

# Alcon Advantage Extreme brake kit installation instructions

**important: read these instructions carefully before fitment.**

Alcon Advantage Extreme brake kits are designed to replace the original brake calipers and discs. However, vehicle production tolerances may exceed those that the kit will accommodate, and the points below must be carefully observed during installation to ensure that the correct clearances are maintained. This brake kit must be fitted by a suitably qualified mechanic.

## Remove the original caliper and disc

- Raise the vehicle on a suitable lift or stands and remove the wheels.
- Clamp the flexible brake hose to reduce brake fluid loss and disconnect the hose from the caliper. Disconnect any pad wear indicator wires and remove the caliper.
- Remove the brake disc.

## Fit the new caliper and disc

- Ensure that the hub flange is completely flat and clean. Note that any 'bruising' or out of flatness will cause brake vibration. If necessary, prepare the hub face to remove any high spots prior to fitting the brake disc. Fit the disc assembly to the hub. The discs are handed and must be fitted to the correct side of the vehicle, with direction of rotation as shown right. With the disc assembled to the hub, check that there is a minimum of 5mm clearance between the disc inner face and the lower suspension/steering joint.



- Unless special longer bolts are provided in the kit, use the original bolts and washers to loosely bolt the mounting bracket to the upright. Locate the caliper over the disc and fit the caliper retaining bolts. Do not tighten at this stage. The caliper must be orientated so that the disc rotates past the small piston first, and with bleed screws uppermost.
- To prevent overheating, radial clearance between the disc and caliper must not be less than 2.5mm in all directions. When the pads are fitted, the top edge of the pads should be approximately 0.8mm below the disc outside diameter and the disc must be central in the caliper within +/- 0.5mm. Use the 0.5mm shims provided to lift the caliper on the bracket or to adjust the bracket position until the caliper is correctly positioned. Fit an equal quantity of shims to each end of the bracket as required.
- Fit the road wheel to check there is a minimum of 2.5mm clearance between the wheel and caliper in all directions.
- Do not make any modifications to the caliper. Alcon accepts no liability whatsoever for the consequences of using a caliper that has been modified without its express written approval.
- When the caliper/bracket assembly has been positioned correctly and clearances have been checked, remove and clean the bracket to upright mounting bolts. Apply thread locking compound to the threads, fit the bracket to the upright and tighten the bolts to the vehicle manufacturers' specified torque.
- Remove the caliper retaining bolts and apply thread locking compound to the threads. Fit each bolts with the washer provided and tighten to 108Nm
- Check that new pads move freely in the caliper. With the pistons pushed back into the bores, there should be a minimum clearance of:
  - 0.25mm between the piston end and pad backplate
  - 0.4mm between end of the pad and the caliper
- Remove the original hose and replace with the braided hose supplied. Connect the hose to the caliper and, ensuring it is not twisted, connect it to the vehicle, including the original fastening clip. Check that the brake line length allows for all combinations of steering lock and suspension movement and that the hose does not come into contact with any suspension component, the wheel or the tyre in any position.
- Tie-back the pad wear indicator wires.

### **Bleeding instructions**

- Bleed the brakes in accordance with the vehicle manufacturer's instructions. Completely flush the system using the new Motul fluid supplied in the kit. The caliper bleed screws must be tightened to 18Nm (cold). To prevent damage to the painted caliper, remove any excess brake fluid from caliper immediately with clean cold water, particularly in the area around the bleed screw thread and in the end of each bleed screw. Check the complete hydraulic system for leaks before driving the vehicle.
- When the brake system has been sufficiently bled and a firm brake pedal has been achieved, replace the road wheels.
- The brakes should now be checked for correct operation by driving the vehicle, making a few light brake applications from low speed in a safe location. Stopping performance of a newly fitted brake kit will be low initially, as all friction materials require a period of bedding in before optimum performance is achieved.

### **Bedding procedure**

- At a suitable safe location, perform a number of increasingly hard brake applications from 100km/h(60mph) almost to rest. After approximately six applications, allow the brakes to cool by driving at 80km/h (50mph) without further brake applications. The pads and discs should now be bedded-in.
- If possible, avoid very heavy brake applications for the first 400km (250 miles) of use.

### **Servicing and maintenance instructions**

- Pads should be examined regularly for wear and condition. Replace pads when less than 2mm of friction material remains anywhere over the surface. When fitting new pads, thoroughly clean the pad location faces in the caliper, removing any debris and brake dust with brake cleaner and a stiff brush. The protruding pistons must be wiped clean before they are pushed back into the bores.
- Discs must be replaced when the total thickness has worn below the minimum indicated on the disc or when any of the face grooves across either inner or outer face have worn away. If a disc shows any sign of cracking, which may occur after heavy usage, it must be replaced.
- Remember to bed-in new pads and discs as described above.
- Replacement of caliper seals is recommended after the brake system has been subjected to high temperature, as may be generated in circuit driving or long mountain descents. Remove pistons by gentle application of line pressure. To prevent any of the pistons being dislodged from the bore, fit a temporary shim (worn out pads are ideal) into the pad aperture on both sides of the caliper. When all pistons protrude from the bores by at least 12mm, disconnect the hose, remove the caliper from the vehicle and remove pistons by hand or using a piston removal tool, available from Alcon. Take care to catch the brake fluid as the pistons are removed. So as not to damage seal grooves, use a brass 'spoon' to remove seals. Clean bores and pistons thoroughly with a clean cloth and brake fluid. Pistons with scratches or damage on the outside diameter must be replaced. With clean hands to prevent contamination of parts, lubricate seals, bores and pistons with clean brake fluid before re-fitting. Ensure no foreign matter enters the open bores.
- Re-fit the caliper and bleed as described above.
- Document RC2157, 'How to get the best from your Alcon Advantage Extreme conversion' is included with this brake kit. It contains important information for the vehicle owner; please ensure that he/she receives it

*Every effort has been made during the preparation of this literature to ensure that the information provided is correct. However, Alcon reserves the right to change information without notice.*

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