

Brake and Control System

General

Technical parameters

Tightening torque

Front brake assembly

Rear brake assembly

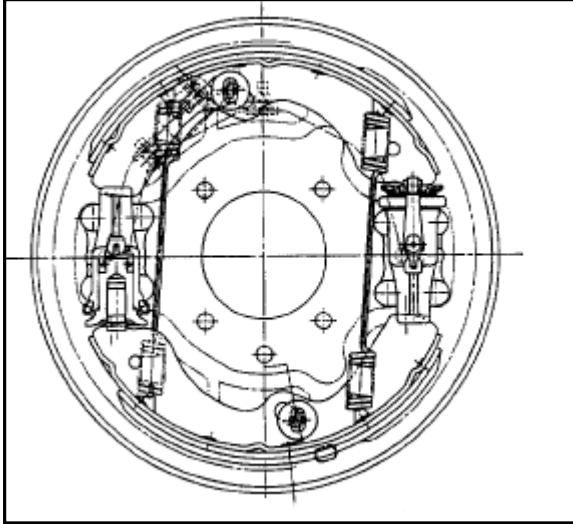
Parking brake assembly

Trouble shooting

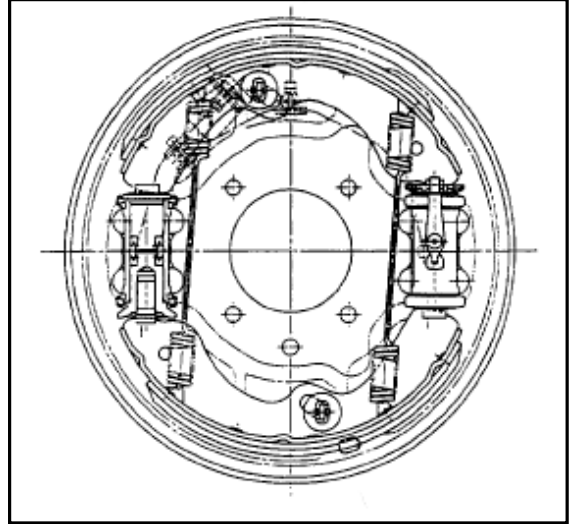
Brake

General

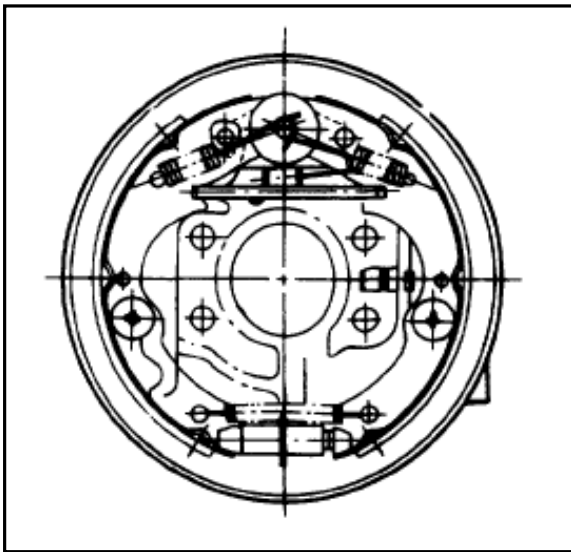
Front brake assembly



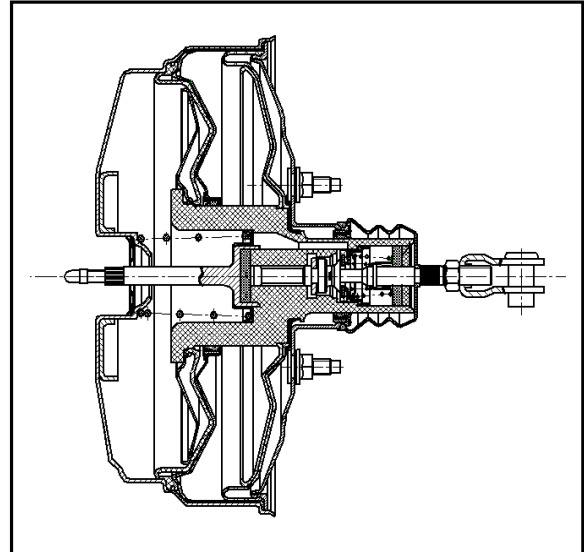
Rear brake assembly



Parking brake

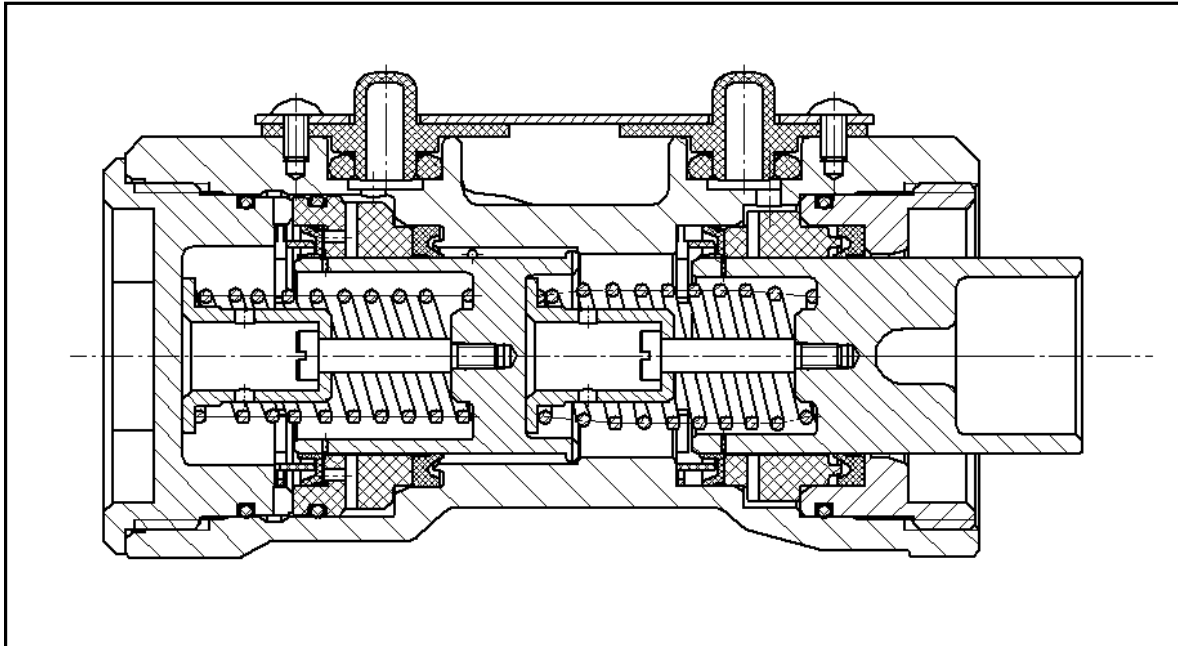


Vacuum booster

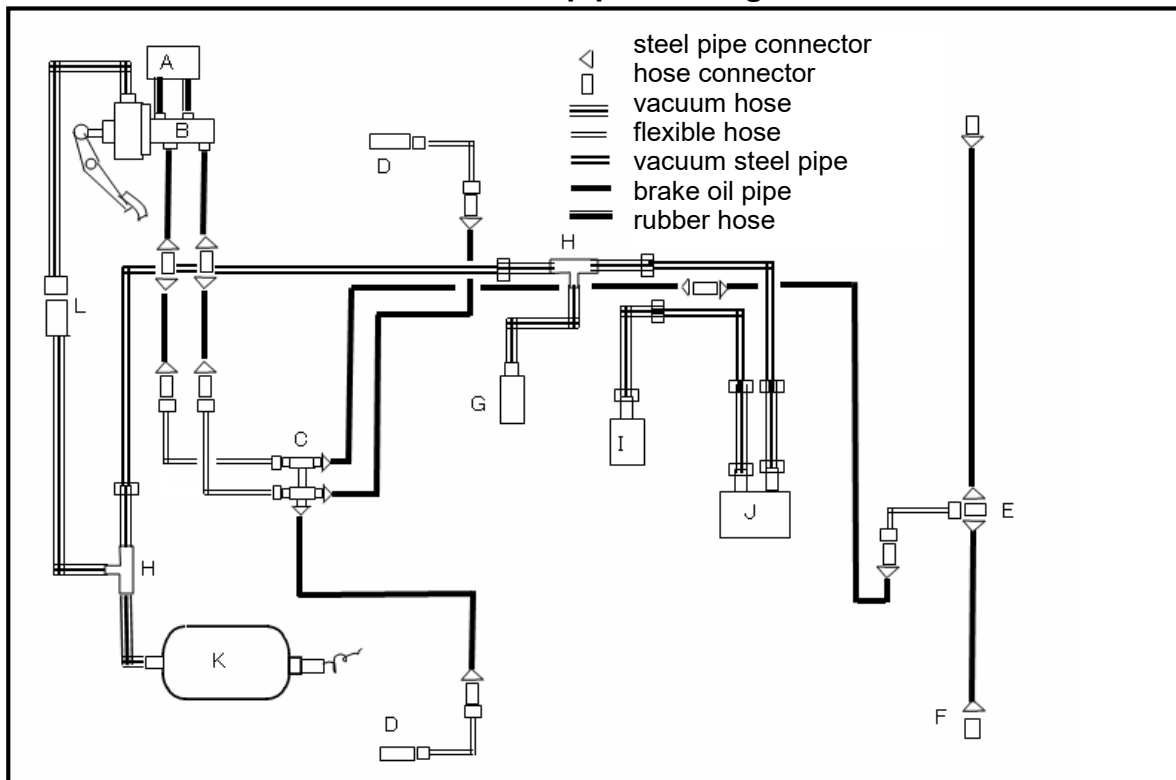


Brake

Brake master cylinder



Brake pipe drawing



A、oil pot; B、vacuum booster, with serial master brake cylinder assembly; C、5-way connector; D、front wheel cylinder; E、oil pipe tee; F、rear wheel cylinder; G、vacuum pump; H、vacuum pipe tee; I、venting aux. brake; J、venting aux. brake solenoid valve; K、vacuum barrel; L、vacuum pipe connecting plate.

