

WORKSHOP MANUAL

TF SERIES

BRAKES

SECTION 5

ISUZU

NOTICE

Before using this Workshop Manual to assist you in performing vehicle service and maintenance operations, it is recommended that you carefully read and thoroughly understand the information contained in Section - OA under the headings "GENERAL REPAIR INSTRUCTIONS" and "HOW TO USE THIS MANUAL".

All material contained in this Manual is based on the latest product information available at the time of publication.

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SECTION 5

BRAKES

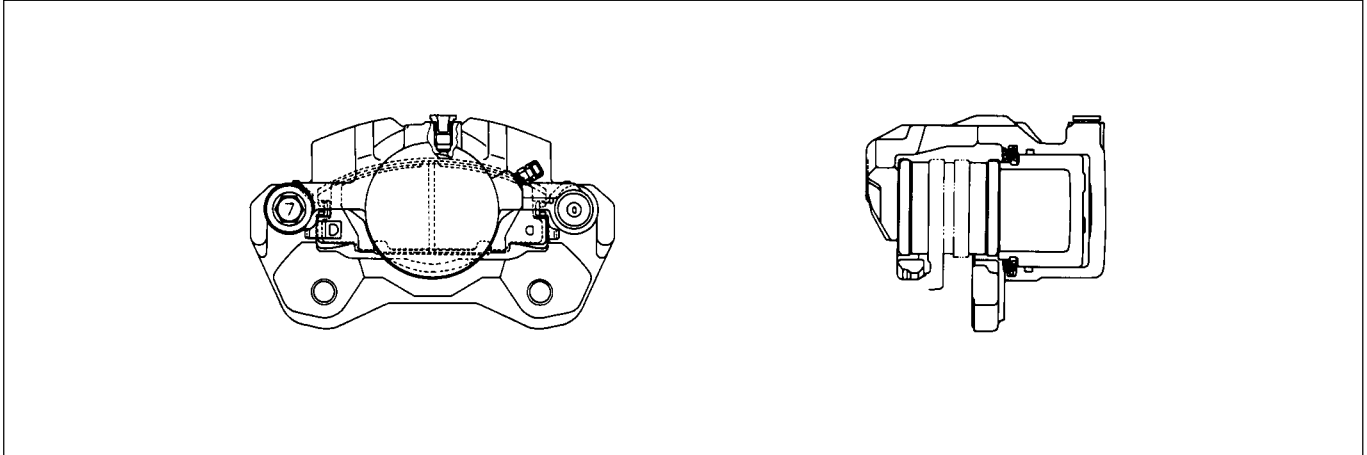
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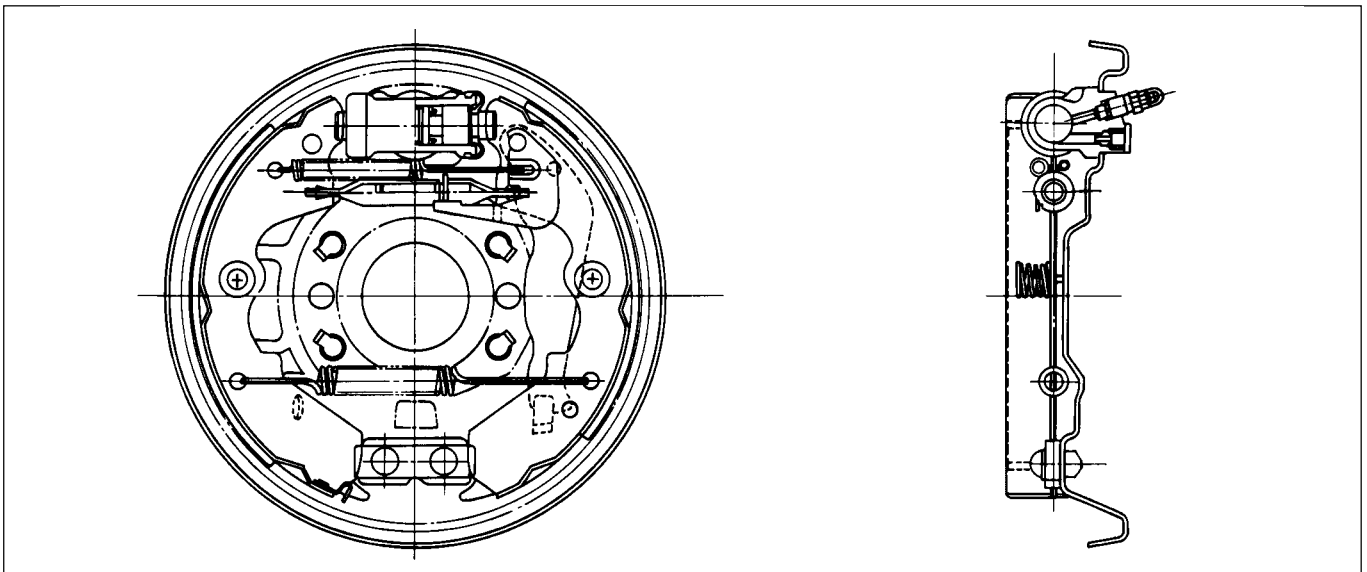
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GENERAL DESCRIPTION

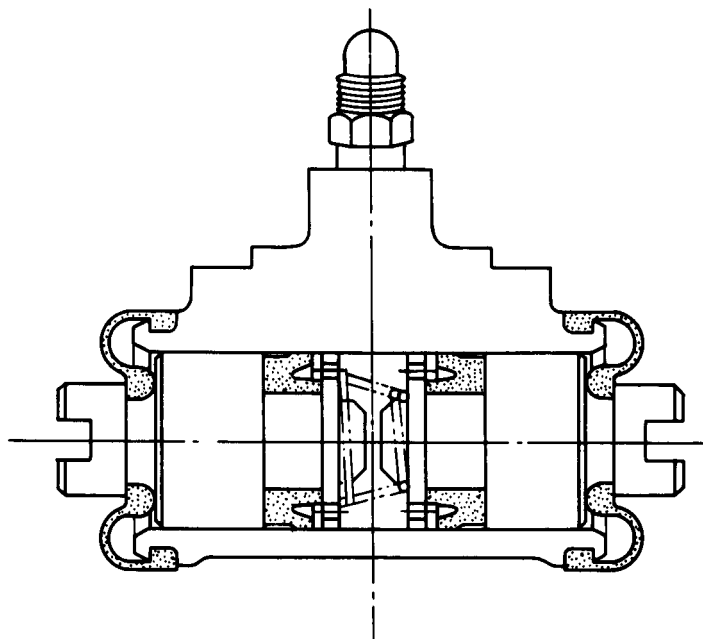
FRONT DISC BRAKE



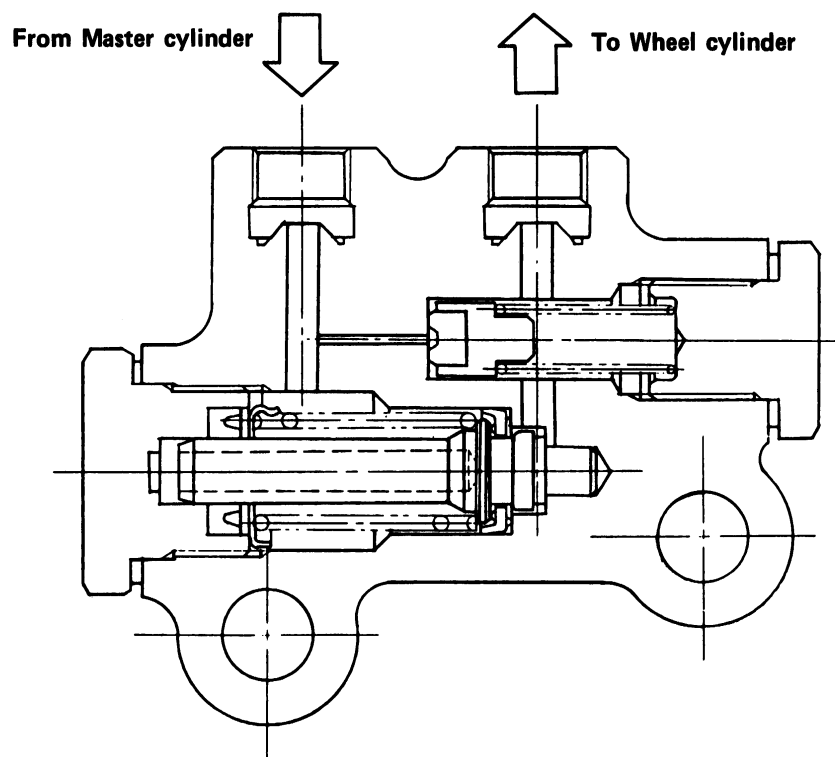
REAR DRUM BRAKE

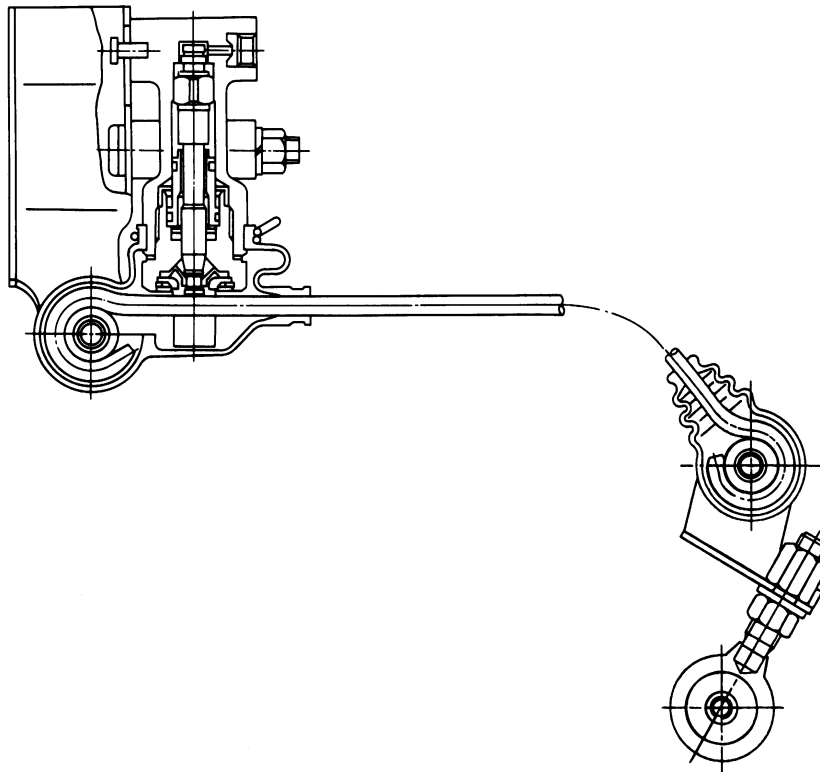


REAR WHEEL CYLINDER

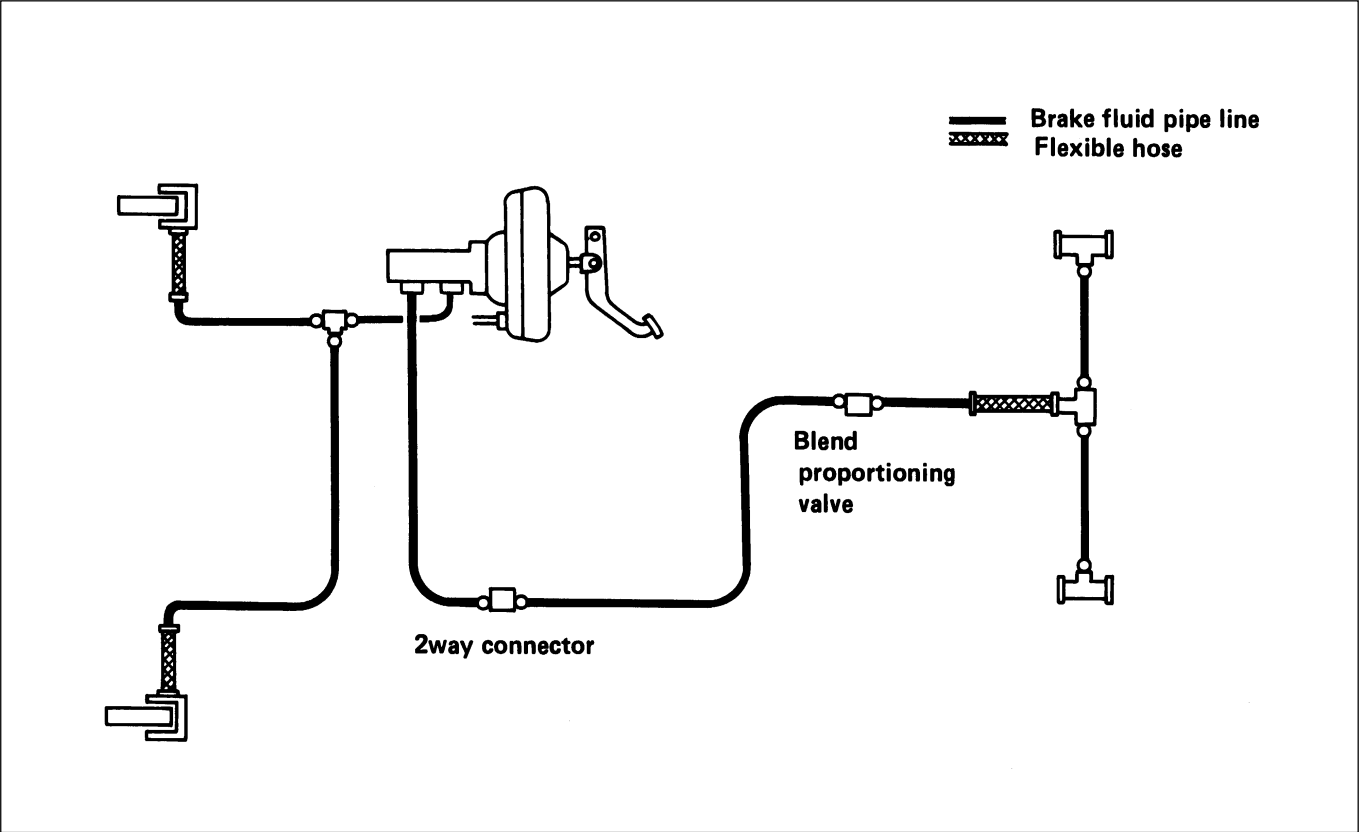


BLEND PROPORTIONING VALVE

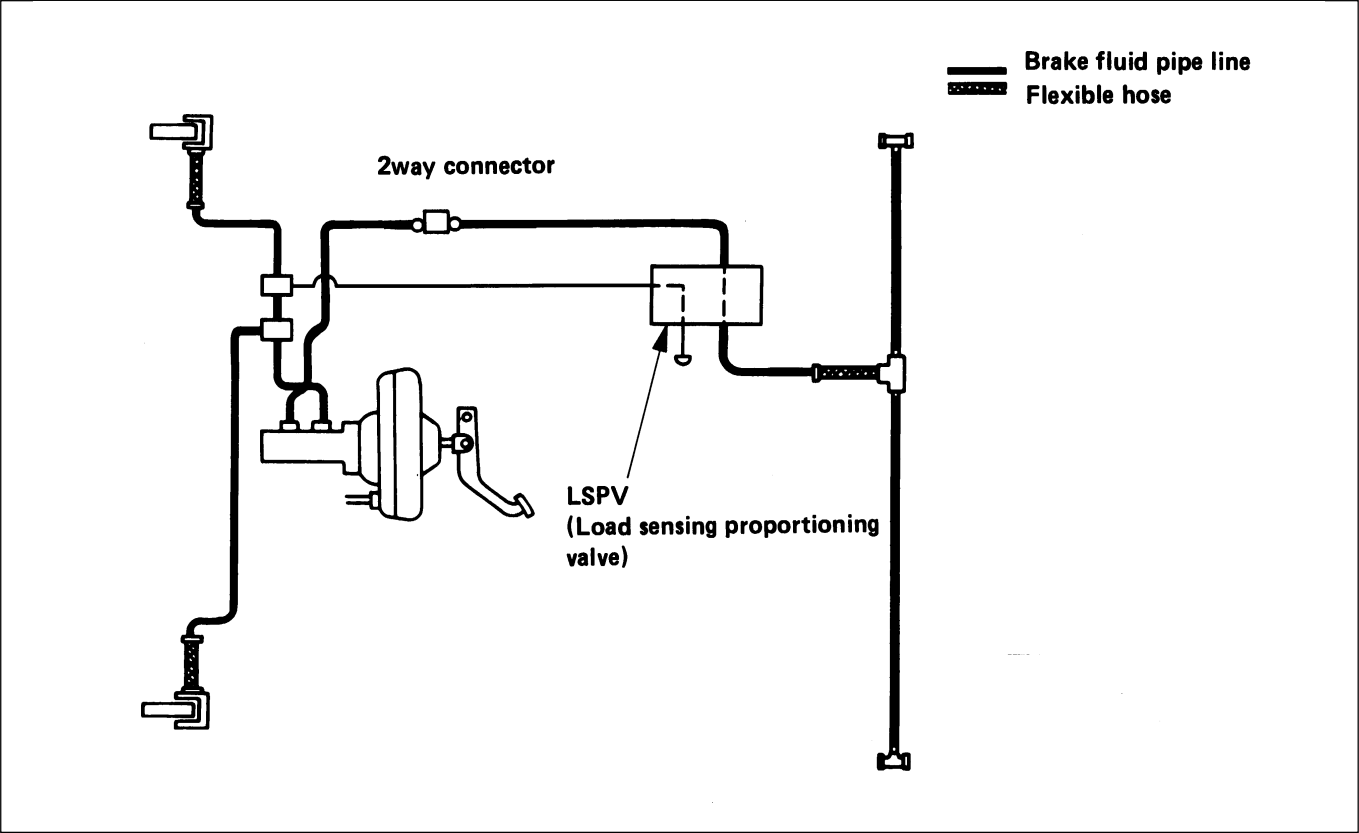


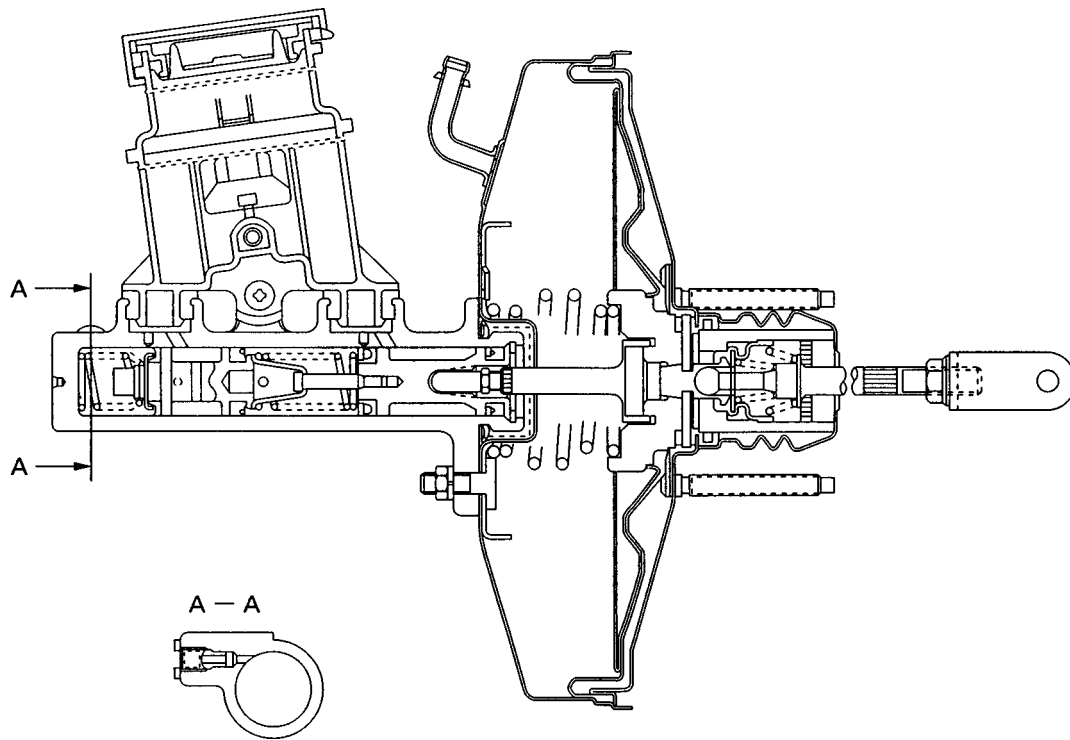
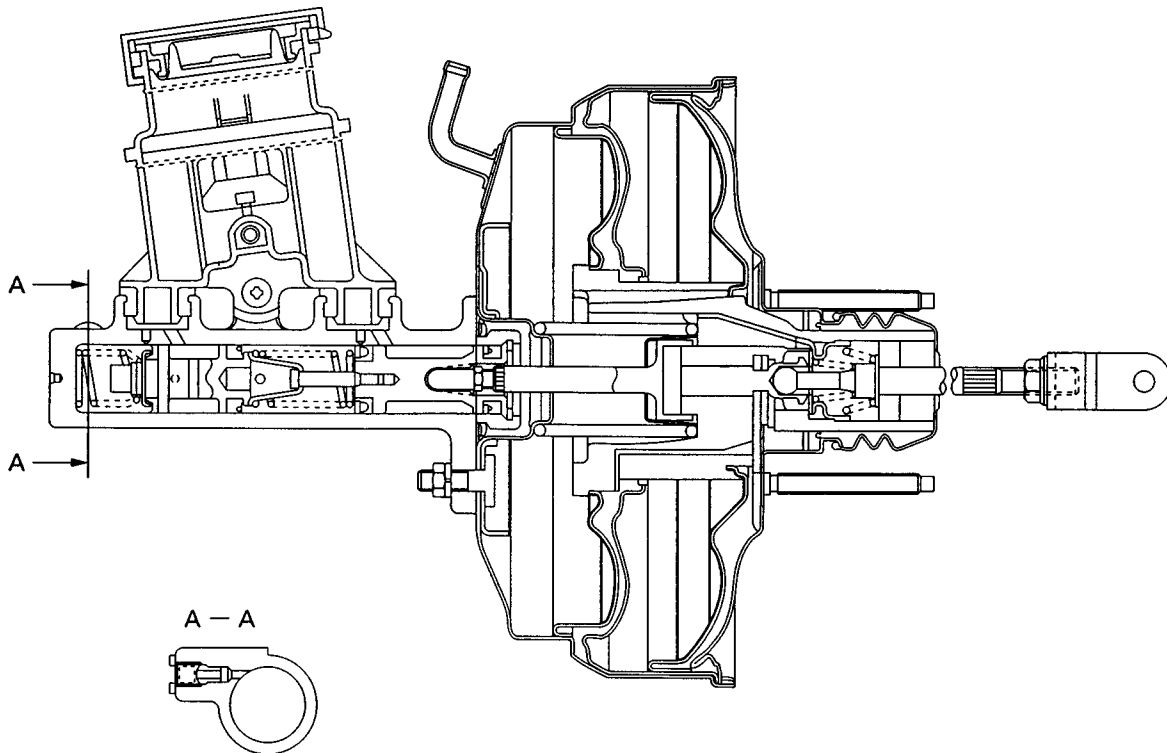
LOAD SENSING PROPORTIONING VALVE (LSPV)

PIPING DIAGRAM (MODEL WITH BLEND PROPORTIONING VALVE)



PIPING DIAGRAM (MODEL WITH LSPV)



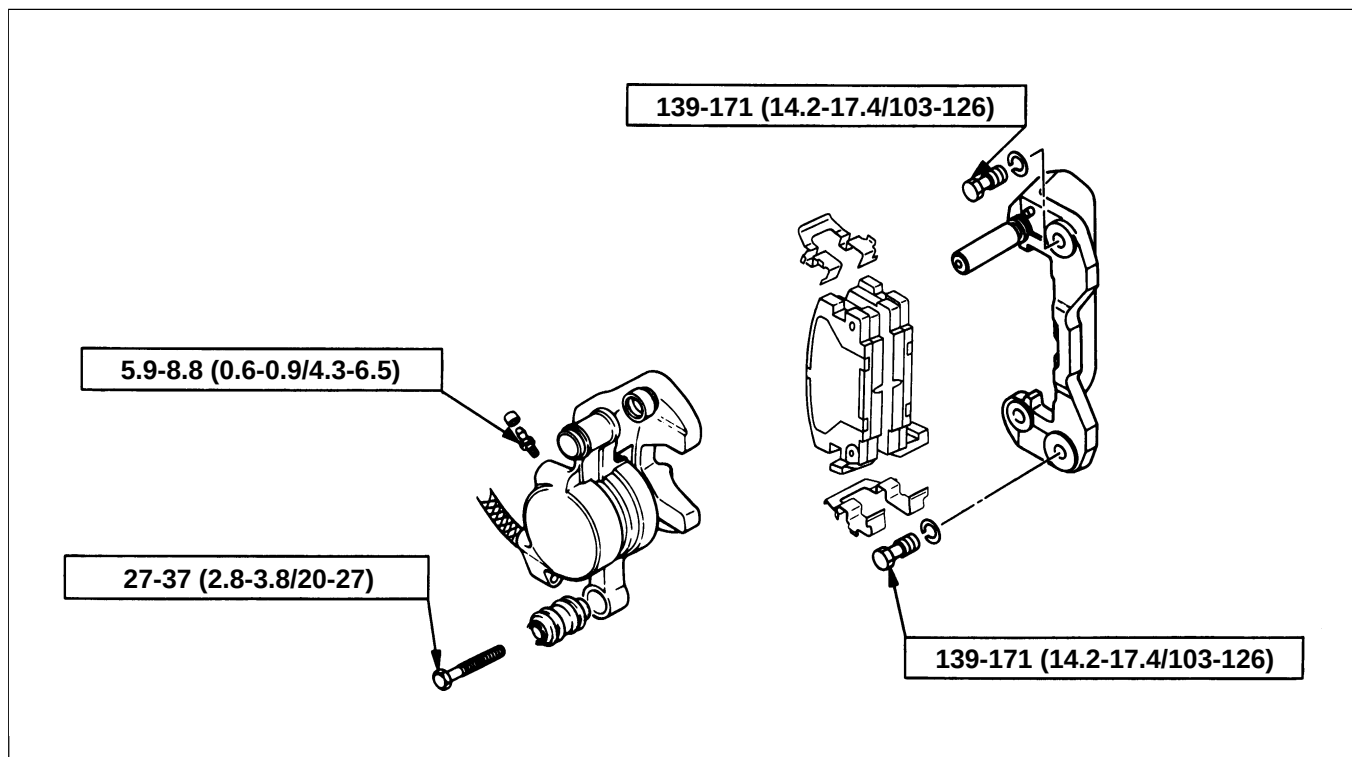
VACUUM SERVO WITH MASTER CYLINDER (Except Australia)**VACUUM SERVO WITH MASTER CYLINDER (For Australia)**

