

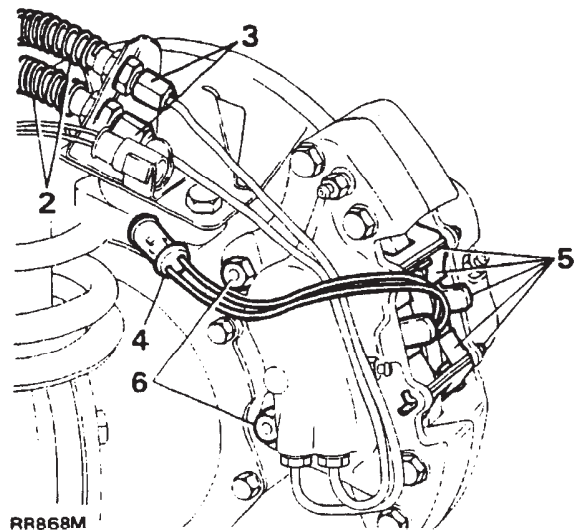
REMOVE AND OVERHAUL FRONT BRAKE CALIPERS

Service tool:
18G672-Piston clamp

NOTE: Pad wear warning indicators are incorporated into the front and rear right hand inboard pads.

Remove caliper

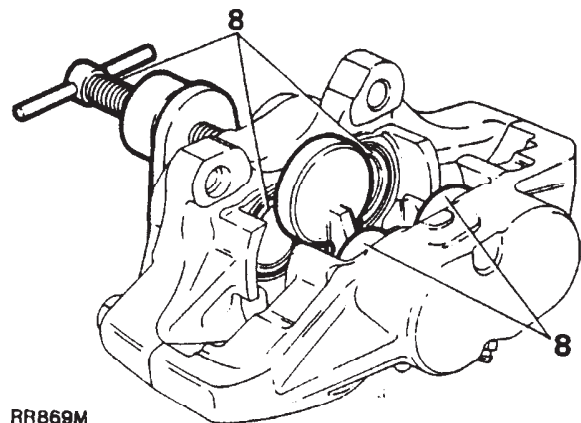
1. Loosen the front wheel retaining nuts, using a suitable hydraulic floor jack raise the front of the vehicle and lower onto axle stands and remove the wheels.
2. Expose the two flexible brake hoses by moving the coiled protective covering.
3. Using a recognised hose clamp, clamp both hoses to prevent loss of brake fluid, disconnect the rigid brake pipes from the flexible hoses, seal the ends of the hoses and pipe openings to prevent ingress of dirt. (If necessary the two rigid brake pipes to the caliper can be disconnected when the caliper is removed from the swivel pin housing).
4. Disconnect the pad wear warning indicator (front right hand side only).
5. Remove the retaining pins and springs, withdraw the pads. If the same pads are to be refitted, identify them for assembly to their original locations.
6. Remove the two bolts and withdraw the caliper from the disc.



DISMANTLE AND OVERHAUL

Do not separate the caliper halves

7. Clean the outer surfaces of the caliper with aerosol brake cleaner.
8. Using special tool 18G672, clamp the pistons in the inboard half of the caliper and gently, keeping fingers clear, and with CAUTION, apply air pressure to the fluid inlet port to expel the rim half pistons. Since it is unlikely that all pistons will expel at the same time, regulate the rate with a suitable piece of wood between the appropriate piston and caliper.



Continued

9. Finally, remove the pistons keeping them identified with their respective bores.
10. Remove the wiper seal retainer by inserting a blunt screwdriver between the retainer and the seal and pry the retainer carefully from the mouth of the bore.
11. Taking care not to damage the seal grooves, extract the wiper seal and fluid seal.
12. Clean the bores, pistons and particularly the seal grooves with clean brake fluid or aerosol brake cleaner only. If the caliper or pistons are corroded or if their condition is not perfect new parts must be fitted.

Assemble outboard pistons

13. Coat a new fluid seal with a suitable disc brake lubricant. Ease the seal into the groove in the bore using only the fingers and ensure that it is properly seated. The fluid seal and the groove are not the same in section so that when the seal is seated it feels raised to the touch at the edge furthest away from the mouth of the bore.
14. Coat the appropriate piston with disc brake lubricant and insert it squarely into the bore by hand only. Do not tilt the piston during insertion and leave approximately 8mm (0.312 inch) projecting from the bore,
15. Coat a new wiper seal with disc brake lubricant and fit it to a new seal retainer. Slide the assembly, seal first, over the protruding piston and into the bore recess. Remove the piston clamp from the mounting half and use the clamp to press home the seal retainer and piston.