Brake

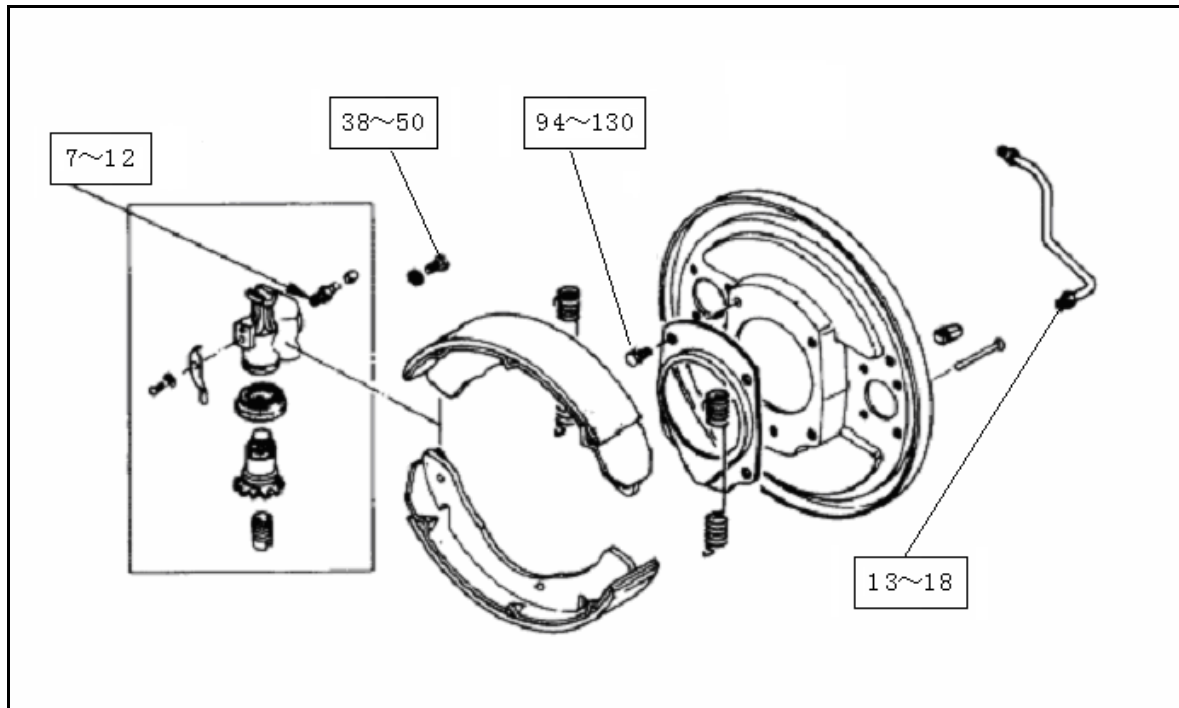
Brake Specifications

Service brake			
		Front	Rear
Type		Dual leading shoe	Duo duplex shoe
Brake drum ID (mm)		320	320
Friction plate size	Length (mm)	307	307
	Width (mm)	75	75
	Thickness (mm)	8.1	8.1
Brake shoe return spring	Free length (mm)	208.0	208.0
	Design length (mm)	224.0	224.0
	Design load (N)	225~275	225~275
Clearance between friction plate and brake shoe (mm)		Below 0.05 at rivet, below 0.2 at side, below 0.3 at end face	
Brake master cylinder			
ID (mm)		31.75	
Piston stroke（front + rear）(mm)		18+15.5	
Wheel cylinder			
		Front	Rear
ID (mm)		30.16	30.16
Parking brake			
Brake drum	ID (mm)	178	
Friction plate size	Length (mm)	193	
	Width (mm)	35	
	Thickness (mm)	5.0	
Brake shoe return spring	Spring serial No.	First	Second
	Free length (mm)	62	49
	Design length (mm)	70	57
	Design load (N)	108~132	90~110
Vacuum booster			
Diaphragm diameter (mm)		228+203	
Stroke (mm)		35	
Pedal			
Free stroke (mm)		5~8	

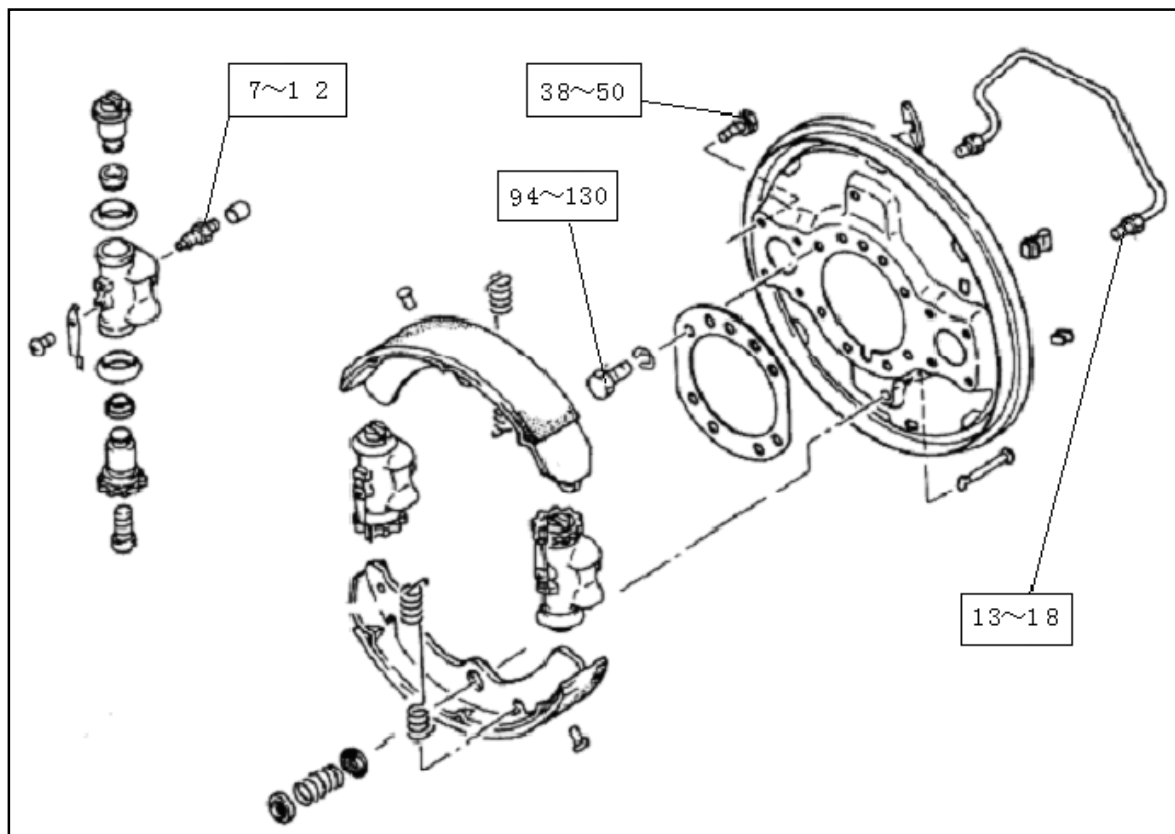
Brake

Fixed torque (N·m)

Front brake assembly (two leading shoe)



Rear brake assembly (two leading shoe)

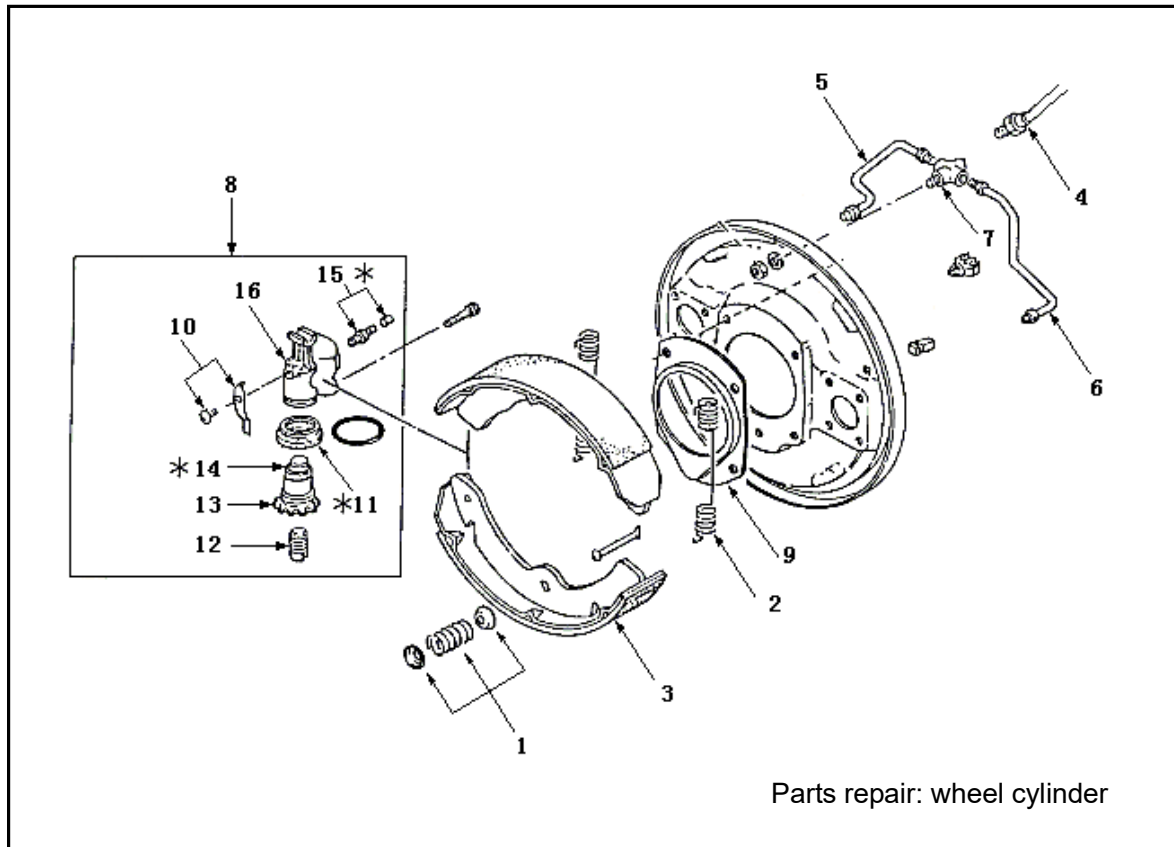


Brake

Front brake assembly (two leading shoe)



