

pressed air into the brake hose port. Be careful not to damage the port threads. NOTE: KEEP HANDS AWAY FROM THE INSIDE OF THE CALIPER WHILE BLOWING OUT PISTON.

18. Handle the piston with care. Inspect the piston for scoring, nicks, corrosion and wear. Replace piston if necessary. Servicing of the collar and clamp foot assembly is restricted.
19. Remove the piston seal (2) from groove in bore. Avoid damage to the bore or seal groove.
20. Remove bleeder screw (21) and then remove and discard rubber cap (22) from bleeder screw.
21. Detach parking brake lever pivot pin seal (17). Remove and discard sprag clip (19). Remove lever (18). Inspect contact points on lever and lever pin (16) for wear and corrosion. Replace if necessary. Remove adjuster screw (23) from housing (1) and discard if damaged/worn.
22. Inspect mounting bracket (30) for wear/damage. Replace if necessary, if not remove residue from pad contact areas.
23. Remove guide pins (28) and boots (29) from mounting bracket (30), discard boots and inspect guide pins for damage, wear and corrosion. Replace if necessary.

## REBUILD

24. Clean all parts not included in the repair kit(s) in clean denatured alcohol. Use dry filtered compressed air to dry parts and blow out all passages in the caliper housing and bleeder screw, taking care to keep alcohol away from eyes.
25. Inspect caliper bore. If badly scored or corroded around the seal area, replace with new caliper housing.
26. Lubricate new piston seal (2) and bore seal groove using UCON LB1145Y24 fluid. If this is not available, use brake fluid.
27. Install new seals (2) into bore seal groove. Make sure seals are not twisted.
28. Lubricate caliper bore and piston (3) with UCON LB1145Y24. If this is not available use brake fluid.
29. Carefully insert the piston (3) into the bore and push down by hand to bottom in the bore.
30. Lock Actuator reassembly: Examine the actuating collar (8) and clamp rod (12b). If corrosion or excessive wear is evident at the working faces the whole actuating collar assembly must be replaced. If the collar and rod are still useable, assemble the pushrod (6), collar (8), new boots (5, 9) and new retainers (4, 10). Ensure that the collar is lightly smeared all over with lubricant

provided in the kit. NO OTHER FLUID OR GREASE MAY BE USED. Ensure that the retainers are firmly clamped against the collar while the tabs are bent over. Assemble the preload spring (7) into the boot retainers. Smear the clamp rod with the provided liquid lubricant and assemble to collar and boot ensuring boot (9) is against reaction plate (12c). Fit the new compliance bush to the end of the screw and lubricate the outside of the bush (11) with the provided liquid lubricant. Lubricate the grooved bead of the inner boot (5) and housing boot groove with the provided liquid lubricant. Use the remainder of the liquid lubricant to coat the collar and rod especially round the centre hole of the collar.

31. Assemble the collar and rod assembly into the housing by engaging the compliance bush in the piston and engaging the inner boot in the groove in the housing. Ensuring that there is a gap between the outer boot (9) and the reaction plate (12c), fully insert the inner boot in the housing groove by pulling both ends of the actuating collar towards the housing ensuring that the pushrod (6) enters the hole then push the clamp rod in the housing assembly (12) fully into the piston and seat the outer boot against the reaction plate.
32. Assemble bleed screw seal/cap to bleed screw and assemble bleed screw into housing finger-tight.
33. If a new pivot pin (16) is required, seat the pin firmly into the housing, then assemble nut to pin and tighten to 20-24 Nm (16-20 lb-ft)
34. Lubricate parking brake lever and pivot pin with grease from the sachet provided. Install seal, then lever using a new sprag clip (19), ensuring tags are located in groove in pin. NOTE: TAGS OF SPRAG CLIP MUST FACE AWAY FROM LEVER. Install pivot pin seal cap.
35. Current collar return springs (15). Ensure that ends of retainer entre the gaps in the springs at the end of the second coil. Insert new adjuster screw (23) and adjust the collar until it is approximately parallel to the bore face. The clamp rod should move freely in and out by hand.
36. Insert new pads or PARALLEL old pads into mounting bracket ensuring that the pad with a lining wear indicator and a thicker metal support plate is fitted inboard (i.e. nearest the piston, additionally the lining wear indicator should be positioned nearest the parking brake cable bracket, if the inboard pad assemblies are handed.) IF OLD PADS ARE TO BE RE-USED: IT IS

OF PARAMOUNT IMPORTANCE THAT THE OLD PADS ARE PARALLEL TO WITHIN 0.15mm. Park brake adjustment is not valid with heavily tapered pads and may cause caliper/parking brake binding in service. INSPECT THE OLD PADS AND REPLACE WITH NEW IF THEY ARE TAPERED.

37. Lubricate guide pins (28) with grease from the sachet of grease provided. Install new guide pin boots (29) over guide pins, and fill boots with the remainder of the grease.
38. Install guide pins into mounting bracket ensuring boots fit into the grooves of the guide pins and mounting bracket.
39. Install 'H' shim into housing as shown in figure 2 ensuring that the deeper part of the 'H' is toward the caliper as indicated. Install caliper over rotor and into mounting bracket, ensuring that the pads springs do not protrude through the inspection hole in the housing casting.
40. Insert new guide pin bolts, and nip them both up loosely, before finally torquing them up.  
Hexagon head—torque 30-34 Nm (24-40 lb ft)  
Cap head —torque 30-34 Nm (24-40 lb ft)
41. Install inlet fitting using new washers, torque bolt to manufacturers recommendation. Consult Service Manual.
42. Fill master cylinder reservoir to correct level and bleed system. RH rear first then LH rear. Tighten bleed screws to 9-14 Nm (7-10 lb ft).
43. With engine running pump brake pedal slowly and firmly three times to bring pads in contact with the rotor, and to square up the caliper for park brake adjustment. Check that there are not fluid leaks. Top up master cylinder reservoir, if necessary to "max." mark.

## 44. CALIPER PARKING BRAKE FREE TRAVEL ADJUSTMENT

This process requires two people. One person is needed to apply a load to the brake pedal in the car.

The caliper lever free travel is adjusted by the adjusting screw (23). Turning the screw clockwise into the casting increases the free travel, anticlockwise decreases the free travel.

44.1 With the caliper lever return spring disengaged, apply a load to the brake pedal to generate a line pressure of 1.4 MPa (200 psi). NOTE: (If pressure measuring equipment is not available) this pedal load is the load applied during light check braking with full booster vacuum.

44.2 Apply a load to the lever to simulate a cable load of 20 Newtons (4.5 lb). Note the position of the cable attachment point on the lever. Slowly release the load and gently return the lever to its stop. Note the new position of the cable attachment point. The distance that point has moved, on the line action of the cable, is the free travel. Refer to the chart at the end of these instructions for the free travel for each application.

44.3 If the free travel is outside the limits specified adjust it using the adjuster screw. Before making any adjustment, undo the screw and withdraw it 4 turns. Apply a small amount of Loctite 262 to adjuster screw threads and screw it back 4 turns. Always make any adjustment with no load on the lever. Repeat 44.2 to recheck the setting.

44.4 When the setting is correct, release the pedal then pump the pedal firmly three times and repeat 44.2 as a final check.

44.5 Attach lever return spring and connect the parking brake cable.

44.6 Consult the service technical manual to enable the parking brake handlever adjustment mechanism.

45. Recheck, master cylinder reservoir fluid and refill to correct level if necessary.
46. Fit wheels lining up marks previously made and lower vehicle.
47. Road test the vehicle.