MAIN DATA AND SPECIFICATIONS

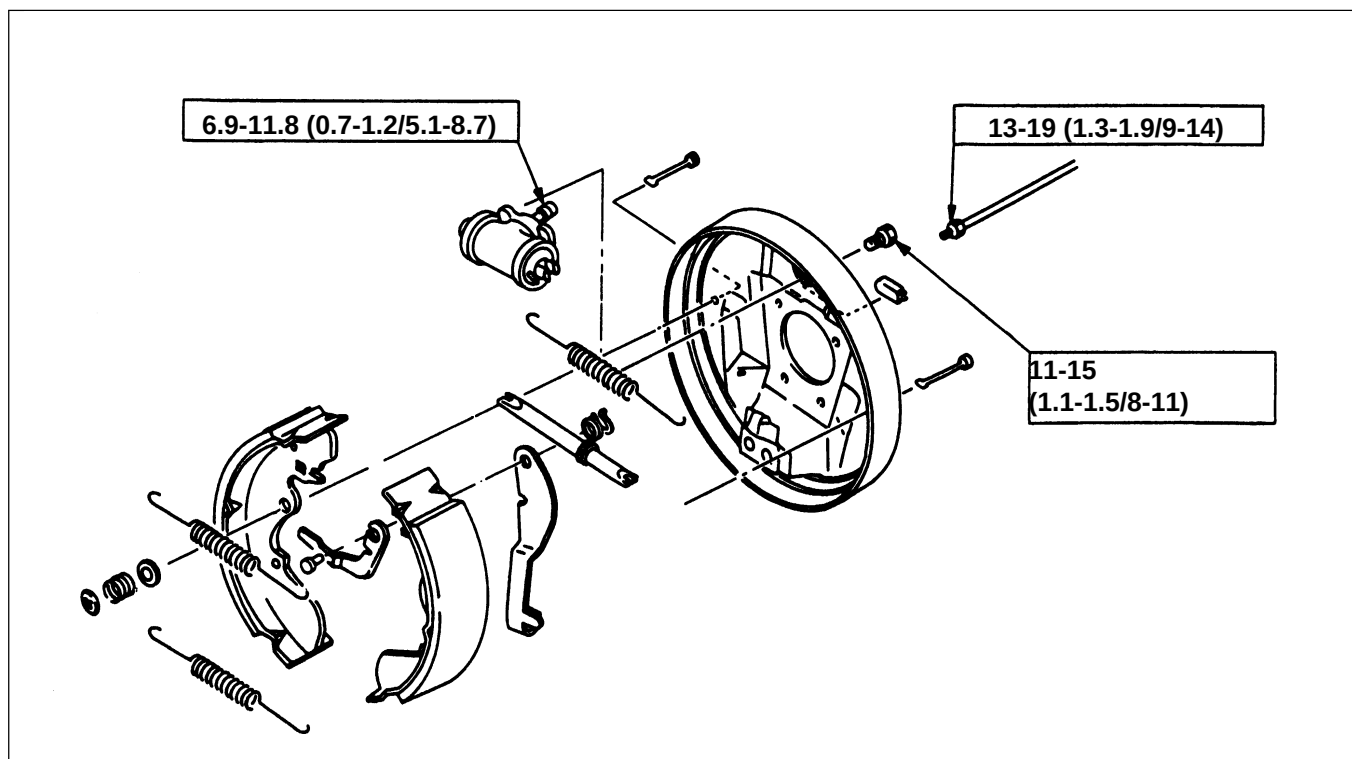
FRONT DISC BRAKE	mm(in.)	
Caliper type		Pin slide
Disc outside diameter		257 (10.118)
Disc thickness		22 (0.866)
Piston diameter		60.33 (2.375)
Adjustment method		Self-adjusting
REAR DRUM BRAKE	mm(in.)	4 × 2 4 × 4
Type		Leading and Trailing
Drum inside diameter		254(10.008) 295 (11.614)
Brake lining dimension (Length × Width × Thickness)		221 × 50 × 5 283 × 45 × 4 (8.71 × 1.97 × 0.20) (11.14 × 1.77 × 0.16)
Adjustment method		Self-adjusting
WHEEL CYLINDER	mm(in.)	
Inside diameter : rear		
Europe and South Africa		25.40 (1.000)
Others		22.22 (0.875)
MASTER CYLINDER	mm(in.)	
Type		Split
Bore diameter		23.81 (0.938)
Piston stroke (Primary + Secondary)		19 + 12 (0.75 + 0.47)
VACUUM SERVO	mm(in.)	
Diaphragm diameter		
Except Australia		230 (9.055)
For Australia		180 (7.087) + 205 (8.077)
Power cylinder stroke		32.5 (1.281)
PEDAL RATIO		4.04
BALANCE		
Type		Blend proportioning valve/Load sensing proportioning valve

**SPECIAL PARTS FIXING NUT AND BOLT****FRONT WHEEL BRAKE**

N·m(kgf·m/lb·ft)

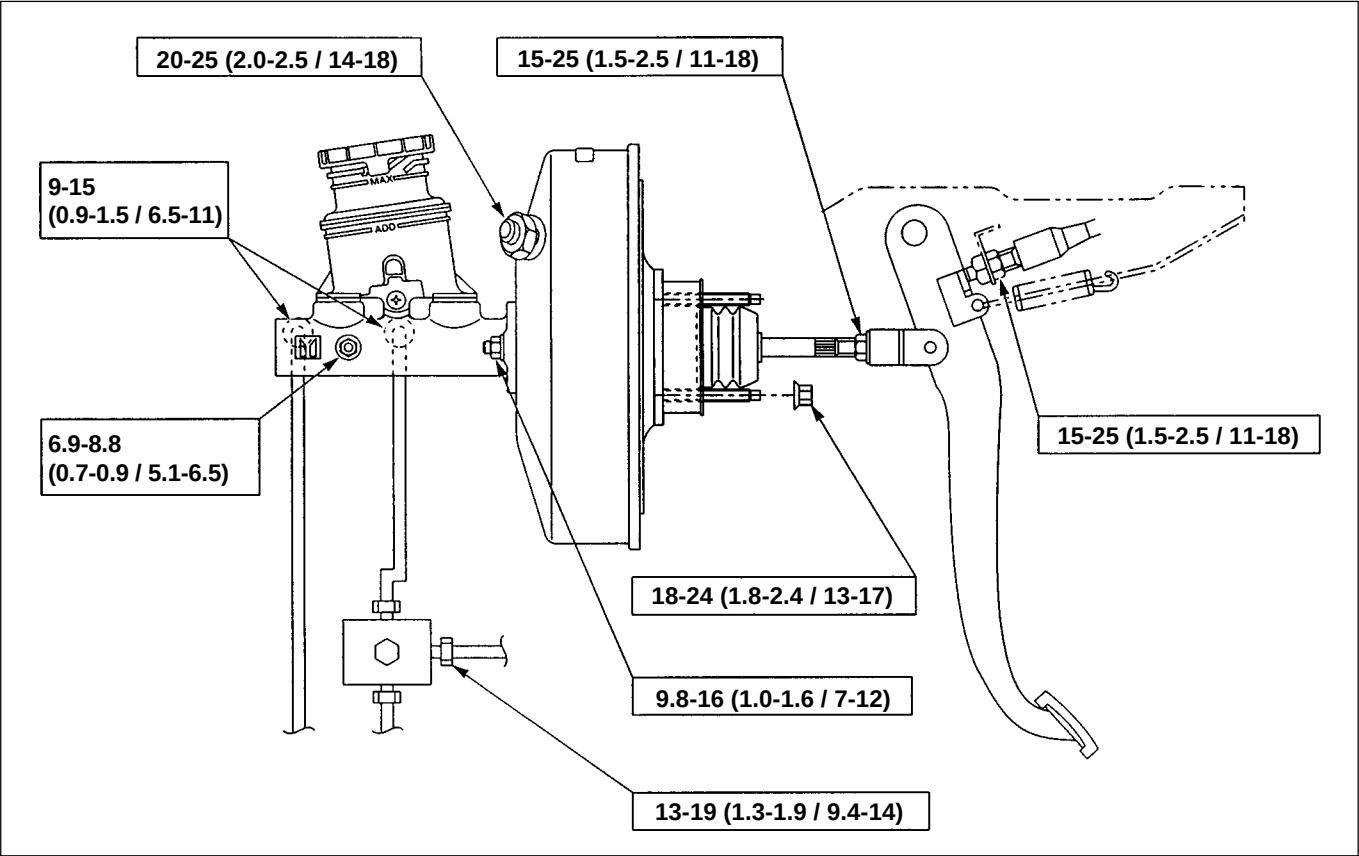
**REAR WHEEL DRUM BRAKE**

N·m(kgf·m/lb·ft)



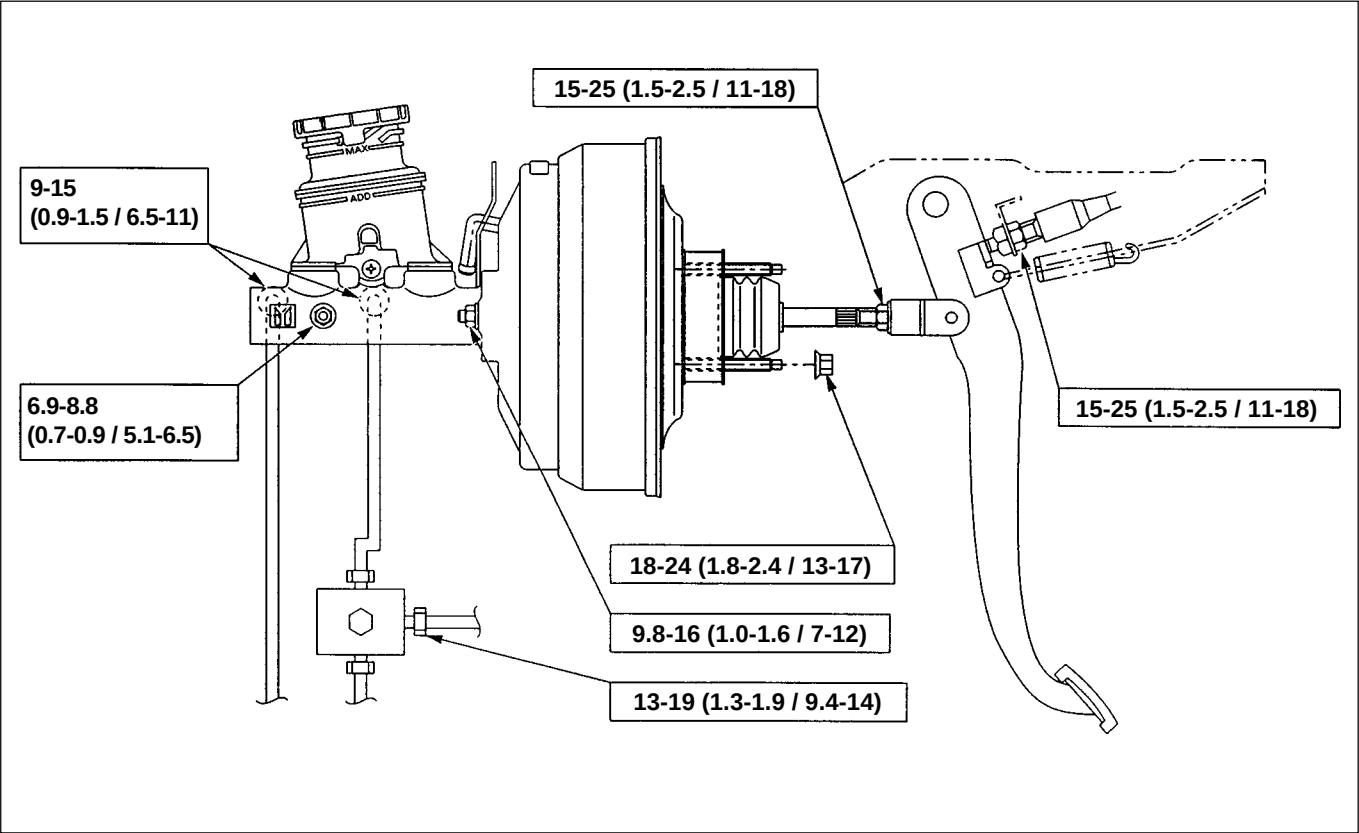
VACUUM SERVO WITH MASTER CYLINDER AND BRAKE PEDAL
(Except Australia)

N·m(kgf·m/lb·ft)



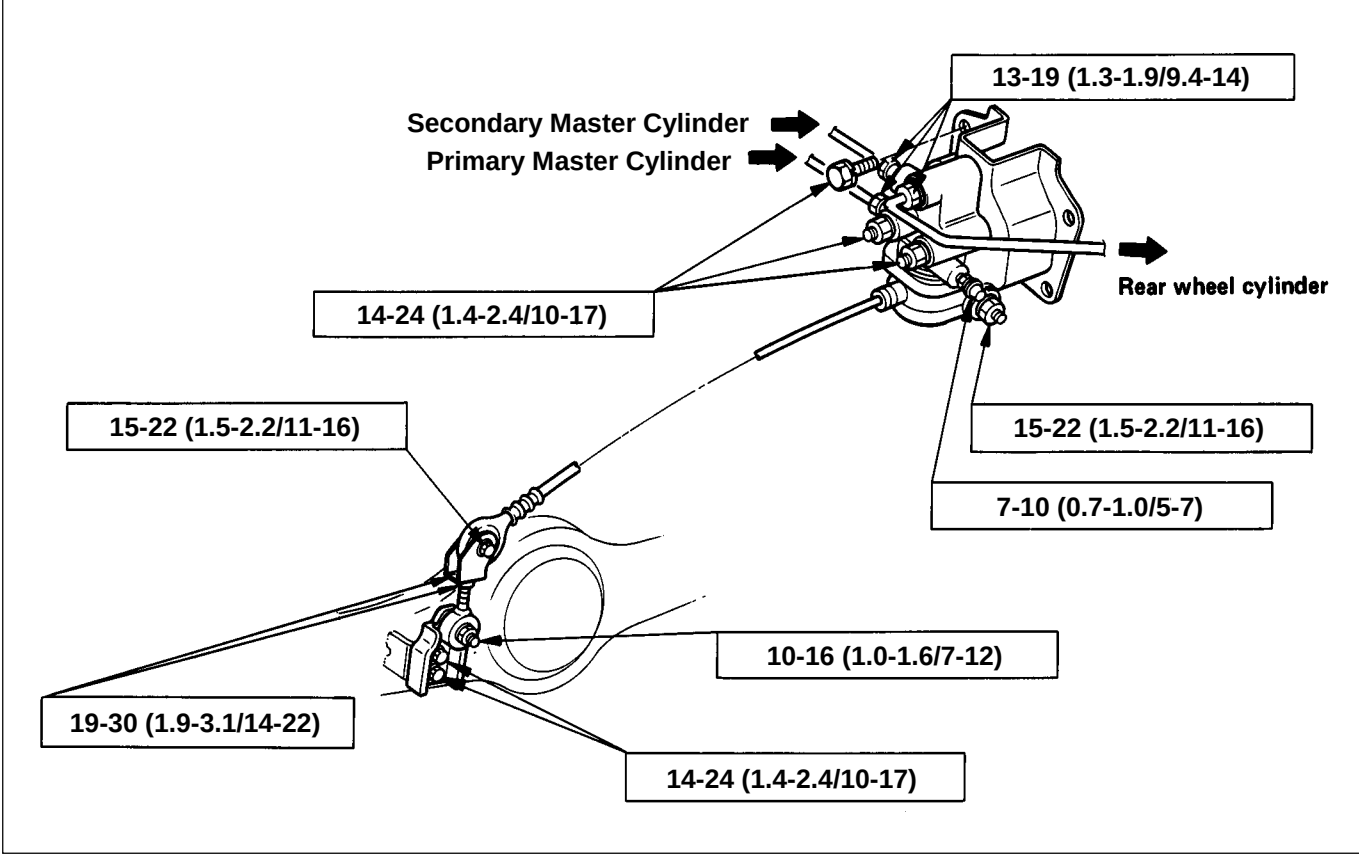
VACUUM SERVO WITH MASTER CYLINDER AND BRAKE PEDAL
(For Australia only)

N·m(kgf·m/lb·ft)



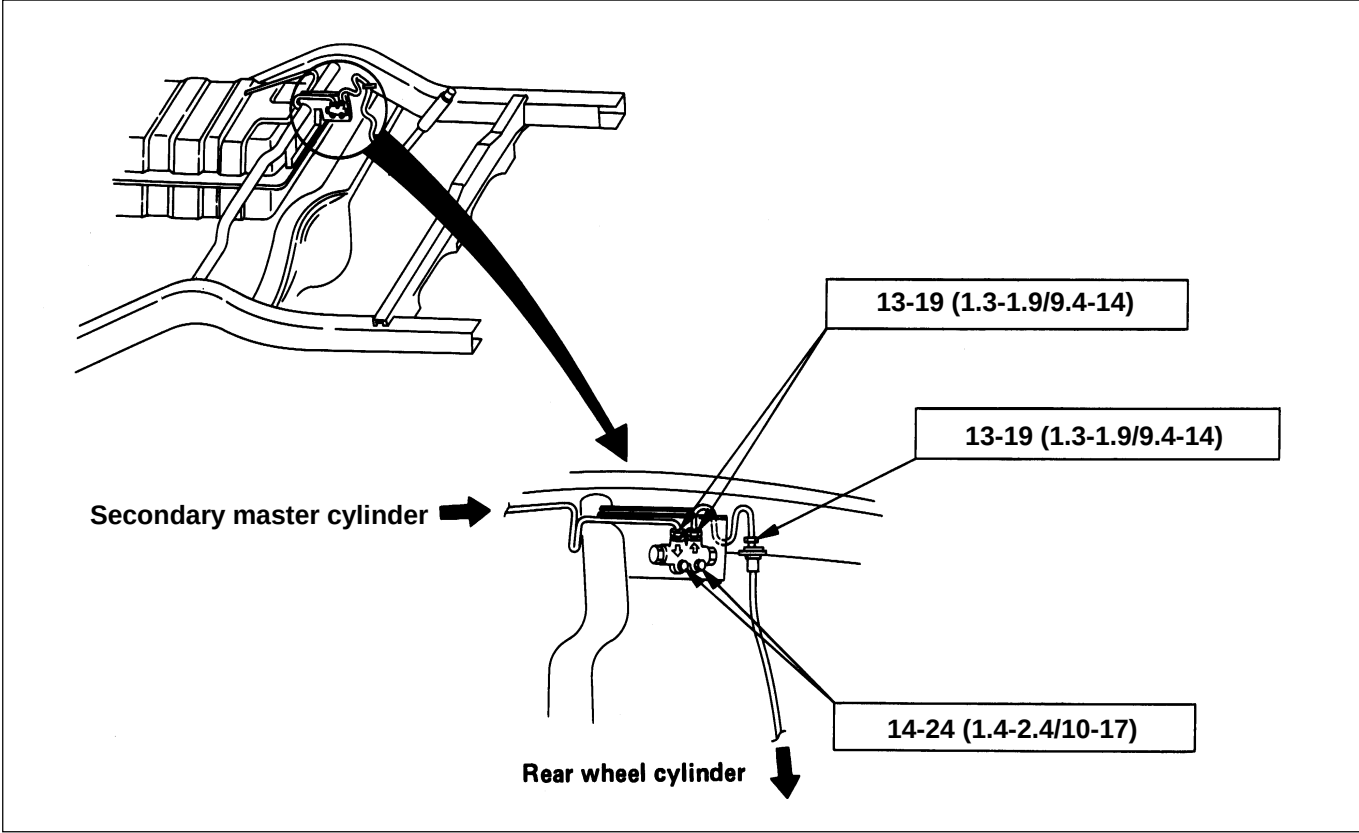
LOAD SENSING PROPORTIONING VALVE

N·m(kgf·m/lb·ft)



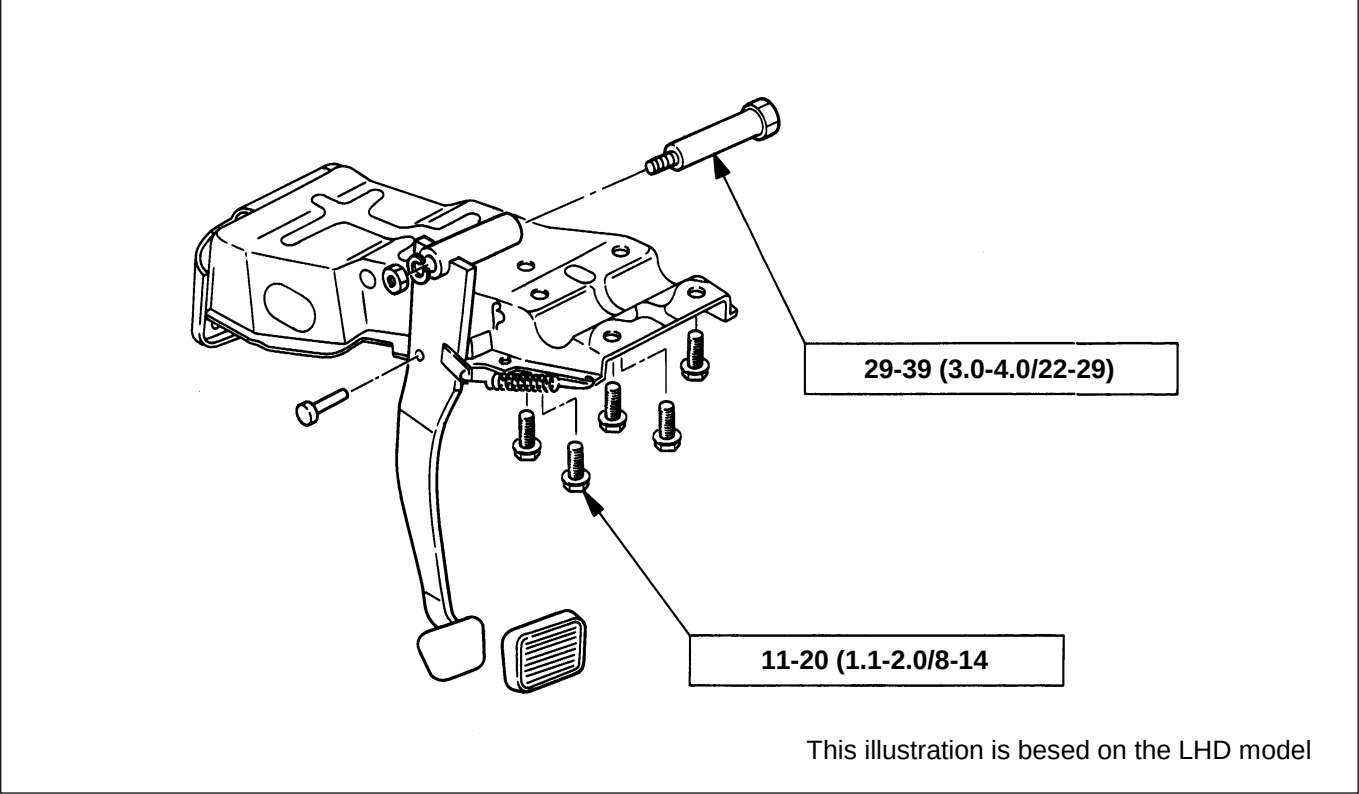
BLEND PROPORTIONING VALVE

N·m(kgf·m/lb·ft)



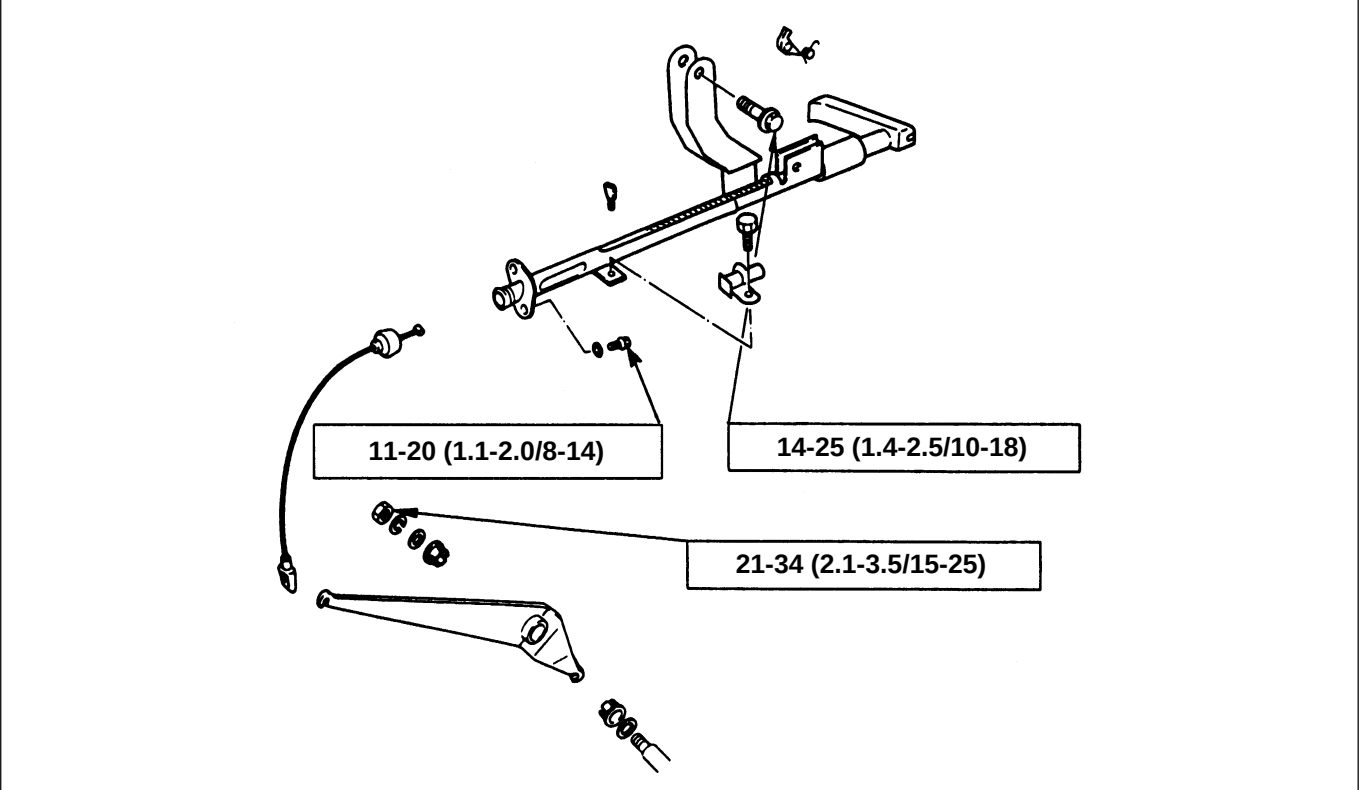
BRAKE PEDAL ASSEMBLY

N·m(kgf·m/lb·ft)



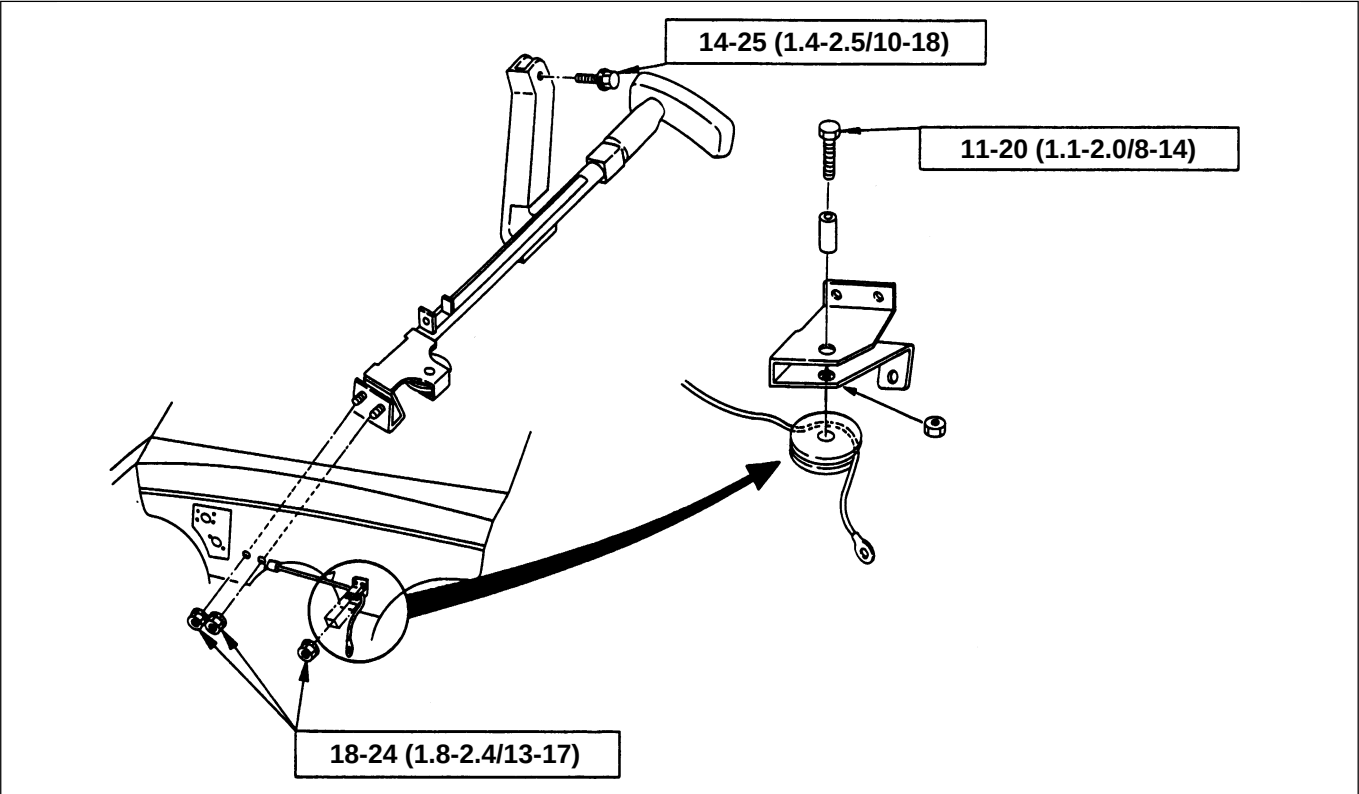
PARKING BRAKE STEM ASSEMBLY
(STEM TYPE, LEFT HAND DRIVE MODEL)