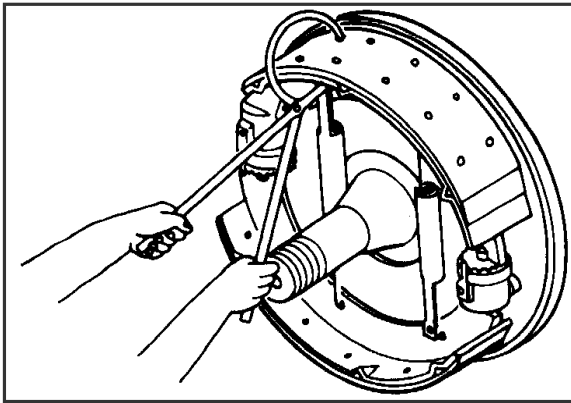
Disassembling



Disassembling sequence

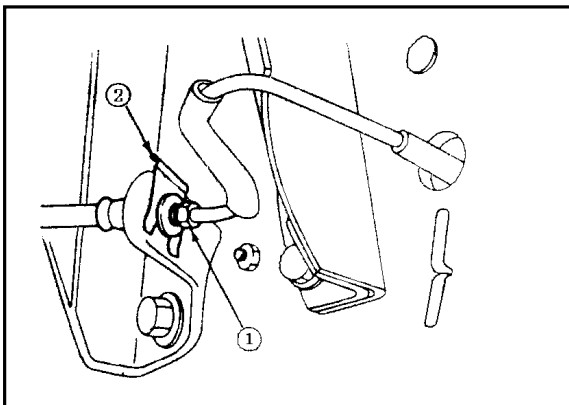
- | | |
|--|---------------------------------|
| 1. brake shoe spring rod, hold down spring and spring holder | 9. oil cover |
| 2. brake shoe return spring | 10. locking claw |
| 3. brake shoe assembly | 11. shield |
| 4. brake hose | 12. piston |
| 5. brake connecting pipe | 13. adjusting screw |
| 6. brake connecting pipe | 14. piston cup |
| 7. tee connector assembly | 15. venting screw and its cover |
| 8. wheel cylinder assembly | 16. wheel cylinder body |

Brake



Important operation

2、 Remove the return spring of the brake shoe.



4、 Hose

Loosen the connecting nut ①, and take down the clip ② and the hose.

- brake drum
- brake friction plate
- wheel cylinder body
- piston
- piston cup
- return spring

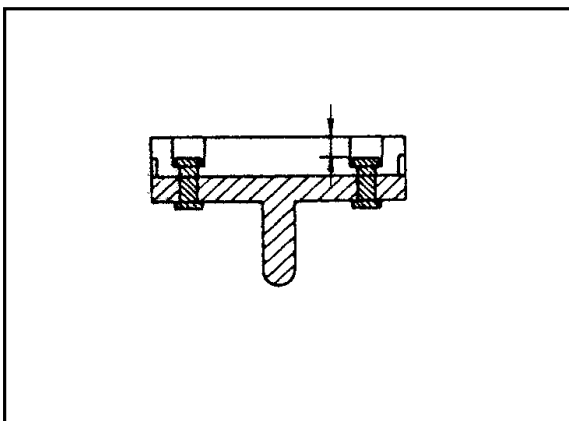


Inspection and repair

Repair or replace the parts if they are found worn out, damaged or with other problems after inspection.

Visual inspection

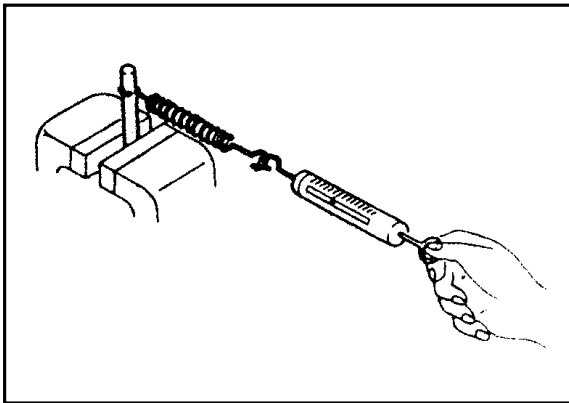
Check the following parts for any abrasion, corrosion, scratches or other problems.



Thickness of brake friction plates

Max. thickness: 1.0mm

Brake

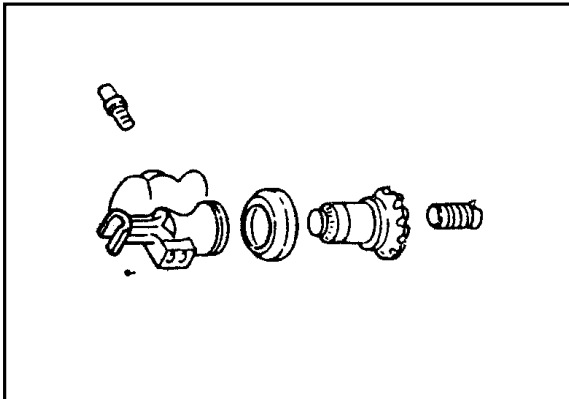


Return spring

Free length: 208.0mm

Design length: 224.0mm

Design load: 225~275N



Washing wheel cylinder parts

The wheel cylinder parts must be washed with clean brake fluid.



Do not use any mineral based cleaning solution like gasoline, kerosene, and acetone, paint thinner, CO₄, etc.



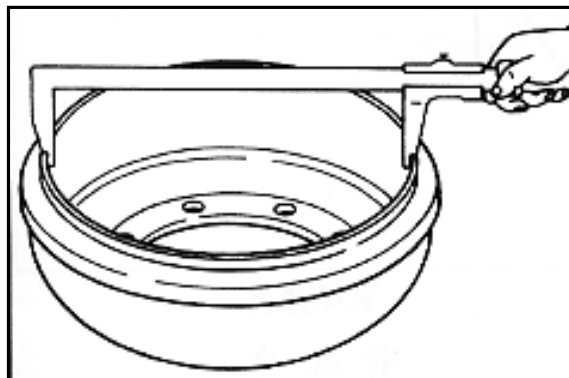
Piston cup

Check the piston cup for any abrasion, deformation, damage or other problems.

Clearance between wheel cylinder and piston



Max: 0.15mm.



Brake drum

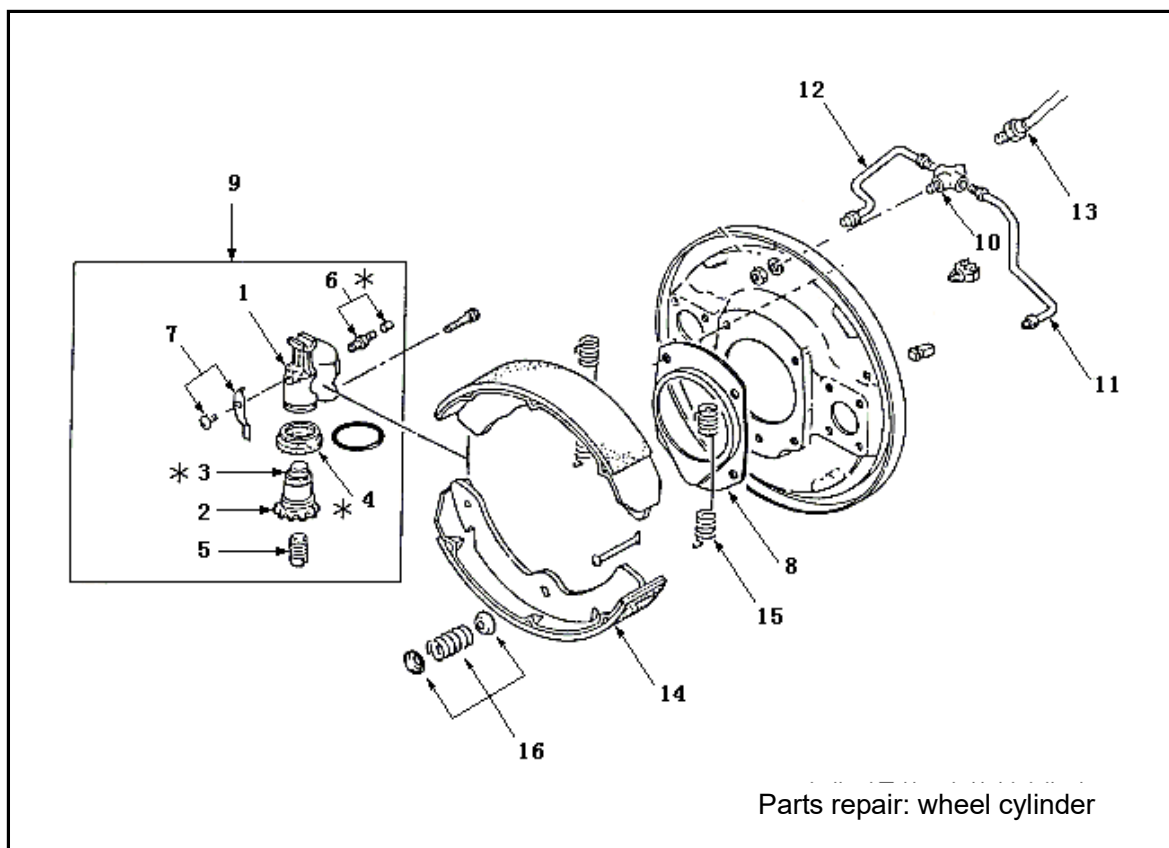
mm

	Standard	Maximum
ID	320	321.5
Out-of-roundness	≤0.13	

Brake



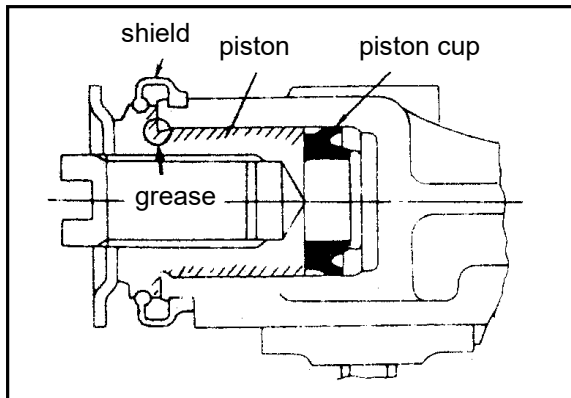
Reassembling



Reassembling sequence

- | | |
|--------------------------------|--|
| 1. wheel cylinder body | 9. wheel cylinder assembly |
| 2. piston brake shoe | 10. tee connector assembly |
| 3. piston cup | 11. brake connecting pipe |
| 4. shield | 12. brake connecting pipe |
| 5. adjusting screw | 13. brake hose |
| 6. venting screw and its cover | 14. brake shoe assembly |
| 7. locking claw | 15. return spring |
| 8. oil cover | 16. brake shoe spring rod, hold down spring and its holder |

