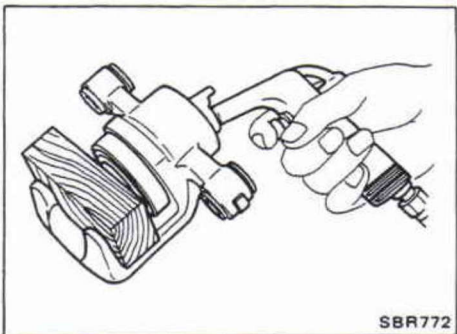


- Install brake hose to caliper at protrusions securely.

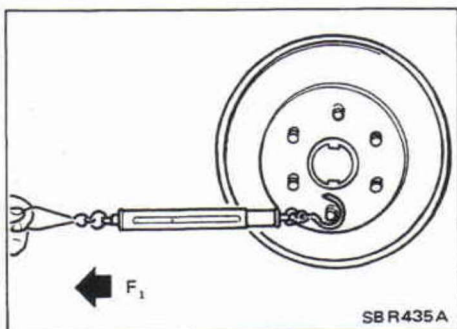


### Disassembly

- Remove dust cover retainer with a screwdriver.



- Push out piston with dust seal using compressed air.

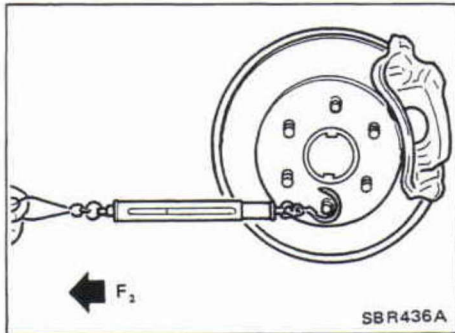


### Inspection

#### INSPECTION OF BRAKE DRAG FORCE

- (1) Swing cylinder body upward.
- (2) Make sure that wheel bearing is adjusted properly. Refer to section RA.
- (3) Measure rotating force ( $F_1$ ).

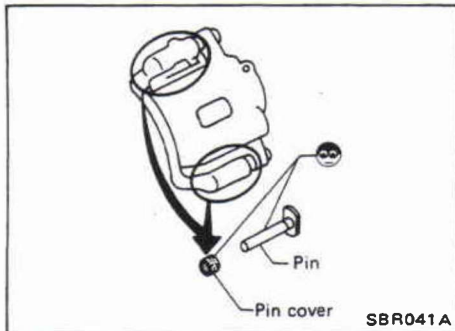
## REAR DISC BRAKE (AD20VC) — Caliper



### Inspection (Cont'd)

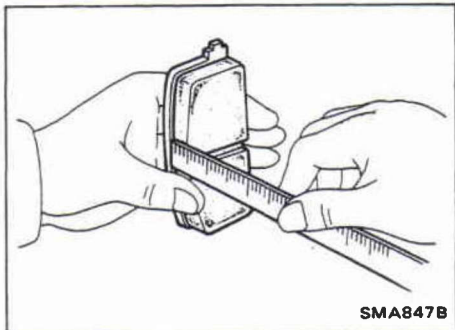
- (4) Install caliper with pads to the original position.
- (5) Depress brake pedal for 5 seconds.
- (6) Release brake pedal, rotate disc rotor 10 revolutions.
- (7) Measure rotating force ( $F_2$ ).
- (8) Calculate brake drag force by subtracting  $F_1$  from  $F_2$ .

**Maximum brake drag force ( $F_2 - F_1$ ):**  
**55.9 N (5.7 kg, 12.6 lb)**



If it is not within specification, check pins and pin cover in caliper.

- Make sure that wheel bearing is adjusted properly.
- Disc pads and disc rotor must be dried.



### DISC PAD

Check disc pad for wear or damage.