N·m(kgf·m/lb·ft)



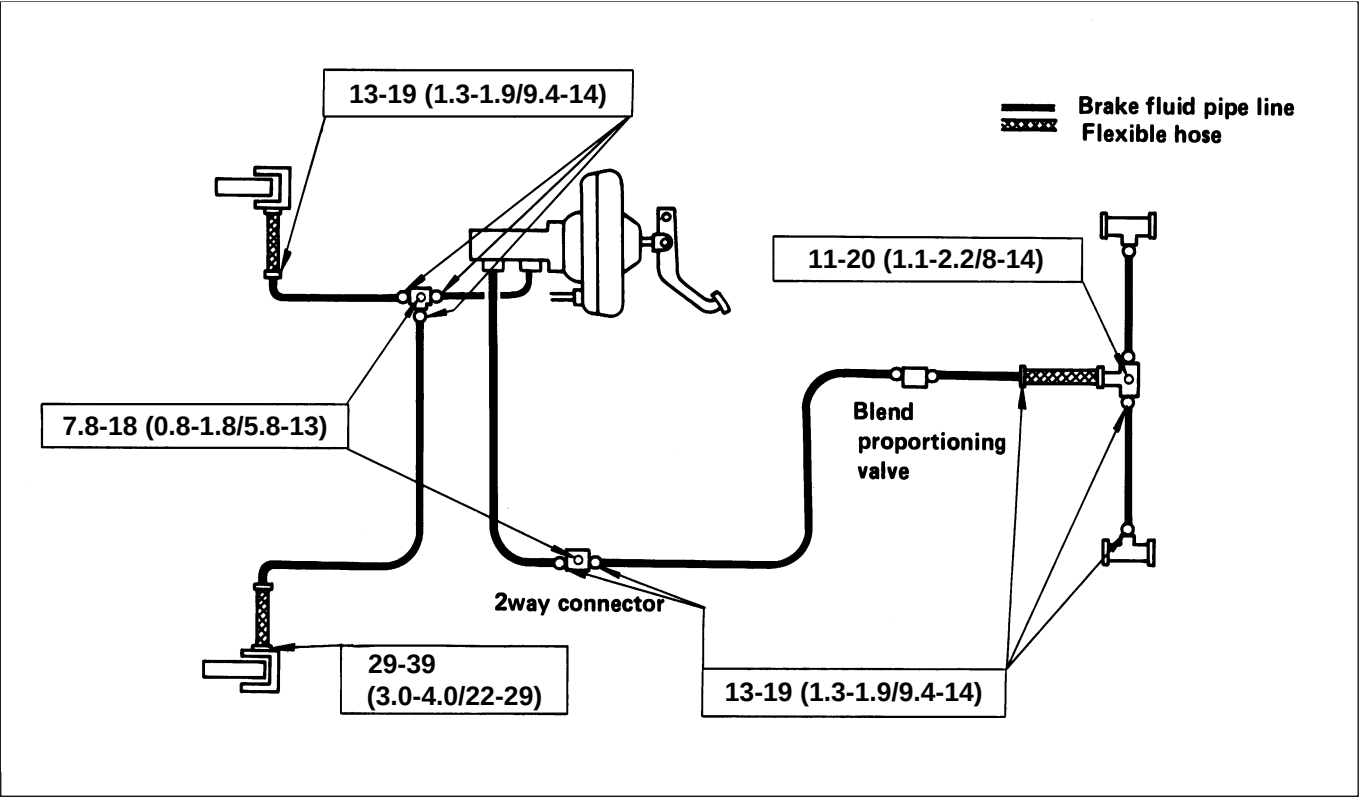
**PARKING BRAKE STEM ASSEMBLY
(STEM TYPE, RIGHT HAND DRIVE MODEL)**

N·m(kgf·m/lb·ft)



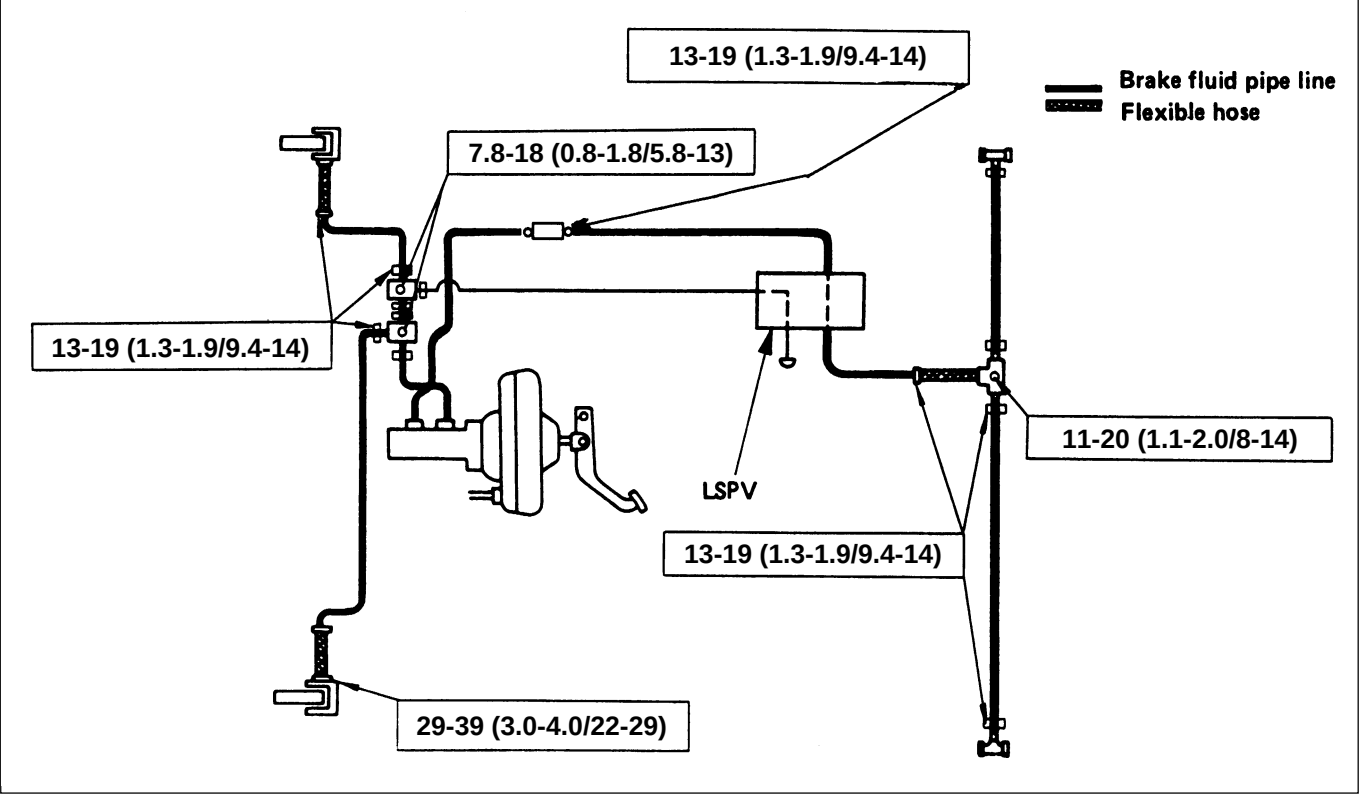
**BRAKE LINES (HOSES AND PIPES)
(MODEL WITH BLEND PROPORTIONING VALVE)**

N·m(kgf·m/lb·ft)



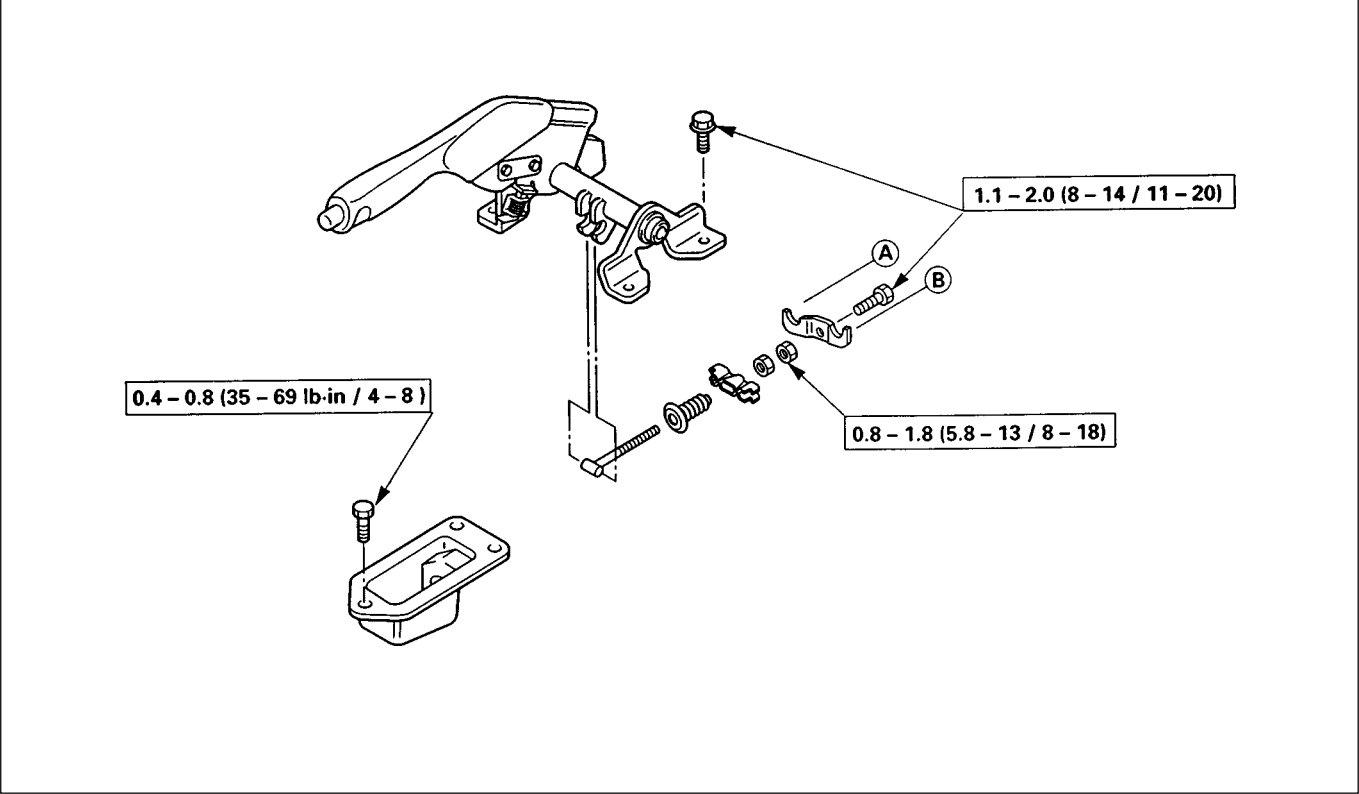
BRAKE LINES (HOSES AND PIPES) (MODEL WITH LSPV)

N·m(kgf·m/lb·ft)



PARKING BRAKE LEVER ASSEMBLY (FLOOR MOUNT TYPE)

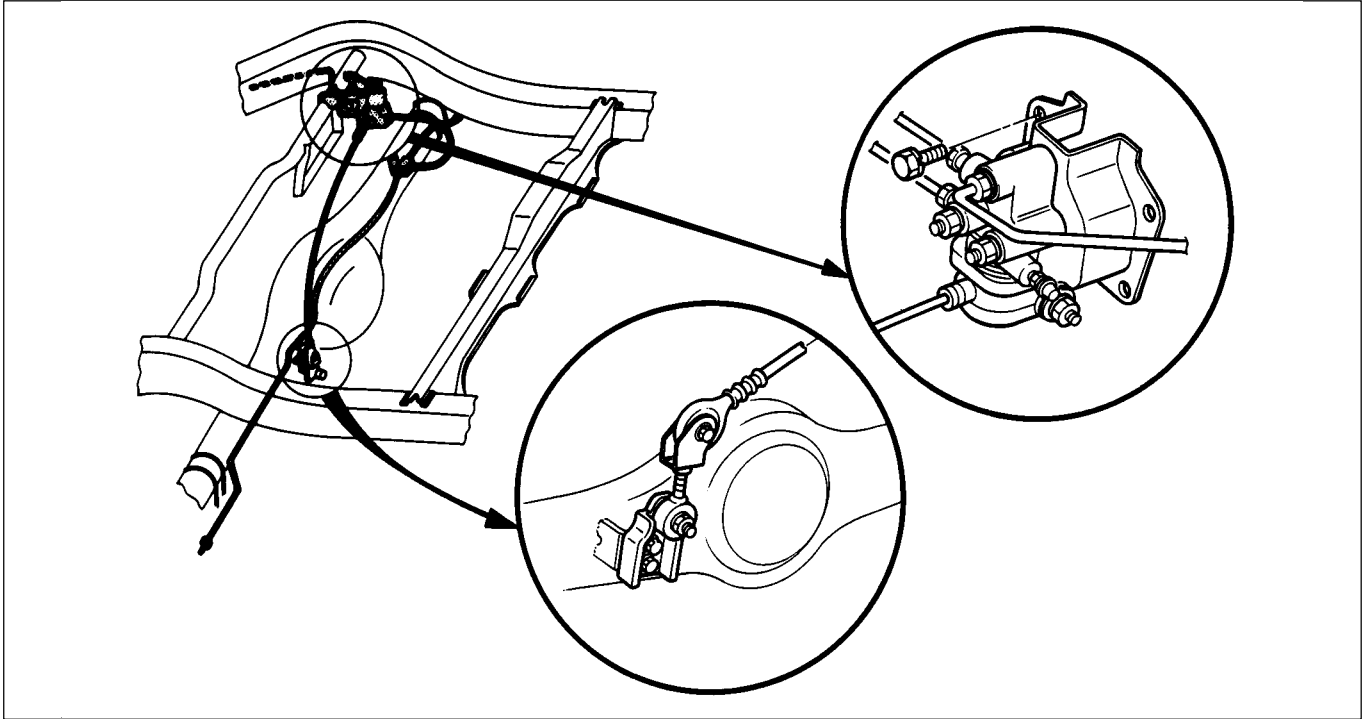
N·m(kgf·m/lb·ft)



SERVICING

LOAD SENSING PROPORTIONING VALVE (LSPV)

Location of LSPV

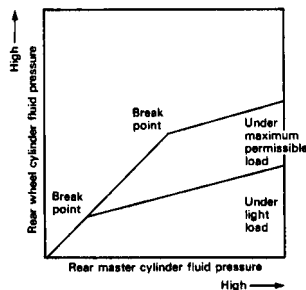


Structure and Operation

The following is an explanation of the structure and operation of the linkage type load sensing device.

This device controls the fluid pressure to the rear brakes in accordance with changes in rear axle load (vertical displacements of the rear axle springs).

Control fluid pressure characteristics

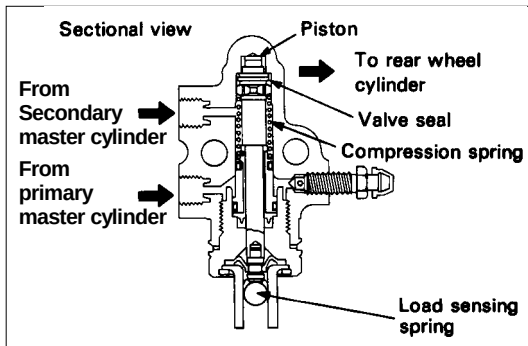


- **Structure**

This device consists of a load sensing spring (bending bar) and a valve.

The valve is mounted through a bracket to the frame.

One end of the load sensing spring is fixed to the valve at the frame and the other end to the rear axle housing through a shackle.



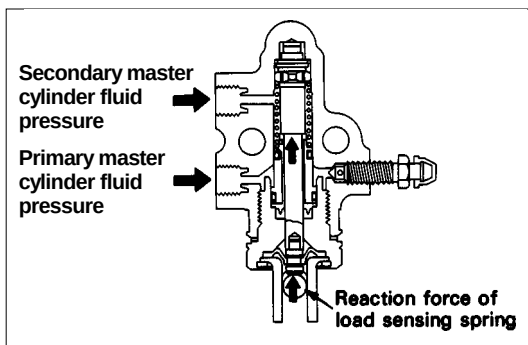
• Operation

1) Outline

When the L.S.P.V.(Load Sensing Proportioning Valve) detects a change in load weight, the load sensing spring deflects.

Its reaction force is transmitted to the bottom of the load sensing valve to secure an optimum rear wheel cylinder fluid pressure break point in proportion to the actual load weight.

Besides, if the front brake system should fail, the device is designed to prevent the master cylinder fluid pressure from decreasing and to apply it directly to the rear wheel cylinder to obtain a sufficient braking performance.



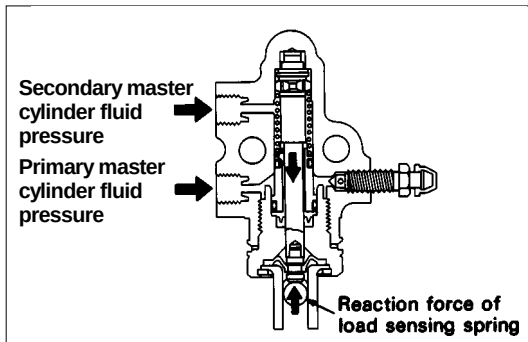
2) Operation

(1) When the fluid pressure is under the break point.

The fluid pressure of the rear master cylinder passes through a clearance between the valve seal and the piston and acts on the rear wheel cylinder.

At this moment, a downward force is applied to the piston.

However, the compression spring force and reaction force of the load sensing spring keep the piston in the upper position by pushing upwards. (See the left figure.)



(2) When the fluid pressure is equal to the break point.

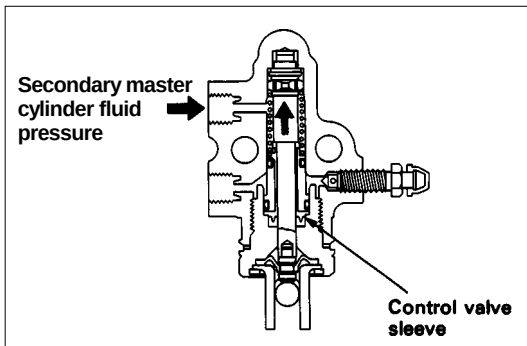
As the rear wheel cylinder pressure increases, it surpasses the compression spring force and reaction force of the load sensing spring, causing the piston to move downwards, so that the piston butts against the valve seal to shut off the fluid line between the master cylinder and rear wheel cylinder. (See the left figure.)

(3) When the fluid pressure is over the break point.

When the fluid pressure increases further, the piston moves upwards.

The moment the piston comes apart from the valve seal, fluid pressure is applied to the rear wheel cylinder and the piston moves downwards so that the fluid line is shut off again.

This process goes on repeatedly to control the fluid pressure to the rear wheel cylinder.



(4) When the front brake system fails.

When there is a failure in the front brake system, the fluid pressure from the front master cylinder decreases.

As a result, the balance between the front and rear brake side fluid pressures are lost at the control valve sleeve so that the control valve sleeve moves upwards.

The control valve sleeve strikes against the piston, thereby pushing the piston upwards.

Accordingly, the fluid pressure of the rear master cylinder is not decreased and is applied directly to the rear wheel cylinder to secure a sufficient braking performance of the rear brakes. (See the left figure.)

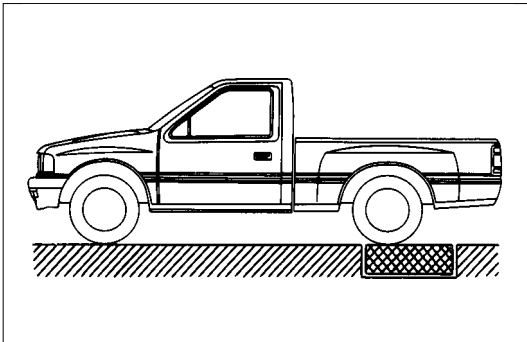


Valve Maintenance

In the case of fluid leak or other abnormalities, faulty valve should be replaced.

Note:

The load sensing proportioning valve is not repairable and must be replaced as a completed assembly.



ADJUSTMENT PROCEDURE OF LSPV

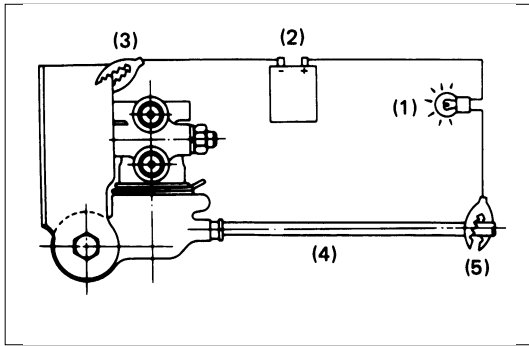
This adjustment should be performed with the battery voltage applied to the valve.

1. Adjust the rear axle weight by loading the rear body as necessary.

Rear axle weight	kg (lbs)
TFR	750(1.654)
TFS	900(1.985)

Note:

The rear axle weight should be adjusted to the specified value with a man seated in the driver seat.

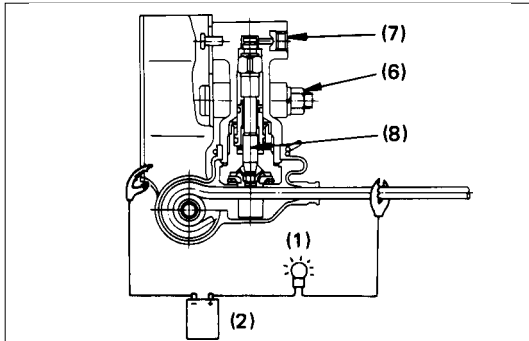


2. Connect the wiring with miniature lamp (1) and a battery (2) between valve bracket (3) and linkage (4) with each end of wiring clipped.

This wiring is necessary to find the moment at which piston within the valve assembly is brought into connect with the linkage.

Note:

As the linkage is coated with insulation material, turn the clip (5) with 2 or 3 turns to break insulation.



3. Loosen the nut (6) and raise the valve assembly (7) all the way.

Then lower the valve assembly gradually and tighten the nut (6) when miniature lamp (1) turns on.

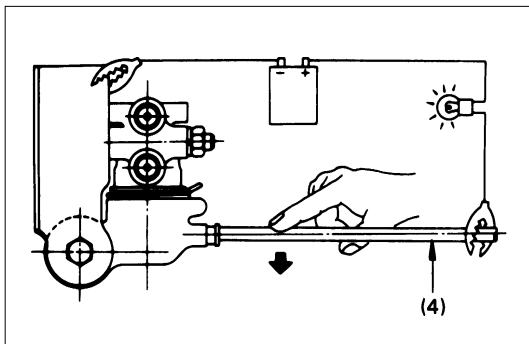
Torque

N·m(kgf·m/lb·ft)

17(1.7/12)

Note:

If the miniature lamp (1) goes out as the nut (6) is tightened, lower the valve assembly (7) slightly with the nut loosened, then retighten the nut(6).

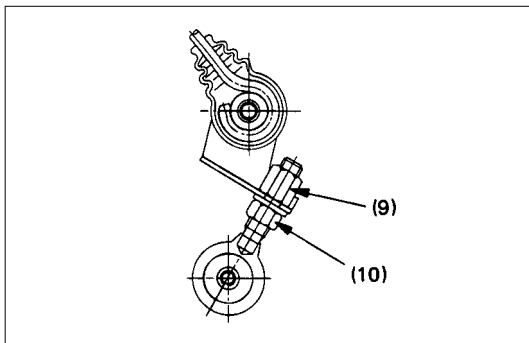


4. Depress the linkage (4) near the valve assembly slightly downward with finger (test pressure:0.5-0.8kg) and check to see if the miniature lamp (1) goes out.

Lamp goes out : OK Adjustment is completed.

Lamp remains on : NG Repeat adjustment operation outline under paragraph 3.

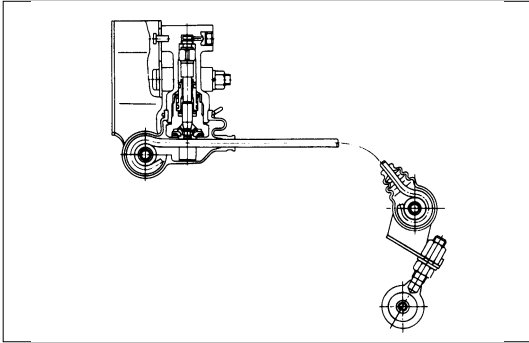
Excessive force is exerted on linkage by piston (8) within the valve assembly.



Note:

Adjustment can also be made by means of nuts (9) and (10) on shackle at rear axle case side.

However, shackle nut is not normally used for adjustment as it is for making fine adjustment.



5. Inspection of brake fluid pressure (Reference value)

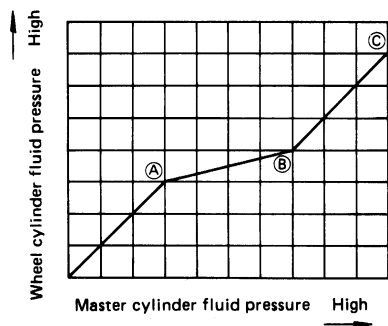
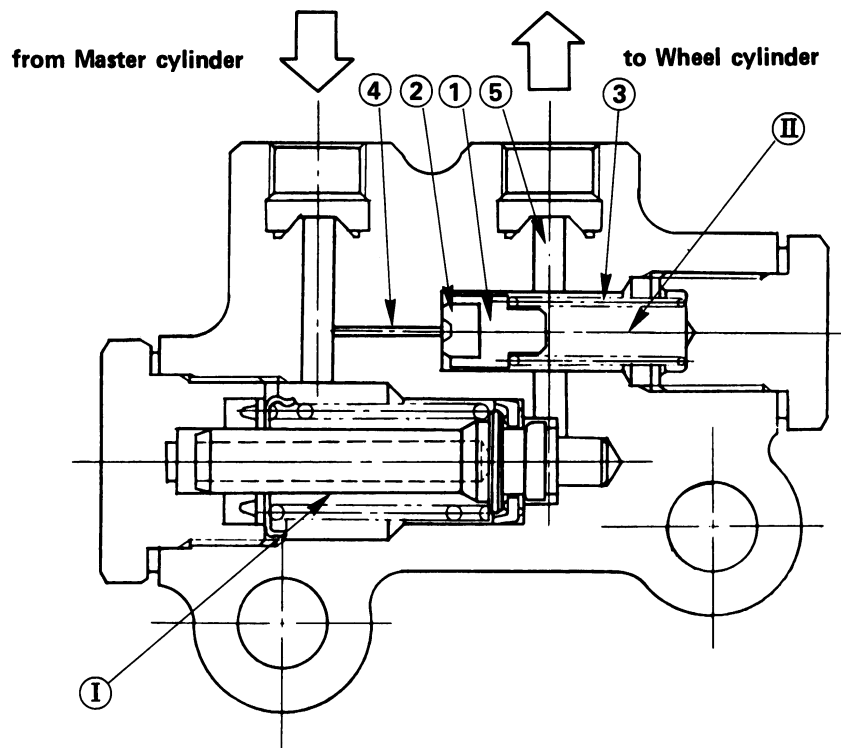
- 1) Adjust the rear axle weight as specified under the paragraph 1.
- 2) Install the pressure gauge on bleeder screws on the front and rear brakes.
- 3) Depress the brake pedal and take reading of the pressure gauges.