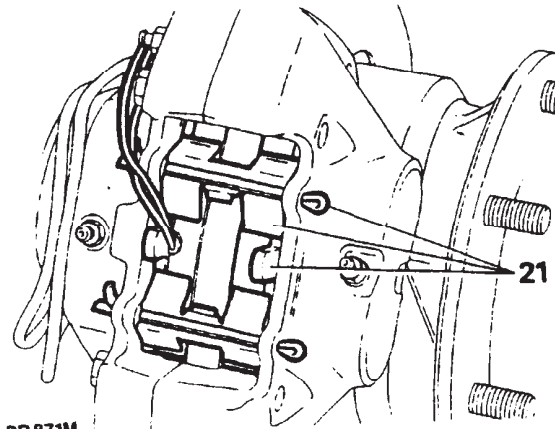
Mounting inboard pistons

16. Clamp the outboard pistons and carry out the same procedure as for removing and fitting the outboard pistons and seals, instructions 8 to 15.

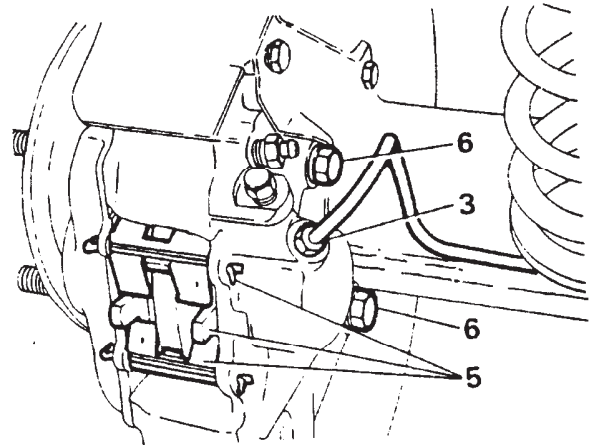
Fit calipers and pads to vehicle

17. Fit the caliper to the axle and secure with the two bolts tightening evenly to the correct torque (see section 06-Torque values).
18. Connect the brake flexible hoses to the caliper and tighten to the correct torque (see section 06-Torque values).
19. Remove the clamps from the hoses.
20. Lightly coat the back and edges of the pads with a suitable disc brake lubricant carefully avoiding the friction material.
21. Insert the pads and retaining springs, secure in position using new retaining pins and open out the ends. Note the correct position of the retaining springs.

NOTE: Ensure that the friction pad with the wear indicator is fitted to the inboard side of the front right hand caliper



22. Reconnect the pad wear indicator electrical plug.
23. Bleed both the primary and secondary brake systems. (Refer to page 4 for the brake bleeding procedure).
24. When the foregoing instructions have been completed on all calipers, press the brake pedal firmly several times to locate the friction pads.
25. Fit the road wheels, remove the axle stands and finally tighten the road wheel nuts.
26. Road test the vehicle, remembering that if new friction pads have been fitted they are not 'bedded-in' and may take several hundred miles before the brakes are at maximum efficiency.