Brake



Important operation



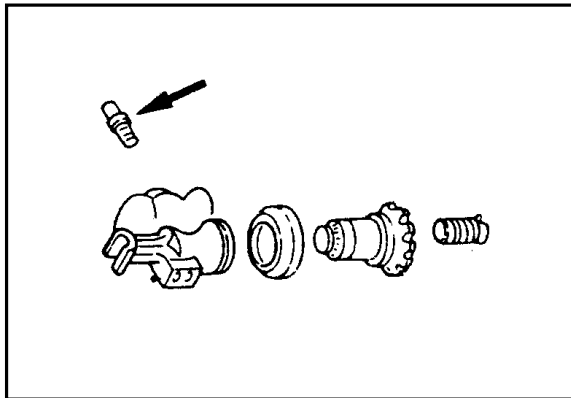
3. Piston cup

When fixing the piston cup, have its butterfly side facing the cylinder. First, apply clean brake fluid to the piston cup, take care not to damage the cup lip. Apply rubber grease to the piston shoulder.



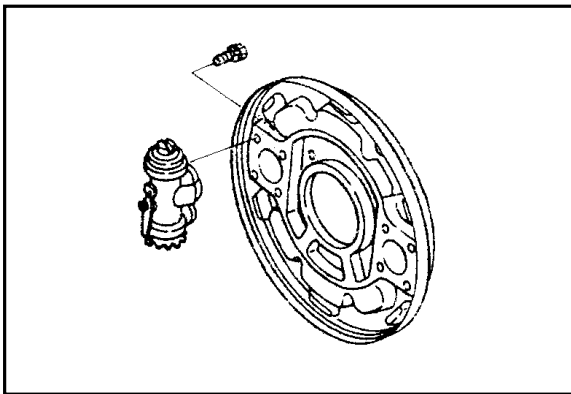
4. Shield

To prevent water entry, apply clean brake fluid to the shield inner surface.



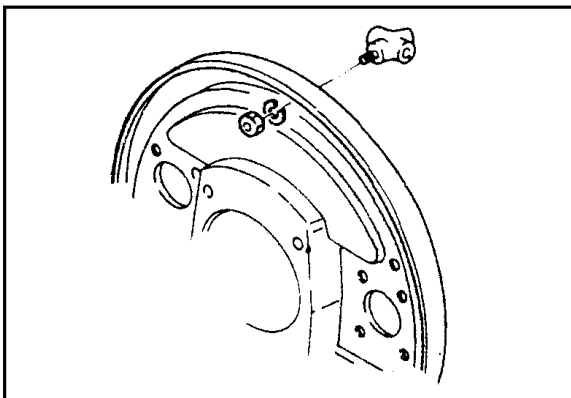
6. Venting screw

Tightening torque: 7~12N·m



9. Wheel cylinder assembly

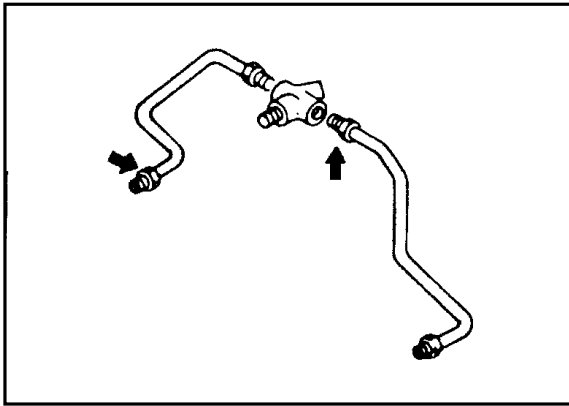
Tightening torque: 38~50N·m



10. Tee connector assembly

Tightening torque: 14~23N·m

Brake

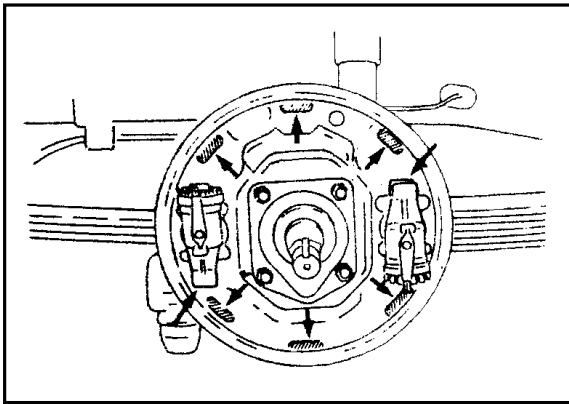
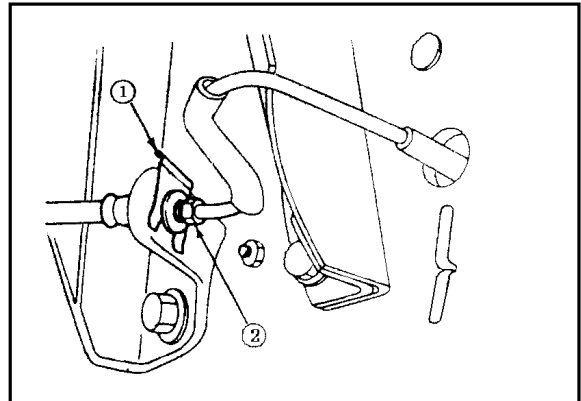


11,12. Tee connector assembly

Tightening torque: 13~19N·m

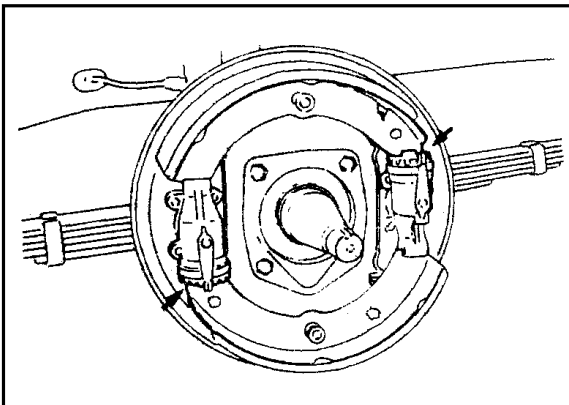
13. Hose

Fix the hose clip ① on the bracket, and tighten the connecting nut ②.



14. Brake shoe

Apply a thin layer of heat resistance grease to the brake shoe, wheel cylinder and the inner surface of the back plate.

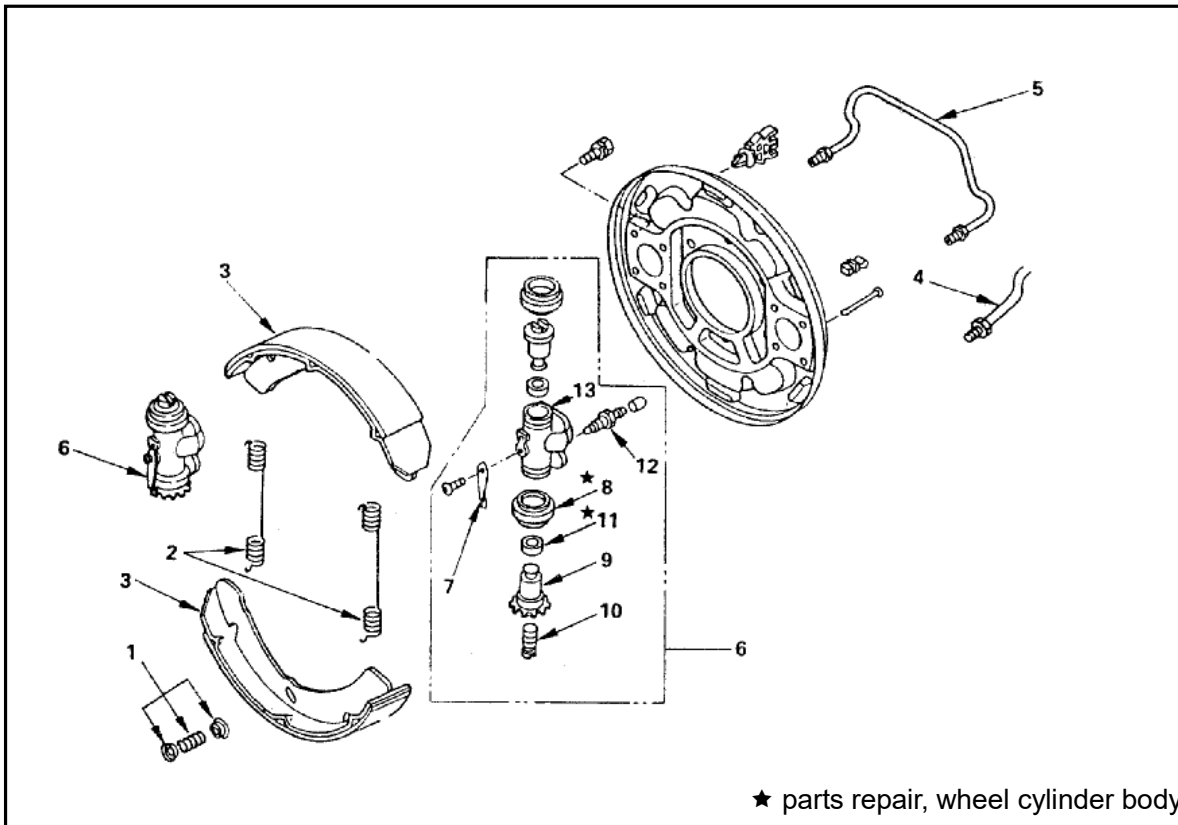


When fixing the brake shoes, have their tip sides facing the wheel cylinder and the adjuster.