The brake fluid pressure is normal if the pressure of fluid within the rear wheel cylinders is within the range of $34.4 \pm 5.5 \text{ kg/cm}^2$ when pressure of fluid within the front wheel cylinders reaches 50 kg/cm^2 .

Note:

The brake pedal should be depressed gradually until specified pressure is reached without pumping or adjusting foot pressure.

BLEND PROPORTIONING VALVE (IF SO EQUIPPED)



Structure and Operation

- **Structure**

Side ① shows P-valve ; side ② shows bypass valve.

Bypass valve seals the routes ④ and ⑤ using the seal ② at the piston ① end.

In addition, spring ③ presses against the piston ①, and in order to seal out the route ④ and route ⑤ sufficiently, spring ③ presses seal ② against cylinder end surface.

The left figure is a characteristic curve diagram.

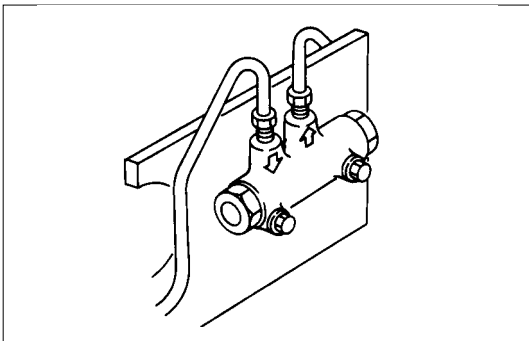
• Operation

The operation of the P-valve by the master cylinder pressure is unchanged up to the brake points ① and ②.

If master cylinder fluid pressure penetrates into the second break point ③, the fluid pressure pressing against the seal ②, (which isolated route ④ and route ⑤), passing the route ④ of the master cylinder side, overcomes the operating force of the spring ③ + fluid pressure affecting the seal ② of the wheel cylinder, and presses the piston ① to the right side, resulting in the opening of the routes ④ and ⑤, and canceling of the P-valve operation.

Then, because the master cylinder fluid pressure and the wheel cylinder fluid pressure, up to the point ③, operate on the identical surface of the seal ②, both have identical ascending ratio.

However, because of the operation of spring ③ in the wheel cylinder side, wheel cylinder fluid pressure operate to preserve the balance against the master cylinder fluid pressure on the lower level with the difference in pressure resulting from this spring.



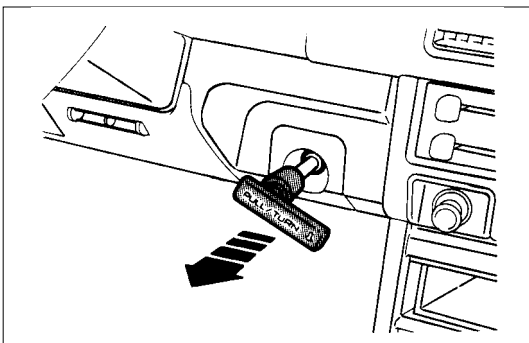
Valve Maintenance

In the case of fluid leak or other abnormalities, faulty valve should be replaced.

The valve is set up at the right hand side of the 5th crossmember near the rear axle.

Note:

The blend proportioning valve is not repairable and must be replaced as a complete assembly.



BLEEDING OF THE BRAKE HYDRAULIC CIRCUIT

If air enters the brake lines, it will cause poor brake action.

Therefore, bleeding should be performed if the brakes have been used with the level of brake fluid in the reservoir excessively low or if brake pipes have been disconnected in the course of brake servicing.

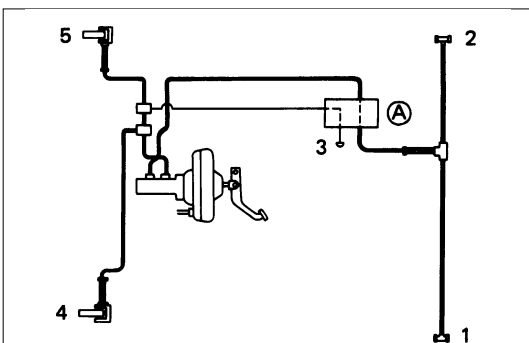
Bleeding operation calls for co-operative action of 2 persons.

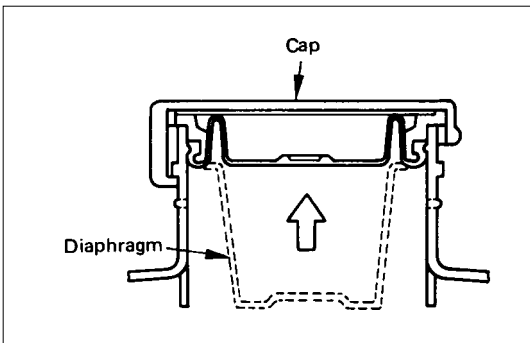
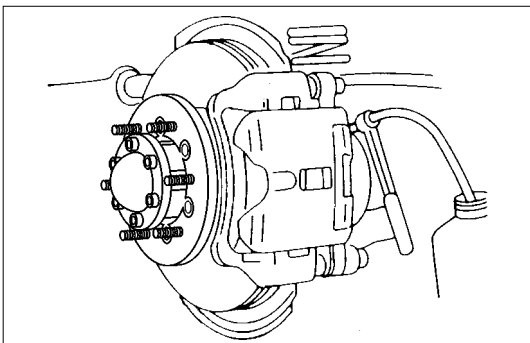
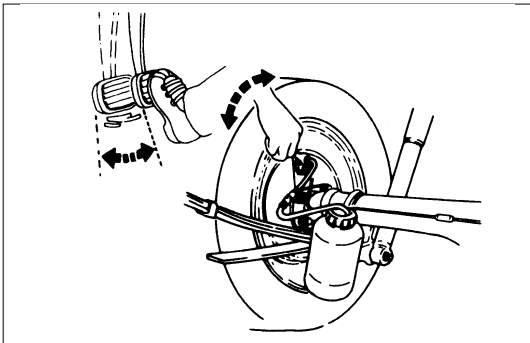
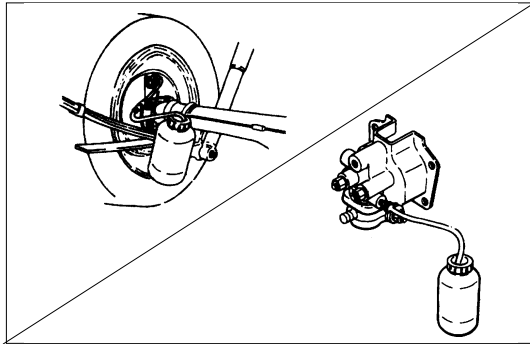
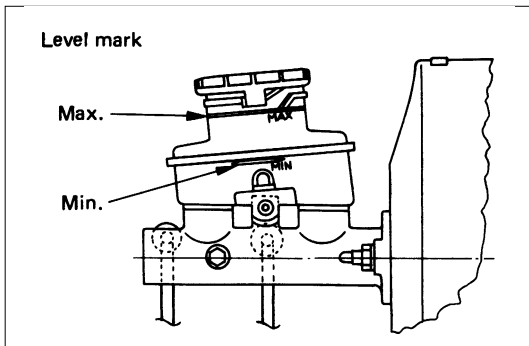
- Set the parking brake firmly while bleeding.
- Perform bleeding operation with ENGINE RUNNING, to prevent damage to push rod seal.

Make sure exhaust is suitably ventilated.

- Bleed the hydraulic system with the fluid reservoir filled to the specified level.
- Bleed the system starting with the rear wheel cylinder farthest from the master cylinder.

① : Load sensing proportioning valve (If so equipped).





1. Fill the brake fluid reservoir with brake fluid.
Handle the brake with reasonable care to avoid spillage as it is damaging to paint.

Note:

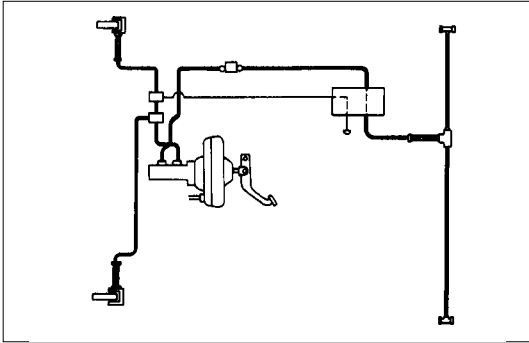
Take care to prevent foreign matter from entry, when replenishing or replacing brake fluid.

When pouring brake fluid, if diaphragm in the oil tank cap is stretched, be sure to place it into original position, (fasten it), and then cap it.

2. Connect a vinyl pipe to the bleeder screw on the wheel cylinder, caliper bode or LSPV and the other end of the pipe in a transparent container.
3. Pump the brake pedal several times and hold it depressed.
Loosen the bleed screw to release brake fluid together with air bubbles.
Tighten the bleeder screw before pressure is released completely.
4. Repeat the step in paragraph 3 above until the air bubbles disappear completely.
Securely tighten the bleeder screw when the air bubbles disappear completely.
5. Repeat the step in paragraph 4 above on the remaining wheel cylinders.
Bleed the system starting with rear side farthest from the brake fluid reservoir.
6. Fill the brake fluid reservoir to the specified level.
Pour brake fluid carefully so as not to produce air bubbles.
7. If the cap diaphragm is stretched, fasten the diaphragm and the sure to cap it after it is placed to the original position.

Note:

Never reuse the old brake fluid.

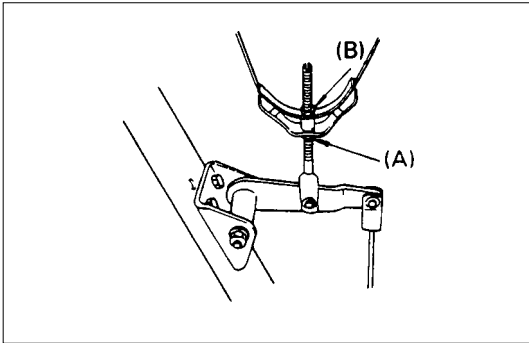


BRAKE LINE (HOSES AND PIPES)

- Inspect all hoses and pipes for wear, bending, chafing, cracks, dents, or any other damage.
Make necessary correction or parts replacement if these abnormal conditions are found through inspection.
- All hoses, pipes and joints can be damaged easily.
Do not allow the hose to become excessively twisted and bent when working with them, and pay special attention to all the brake lines not to damage them when repairing or replacing other parts (axle, suspension, etc).
- Inspection for leakage should be performed by depressing the brake pedal fully.
If leakage is apparent at the circumference of joints, retighten or replace these parts.
This procedure must be performed whenever brake lines are installed.
- After disconnecting the hoses and pipes, cap or tape the openings to prevent entry of foreign material.



ADJUSTMENT PROCEDURE OF SERVICE AND PARKING BRAKE



Stem type

All brakes are self-adjusting.

Brake are adjusted by repeated stepping on the brake pedal.

The parking brake adjustment should be performed as follows:

1. Release the parking brake lever fully.
2. Loosen the lock nut (A).
3. Repeat stepping the brake pedal firmly and releasing it until the rear brake auto-adjuster completes the function.
4. Rotate the adjust nut (B) until all slack disappears from the cable.
5. Set the lock nut.

The parking brake lever travel is normal when the lever comes out 9 to 11 notches when pulled with a force of 30 kg (66 lbs.).

Floor mount type

All brakes are self-adjusting.

Brakes are adjusted by repeated stepping on the brake pedal. (After stepping on the pedal and releasing it, the rear auto-adjuster, in the rear brake, produces a clicking sound. the same operation should be repeated until the sound disappears.)

Take the following steps after overhauling the rear brake assembly.

1. Move the parking brake lever to its fully released position.
2. Parking cable must be loosened sufficiently.
(Loosen the adjust nut and the lock nut.)
3. Repeat stepping on the brake pedal firmly, and releasing it until the clicking sound can no longer be heard.

If the difference between the brake drum inside diameter of the brake shoes is adjusted to be 0.5 mm, the number of times for depressing the brake pedal can be reduced.

4. Remove the drum.

Measure the brake drum inside diameter and diameter and diameter of the brake shoes.



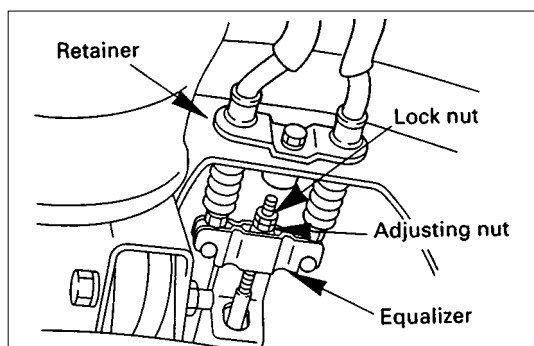
Shoe Clearance	mm(in)
0.25 - 0.40 (0.0098 - 0.0157)	

If incorrect, check the brake auto-adjusting system.

5. Turn the equalizer nut so that the parking brake lever travels 6 or 7 notches when pulled up with a force 30 kg (66 lbs.).
6. Make sure there is not brake dragging and tighten the cable lock nut.



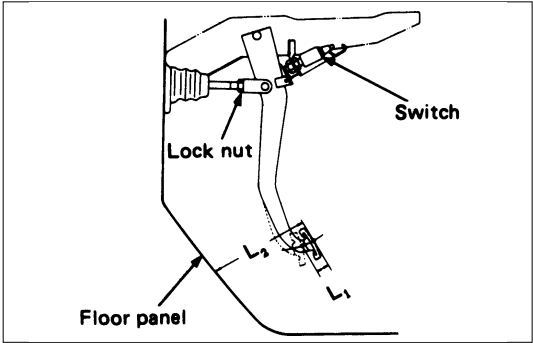
Torque	N·m(kgf·m/lb·ft)
8 - 18 (0.8 - 1.8 / 5.8 - 13)	





ADJUSTMENT PROCEDURE OF BRAKE PEDAL

The push rod serves as the brake pedal stopper when the pedal is fully released.
Brake pedal height adjustment should be performed as follows.



Brake Pedal - Height

Measure the brake pedal height after making sure the pedal is fully returned by the pedal return spring.

Note:

Pedal height (L2) must be measured after starting the engine and increasing the revolution several times by stepping on the accelerator pedal.

mm(in)		
Pedal free play (L1)		6-10 (0.23 - 0.39)
Height (L2)	LHD	174-184 (6.85-7.24)
	RHD	193-203 (7.60 7.99)

Note:

Pedal free play must be measured after turning off the engine and stepping on the brake pedal firmly five times or more.

If the measured value deviates from the above range, adjust the brake pedal as follows:

- Disconnect the stop lamp switch.
- Loosen the lock nut on the push rod.
- Adjust the brake pedal to the specified height by rotating the push rod in the appropriate direction.



Lock Nut Torque

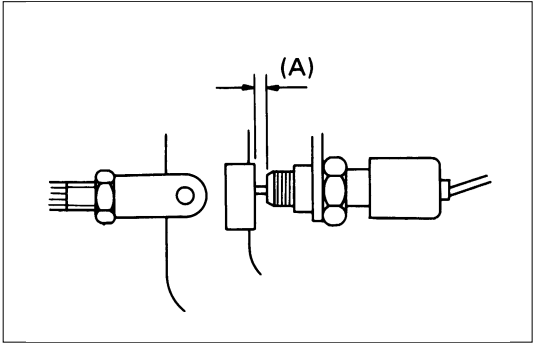
N·m(kgf·m/lb·ft)

15- 25 (1.5 - 2.5 / 11 - 18)

d) Install the stop lamp switch.

Note:

Pedal height (L₂) must be 95 mm (3.7 in.) or more when applying about 50 kg (110.25 lbs.) of stepping force.



Clearance

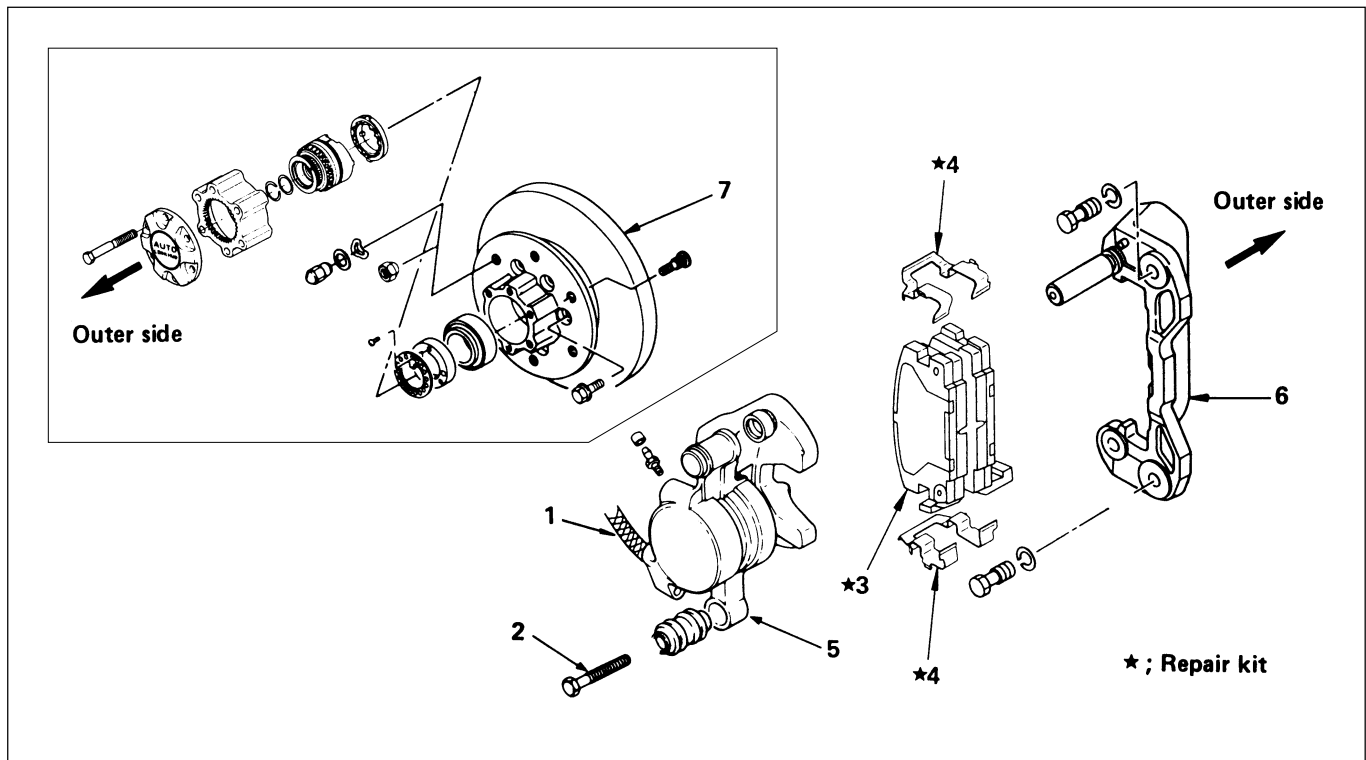
Between the Switch Housing and the Brake Pedal (A).

mm(in)

0.5 - 1.0 (0.02 - 0.04)

FRONT BRAKE ASSEMBLY

REMOVAL AND INSTALLATION

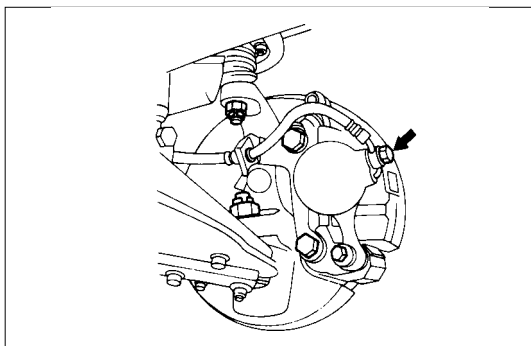


Removal Steps

- ▲ 1. Brake flexible hose
- ▲ 2. Lock bolt
- ▲ 3. Pad assembly with shim
- 4. Clip ; pad
- 5. Caliper assembly
- ▲ 6. Support bracket
- ▲ 7. Front hub and disc assembly

Installation Steps

- ▲ 7. Front hub and disc assembly
- ▲ 6. Support bracket
- 5. Caliper assembly
- ▲ 4. Clip ; pad
- 3. Pad assembly with shim
- ▲ 2. Lock bolt
- ▲ 1. Brake flexible hose

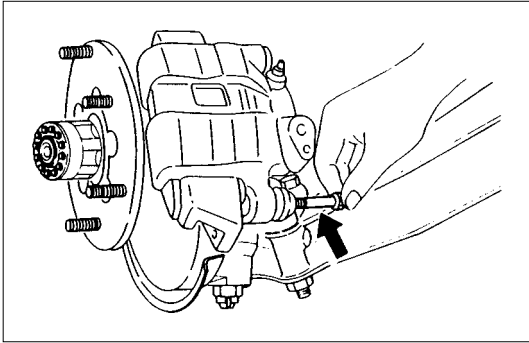


Important Operations - Removal

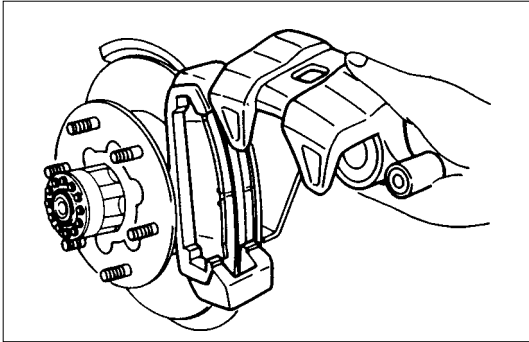
1. Brake Flexible hose

Remove the bolt and gasket and disconnect the brake flexible hose from the caliper.

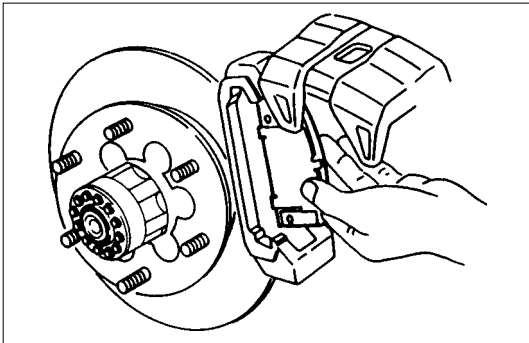
After disconnecting the flexible hose, cap or tape the openings to prevent entry of foreign material.

**2. Lock Bolt**

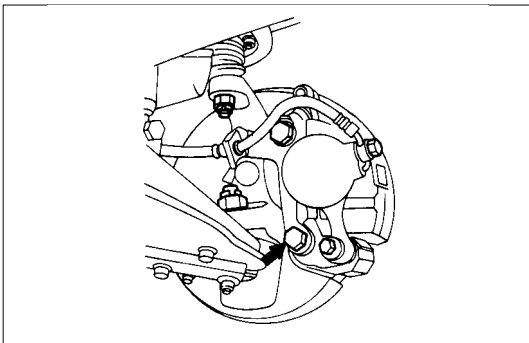
Remove the lock bolt from the caliper.

**3. Pad Assembly with Shim**

Rotate the caliper upward.



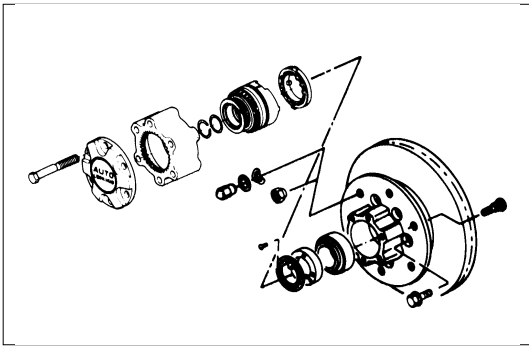
Mark the lining locations if they are to be reinstalled.

**6. Support Bracket**

Take care not to damage the flexible brake hose when removing the support bracket.

7. Front Hub and Disc Assembly

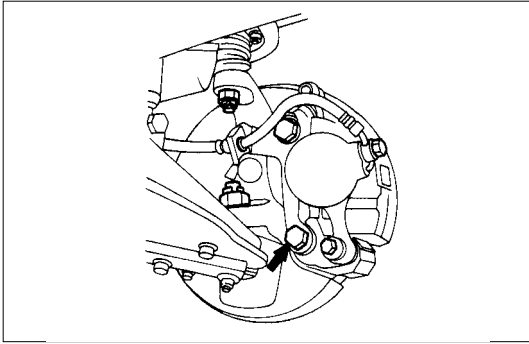
For the removal procedure, refer to Section 4C "FRONT WHEEL DRIVE".



Important Operations - Installation

7. Front Hub and Disc Assembly

For the installation procedure, refer to the front hub and disc reassembly procedure in Section 4C "FRONT WHEEL DRIVE".



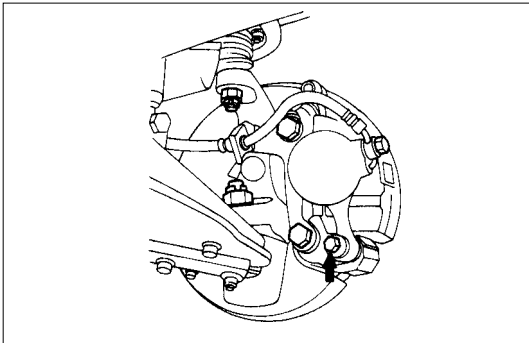
6. Support Bracket

Torque	N·m(kgf·m/lb·ft)
139 - 171 (14.2 - 17.4 / 103 - 126)	

Set up the clip and pad before installation of the support racket.

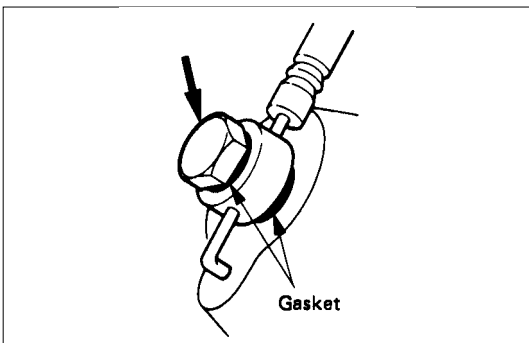
4. Clip ; Pad

Install new parts if necessary.



2. Lock Bolt

Torque	N·m(kgf·m/lb·ft)
27 - 37 (2.8 - 3.8 / 20 - 27)	



1. Brake Flexible Hose

Attach the bolt and new gasket

Torque	N·m(kgf·m/lb·ft)
29 -39 (3.0 - 4.0 / 22 - 29)	



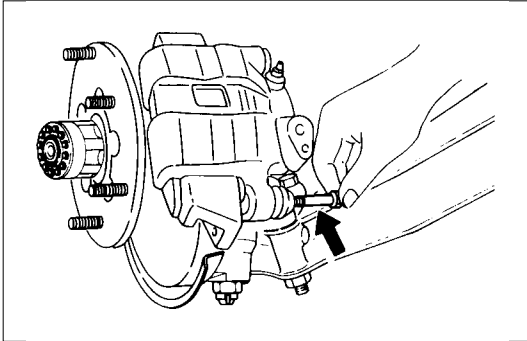
After installation, bleeding and replenishing procedure must be performed.

Wipe the circumference of the hose clean.

Note:

- Always use new gaskets.
- Be sure to put the hooked edge of the flexible hose end into the anti-rotation cavity.

REMOVAL AND INSTALLATION OF DISC PAD



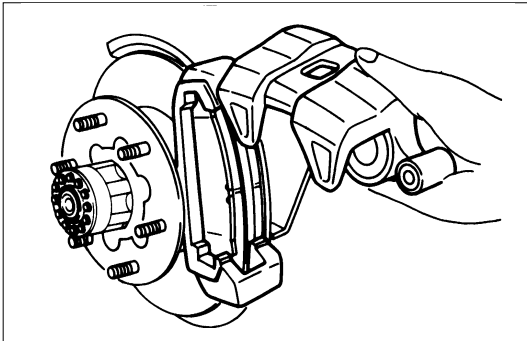
Removal Steps

1. Lock Bolt

Remove the lock bolt from the caliper.