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Dismantle and overhaul

Do not separate the caliper halves

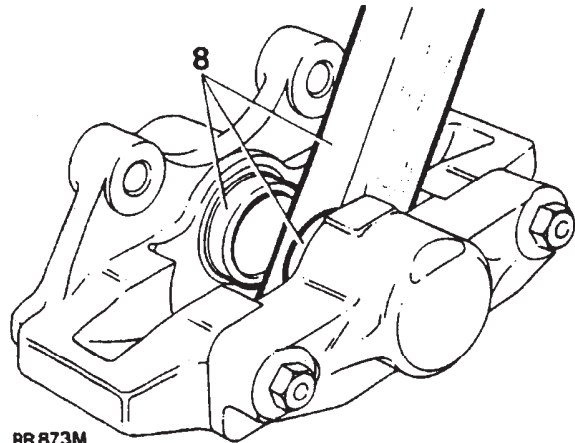
REMOVE AND OVERHAUL REAR BRAKE CALIPERS

Service tool:
18G672-Piston clamp

Remove caliper

1. Loosen the rear road wheel nuts and jack up the rear of the vehicle, lower onto axle stands and remove the wheels.
2. Using a **recognised** hose clamp, clamp the flexible brake hose above the rear axle, to prevent loss of fluid.
3. Remove the brake pipe(s) from the rear brake caliper(s). Seal the ends of the pipe to prevent ingress of dirt.
4. Rear right hand caliper only, disconnect the pad wear indicator.
5. Remove the retaining pins and springs and withdraw the pads. If the same pads are to be refitted, identify them for assembly to their original locations.
6. Remove the two bolts and withdraw the caliper from the axle.

7. Clean the outer surfaces of the caliper with aerosol brake cleaner.
8. **WITH CAUTION** expel the pistons from their bores by applying air pressure to the fluid inlet port. Since it is unlikely that both pistons will expel at the same time, regulate the rate with a suitable piece of wood inserted between the two pistons.



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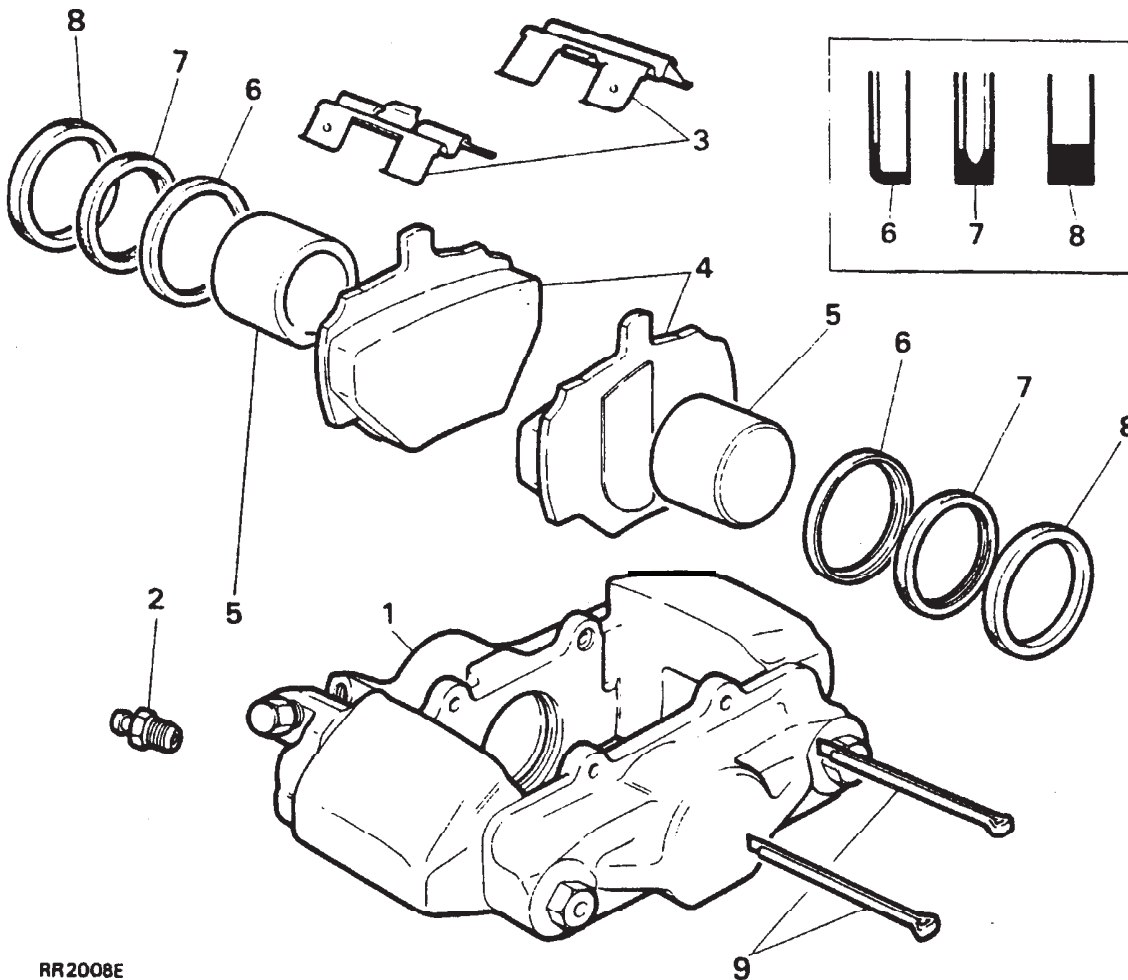
9. Finally, remove the **pistons** keeping them identified with **their** respective bores.

