

Disc Brake Conversion Kit

For Land Rover Series (1,2,2A,3), Stage 1 Counties, and Salisbury Axles with Drums

Introduction

Since 1948 Land-Rover have used drum brakes on all the vehicles up until about 1986. While at the time drum brakes were an appropriate technology, it is now possible for all Land Rover owners to upgrade their series vehicles brakes to disc brakes (front or front and rear axles).

This now means that Series Land-Rover owners don't have to be concerned about:

- general poor braking
- intermittent front brakes swerving
- lack of brakes following water wading or similar
- minimal braking in reverse
- problems associated with bleeding front brake drums, a especially on Series 3's!

The Disc Brake Conversion Kit was developed, designed and manufactured by a company with a proven track record in designing disc brake conversions (ask any London taxi-driver or classic car owner for example) over the last 15 years. This development programme brings not only the new series disc brake conversion kit, but various other ancillary products such as:

- Extension Studs (9/16" and 16 mm)
- Stainless Steel pistons for Land Rovers and Range Rovers.

Disc Brake Kit

Purposes designed, the Disc Brake Kit is a simple and effective conversion kit that contains all the parts required to convert any series Land Rover Axle from drum brakes to disc brakes. Fitting is simple and uses the familiar Land-Rover technique required to change a wheel bearing. It is a non-invasive technique that doesn't require drilling, grinding or similar modifications to the swivel ball housing. In fact, the complete kit can be removed from the vehicle, transferred to another, and the old drum brakes replaced without leaving any trace of the modification.

Installation

The kit requires the fitting of 16inch 6J wheels and this maximise the benefits of the improved braking. These have the extra space to accommodate the caliper and most importantly an enlarged 'footprint' through which the increased braking power can be applied. More rubber on the road, means better and more controlled braking. Popular wheels include the Discovery steel rims or Wolfe rims or the 5 spokers.

Q1. I have a diesel, and as such I can't run a brake booster, so what can I do?

Fit the Disc Brake Kit. The four-pot caliper isn't reliant on a brake booster. In fact much of the testing work during the kits development was done on an 88 inch diesel.

Q2. Can I fit the kit to both front and rear axles?

Yes, the kits can be fitted to both front and rear axles. However in such a case proportioning valves should be fitted to ensure the appropriate front to back ratio. The proportioning valve from the Discovery is a good one to use. It is called a PCRV (pressure control release valve) Part number NTC6868L.

Q3. Can I get extra extension studs if I'd just fit the kit to the front axle?

Yes, we sell the Extension Studs separately and these are available in either 9/16" or 16 mm. Many customers running non standard wheels used Zeus Extension Studs to help them pass their MOT or similar.

Q4. If I want to buy replacement pads do I have to buy them from you or are they available from other suppliers?

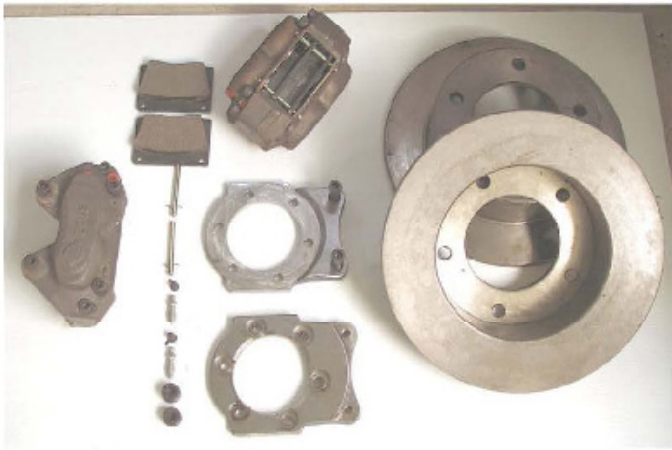
The pads are a standard and popular pad, and as such you can buy them from your local motor accessory store, although we would be more than happy to at least provide a quote. We keep these and other spare parts in stock for anyone who needs them.

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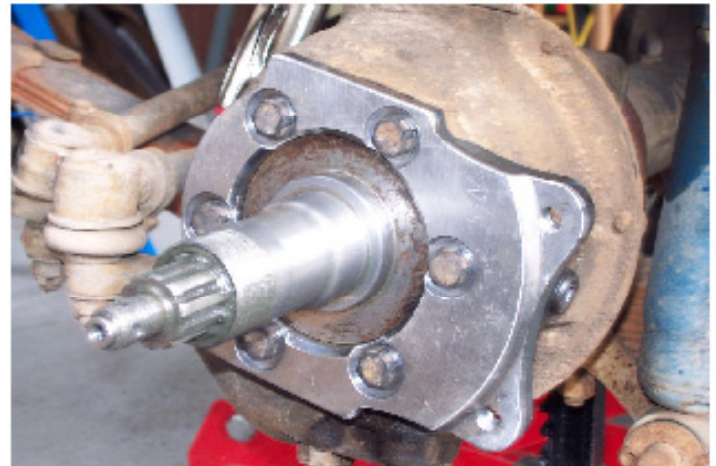
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Q5. What do I get in a kit?