Note:

Don't remove the brake hose from caliper when replacing pads.

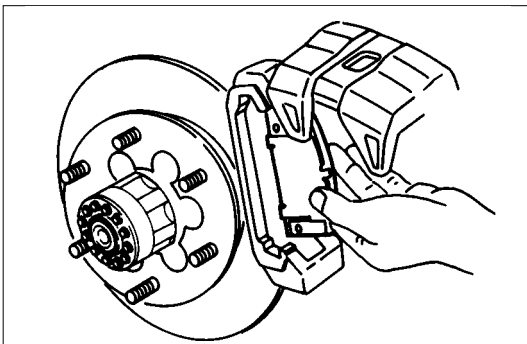


2. Rotate the Caliper Upward

Remove the caliper from the support bracket and move the caliper to the upper link or the frame.

Note:

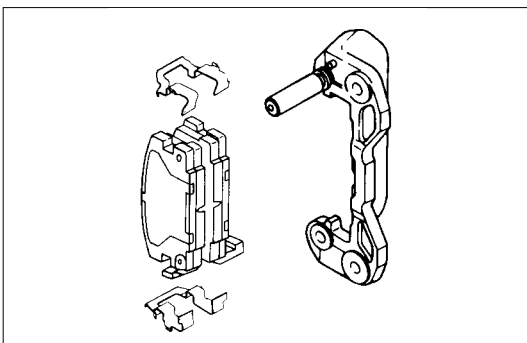
While caliper is removed from support bracket, never step on the brake pedal or the piston will protrude rapidly.



3. Pad Assembly with Shim

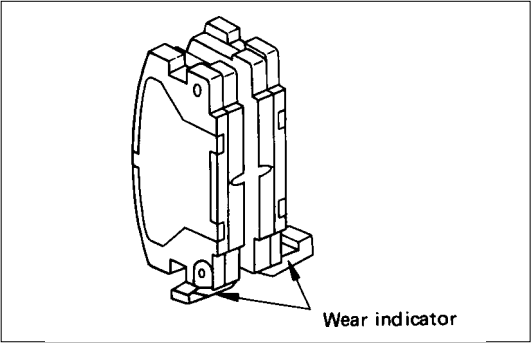
Remove the pad assembly with the shim.

Mark the pad locations if they are to be reinstalled.



4. Clip ; Pad

Discard the used clip and install a new one.

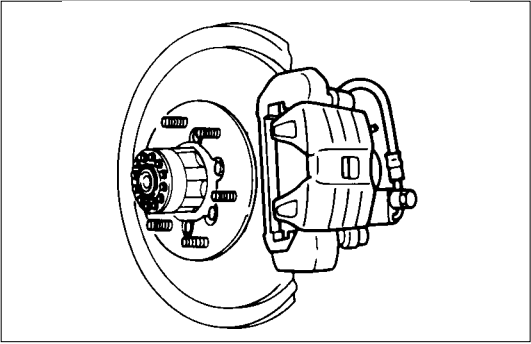


Installation Steps

1. Clip ; Pad

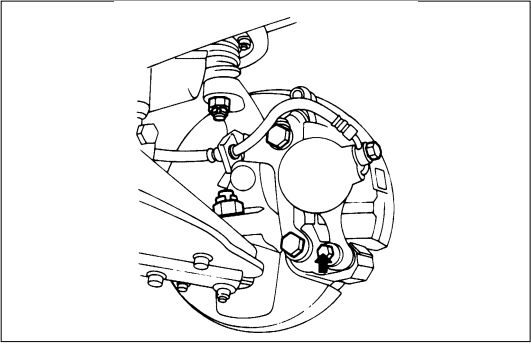
2. Pad Assembly with Shim

After attaching the pad assembly with the shim to the support bracket, position the wear indicator to the lower side of the pad.



3. Caliper Assembly

Lower the caliper into its original position.
Do not damage the flexible hose by twisting or pulling it.



4. Lock Bolt

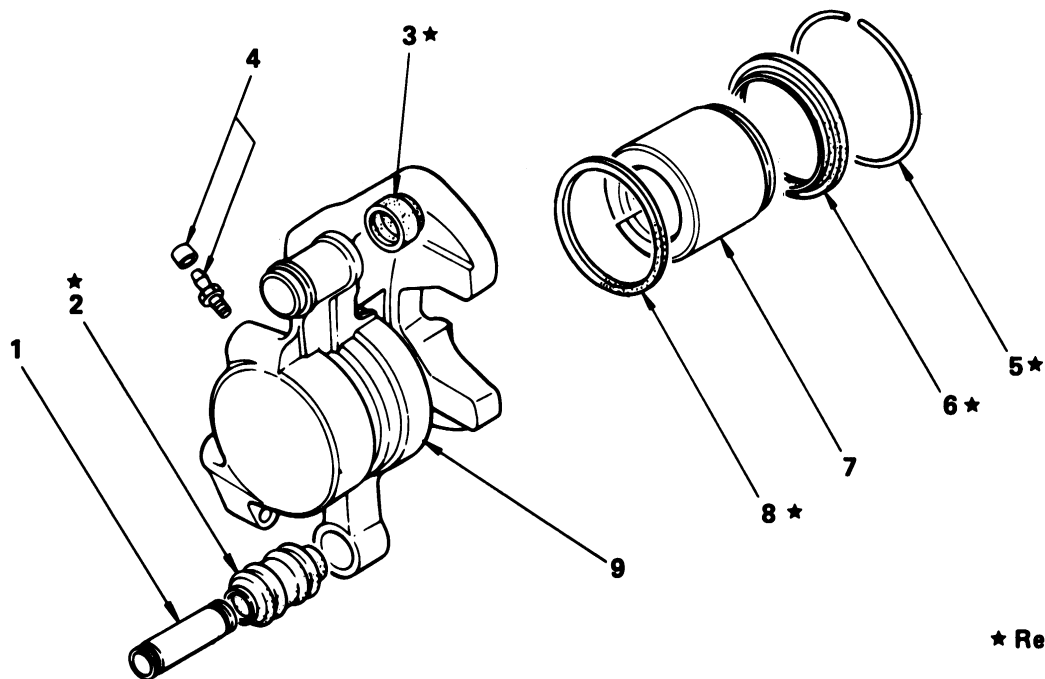
Attach the lock bolt to the caliper.

Torque	N·m(kgf·m/lb·ft)
27 - 37 (2.8 - 3.8 / 20 - 27)	



DISASSEMBLY

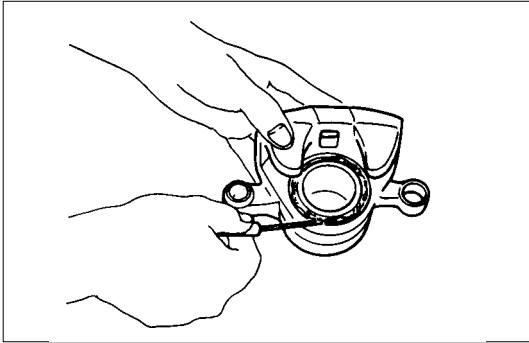
CALIPER ASSEMBLY



★ Repair kit

Disassembly Steps

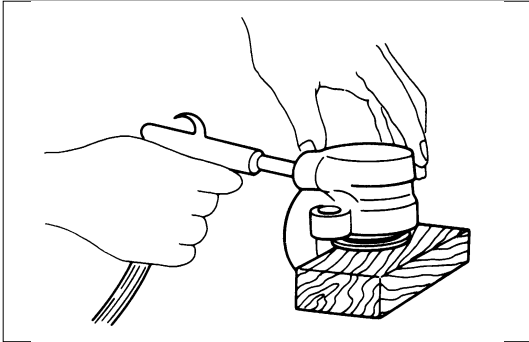
- | | |
|--------------------------|------------------------------|
| 1. Sleeve | 6. Dust seal ; piston |
| 2. Dust boot ; sleeve | ▲ 7. Piston (with seal ring) |
| 3. Dust boot ; guide pin | 8. Ring seal |
| 4. Bleeder with cap | 9. Body ; caliper |
| ▲ 5. Dust seal ring | |



Important Operations

5. Dust Seal Ring

Using a small screwdriver, remove the dust boot.



7. Piston (with Ring Seal)

Insert a block of wood into the caliper and force out the piston by blowing compressed air into the caliper at the flexible hose attachment.

This procedure must be done prior to removal of dust seal.

CAUTION:

Do not place your fingers in front of the piston in an attempt to catch or protect it when applying compressed air.



INSPECTION AND REPAIR

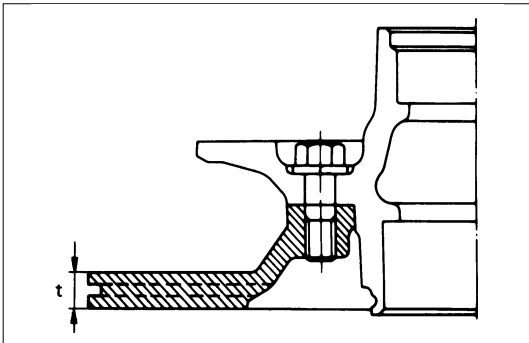
Make necessary correction or parts replacement if wear damage or any other abnormal conditions are found through inspection.

- Rotor
- Caliper body
- Cylinder bore
- Piston
- Support bracket
- Lock bolt
- Guide pin



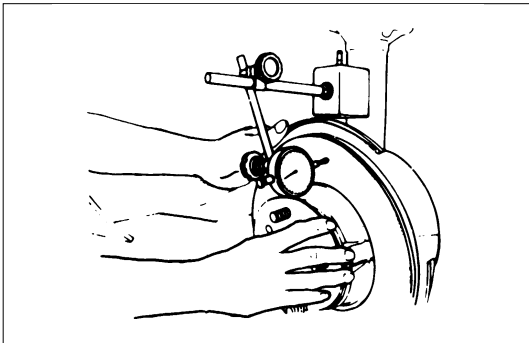
Visual Check

Inspect the following parts for wear, bending, distortion, cracking, corrosion, or other abnormal conditions.



Rotor

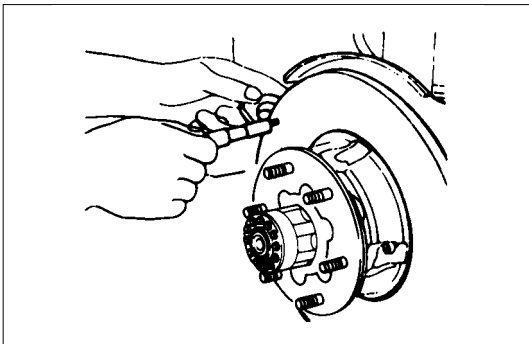
Thickness (t) mm(in)		
Standard	Minimum thickness after refinishing	Replacement thickness (Discard)
22.0(0.866)	20.97(0.826)	20.6(0.811)



- Run out

Limit mm(in)
0.13 (0.005)

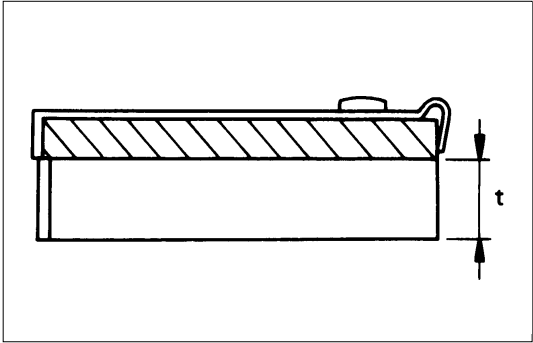
Before inspection, adjust the wheel bearing correctly.
Using a dial gauge, measure the run out at the center of disc pad contact surface.



- Parallelism (Total circumferential thickness variation)

Limit mm(in)
0.15 (0.0006)

Contact surface must be within 0.015 mm at the circumference of 203 mm dia. Circle.



Thickness of Disc Pad

Thickness (t) mm(in)	
Standard	Limit
10.5 (0.413)	1.0 (0.039)
9.5 (0.374) (For Australia only)	

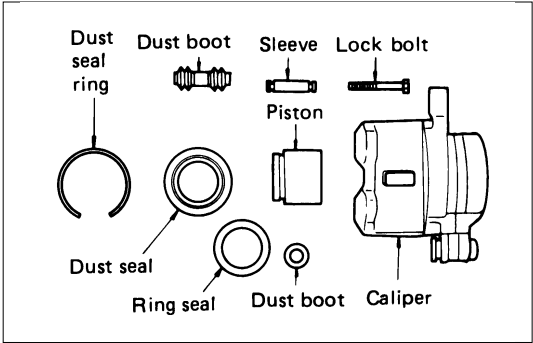
Replace the front disc pad whenever the pad wear indicator makes a squeaking noise or when the pad is worn to within 1 mm of the shoe table.



All four brake pads should be replaced together.

Seal and Boot

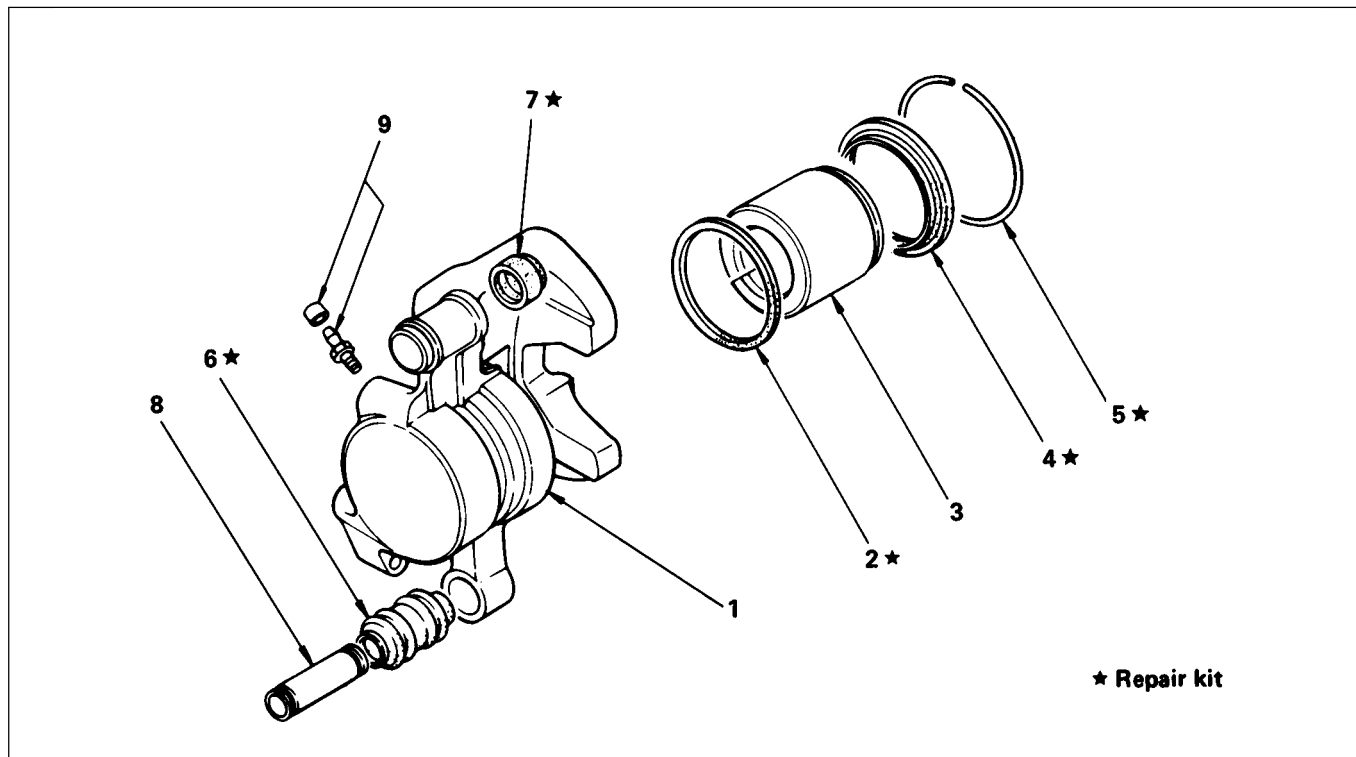
The dust seal, dust boot and ring seal are to be replaced each time the caliper is overhauled.
Discard thee used rubber parts.





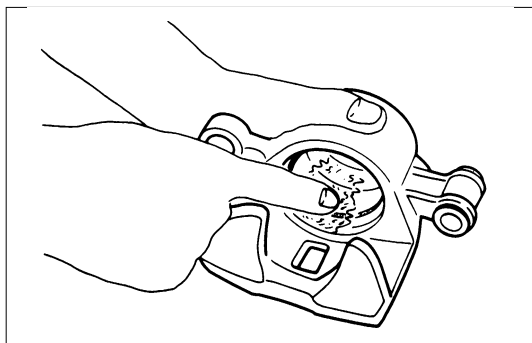
REASSEMBLY

CALIPER ASSEMBLY



Disassembly Steps

- ▲ 1. Body ; caliper
- ▲ 2. Ring seal
- ▲ 3. Piston
- ▲ 4. Dust seal ; piston
- ▲ 5. Dust seal ring
- ▲ 6. Dust boot ; sleeve
- ▲ 7. Dust boot ; guide pin
- ▲ 8. Sleeve
- ▲ 9. Bleeder with cap



Important Operations

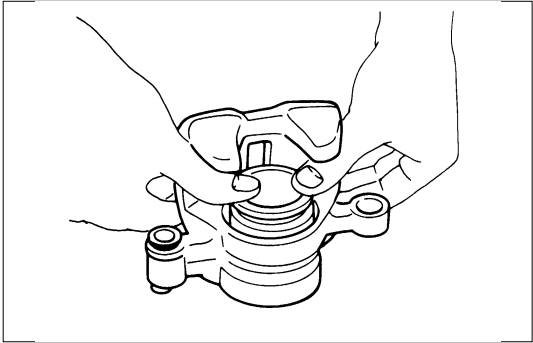


1. Body ; Caliper

2. Ring Seal

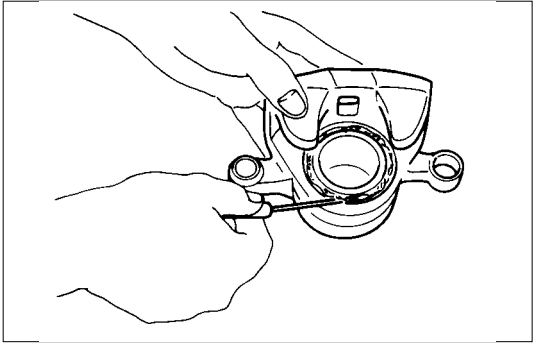
Apply special grease to the ring seal and cylinder wall, then insert the ring seal into the cylinder.

The special grease is included in the repair kit.



3. Piston

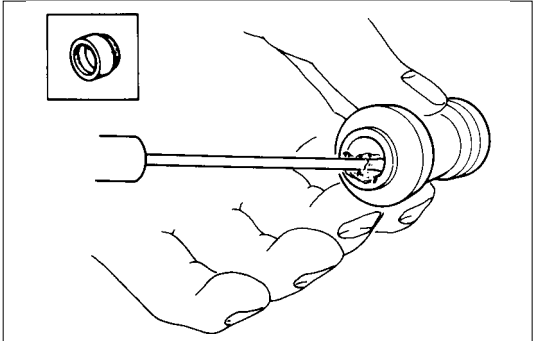
When inserting the piston into the cylinder, use finger pressure only.
Do not use a mallet or other impact tools, since damage to the cylinder wall or ring seal can result.



4. Dust Seal ; Piston

5. Dust Seal Ring

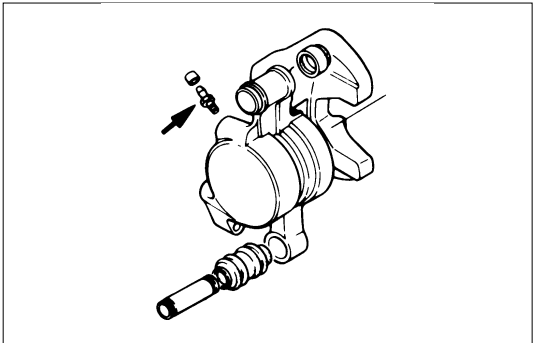
Apply special grease (Approx. 1g) to the piston and attach the dust seal to the piston and caliper.
Insert the dust seal ring into the dust seal.



6. Dust Boot ; Sleeve

7. Dust Boot ; Guide Pin

Install the sleeve dust boot on the caliper after applying special grease (Approx. 1g) into the sleeve and guide pin boot, then insert the sleeve into the dust boot.



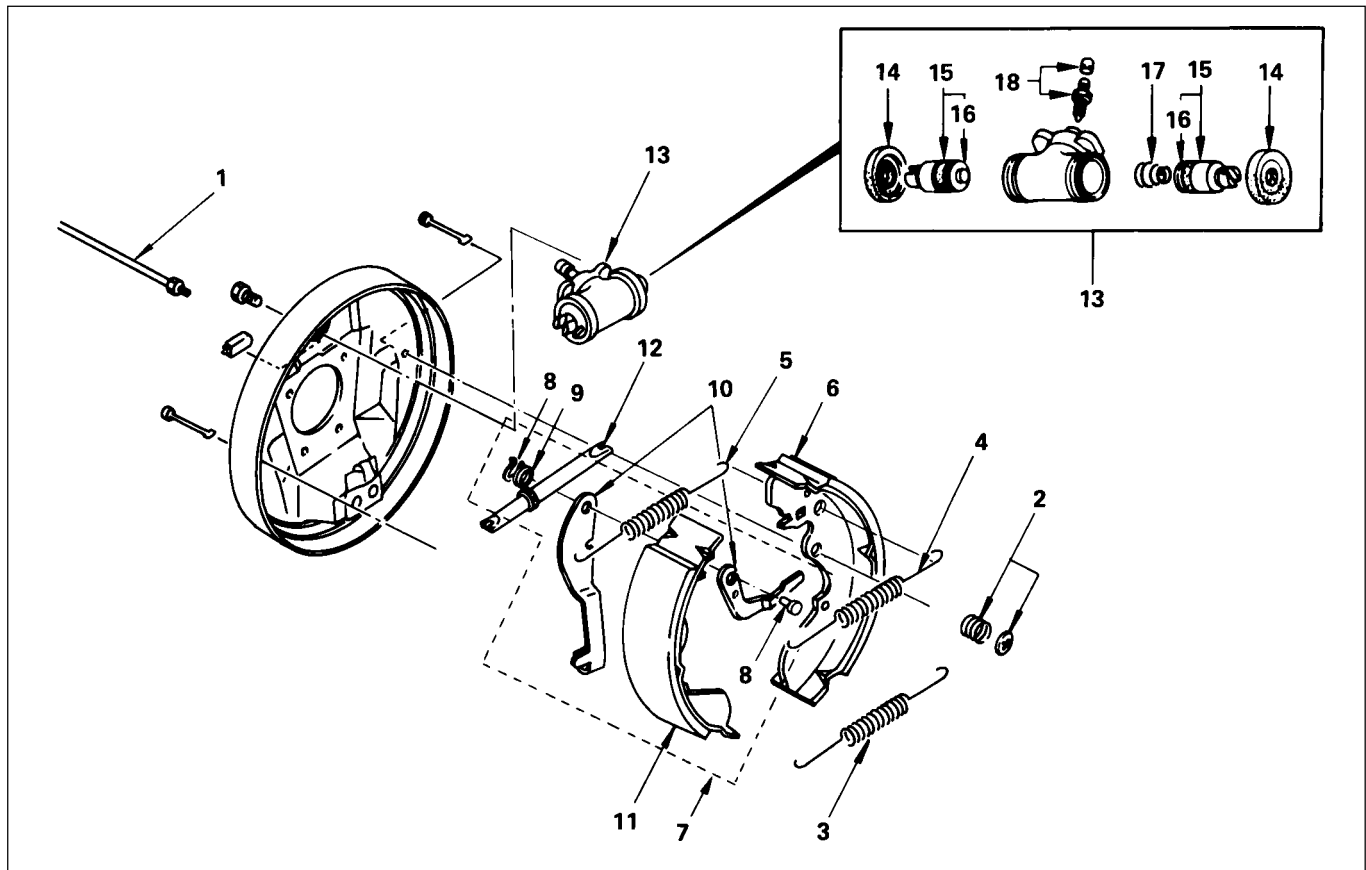
9. Bleeder with Cap

Torque	N·m(kgf·m/lb·ft)
5.9-8.8 (0.6 - 0.9 / 4.3 - 6.5)	

REAR DRUM BRAKE ASSEMBLY

DISASSEMBLY

First, disassemble the brake drum. Then disassemble the rear brake assembly. Refer to the "REAR AXLE" section for the brake drum disassembly procedure.



MAJOR COMPONENTS

Disassembly Steps

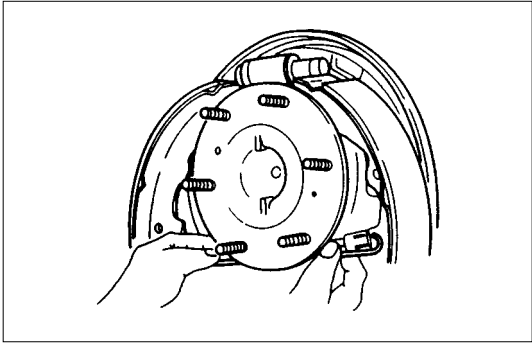
- | | |
|--|-------------------------------|
| 1. Brake line | 7. Shoe assembly with lever |
| 2. Holding spring and cups | 8. Retainer with pin |
| ▲ 3. Return spring ; lower | 9. Washer ; wave |
| 4. Return Spring ; upper
(shoe to adjust lever) | 10. Lever ; auto adjust |
| 5. Return spring ; upper
(shoe to shoe) | 11. Shoe assembly (secondary) |
| 6. Shoe assembly (primary) | 12. Adjuster assembly |
| | 13. Wheel cylinder assembly |

MINOR COMPONENTS

Disassembly Steps

Wheel Cylinder Assembly (13)

- | | |
|---------------------------|------------------------------|
| 14. Boot ; wheel cylinder | 17. Return spring ; piston |
| 15. Piston assembly | 18. Bleeder ; wheel cylinder |
| 16. Cup ; piston | |



Important Operations

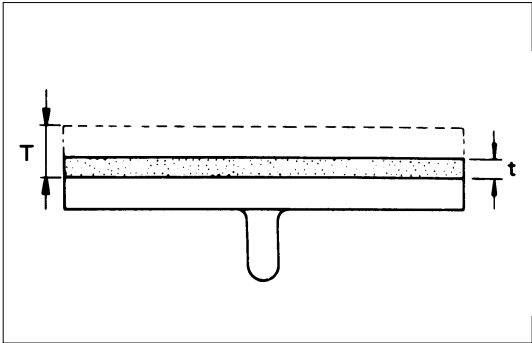
3. Return Spring ; Lower

 INSPECTION AND REPAIR

Make necessary correction or parts replacement if wear damage or any other abnormal conditions are found through inspection.

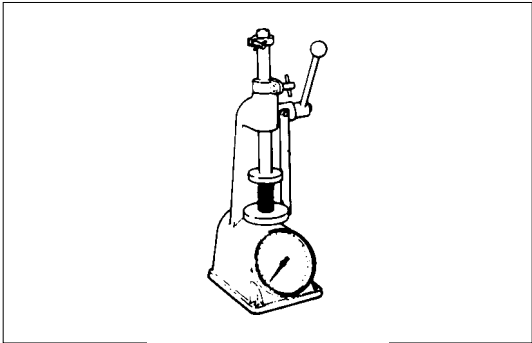
- Brake drum
- Back plate
- Brake lining
- Wheel cylinder body
- Piston
- Piston cup
- Return spring

 **Visual check**
Inspect the following parts for wear scuffs, scratches, corrosion, stains, deterioration, or other abnormal conditions.