**Pad standard thickness (A):**

**11 mm (0.43 in)**

**Pad wear limit (A):**

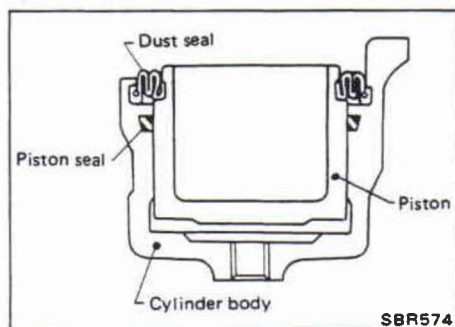
**2.0 mm (0.079 in)**

### CYLINDER BODY

- Check inside surface of cylinder for scoring, rust, wear, damage or foreign materials. If any such condition exists, replace cylinder body.
- Eliminate minor damage from rust or foreign materials by polishing surface with fine emery paper. Replace cylinder body if necessary.

#### CAUTION:

Use brake fluid to clean.



### Assembly

- Insert piston seal into groove on cylinder body.
- With dust seal fitted to piston, install piston into cylinder body.

#### CAUTION:

- Secure dust seal properly.

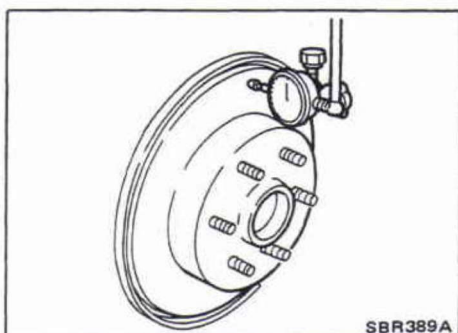
## REAR DISC BRAKE (AD20VC) — Rotor

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### Inspection

#### RUBBING SURFACE

Check rotor for roughness, cracks or chips.

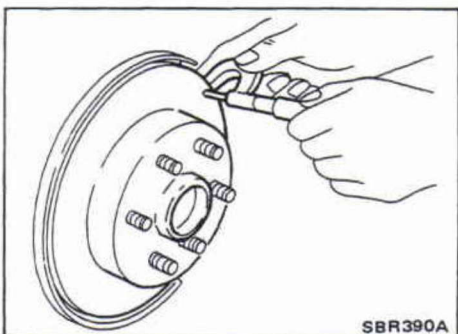


#### RUNOUT

Adjust wheel bearing preload.  
Check runout using a dial indicator.  
Refer to section RA.

##### Rotor repair limit:

**Maximum runout**  
**(Total indicator reading at center of rotor pad**  
**contact surface)**  
**0.07 mm (0.0028 in)**