Rear brake assembly (two leading shoe)



Disassembling



Disassembling sequence

- | | |
|--|--------------------------------|
| 1. brake shoe spring rod, hold down spring and spring holder | 8.shield |
| 2. brake shoe return spring | 9.piston |
| 3. brake shoe assembly | 10.adjusting screw |
| 4. brake connecting pipe | 11.piston cup |
| 5. brake connecting pipe | 12.venting screw and its cover |
| 6. wheel cylinder assembly | 13.wheel cylinder body |
| 7. locking claw | |

Brake



Inspection and repair

Repair or replace the parts if they are found worn out, damaged or with other problems after check.

- brake drum
- brake friction plate
- wheel cylinder body
- piston
- piston cup
- return spring

Visual inspection

Check the following parts for any abrasion, corrosion, scratches or other problems.



Thickness of brake shoe friction plate

Max. thickness: 1.0mm



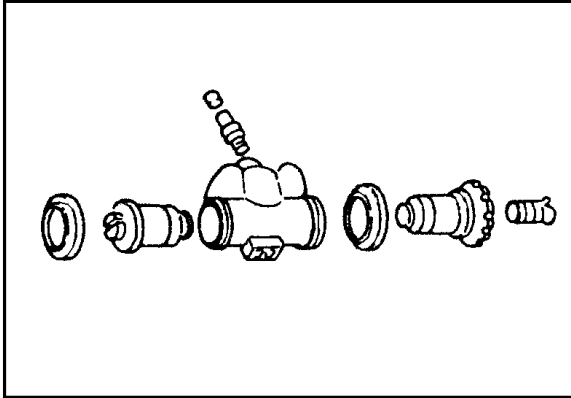
Return spring

Free length: 208.0mm

Design length: 224.0mm

Design load: 225~275N

Brake



Washing wheel cylinder parts

The wheel cylinder parts must be washed and with clean brake fluid.

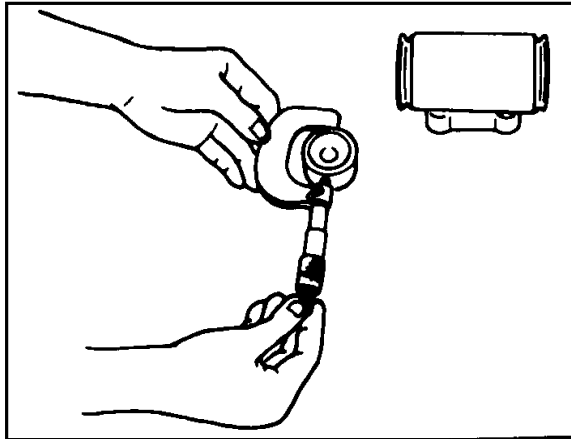


Do not use any mineral based cleaning solution like gasoline, kerosene, and acetone, paint thinner, CO₄, etc.



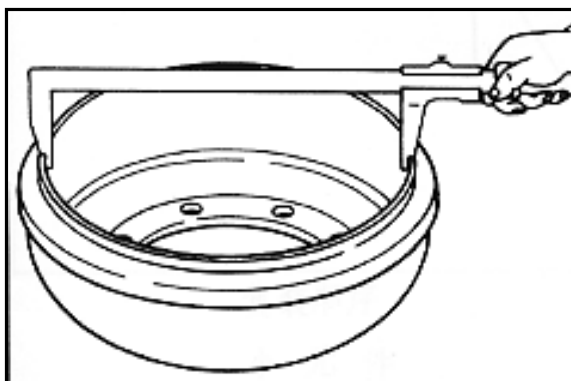
Piston cup

Check the piston cup for any abrasion, deformation, damage or other problems.



Clearance between wheel cylinder and piston

Max: 0.15mm.



Brake drum

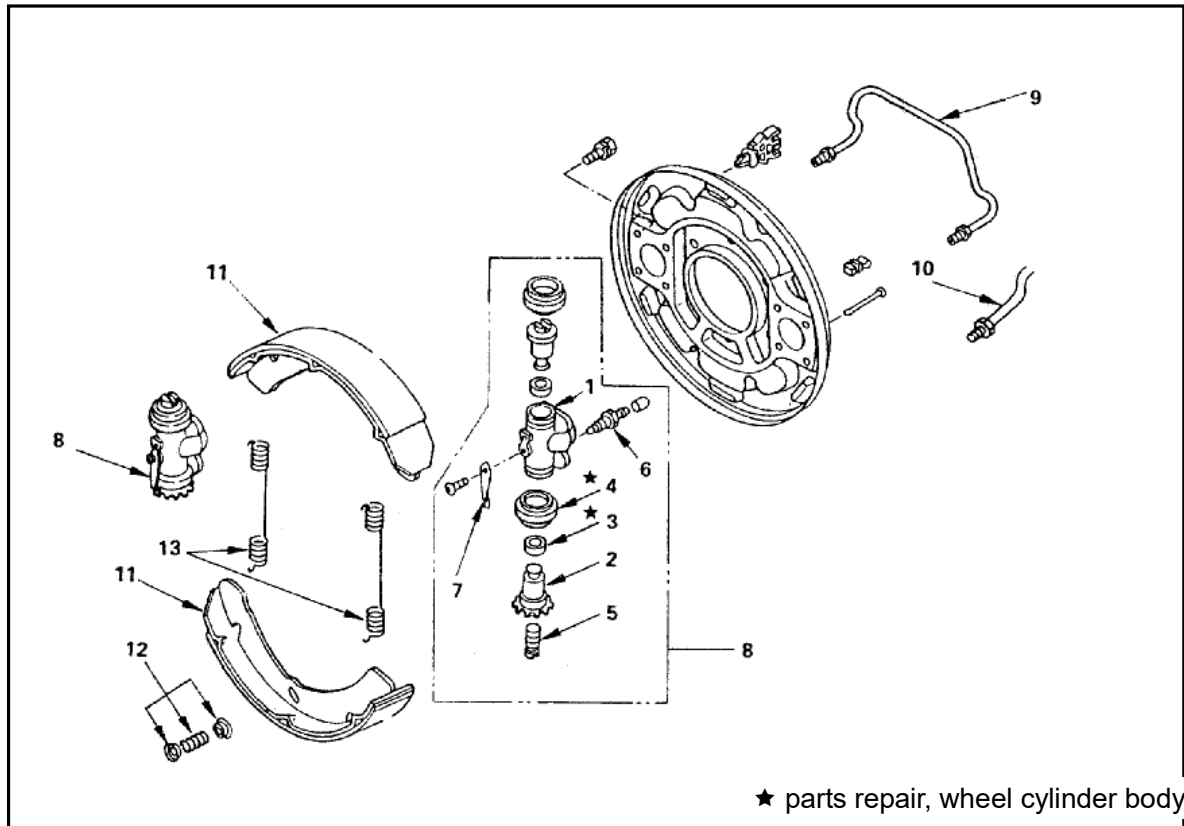
mm

	Standard	Limits
ID	320	321.5
Out-of-roundness	≤0.13	

Brake



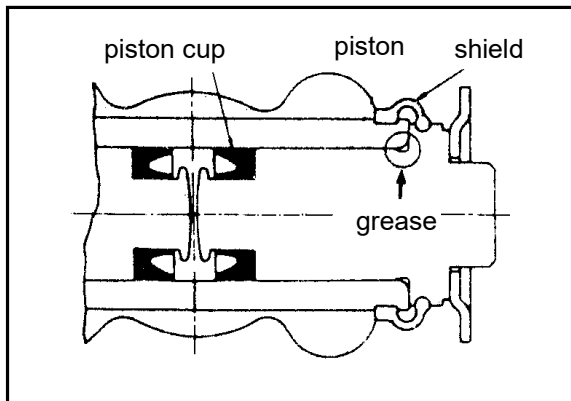
Reassembling



Reassembling sequence

- | | |
|--|--|
| 1. wheel cylinder body | 8. wheel cylinder assembly |
| 2. piston | 9. piston brake connecting pipe |
| 3. piston cup | 10. brake connecting pipe |
| 4. shield | 11. brake shoe assembly |
| 5. adjusting screw brake connecting pipe | 12. brake shoe spring rod, hold down
spring and spring holder |
| 6. venting screw and its cover | |
| 7. locking claw | 13. brake shoe return spring |

Brake



Important operation



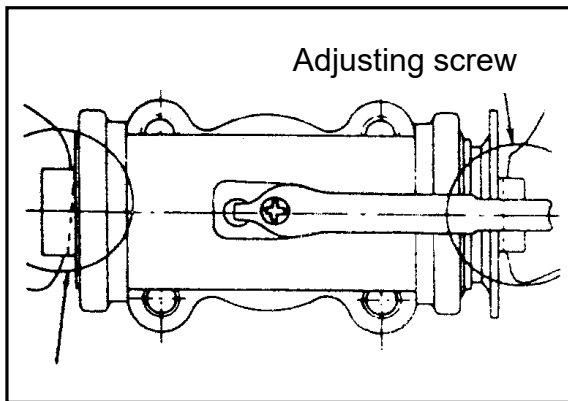
3. Piston cup

When fixing the piston cup, have its butterfly side facing the cylinder. First, apply clean brake fluid to the piston cup, then insert the cup. Take care not to damage the cup lip. Apply rubber grease to the piston shoulder.