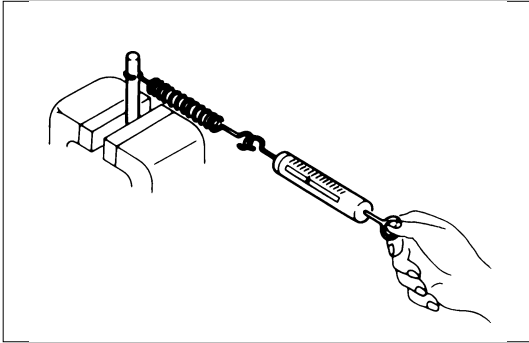
 **Thickness of the Brake Lining**

Thickness		mm(in)
	standard (T)	Limit (t)
TFR	5.0 (0.197)	1.0 (0.039)
TFS	4.0 (0.157)	1.9 (0.039)

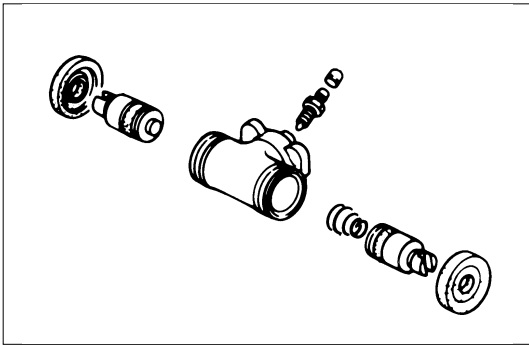


 **Inspection of the Return Spring**

	Free length mm(in.)	Set length mm(in.)	Set load kg (lbs.)
Holding spring	15.0 (0.591)	11.2 (0.441)	10.0±1.0 (22.3±2.2)
Wheel cylinder spring	37.4 (1.472)	8.0 (0.315)	1.0±0.1 (2.2±0.2)



	Free length mm(in.)	Set length mm(in.)	Set load kg(lbs.)
Return spring : upper (adjust lever)	124.9 (4.917)	134.9 (5.311)	7±0.7 (15.4±1.6)
Shoe return spring : upper	112.4 (4.425)	121.5 (4.783)	2±0.2 (4.4±0.4)
Shoe return spring : lower	167.2 (6.583)	190.2 (7.488)	28.0±2.8 (61.7±6.4)



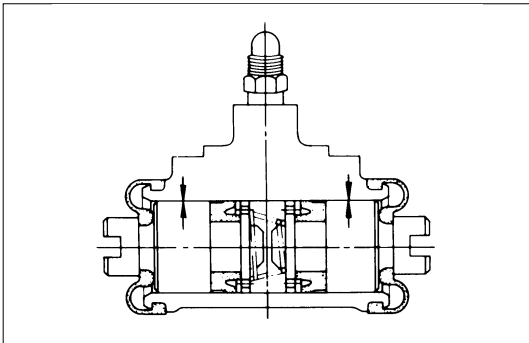
Clean wheel Cylinder Parts

Always use clean brake fluid to clean wheel cylinder parts.



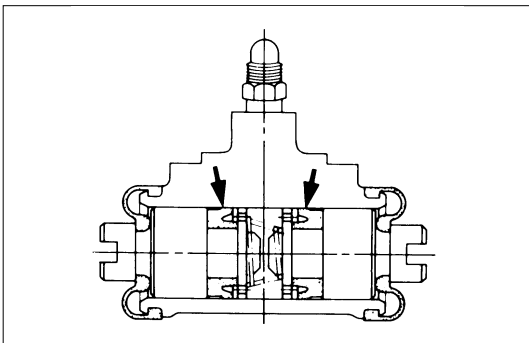
Note:

Do not use mineral-vase cleaning solvents such as gasoline, kerosene, acetone, paint thinner, or carbon tetrachloride.



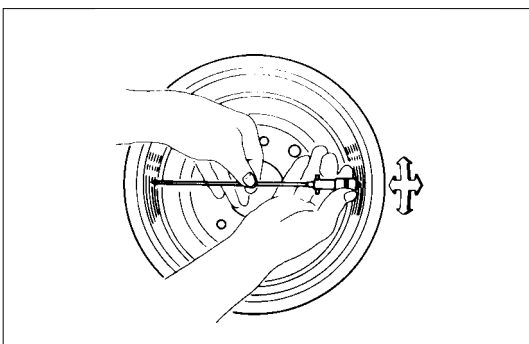
Clearance Between the Wheel Cylinder and the Piston

		mm(in)
Standard		Limit
0.02 - 0.1(0.001 - 0.004)		0.15(0.006)



Piston Cups

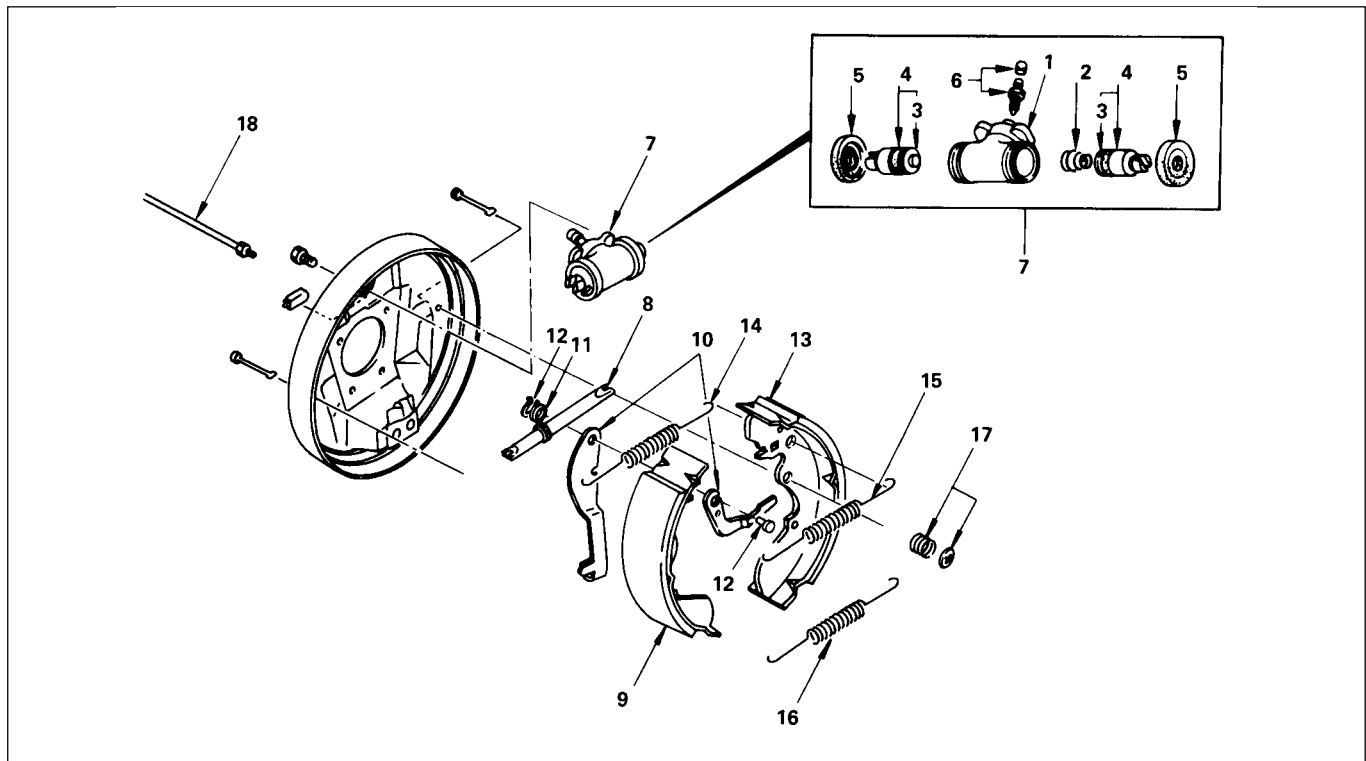
Inspect the piston cups for wear, distortion, fatigue, fatigue or other abnormal conditions.



Measuring the Brake Drum

		mm(in)	
		Standard	Limit
TFR	Inside diameter	254(10.000)	255.5(10.059)
	Run out	0.05(0.002)	0.15(0.006)
TFS	Inside diameter	295(11.614)	296.5(11.673)
	Run out	0.05(0.02)	0.15(0.006)

✚ REASSEMBLY



MINOR COMPONENTS

Reassembly Steps

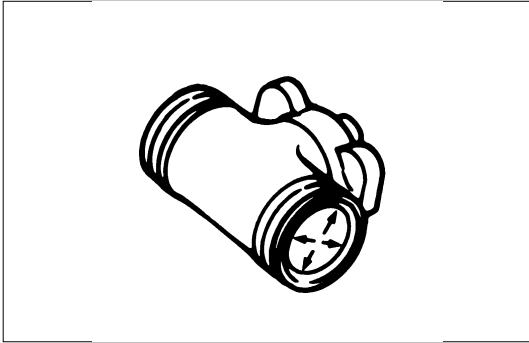
Wheel cylinder Assembly (7)

- | | |
|--|---|
| <ul style="list-style-type: none"> ▲ 1. Bode ; wheel cylinder 2. Return spring ; piston 3. Cup ; piston | <ul style="list-style-type: none"> ▲ 4. Piston assembly 5. Boot ; wheel cylinder ▲ 6. Bleeder ; wheel cylinder |
|--|---|

MAJOR COMPONENTS

Reassembly Steps

- | | |
|--|--|
| <ul style="list-style-type: none"> ▲ 7. Wheel cylinder assembly 8. Adjuster assembly 9. Shoe assembly (secondary) 10. Lever ; auto adjuster 11. Washer ; wave 12. Retainer with pin 13. Shoe assembly (primary) | <ul style="list-style-type: none"> 14. Return spring ; upper (shoe to shoe) 15. Return spring ; upper (shoe to adjust lever) 16. Return spring ; lower 17. Holding spring and cups ▲ 18. Brake line |
|--|--|

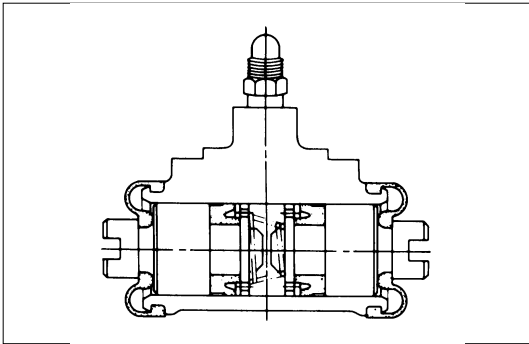


Important Operations



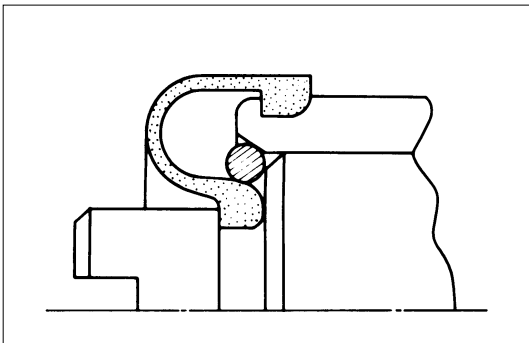
1. Bode ; Wheel Cylinder

Lubricate the cylinder bore with clean rubber grease.

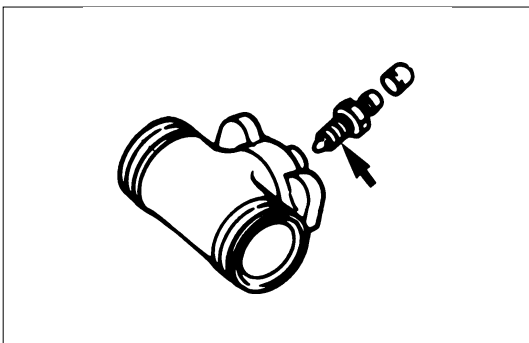


4. Piston Assembly

Install new piston cups on each piston so that the flared end of the cups are turned to the inboard side of the pistons. Attach the return spring and the boot to the piston.

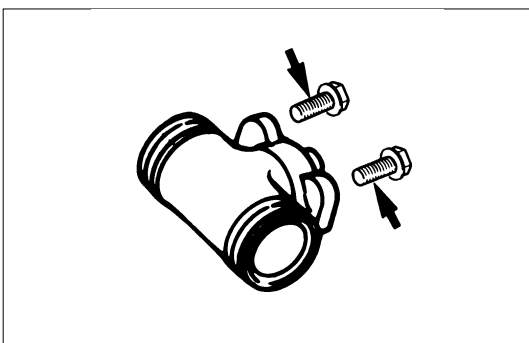


Apply DELCO silicone lube No.5459912 (or equivalent) to the piston and the inner face of the boots.



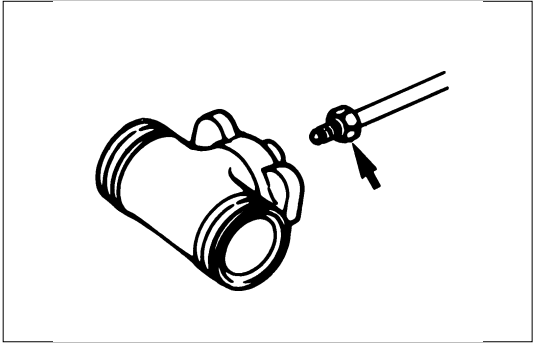
6. Bleeder ; Wheel Cylinder

Torque	N·m(kgf·m/lb·ft)
6.9 - 11.8 (0.7 - 1.2 / 5.1 - 8.7)	



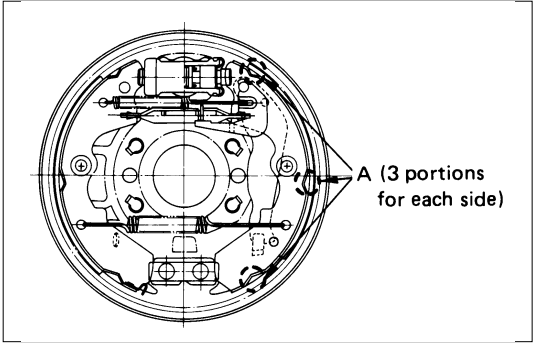
7. Wheel Cylinder Assembly

Torque	N·m(kgf·m/lb·ft)
11 - 15 (1.1 - 1.5 / 8 - 11)	



18.Brake Line

Torque	N·m(kgf·m/lb·ft)
13 - 19 (1.3 - 1.9 / 9 - 14)	

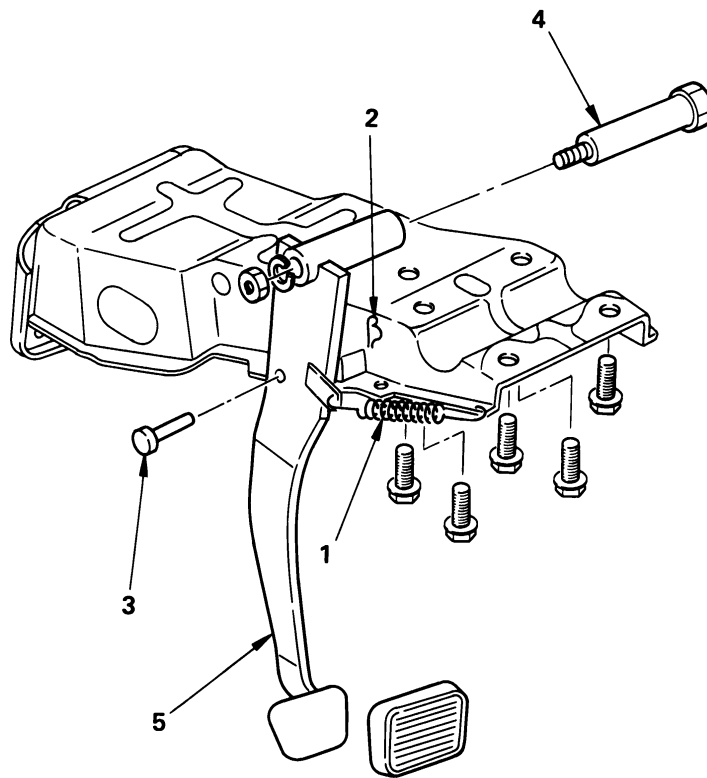


Apply grease lightly to back plate A.

BRAKE CONTROL

↔ ↔ REMOVAL AND INSTALLATION

BRAKE PEDAL ASSEMBLY



This illustration based on the LHD model

Removal Steps

1. Return spring
2. Snap pin
3. Pin ; push rod to pedal
4. Pin ; fulcrum, pedal to bracket
5. Pedal assembly with bush

Installation steps

To install, follow the removal procedure in reverse order.

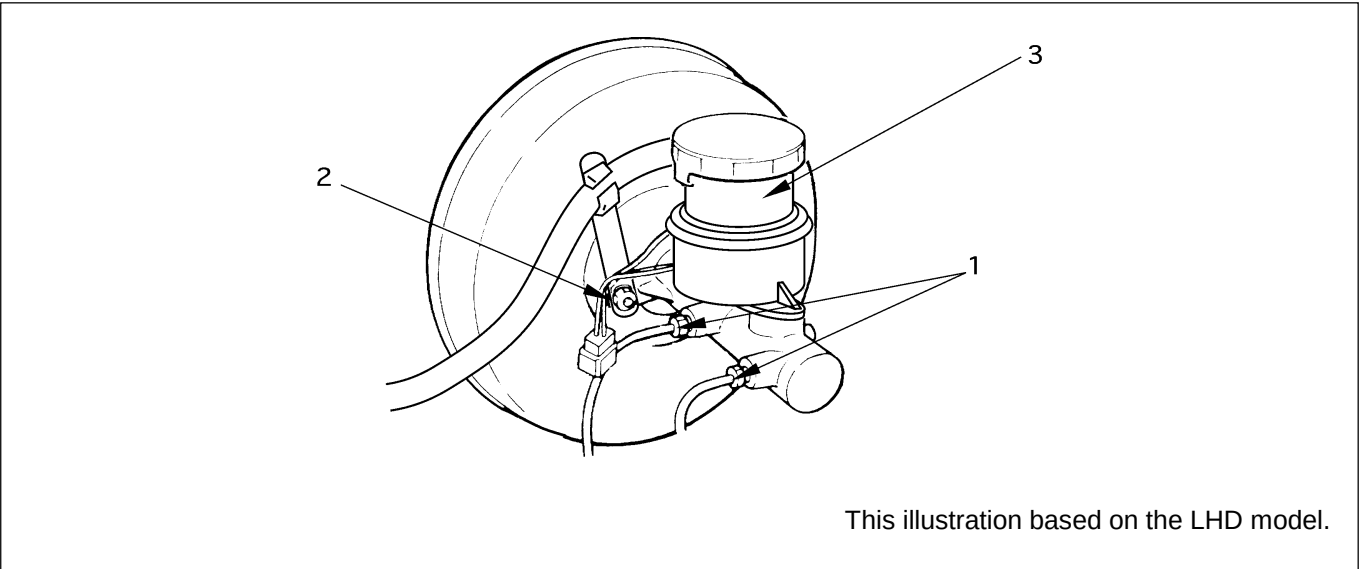
Before installation, apply grease to the entire circumference of the fulcrum pin (4) and push rod pin (3).

Refer to "SERVICING" in this section for adjustment procedure of brake pedal.

MASTER CYLINDER

REMOVAL AND INSTALLATION

BRAKE PEDAL ASSEMBLY

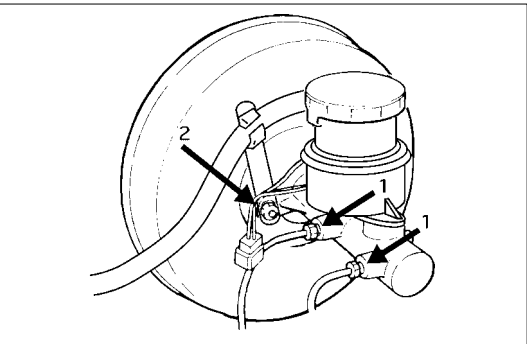


Removal Steps

- ▲ 1. Brake line
- 2. Nut ; master cylinder to vacuum servo
- 3. Master cylinder assembly

Installation Steps

- 3. Master cylinder assembly
- ▲ 2. Nut ; master cylinder to vacuum servo
- ▲ 1. Brake line



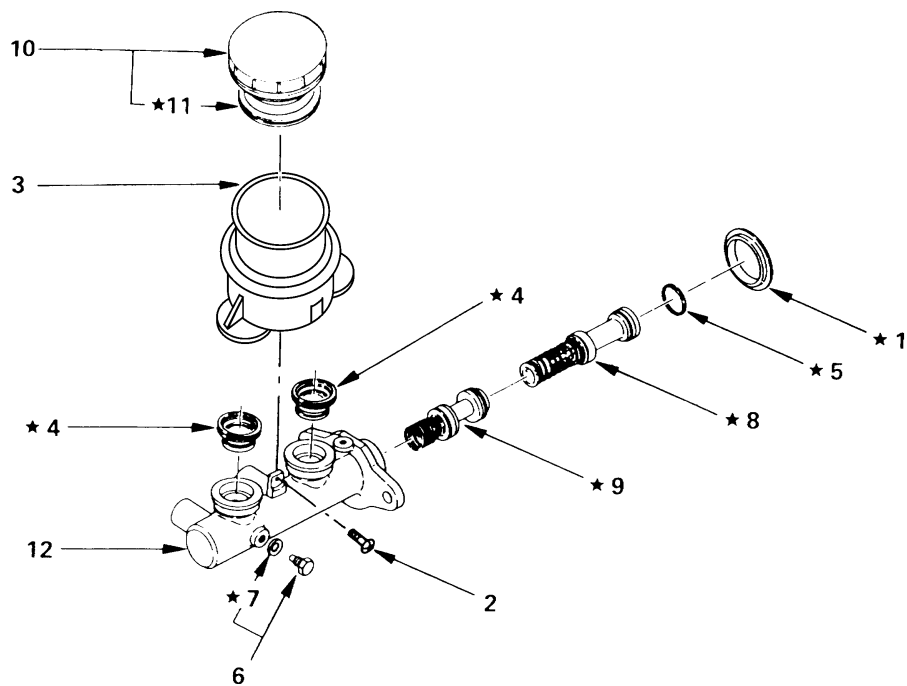
Important Operation - Removal

- 1. Brake Line
Be very careful not to spill brake fluid on the painted surface. Damage to the painted surface will result.

Important Operation - Installation

	2. Nut ; Master Cylinder to Vacuum Servo	Torque	N·m (kgf·m/lb·ft)
	1. Brake Line	Torque	N·m (kgf·m/lb·ft)

✚ DISASSEMBLY



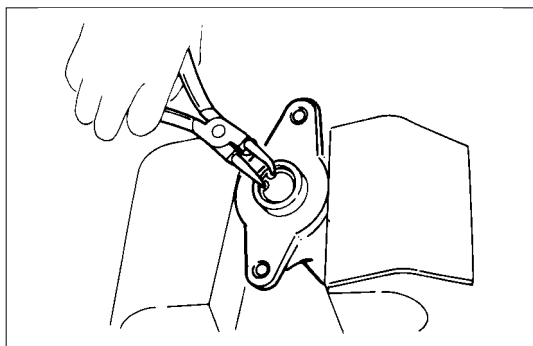
Disassembly Steps

- | | |
|----------------------------|--|
| 1. Dust seal | 7. Gasket |
| 2. Screw | ▲ 8. Piston assembly; primary and spring |
| 3. Reservoir; fluid, brake | ▲ 9. Piston assembly; secondary and spring |
| 4. Grommet | 10. Cover; fluid reservoir |
| ▲ 5. Ring; snap | 11. Seal |
| ▲ 6. Bolt; stopper | 12. Cylinder assembly; brake, master |



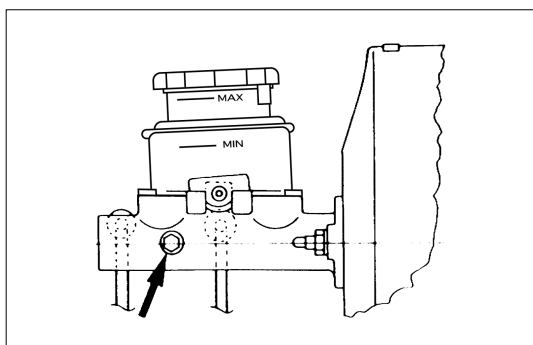
Important Operations

When disassembling, inspecting or reassembling the master cylinder assembly, take care not to bring the parts into contact with mineral oil or dust. Wash the piston cups only with brake fluid. Do not use gasoline or other mineral-base cleaning solvents.



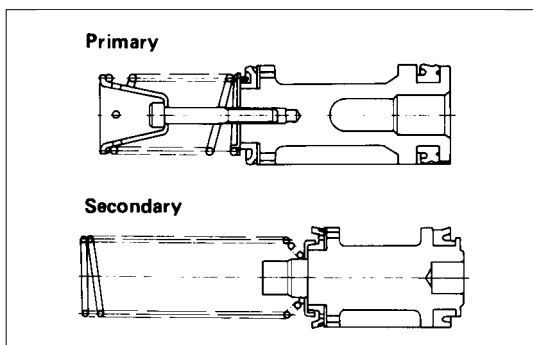
5. Ring ; Snap

Remove the snap ring from the cylinder body with pushing in the primary and secondary pistons.



6. Bolt ; Stopper

Push in the primary and secondary pistons and remove the stopper bolt completely from the cylinder body, then remove the primary and secondary piston assemblies.



8. Piston Assembly ; Primary and Spring

9. Piston Assembly ; Secondary and Spring

Don't remove the spring from the piston.



INSPECTION AND REPAIR

Make necessary correction or parts replacement if wear damage or any other abnormal conditions are found through inspection.

- Cylinder inside face
- Piston
- Piston cap
- Piston cap spacer
- Return port
- Return spring

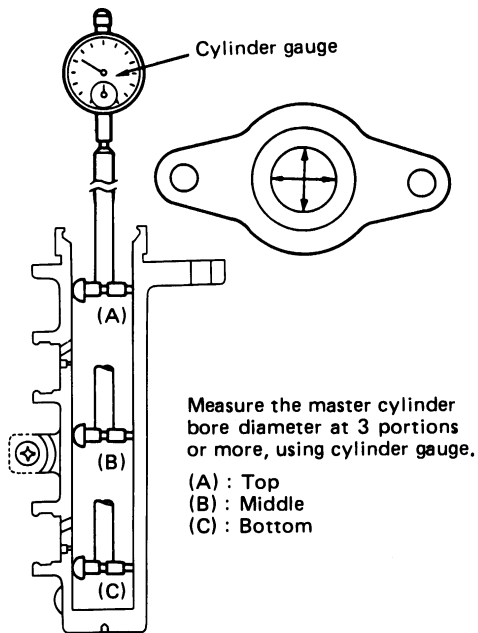
Visual Check

Inspect the following parts for wear, distortion, cuts, nicks, corrosion, or other abnormal conditions.

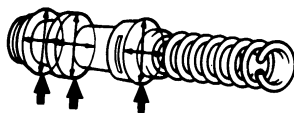


Master Cylinder Bore Diameter

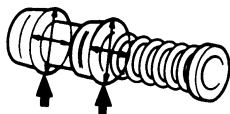
Standard	mm(in)
	23.81 (0.938)



Primary piston



Secondary piston



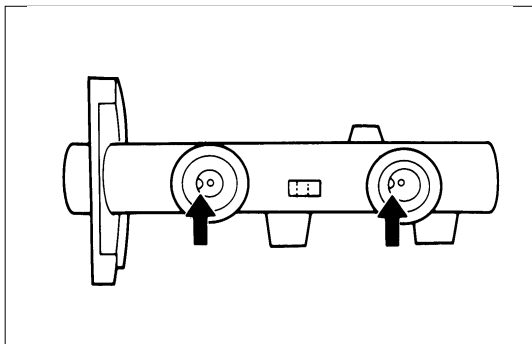
Clearance between the Master Cylinder and the Piston

Measure the outer diameter of the piston assembly at the portions shown in the left figure.