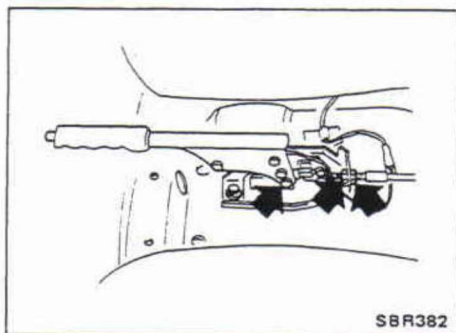
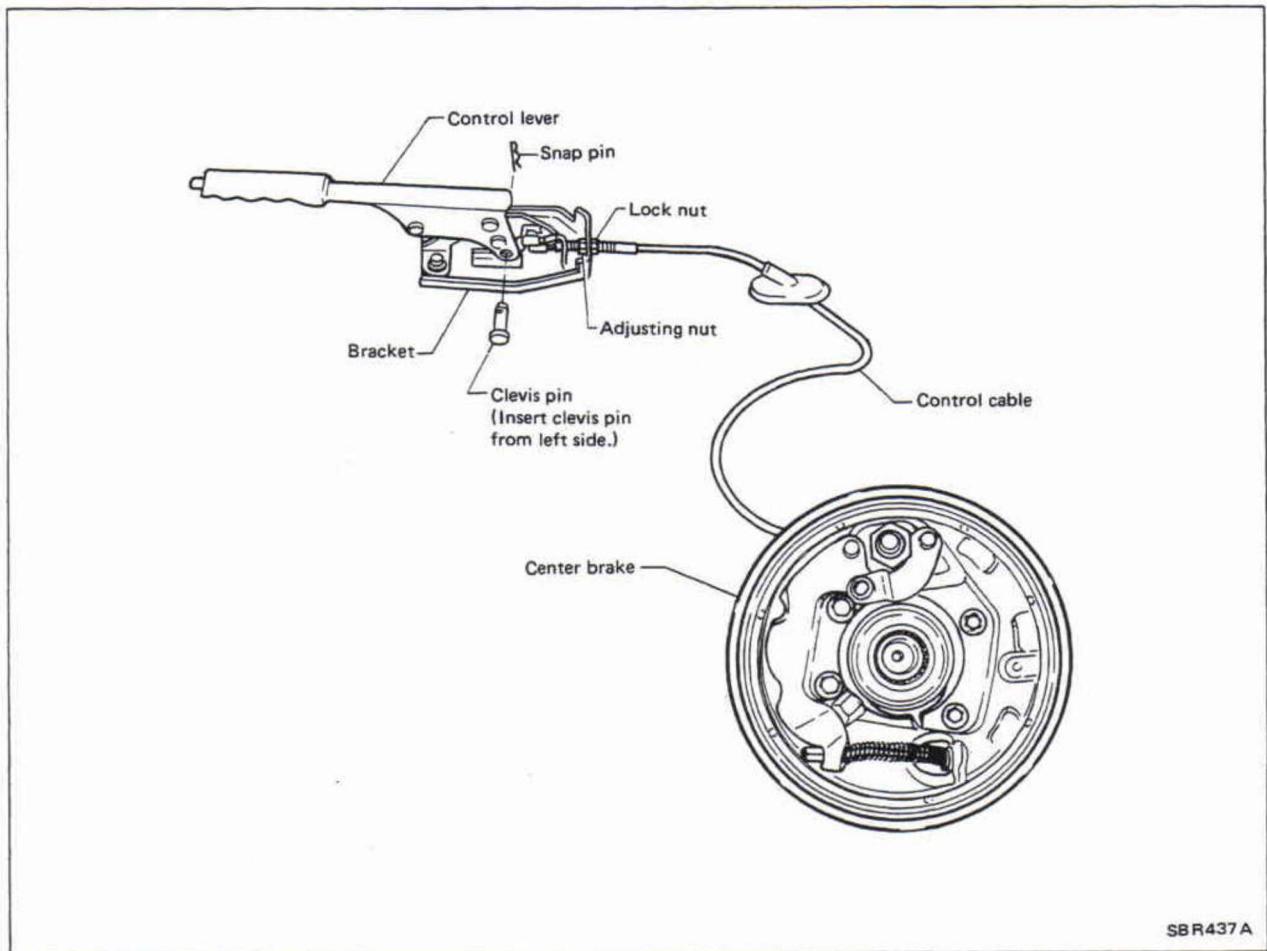


#### THICKNESS

##### Rotor repair limit:

**Standard thickness**  
**18.0 mm (0.709 in)**  
**Minimum thickness**  
**16.0 mm (0.630 in)**

## PARKING BRAKE CONTROL



### Removal

1. Disconnect harness connector.
2. Disconnect control cable from control lever and bracket.
3. Remove control lever and bracket.
4. Disconnect control cable from center brake and remove control cable.  
Refer to Center Brake.

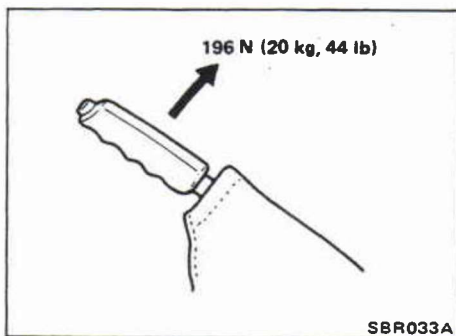
## PARKING BRAKE CONTROL

### Inspection

1. Check control lever and ratchet for evidence of wear or other damage.
2. Check wires for evidence of discontinuity or other deterioration.
3. Check parts at each connection for deformation or damage.