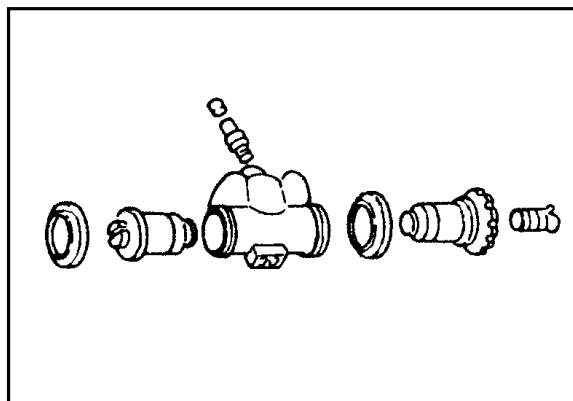
4. Shield

To prevent water entry, apply clean brake fluid to the shield inner surface.



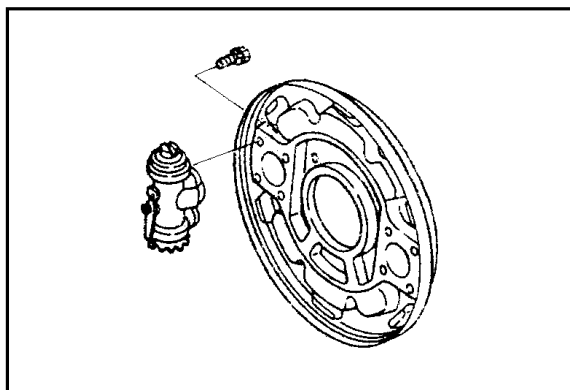
5. Adjusting screw

When fixing the wheel cylinder adjuster, have the shallow slot side face the outside.



6 Venting screw

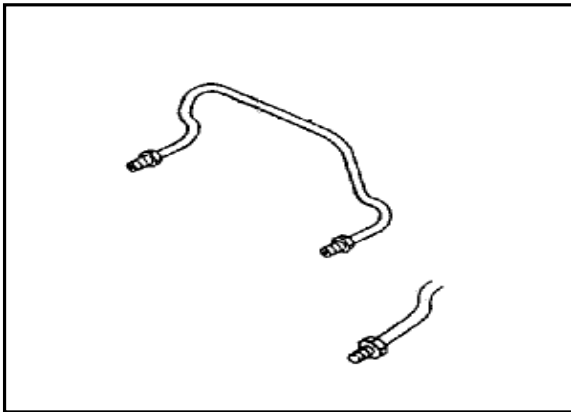
Tightening torque 7~12N·m



9. Wheel cylinder assembly

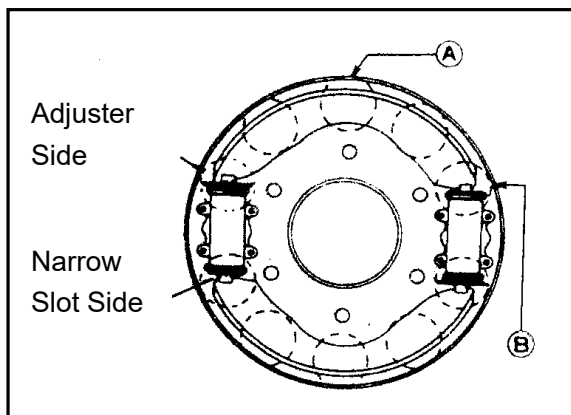
Tightening torque: 38~50N·m

Brake



9, 10. Brake connecting pipe

Tightening torque: 13~19N·m



11. Brake shoe

Apply a thin layer of heat resistant grease to the back plate A between the brake shoe and wheel cylinder as well as the inner part B.



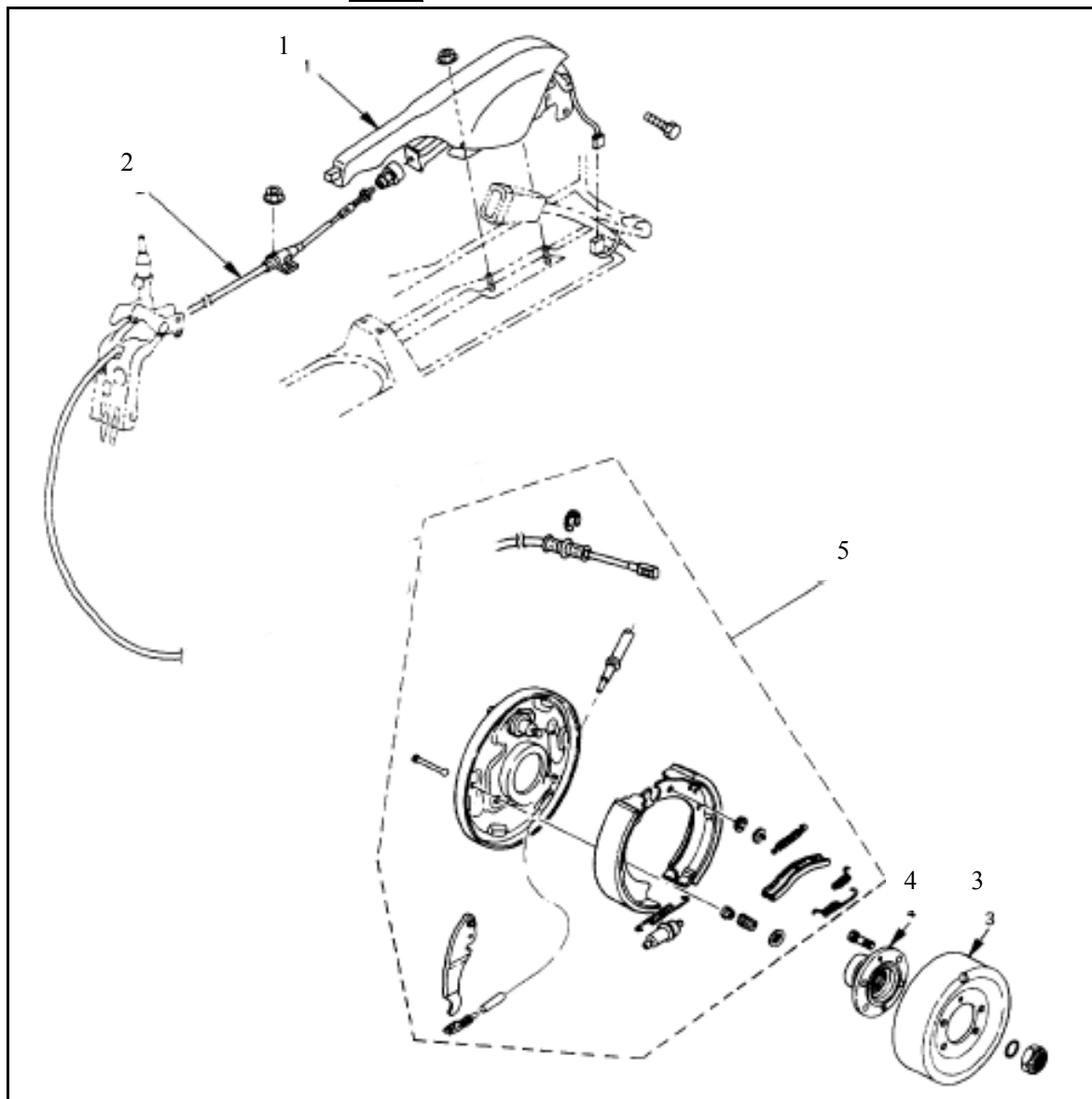
When fixing the brake shoes, have the tips face the wheel cylinder and adjuster.

Brake

Parking brake



Disassembling



Disassembling sequence

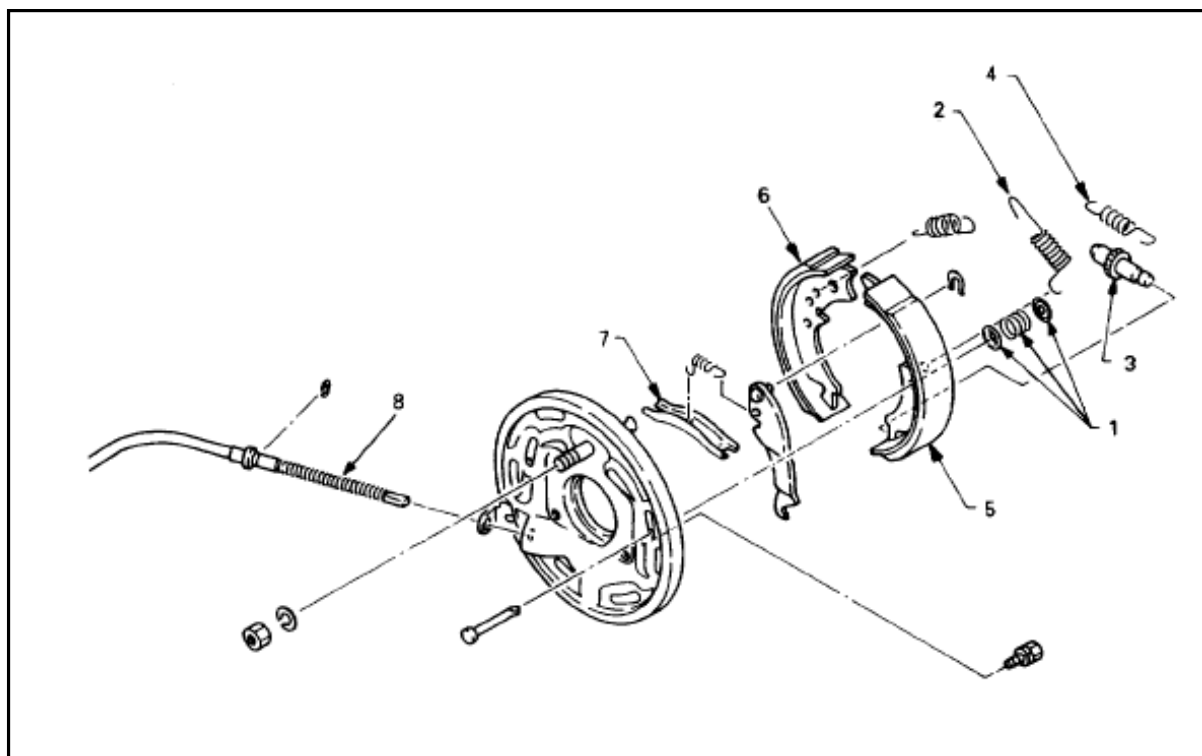
1. Parking brake handle
2. Parking brake control cable
3. Parking brake drum
4. Flange
5. Parking brake

Brake

Parking brake

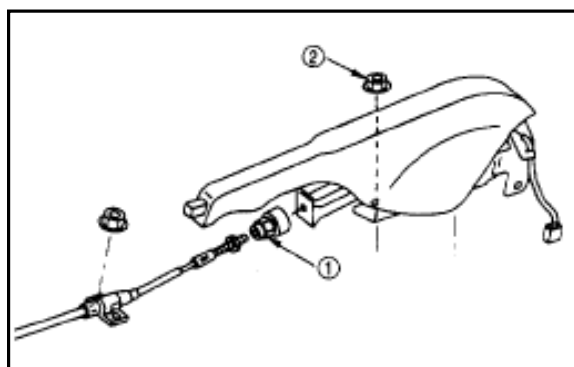


Disassembling



Disassembling sequence

1. pull-rod spring 2. return spring 3. adjuster 4 adjusting spring 5. 2nd brake shoe and lever assembly 6. 1st brake shoe assembly 7. hold down rod 8. control cable assembly



Disassembling steps

Loosen the adjusting nut①, and remove the control cable from the handle.