Standard	Limit	mm(in)
0.04 - 0.125 (0.00158 - 0.00493)	0.15 (0.00591)	

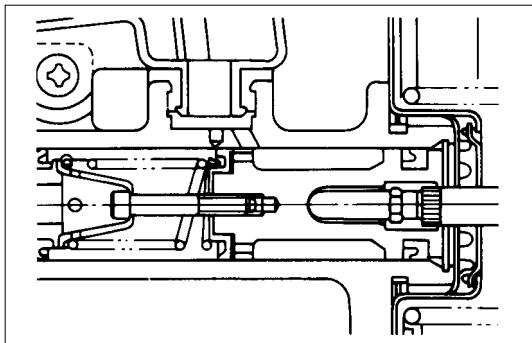
Note:

If the clearance deviates from the range shown above, replace the master cylinder and the piston assembly together.



Return Port

Check the return port for obstructions and if necessary, clean with a tag wire.
Blow away foreign matter with compressed air.

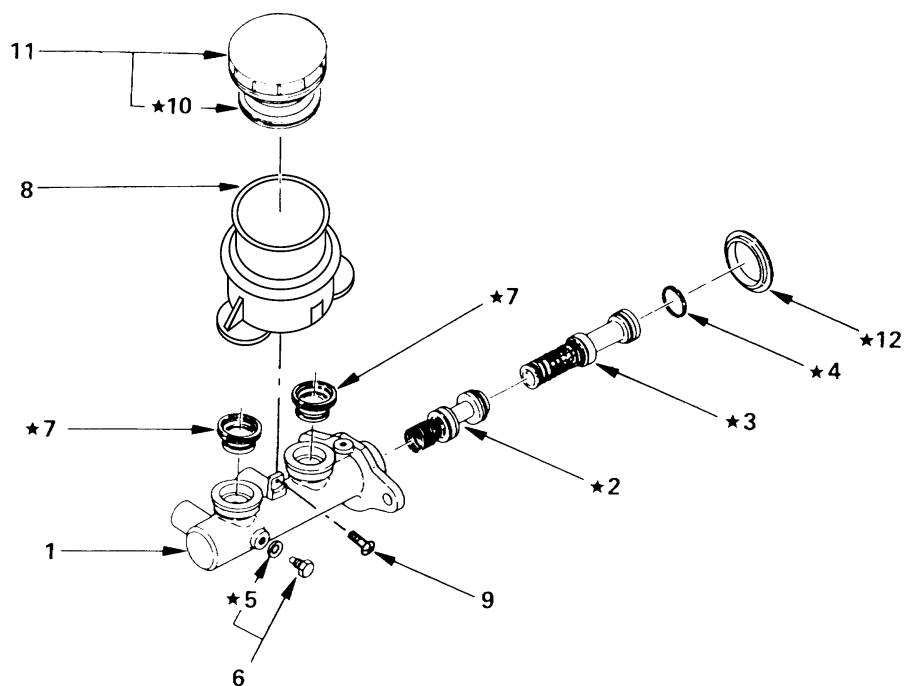


Primary Piston

After reassembly, push in the primary piston to see that it returns smoothly.
Repeat the test two or three times to see that brake fluid is forced out from the front and rear outlets.



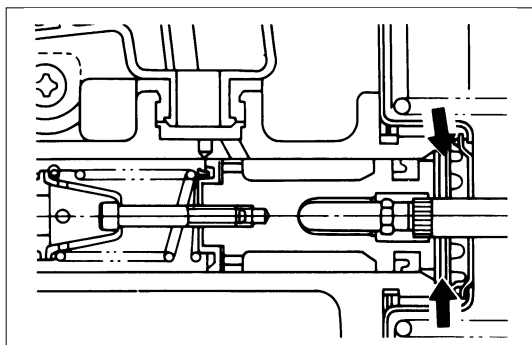
REASSEMBLY



★; Repair Kit

Reassembly Steps

- | | |
|---|-----------------------------|
| ▲ 1. Cylinder assembly ; brake, master | ▲ 7. Grommet |
| ▲ 2. Piston assembly ; secondary and spring | 8. Reservoir ; fluid, brake |
| ▲ 3. Piston assembly ; primary and spring | ▲ 9. Screw |
| 4. Ring ; snap | 10. Seal |
| 5. Gasket | 11. Cover ; fluid reservoir |
| ▲ 6. Bolt ; stopper | ▲ 12. Dust seal |

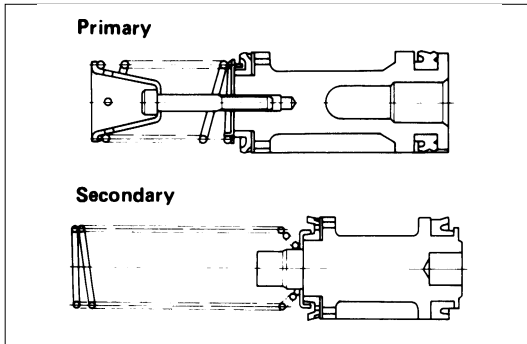


Important Operations



1. Cylinder Assembly ; Brake, Master

Lubricate the master cylinder bore with clean rubber grease.(arrowed portion)



2. Piston Assembly ; Secondary and Spring

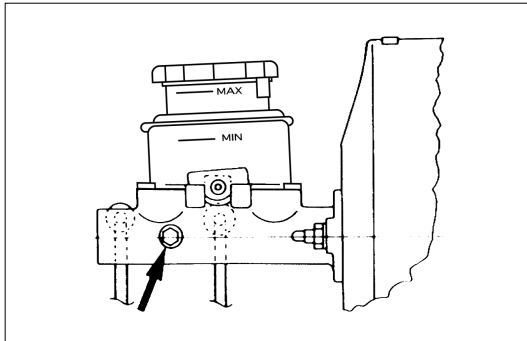
3. Piston Assembly ; Primary and Spring

Lubricate the piston cups on the primary piston assemblies with rubber grease.

Take care not to scratch the piston cup when installing the piston assemblies.

Note:

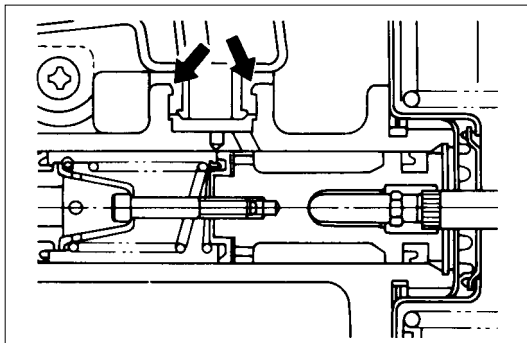
Don't remove the spring from the piston.



6. Bolt ; Stopper

Depress the primary piston and install the piston stopper bolt with a new gasket.

Torque	N·m(kgf·m/lb·ft)
6.9 - 8.8 (0.7 - 0.9 / 5.1 - 6.5)	



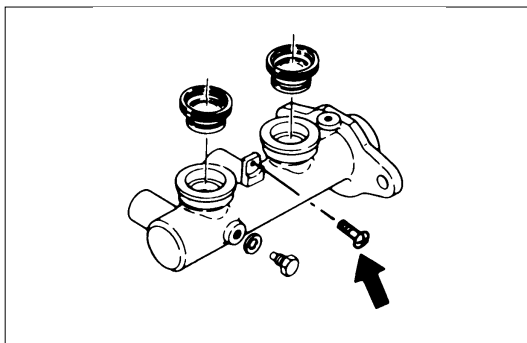
7. Grommet

Lubricate the new grommets with clean rubber grease.

Insert the grommets, with the flared side up, into the cylinder body.

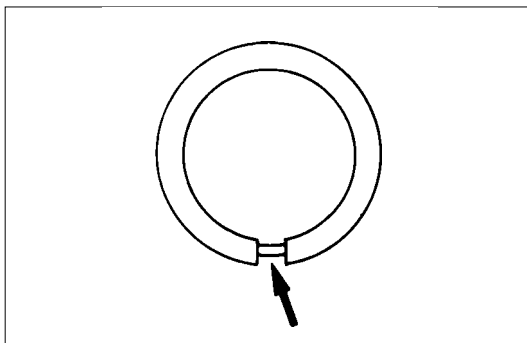
Apply rubber grease to the dust seal portion.

(The portion indicated by the arrows in the left diagram.)



9. Screw

Torque	N·m(kgf·m/lb·ft)
1.0 - 2.0 (0.01 - 0.20 / 0.7 - 1.5)	

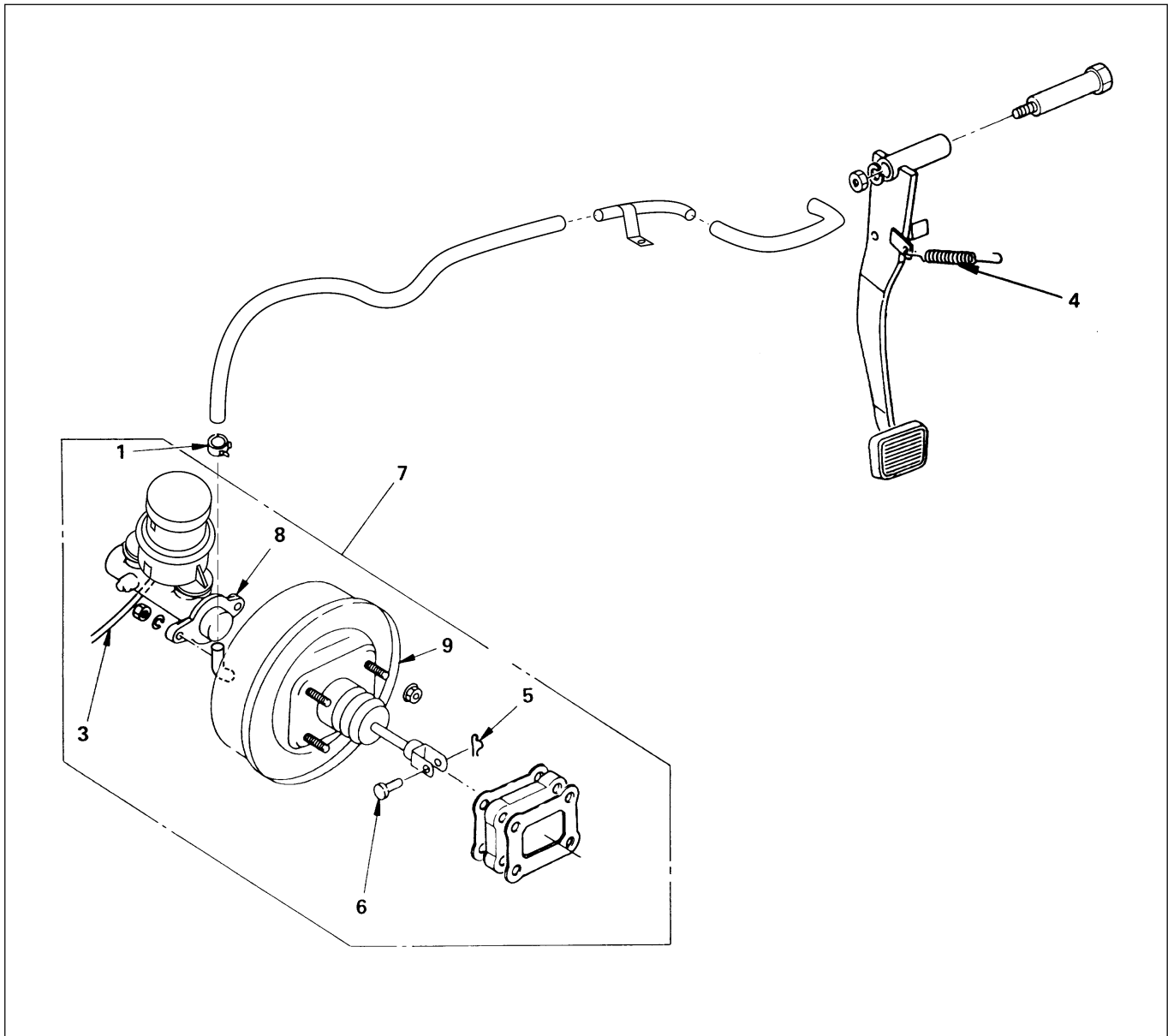


12. Dust Seal

Install the dust seal so that its groove faces downward.

VACUUM SERVO

REMOVAL AND INSTALLATION

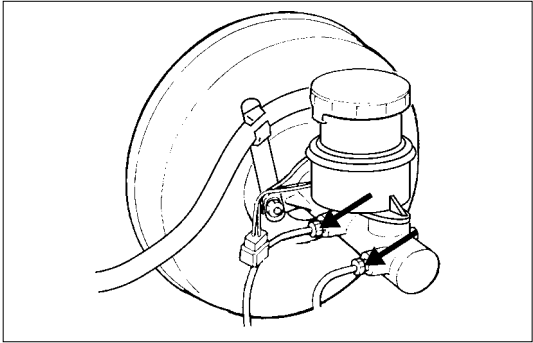


Removal Steps

1. Clamp ; vacuum hose
2. Vacuum hose
- ▲ 3. Brake line
4. Return spring ; brake pedal
5. Snap pin
6. Pin ; push rod to brake pedal
7. Vacuum servo to dash panel and pedal mounting bracket
8. Maser cylinder assembly
9. Vacuum servo assembly

Installation Steps

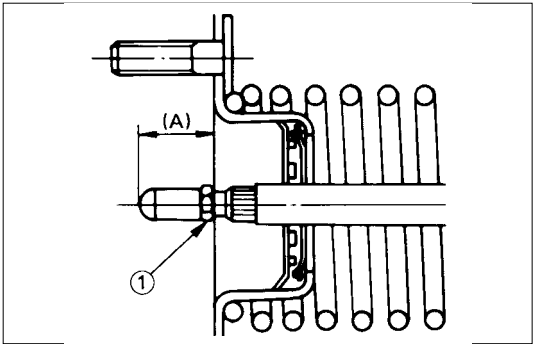
9. Vacuum servo assembly
- ▲ 8. Maser cylinder assembly
- ▲ 7. Vacuum servo to dash panel and pedal mounting bracket
6. Pin ; push rod to brake pedal
5. Snap pin
4. Return spring ; brake pedal
- ▲ 3. Brake line
- ▲ 2. Vacuum hose
1. Clamp ; vacuum hose



Important Operation - Removal

3. Brake Line

When handling, be careful not to spill brake fluid over the painted surfaces, as damage to the paint finish will result.



Important Operation - Installation



8. Master Cylinder Assembly

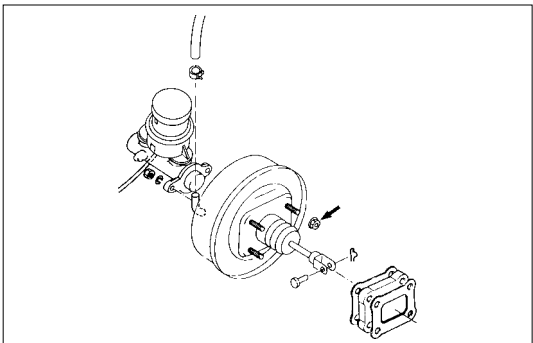
Check the distance from the flange face of the vacuum servo to the end of the push rod before installation of the master cylinder.



Projection (A)	mm(in)
18.0 - 18.2 (0.709 - 0.717)	

If the measured distance deviates from the specified range, make an adjustment with the lock nut ① at the end of the push rod.

Torque	N·m(kgf·m/lb·ft)
15 - 25 (1.5 - 2.5 / 11 - 18)	

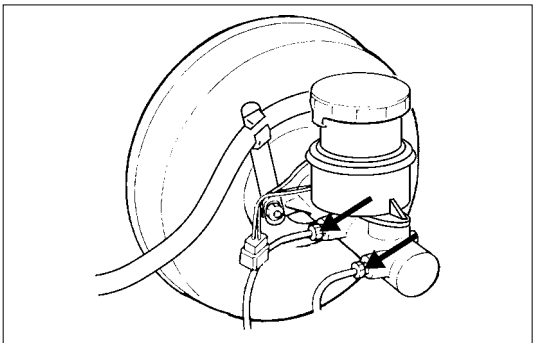


7. Vacuum Servo to Dash Panel and Pedal Mounting Bracket

Torque	N·m(kgf·m/lb·ft)
22 - 31 (2.2 - 3.2 / 16 - 23)	

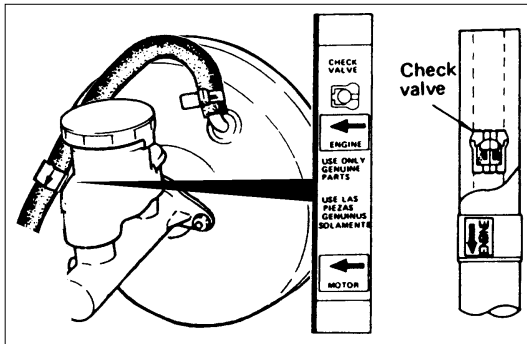


Apply sealer to the dashboard fitting face.



3. Brake Line

Torque	N·m(kgf·m/lb·ft)
9 - 15 (0.9 - 1.5 / 6.5 - 11)	



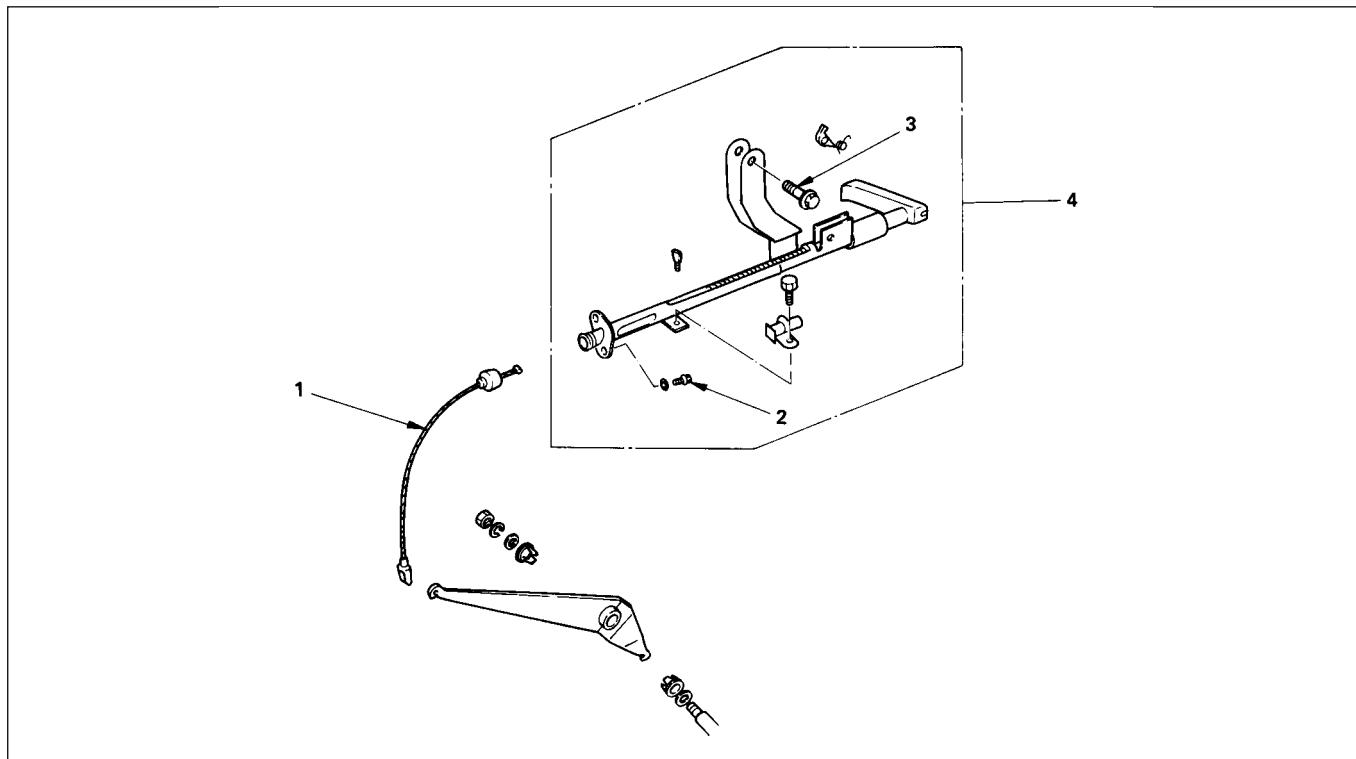
2. Vacuum Hose

- 1) When removing or replacing the vacuum hose make sure that the arrow on the label of the hose is facing the engine.
- 2) Also confirm that the check valve is facing the engine.

PARKING BRAKE (STEM TYPE)

↔ ↔ REMOVAL AND INSTALLATION

PARKING BRAKE STEM ASSEMBLY (LEFT HAND DRIVE MODEL)



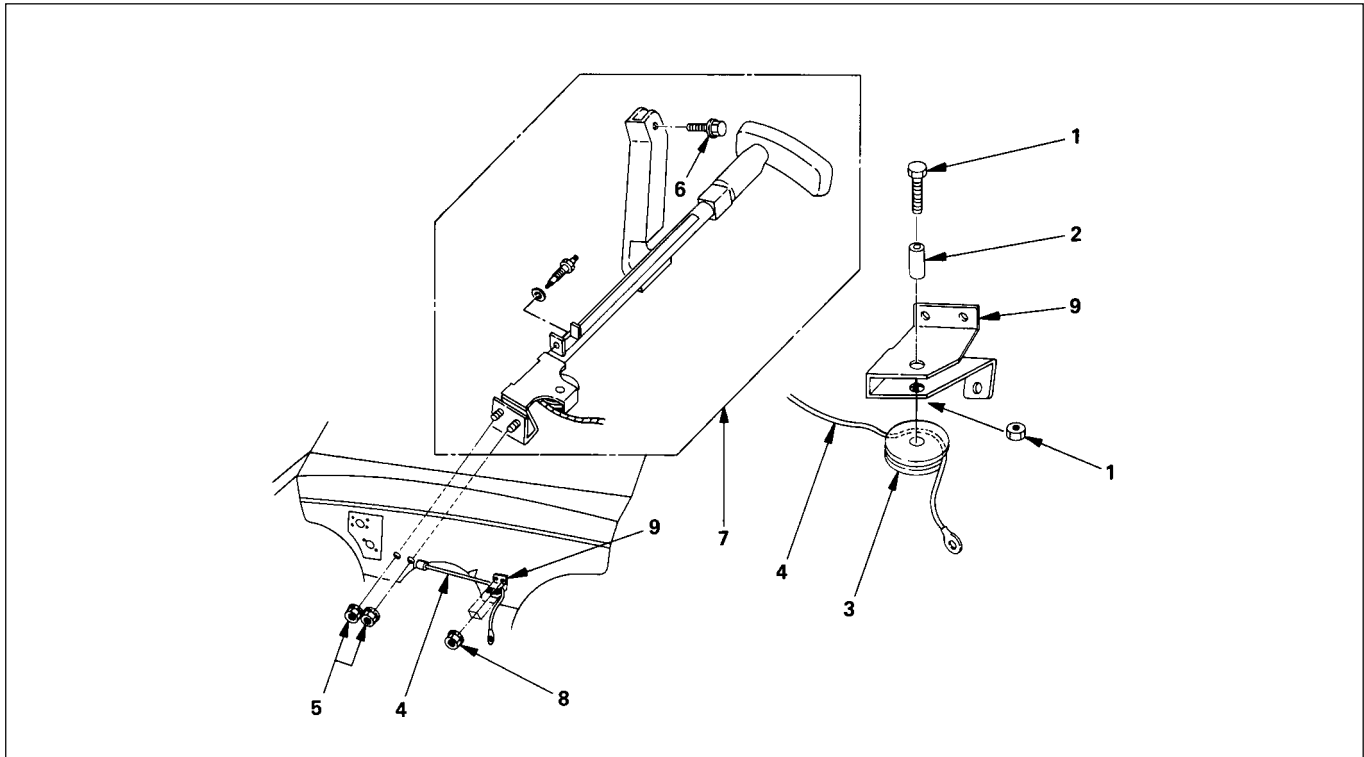
Removal Steps

1. Cable front, relay lever side
2. Bolt ; bracket to dash
3. Bolt ; bracket to cross beam
4. Parking brake stem assembly

Installation Steps

To install, follow the removal procedure in reverse order.

PARKING BRAKE STEM ASSEMBLY (RIGHT HAND DRIVE MODEL)



Removal Steps

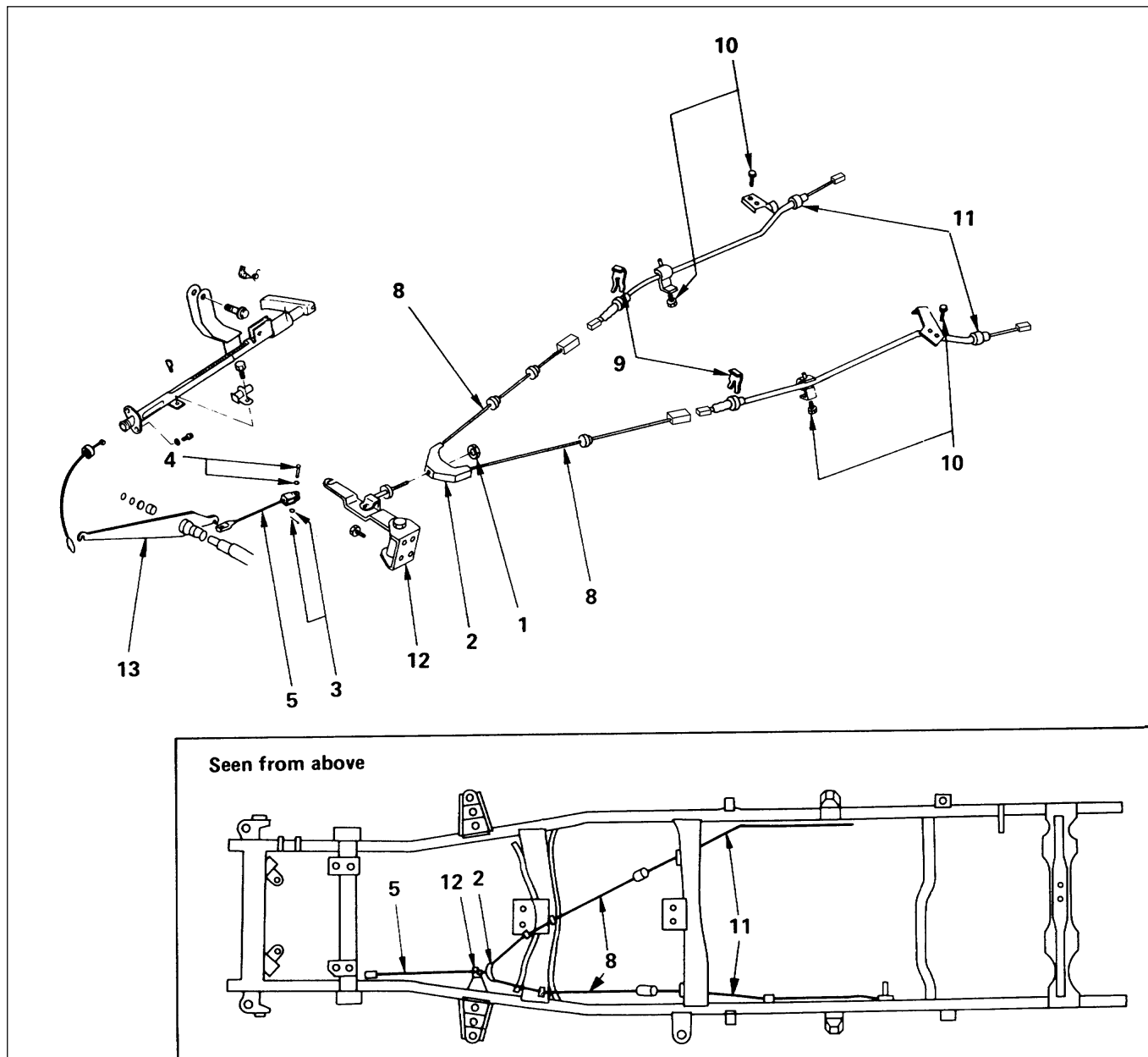
1. Bolt and nut
2. Collar
3. Roller
4. Cable front, relay lever side
5. Nuts ; bracket to dash
6. Bolt ; bracket to cross beam
7. Parking brake stem assembly
8. Nuts
9. Bracket ; roller

Installation Steps

To install, follow the removal procedure in reverse order.

Before installation, apply chassis grease to the roller (3)'s contact surface to the collar (2) and cable (4).