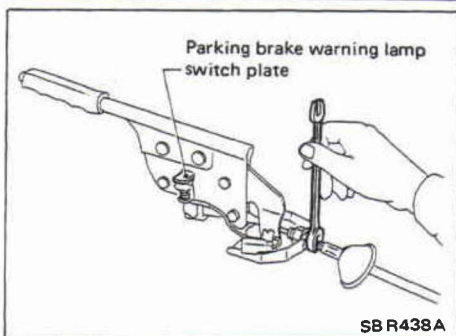
### Installation

1. Apply a coating of grease to sliding contact surfaces.
2. Insert clevis pin from left side.
3. After installation is completed, adjust entire system.



### Adjustment

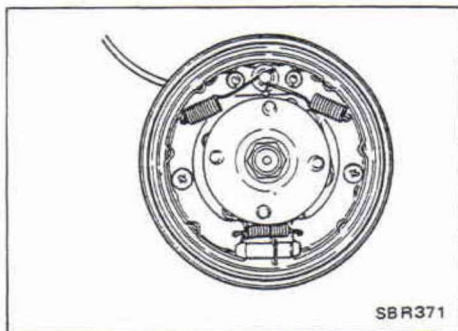
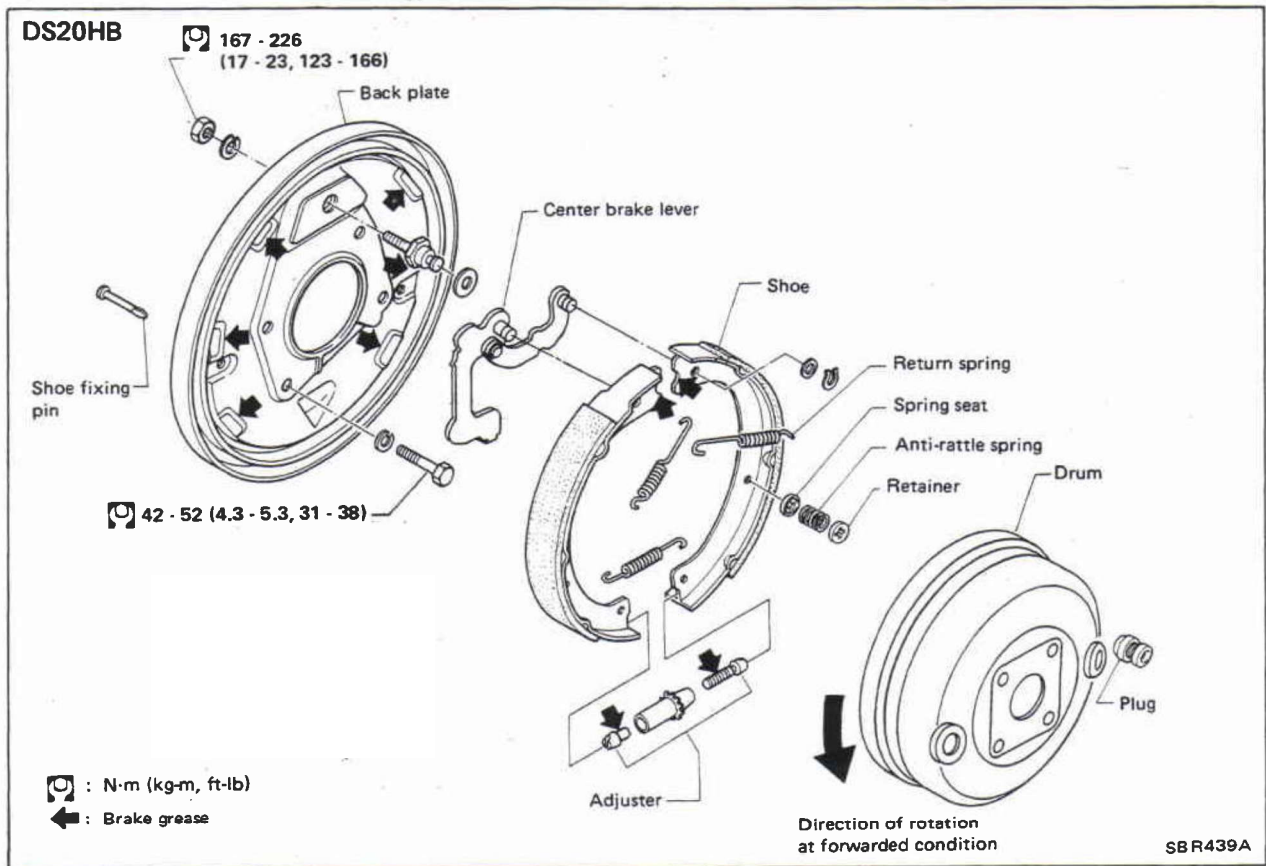
1. Pull control lever with specified amount of force. Check lever stroke and ensure smooth operation.  
**Number of notches: 7 - 9**



