

TL092 – Bedding of ‘Green’ Discs on GT Applications

1. Overview

Correct bedding in of new brake discs and/or pads achieves two aims:

- The mating surfaces conform to each other.

- The friction surfaces are conditioned for efficient friction and wear.

The procedure required to reach these aims varies by vehicle and by pad compound. This procedure is intended to be a *general* guide to suit GT applications.

2. Bedding Procedure

Where new parts have been fitted, ensure the vehicle is safe to operate.

Brake bedding should be carried out on a dry track, performing a number of brake applies as described below. As much as possible, the layout and configuration of the track should not influence the following procedure. It is advisable to apply thermal paints to the outside diameter of the brake disc and across the cooling vane, as this will help you assess the effectiveness of your bedding procedure. An example is shown below:



Green paint turns to white at 450°C
 Orange paint turns to yellow at 550°C
 Red paint turns to white at 630°C
 (based on 10mins continuous exposure time)

After bedding, allow the brakes to cool by driving a ‘steady’ in lap, minimising further brake applications.

Carry out a series of 28 brake applications as follows:

Stop No.	Brake on Speed	Brake off Speed	Brake Pressure	Target
1 - 5	100 km/h (62 mph)	60 km/h (37 mph)	15 bar (218 psi)	Warm discs to >100°C + physical mating of parts (>212°F)
6 - 8	170 km/h (106 mph)	100 km/h (62 mph)	25 bar (363 psi)	Warm discs to >200°C + physical mating of parts (>392°F)
9 - 20	190 km/h (118 mph)	100 km/h (62 mph)	35 bar (508 psi)	Progressively heat discs to >400°C (>752°F) Allow disc to cool by 60 - 80°C (140 – 176°F) between stops so that all 12 stops are used to get discs above 400°C (752°F)
21 - 28	200 km/h (124 mph)	100 km/h (62 mph)	35 bar (508 psi)	Heat the discs to >500°C (>932°F) Allow disc to cool by 80°C (176°F) between stops so that all 8 stops are used to get discs above 500°C (932°F)

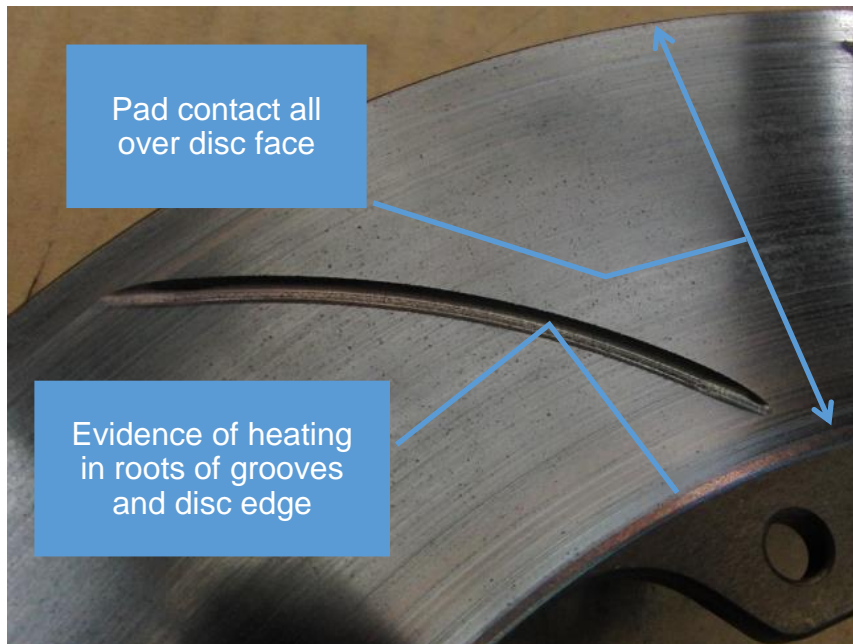
The pads and discs should now be bedded-in.

Information

3. Inspection after Bedding

After the brakes have cooled down, inspect the discs for correct bedding. There should be:

- a. Full contact of the pad across the disc face.
- b. The disc should have a layer of pad material attached (black or charcoal in colour).
- c. The layer of pad material should be even all around the disc (no splotches or spotting).
- d. Evidence of heating on the disc, the roots of the disc grooves and the un-rubbed section of disc below the pads should be blue in colour with the green thermal paint blown.



If the disc does not meet all of these requirements, then further bedding is required. This can be done by repeating the bedding procedure above.

4. Care Points

Failure to adopt a controlled on car bedding procedure can lead to premature cracking. All discs can suffer from premature cracking. This is normally caused by thermal shock, occurring when the disc is either cooled or heated too quickly. An excessive rate of disc temperature increase does not allow heat to be absorbed into both braking faces and the vanes evenly. Any significant temperature variation between the opposing flanges, including the mounting flange, can cause and promote disc coning and generate avoidable stresses within the disc cheeks.

A properly bedded disc with a uniform transfer layer will minimise thermal banding during use of the brakes. A non-bedded, or poorly bedded disc will promote thermal banding and significantly increase the risk of premature cracks forming. Poor bedding will lead to non-uniform heating of the disc annulus during use and will promote excessive stresses within the disc cheeks.

Ideally, used pads should be used for the bedding of 'green' discs. Alternatively pre-bedded pads, available from some manufacturers, can be used for the bedding of green discs.

It may be advisable to blank off ducted air to the brake discs during the bedding process to prevent excessive cooling between stops. Duct blanking can be used to obtain greater control of the bedding process, but must not be used as a means of short-cutting the process.

For matching of factory bedded parts please refer to TL009.

ALCON DO NOT RECOMMEND BEDDING 'GREEN' DISCS WITH NEW UNBEDDED PADS.