Loosen the nut② before removing the handle.

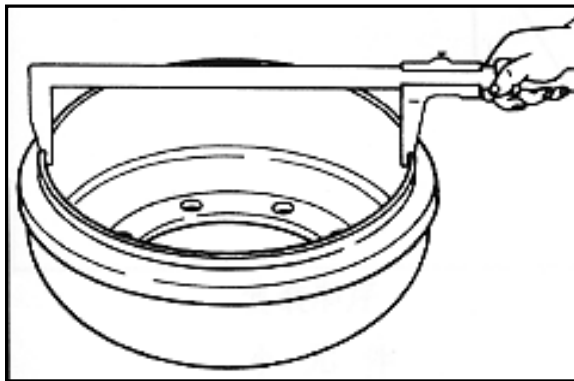
Brake



Inspection and repair

Repair or replace the parts if they are found worn out, damaged or with other problems after check.

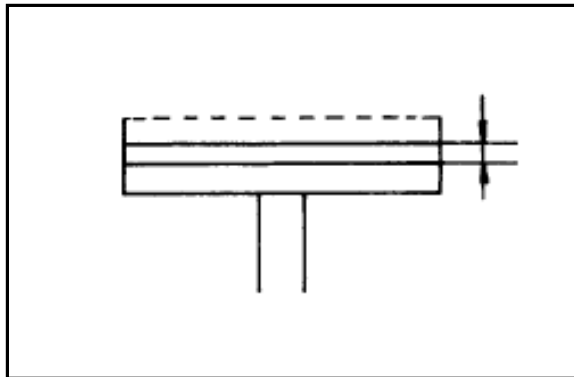
- brake drum
- brake friction plate
- return spring
- strut
- control cable
- control handle



Brake drum

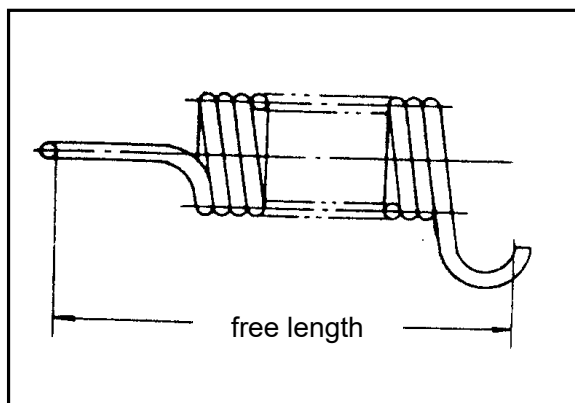
mm

	Standard	Limit
ID	178	179
Out-of-roundness	≤0.13	



Thickness of brake friction plates

Measure the thickness of brake lining by a vernier caliper. If it is less than 1mm thick, the brake shoe assembly should be changed.



Return spring

Free length: 62.1mm

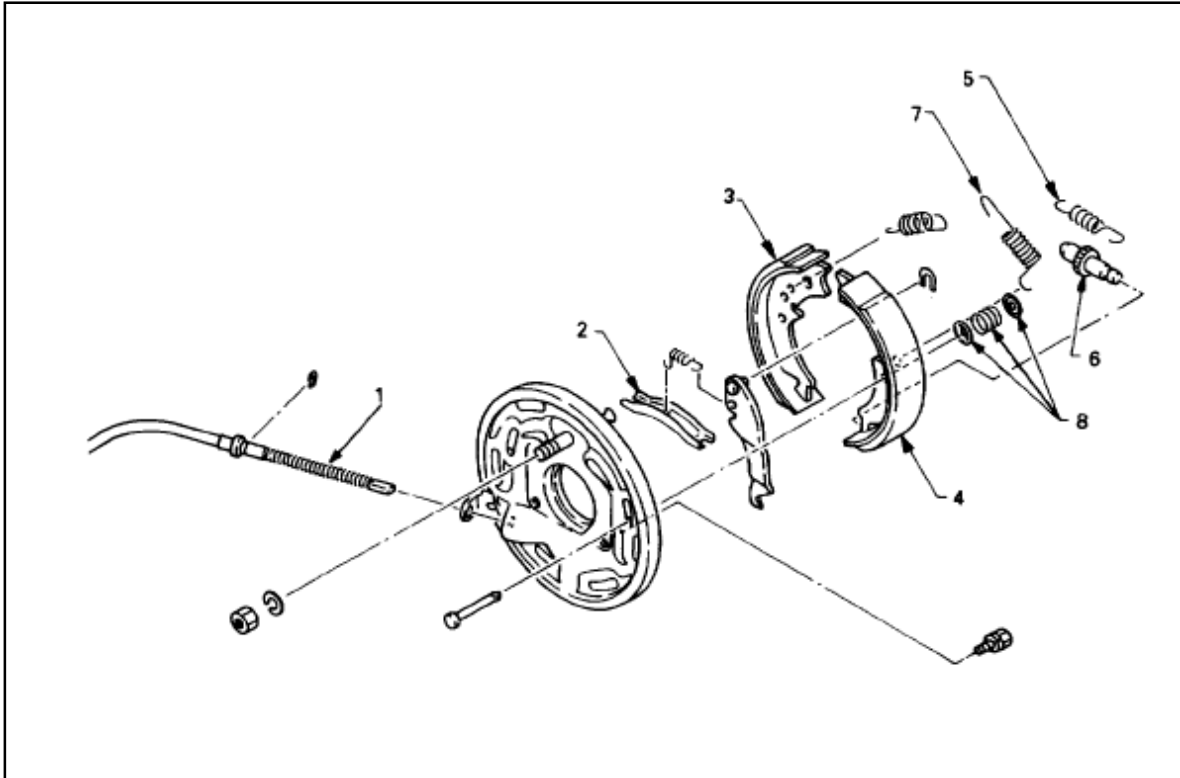
Design length: 66.9mm

Design load: 54~66N

Brake

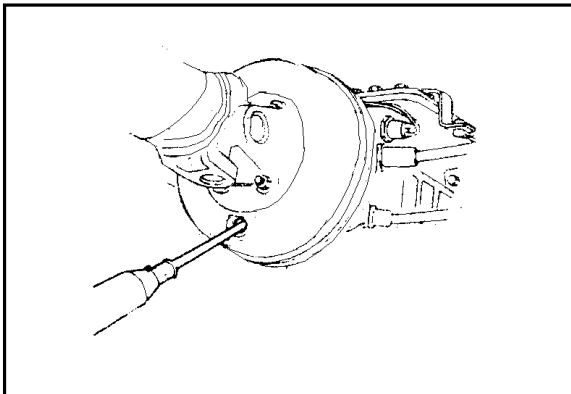


Reassembling



Reassembling sequence

1. control cable assembly 2. push rod 3. 1st brake shoe assembly 4. 2nd brake shoe and lever assembly 5. adjusting spring 6. adjuster 7. return spring 8. pull-rod spring



Adjustment of parking brake

Brake friction plate adjustment

Move the adjuster upward with a screw driver, until the brake drum is locked. And then move the adjuster back for about 25 notches. The clearance between the brake drum and friction plates is about 0.5mm by now.