2. Bend parking brake warning lamp switchplate so that brake warning lamp comes on when ratchet at parking brake lever is pulled notches and goes out when fully released.  
**Number of notches: 2**

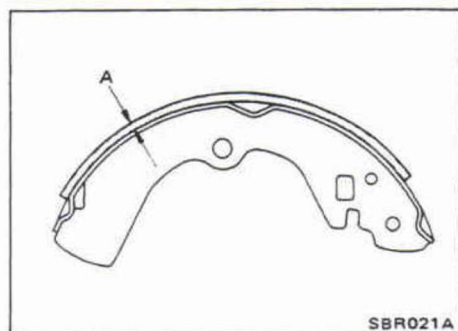


## CENTER BRAKE



### Brake Drum Removal

- Release parking brake control lever fully.
- Remove propeller shaft and drum.



### Shoe Replacement

- Measure lining thickness.

**Lining wear limit:**

**1.5 mm (0.059 in)**

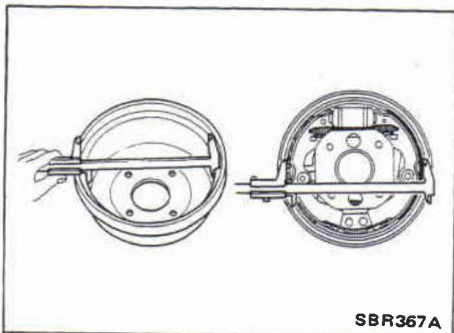
**Lining standard thickness:**

**5.1 mm (0.201 in)**

Before installing new shoes, rotate nut until adjuster rod is at its shortest point.

After installation, adjust shoe-to-drum clearance. Refer to Removal and Installation.

## CENTER BRAKE



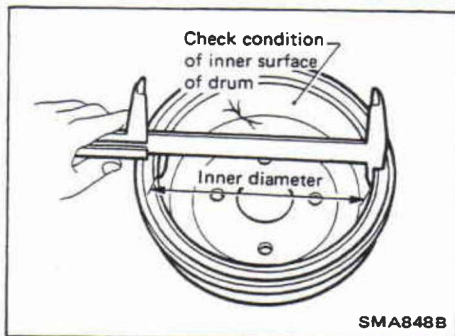
### Removal and Installation

When installing, measure brake drum inside diameter and diameter of brake shoes. Check that the difference between diameters is the correct shoe clearance.

**Shoe clearance:**

**0.25 - 0.4 mm (0.0098 - 0.0157 in)**

If necessary, adjust by rotating adjuster.



### Drum Inspection

**Standard inner diameter:**

**203.2 mm (8 in)**

**Maximum inner diameter:**

**204.5 mm (8.05 in)**

**Out-of-roundness (Ellipticity):**

**0.03 mm (0.0012 in) or less**

**Radial runout (Total indicator reading):**

**0.05 mm (0.0020 in) or less**

- Contact surface should be fininished with No. 120 to 150 emery paper.
- Using a drum lathe, lathe brake drum if it shows scoring, partial wear or stepped wear.
- After brake drum has been completely reconditioned or replaced, check drum and shoes for proper contact pattern.