FRONT AND REAR CABLE ASSEMBLY

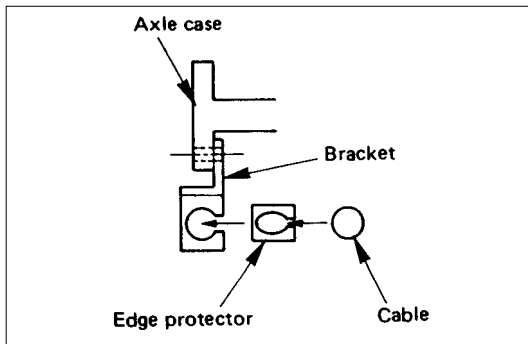


Removal Steps

1. Nut
2. Equalizer bracket
3. Snap pin, with plan washer
4. Pin with curved washer
5. Cable ; front lower
6. Pin with curved washer
7. Parking brake stem assembly
8. Nuts
9. Clip
10. Clip ; fixing bracket
- ▲ 11. Cable assembly ; rear
12. 2nd relay lever assembly with return spring
13. 1st relay lever assembly

Installation Steps

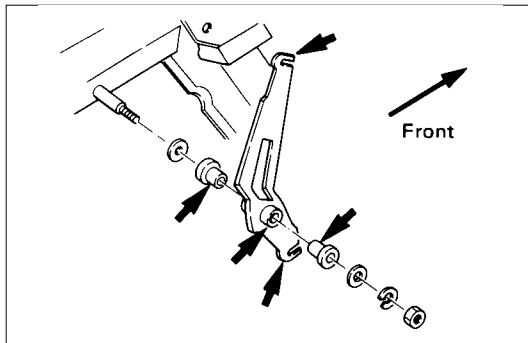
- ▲ 13. 1st relay lever assembly
- ▲ 12. 2nd relay lever assembly with return spring
11. Cable assembly ; rear
10. Clip ; fixing bracket
9. Clip
- ▲ 8. Nuts
- ▲ 7. Parking brake stem assembly
- ▲ 6. Pin with curved washer
5. Cable ; front lower
4. Pin with curved washer
- ▲ 3. Snap pin, with plan washer
2. Equalizer bracket
1. Nut



Important Operations - Removal

11. Cable Assembly ; Rear

When abrasion or wear is evident on edge protector, it must be replaced with new one.

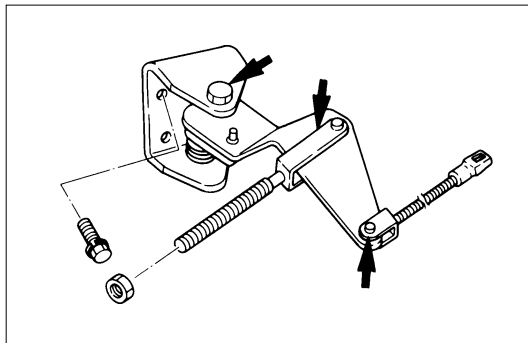


Important Operations - Installation



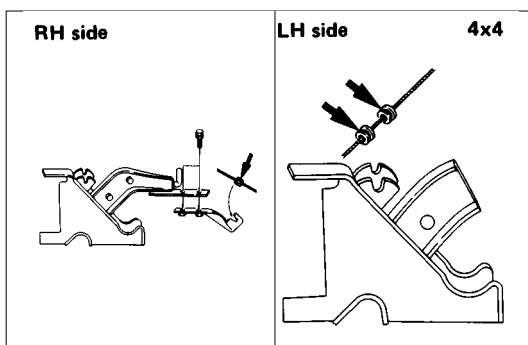
13. 1st Relay Lever Assembly

Apply grease (BESCO L-2 or equivalent) to the inner and outer surface of the bushes and cable connecting portions.



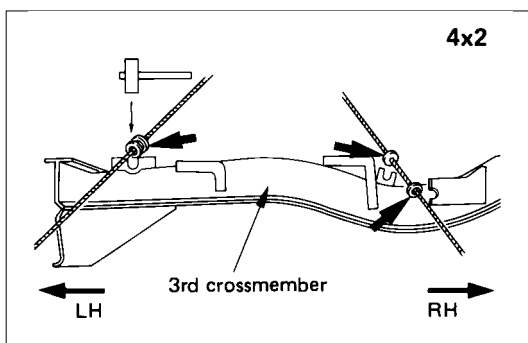
12. 2nd Relay Lever Assembly with Return Spring

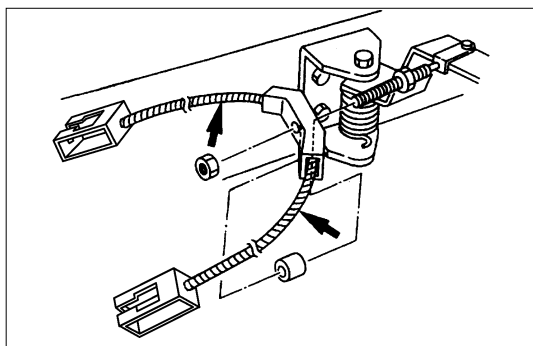
Apply grease (BESCO L-2 or equivalent) to the arrowed portion in the left figure.



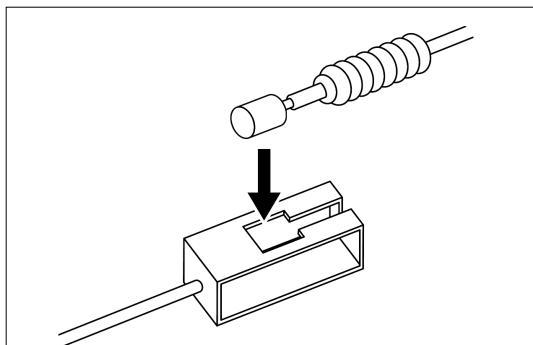
8. Intermediate Cable

After applying grease (BESCO L-2 or equivalent) to the cable guide, set it to the bracket by striking lightly with a mallet.





Apply grease (BESCO L-2 or equivalent) to the arrowed portion in the left figure.



7. Pin with Curved Washer

Apply grease (BESCO L-2 or equivalent) to the circumference of the pin and joint.

6. Snap pin, with Plain Washer

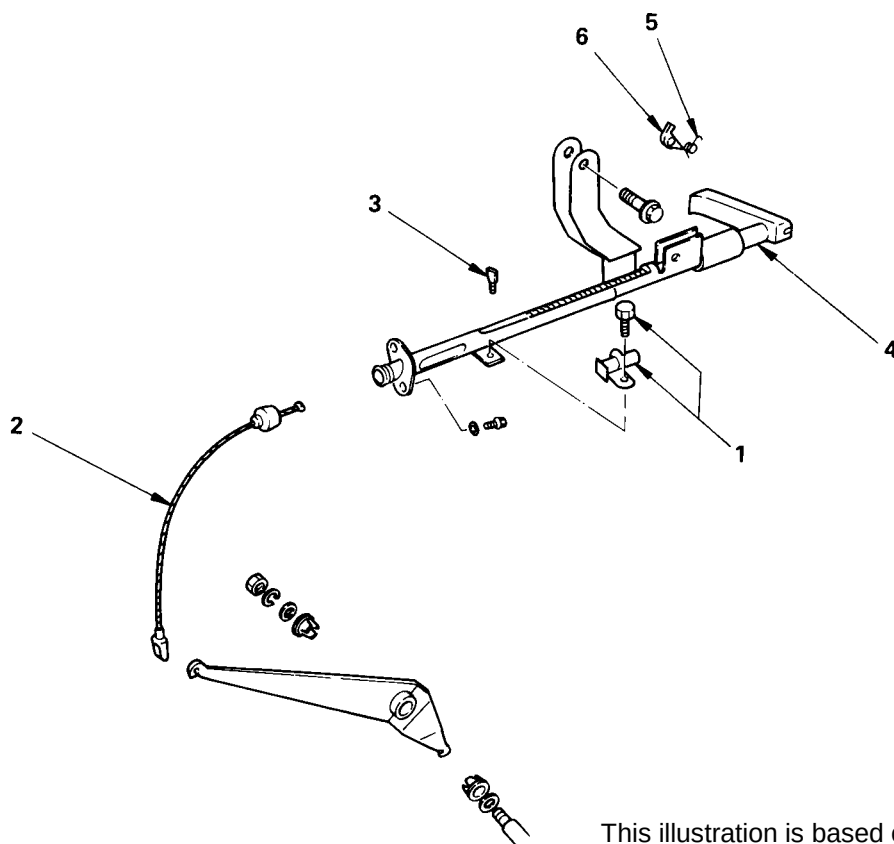
3. Snap pin, with Plain Washer

Discard the used snap pins and use new parts.



DISASSEMBLY AND REASSEMBLY

PARKING BRAKE STEM ASSEMBLY



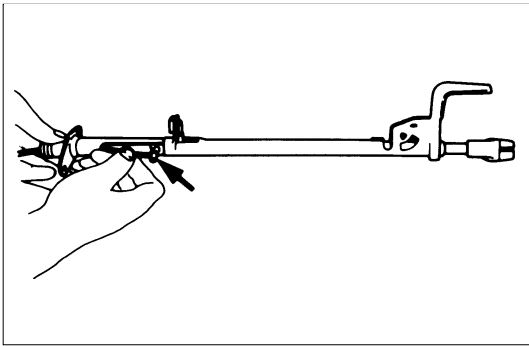
This illustration is based on the LHD model

Disassembly Steps

1. Switch ; parking brake and bolt
- ▲ 2. Cable ; front
- ▲ 3. Switch actuating pin
4. Stem
5. Spring
6. Pole

Reassembly Steps

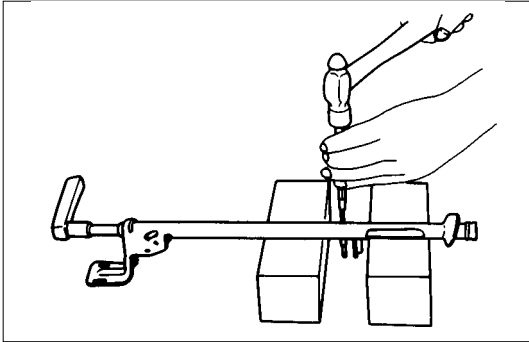
- ▲ 6. Pole
5. Spring
- ▲ 4. Stem
3. Switch actuating pin
- ▲ 2. Cable ; front
1. Switch ; parking brake and bolt



Important Operations - Disassembly

2. Cable ; Front

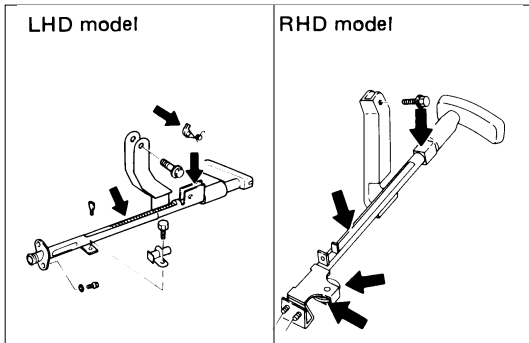
Manually release the lever ratchet and depress the stem until the cable attachment at the lower end of the stem is visible. Remove the cable from the stem lower end.



3. Switch Actuating Pin

Align the parking brake switch actuating pin with the hole in the housing.

Using a flat head punch, drive out the pin.



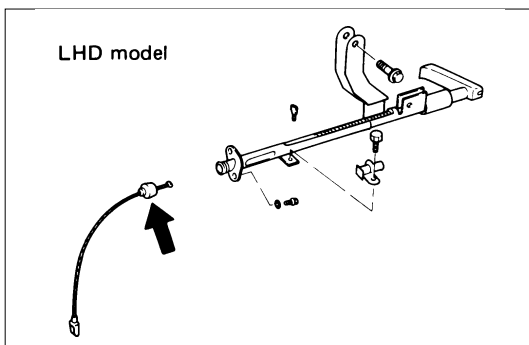
Important Operations - Reassembly



6. Pole

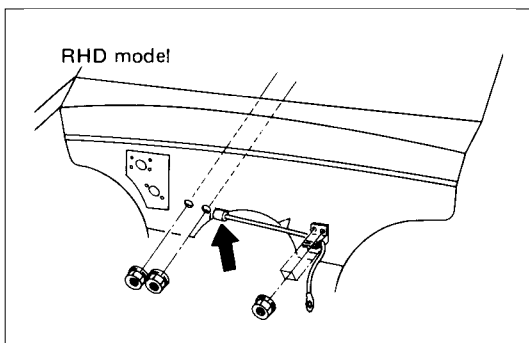
4. Stem

Before reassembly, apply chassis grease to the arrowed portion in the left figures.



2. Cable ; Front

Before reassembly, apply chassis grease to the entire inside surface of the cable boot (arrowed in the left figure) fully.





INSPECTION AND REPAIR

Make necessary adjustments, repairs, and parts replacements if wear, damage or other problems are discovered during inspection.

Refer to "SERVICING" in this section for adjustment procedure of parking brake.



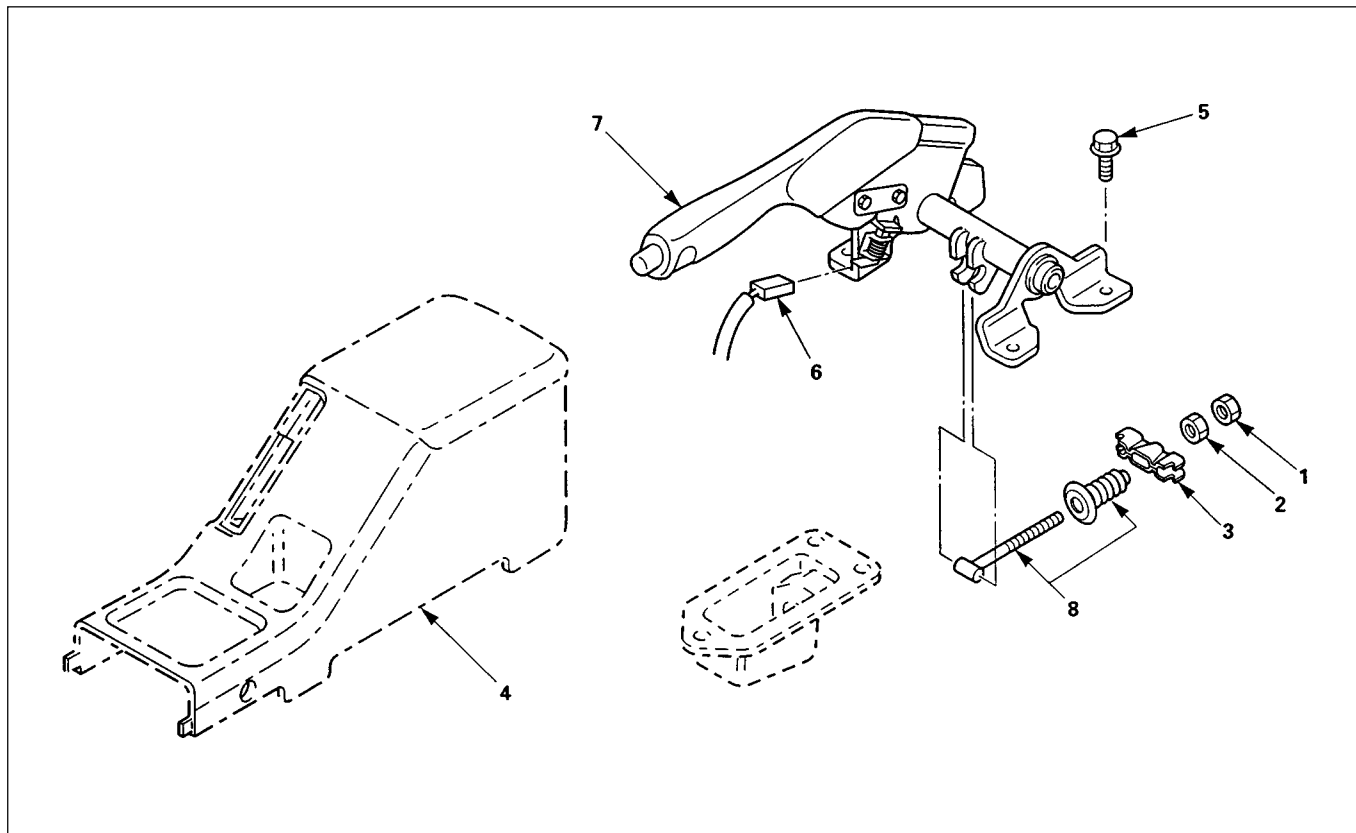
Adjustment Procedure of Parking Brake

- Parking brake

PARKING BRAKE (FLOOR MOUNT TYPE)

REMOVAL AND INSTALLATION

PARKING BRAKE LEVER AND FRONT CABLE ASSEMBLY



Removal Steps

1. Lock nut
2. Adjust nut
3. Equalizer
4. Center console
5. Bolt
6. Switch connector
7. Parking brake lever
8. Parking brake front cable

Installation Steps

- ▲ 8. Parking brake front cable
7. Parking brake lever
6. Switch connector
- ▲ 5. Bolt
4. Center console
3. Equalizer
2. Adjust nut
1. Lock nut



Important Operation - Installation



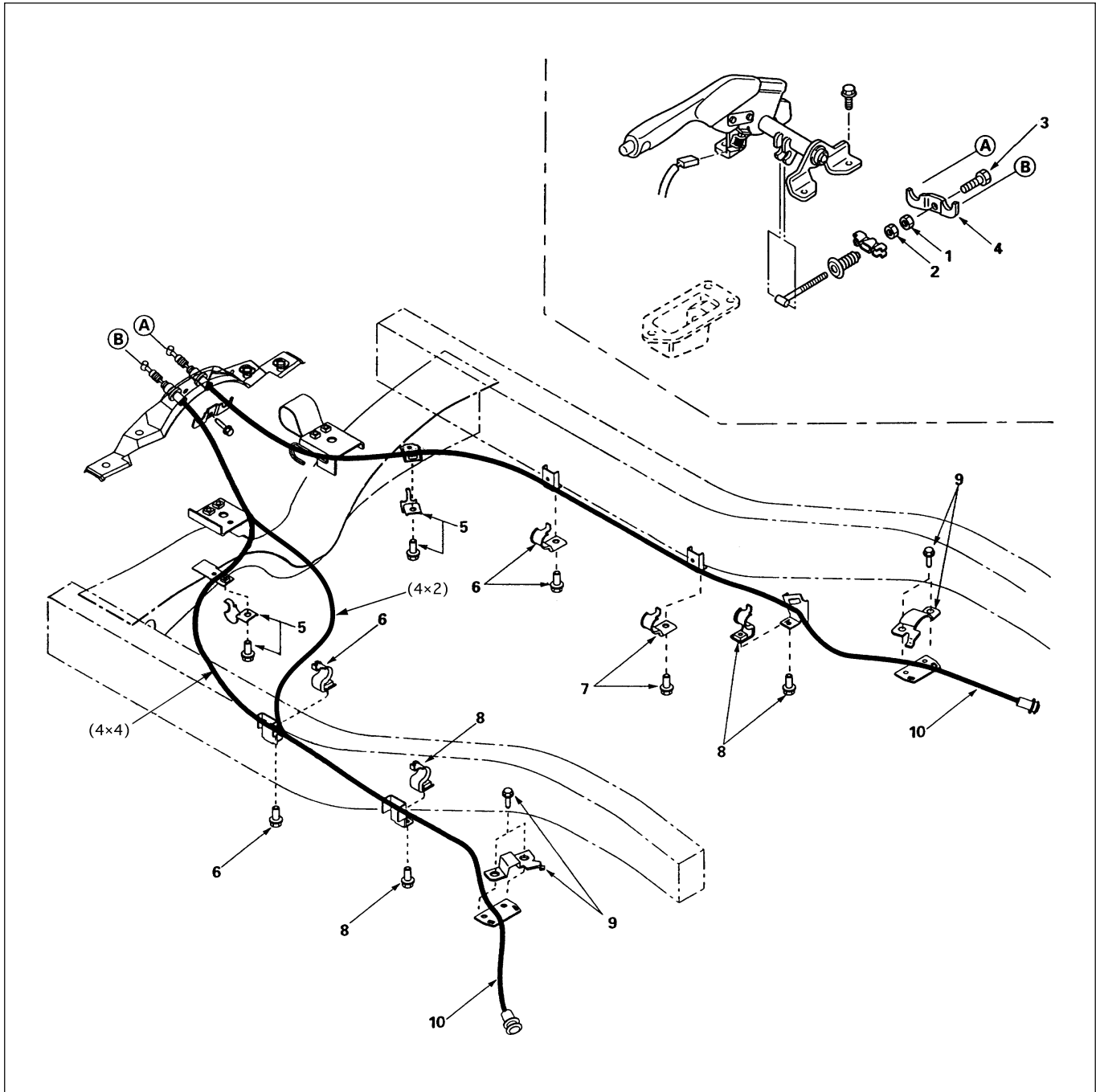
8. Parking Brake Front Cable

Apply grease (BESCO L-2 or equivalent) to the front cable before installation.



- After installation, be sure to adjust the parking brake. Refer to "SERVICING" of this section.

REAR CABLE ASSEMBLY

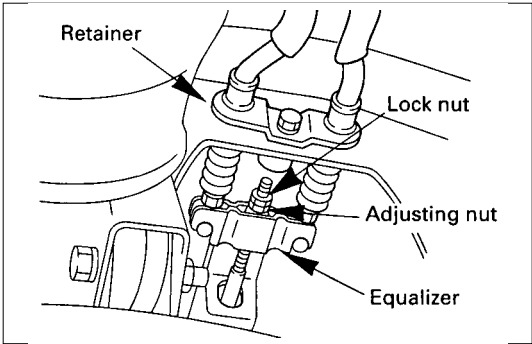
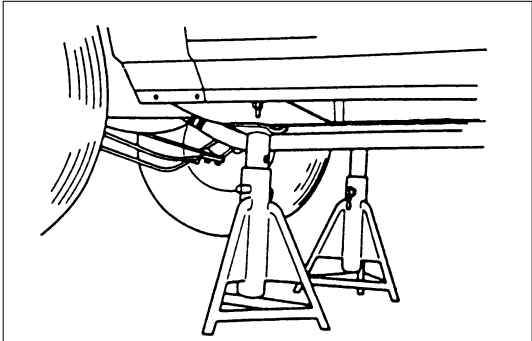


Removal Steps

- ▲ 1. Lock nut
- ▲ 2. Adjusting nut
- ▲ 3. Bolt
- ▲ 4. Retainer
- 5. Clip and bolt ; crossmember
- 6. Clip and bolt ; side member
- 7. Clip and bolt ; side member
- 8. Clip and bolt ; spring eye
- 9. Clip and bolt ; leaf spring
- 10. Hand brake rear cable

Installation Steps

- ▲ 10. Hand brake rear cable
- ▲ 9. Clip and bolt ; leaf spring
- ▲ 8. Clip and bolt ; spring eye
- ▲ 7. Clip and bolt ; side member
- ▲ 6. Clip and bolt ; side member
- ▲ 5. Clip and bolt ; crossmember
- ▲ 4. Retainer
- ▲ 3. Bolt
- ▲ 2. Adjusting nut
- ▲ 1. Lock nut



Important Operations - Removal Preparation

- Raise vehicle to the working level.
Support the axle assembly with the proper jack and chassis stands.
- Remove the tire and wheel.
- Remove the brake drum.

1. Lock Nut
2. Adjusting Nut
3. Bolt
4. Retainer

- Loosen lock nut and adjusting nut, then disconnect rear cable from the equalizer.
- Remove bolt and retainer.



Important Operations - Installation

10.Hand Brake Rear Cable

- Apply grease (BESCO L-2 or equivalent) to the circumference of the pin and joint.
- Apply grease (BESCO L-2 or equivalent) to the equalizer joint portion.

9. Clip and Bolt; Leaf Spring
8. Clip and Bolt; Spring Eye
7. Clip and Bolt; Side Member
6. Clip and Bolt; Side Member
5. Clip and Bolt; Crossmember

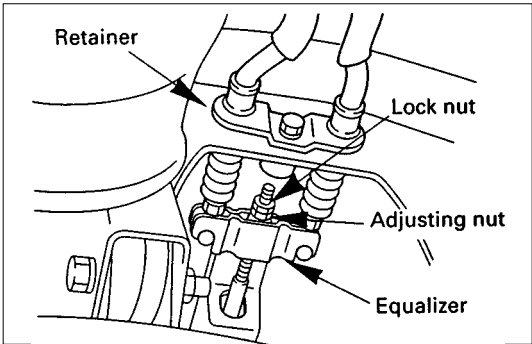


Torque	N·m (kgf·m/lb·ft)
6 (0.6 / 4.3)	

4. Retainer
3. Bolt



Torque	N·m(kgf·m/lb·ft)
16 (0.6 / 4.3)	



2. Adjusting Nut

1. Lock Nut
- Apply grease (BESCO L-2 or equivalent) to the front cable contact portion.
 - Connect rear cable to the equalizer, then adjust the parking brake. Refer to "SERVICING".
 - Tighten lock nut to the specified torque.



Torque	N·m(kgf·m/lb·ft)
16 (0.6 / 4.3)	

TROUBLESHOOTING

Condition and Cause	Correction
Poor Brake Action Master cylinder faulty Power cylinder faulty Level of brake fluid in reservoir too low Air in hydraulic circuit Front disc brake caliper faulty Rear brake wheel cylinder faulty Water or oil on brake pads or linings Brake pads or linings hardened Brake pads or linings in poor contact with rotor or brake drum Brake pads or linings worn Brake disc or drum rusted Check valve in vacuum hose faulty	Correct or replace Correct or replace Replenish and bleed Bleed Clean or replace Clean or replace Clean or replace Replace Correct Replace Grind or replace Correct or replace
Brake Squeak Brake pads or linings worn Brake pads or linings hardened Brake pads or linings in poor contact with rotor or brake drum Brake disc(s) warped, worn or damaged Disc brake anti-squeak shims fatigued Front hub bearings loose or preload is incorrect Brake disc or drum rusted	Replace Replace Correct Grind or replace Replace Adjust or replace Grind or replace
Brake Pull Tire inflation pressures unequal Front wheel alignment incorrect Water or oil on brake pads or linings Brake pads or linings hardened Brake pads or linings worn excessively Brake drum or rotor worn or scored Front or rear wheel cylinder or disc brake caliper malfunctioning Front hub bearing preload incorrect Brake pad or lining clearances unequal	Adjust Adjust Clean or replace Replace Replace Grind or replace Clean or replace Adjust or replace Adjust or replace
Brake Drag Parking brake maladjusted Brake pad or lining clearance insufficient Brake pedal free play insufficient Piston in master cylinder sticking Pistons in disc brake caliper sticking Pistons in rear brake wheel cylinders sticking Brake pads sticking in caliper Return springs weakened Parking brake binding Front hub bearing preload incorrect Rear brake shoes not returning Obstructions in hydraulic circuit Rotor warped excessively Rear brake drum distorted Piston cups swollen Check valve ; vacuum hose faulty Parking cable sticking Rear disc brake over adjust	Adjust Adjust Adjust brake pedal height or power cylinder operating rod Clean or replace Replace piston seals Clean or replace Clean Replace Overhaul rear brakes Adjust or replace Correct or replace brake back plate, check automatic adjuster and replace as necessary Clean Grind or replace Grind or replace Replace brake fluid and piston cups Replace Clean or replace Adjust or overhaul rear brakes
Excessive Brake Pedal Travel Air in hydraulic circuit Level of brake fluid in reservoir too low Master cylinder push rod clearance excessive Leakage in hydraulic system Rear disc brake autoadjuster malfunction	Bleed hydraulic circuit Replenish brake fluid reservoir to specified level and bleed hydraulic circuit as necessary. Adjust Correct or replace defective parts Overhaul rear brakes

TFBRK-WE-981

You are requested to order this manual using the manual number that is shown above.

This manual is applicable for vehicles in all countries except the USA, Canada, Europe and Thailand.

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Issued by
ISUZU MOTORS LIMITED

INTERNATIONAL SERVICE DEPARTMENT

Tokyo, Japan

First edition May., 1998

9805-01A4