Continued

10. Remove the wiper seal retainer by inserting a blunt screwdriver between the retainer and the seal and pry the retainer carefully from the mouth of the bore.
11. Taking care not to damage the seal grooves, extract the wiper seal and fluid seal.
12. Clean the bores, pistons and particularly the seal grooves with clean brake fluid or aerosol brake cleaner only. If the caliper or pistons are corroded or their condition is not perfect new parts must be fitted.

REAR BRAKE CALIPER ASSEMBLY

LH Rear Caliper illustrated



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KEY TO CALIPER

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Caliper 2. Bleed screw 3. Pad retaining springs 4. Friction pads 5. Piston | <ol style="list-style-type: none"> 6. Wiper seal retainer 7. Wiper seal 8. Fluid seal 9. Retaining pins |
|---|---|

13. Coat a new fluid seal with a suitable disc brake lubricant. Ease the seal into the groove in the bore using only the fingers and ensure that it is properly seated. The fluid seal and the groove are not the same in section so that when the seal is seated it feels raised to the touch at the edge furthest away from the mouth of the bore.
14. Coat the appropriate piston with a suitable disc brake lubricant and insert it squarely into the bore by hand only. Do not tilt the piston during insertion and leave approximately 8mm (0.312 inch) projecting from the bore.
15. Coat a new wiper seal with a suitable disc brake lubricant and fit it to a new seal retainer. Slide the assembly, seal first, over the protruding piston and into the bore recess.
16. Using special tool 18G672-piston clamp, press home the seal retainer and piston.

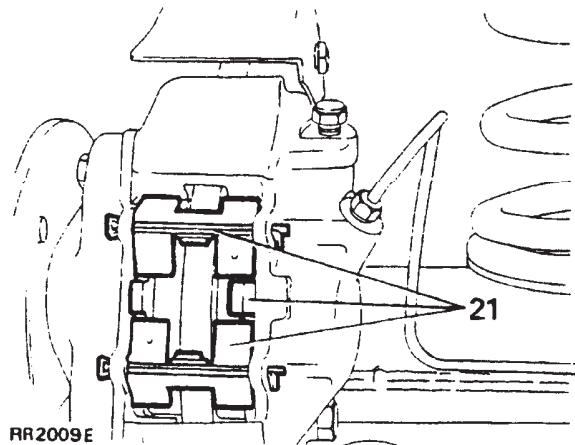
Mounting inboard piston

17. Carry out the same procedure as for removing and fitting the outboard piston and seals, instructions 8 to 16.

Fit calipers and pads to vehicle

18. Fit the caliper to the axle and secure with the two bolts tightening evenly to the correct torque (see section 06-Torque values).
19. Connect the brake pipes to the calipers and remove the clamp from the flexible brake hose above the rear axles, see section 06-Torque values for brake pipe to caliper tightening torque.
20. Lightly coat the back and edges of the pads with disc brake lubricant carefully avoiding the friction material.

21. Insert the pads and retaining springs, secure in position with new retaining pins and spread the ends. Note the correct position of the retaining springs.



NOTE: Ensure that the friction pad with the wear indicator is fitted to the inboard side of the rear right hand, brake caliper.

22. Reconnect the pad wear indicator electrical multi-plug.
23. Bleed the secondary brake system at the rear calipers, starting at the caliper furthest away from the master cylinder.
24. When the foregoing instructions have been completed on both calipers, press the brake pedal **firmly** several times to locate the friction pads.
25. Fit the road wheels, remove the axle stands and finally tighten the road wheel nuts, (see section 06 - Torque values).
26. Road test the vehicle, remembering that if new friction pads have been fitted they are not 'bedded-in' and may take several hundred miles before the brakes are at maximum efficiency.