## SERVICE DATA AND SPECIFICATIONS (S.D.S.)

### General Specifications

Item	Applied model	All	Optional for Australia
<b>Front brake</b>			
Brake model		CL36VA disc brake	
Cylinder bore diameter mm (in)		68.1 (2.681)	
Pad dimensions Length x width x thickness mm (in)		130 x 52 x 11.5 (5.12 x 2.05 x 0.453)	
Disc rotor outer diameter x thickness mm (in)		295 x 20 (11.61 x 0.79)	
<b>Rear brake</b>			
Model		LT30 drum brake	AD20VC disc brake
Cylinder bore diameter mm (in)		25.40 (1)	51.1 (2.012)
Lining or pad dimensions Length x width x thickness mm (in)		296 x 60 x 6.1 (11.65 x 2.36 x 0.240)	112.8 x 46.7 x 11 (4.44 x 1.839 x 0.43)
Drum inside diameter mm (in)		295.0 (11.61)	—
Disc rotor outer diameter x thickness mm (in)		—	316 x 18.0 (12.44 x 0.709)

Item	Applied model	All	Optional for Australia
<b>Master cylinder</b>			
Cylinder model		MJ2AS	
Bore diameter mm (in)		25.40 (1)	26.99 (17/16)
<b>Control valve</b>			
Valve type		Load sensing valve	
Split point x reducing ratio kPa (bar, kg/cm <sup>2</sup> , psi) x ratio		Variable x 0.23	
<b>Brake booster</b>			
Booster model		G23 or M23	M20, M23
Diaphragm diameter mm (in)		230 (9.06)	Primary: 230 (9.06) Secondary: 205 (8.07)
<b>Parking brake</b>			
Brake model		DS20HB	
Drum inside diameter mm (in)		203.2 (8)	
Lining dimensions Length x width x thickness mm (in)		195 x 45 x 5.1 (7.68 x 1.77 x 0.201)	

### Inspection and Adjustment

#### BRAKE PEDAL

Transmission type	A/T	M/T
Free height "H" mm (in)	202 - 212 (7.95 - 8.35)	192 - 202 (7.56 - 7.95)
Depressed height [Applied 490 N (50 kg, 110 lb) or pressure with engine running] mm (in)	120 (4.72) or more	
Pedal free play mm (in)	1.0 - 3.0 (0.04 - 0.12)	
Clearance between pedal stopper and threaded end of stop lamp switch mm (in)	0.3 - 1.0 (0.012 - 0.039)	

#### PARKING BRAKE CONTROL

Control type	Center lever
Number of notches when warning lamp comes on	2
Number of notches [Applied 196 N (20 kg, 44 lb) of pressure]	7 - 9

#### DISC BRAKE

Brake model	CL36VA	AD20VC
Pad lining wear limit Minimum thickness mm (in)	2.0 (0.079)	
Rotor repair limit Minimum thickness mm (in)	18.0 (0.709)	16.0 (0.630)
Maximum runout mm (in)	0.07 (0.0028)	

#### DRUM BRAKE

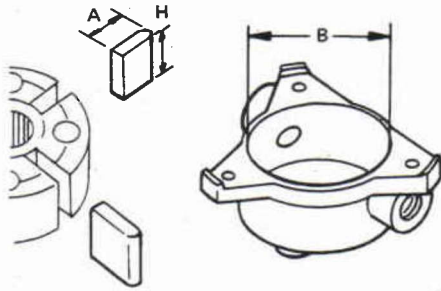
Brake model	LT30	DS20HB
Lining wear limit Minimum thickness mm (in)	1.5 (0.059)	
Drum repair limit Maximum inside diameter mm (in)	296.5 (11.67)	204.5 (8.05)
Maximum out-of-roundness mm (in)	0.03 (0.0012)	
Maximum runout mm (in)	0.05 (0.0020)	

## SERVICE DATA AND SPECIFICATIONS (S.D.S.)

### Inspection and Adjustment (Cont'd)

#### VACUUM PUMP

Pump vane length "A" mm (in)	14.0 - 15.0 (0.551 - 0.591)
Pump vane width "H" mm (in)	39 (1.54)
Vacuum pump housing inner diameter "B" mm (in)	60.0 - 60.1 (2.362 - 2.366)



SBR039A