Adjustment of the parking brake handle travel

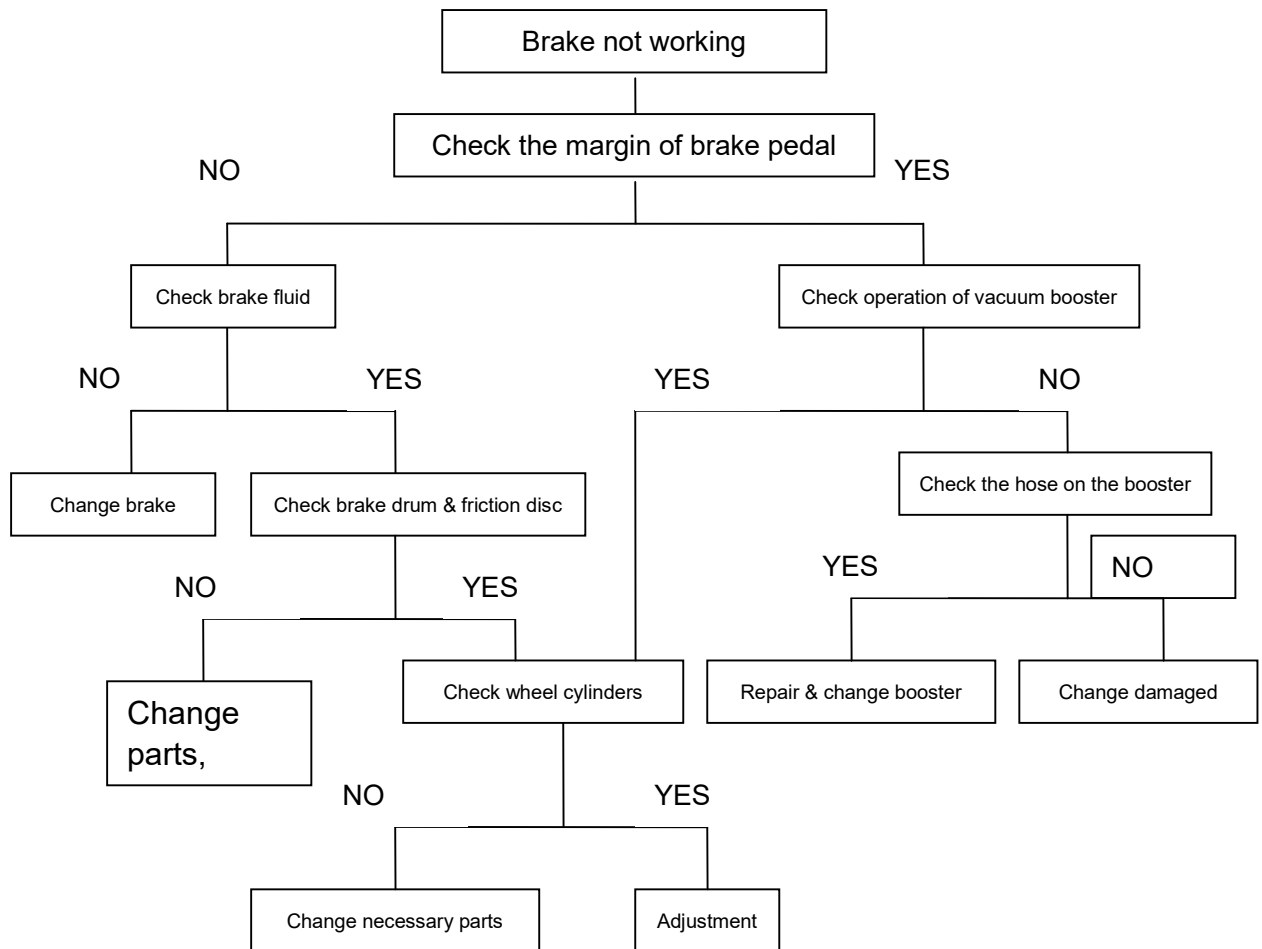
Pull up the parking brake handle to the end, count the number of the gears in the brake lever. If the parking brake handle is pulled with a force of 300N, its travel covers 9 to 14 notches. Adjust the parking brake if necessary.

Before adjustment of the parking brake, make sure that the clearance of the rear brake shoe is already adjusted.

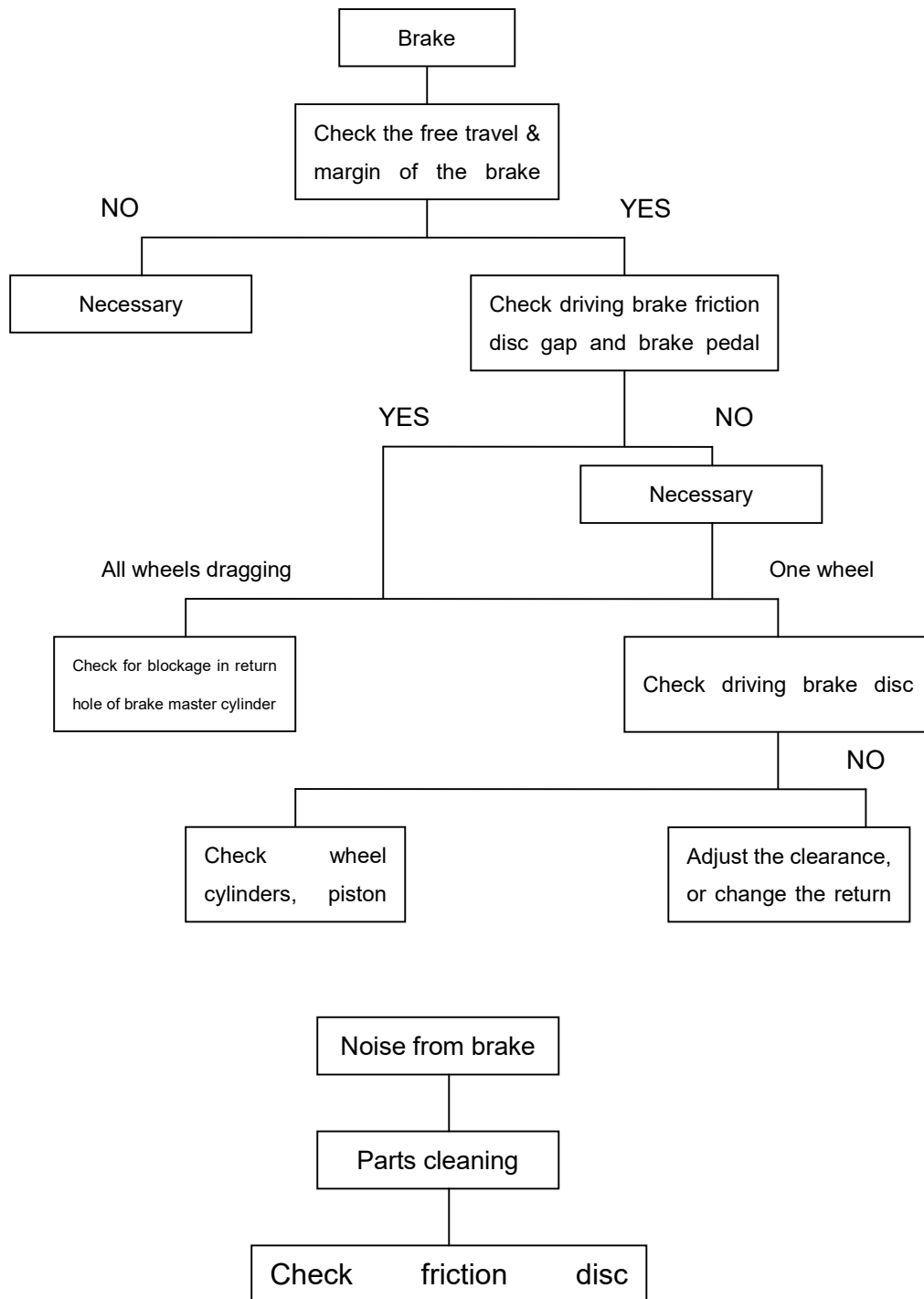
1. Loosen the locknut, rotate the adjuster to adjust the travel distance.
2. Tighten the locknut.

Brake

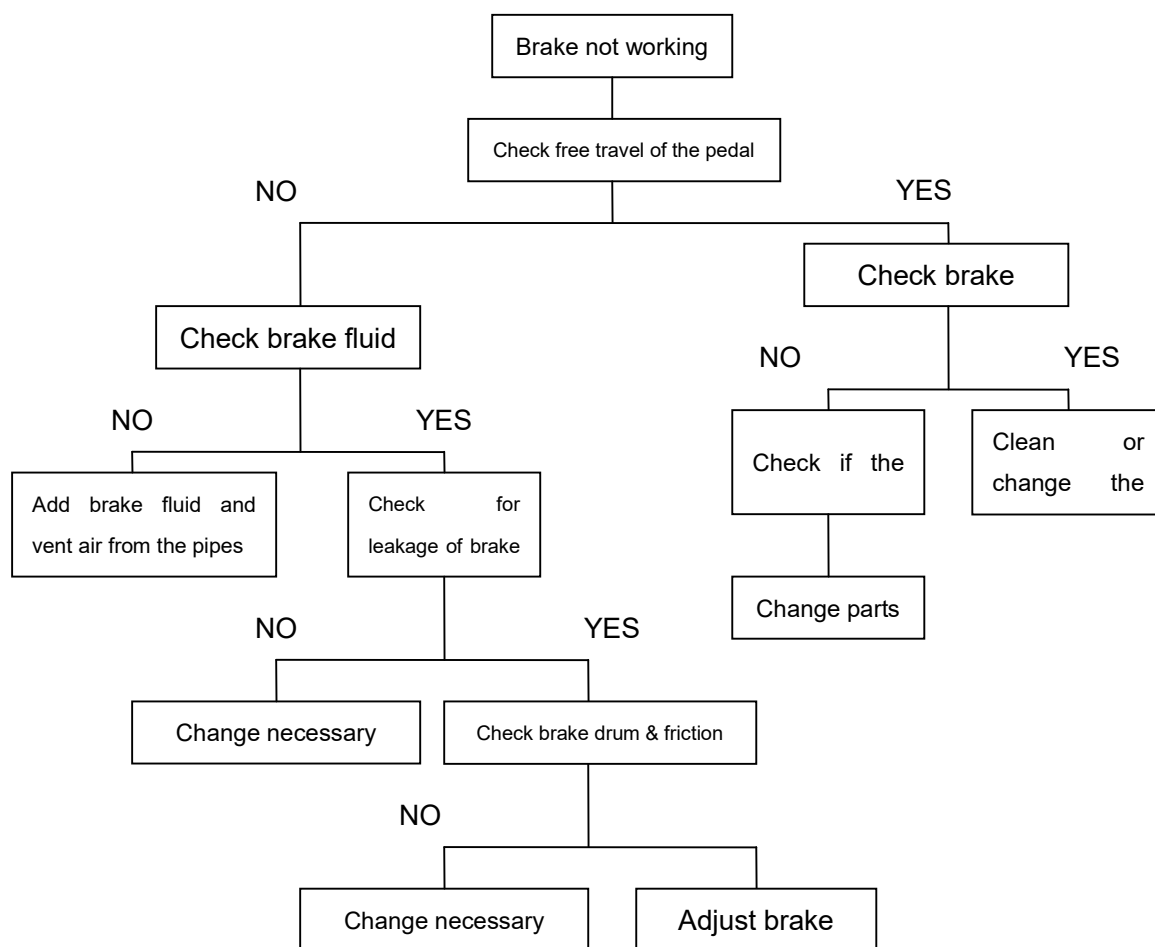
Trouble shooting



Brake



Brake



Brake