In the following photo you'll see everything in the kit, except for the extension studs and new brake pipes which are included in the kit.



Q6. Can I see some photos taken during the installation process?



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These instructions are designed to assist skilled technicians install the Zeus Z1300/Z1301 Disc Brake Kit.

No warranty is offered on the accuracy or the completeness of any information, procedure or diagram contained within these instructions.

No liability will be accepted for damages, injury or death resulting from the use of incorrect or misrepresented information that may have arisen during the preparation of these instructions.

Individuals, who undertake to install their own kit, should have some skill and training, and be aware of potential risks associated with working with brake components, and jacked or raised vehicles. If you have any doubt in your abilities, contact a suitably qualified mechanic.

This kit contains precision-machined components and under no circumstances should force or hard-faced hammers be used during assembly. Any damage on installation to this kit will invalidate your guarantee.

Working with brakes potentially exposes the individual to asbestos. As such compressed air or similar should not be used to clean the working area or components. Uses only approved brake-cleaning products and follow all instructions provided with such products.

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Zeus Engineering reserves the right to make changes in design or construction at any time without incurring any obligation in incorporating such changes in previously sold products.

Fitting Disc Brake Kit.

- Remove front wheel hub as per standard LR procedure.
- Clamp off rubber brake hose on both front wheels.
- Remove top spring to allow access to backing plate bolts (x6).
- Disconnect metal brake pipe that connects brake cylinder to rubber brake hose.
- Remove lock-taps securing the backing plate bolts and remove the 6 backing plate bolts (5/8" bolts).
- Remove backing plate complete with wheel cylinder and brake pads, and discard appropriately.
- Thoroughly clean the front hub ready to accept the new components, and carry out cleaning and repacking of wheel bearings with grease as per standard LR procedure. New stub-axle oil seals should be fitted.
- With the front hub removed press out the old wheel studs and replace these with the 10 new ones provided in the kit. (If it is found that the old studs were welded in place, it will be necessary to drill these out and to ensure that the welding process hasn't distorted the wheel hub-replace or repair as required.) If in doubt present the hub to the disc to ensure that the wheel hub can fit inside the disc.
- After checking that the drain plug is properly tightened, refill the swivel hub with EP90 oil, or similar and fit the new filler plug provided in the kit.
- The kit contains 2 caliper backing plates marked N/S and O/S. These are to be fitted to the Near Side (LH) and Off Side (RH) respectively.
- Apply sealant to rear of caliper backing plate and fit to appropriate swivel hub. Correct position is with the 2 caliper retaining lugs rearward and the midpoint in line with the filling hole. Tighten 6 bolts to 40Nm.
- Refit the front wheel hub system as per standard LR procedure.
- The calipers must now be readied for installation. This simply requires the removal of the red protecting plugs and fitting of the bleeding nipple. With the caliper orientated in the final fitted position, the nipple is fitted to the horizontal hole (between the 2 Socket Head Cap Screws (SHCS)). The new brake pipe supplied in the kit, fits into the vertical hole.
- Fit the new disc rotor to the hub assembly. If the rotor is a tight fit, DO NOT strike the rotor with any form of metal hammer or tool. Check the wheel hub for any distortion, and correct as required.
- The rotor can be pulled onto the hub using the wheel nuts in a reversed position, so that the flat side is against the rotor, and tightened in a diagonal pattern.

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- With the rotor correctly fitted the caliper can now be fitted to the caliper backing plate using the SHCS bolts provided in the kit, and tightened with an 8mm allen key. (TIGHTEN TO 67Nm)
- The brake pads are now fitted using the retaining pins supplied in the kit, and these are locked in place with the clips in the kit. The pins are fitted from the inboard side and come through to the outside of the caliper.
- Prior to fitting the brake line, final bleeding is made easier if the caliper is pre-filled with brake fluid using a syringe or similar.
- We recommend that whilst upgrading your brakes you take the opportunity to check your master cylinder for seal integrity and functionality. Should you decide to replace it we recommend using an original equipment spec master cylinder with an appropriate fluid capacity .
- Connect new metal brake line to flexible rubber hose. Release clamp, and proceed with standard bleeding of brake system.
- Fit black protective cap over end of bleeding nipple.
- Refit wheels.

Before attempting to drive the vehicle on the open road check the brake lines for leaks and ensure you have tightened all bolts and connections.

Initially road test the vehicle at low speed to ensure you are satisfied with the system. After the initial road test, re check the brake lines for leaks.

As the brake pads are new care should be taken for the first 200km as the pads bed in.

It should be noted that fitting the new calipers will bring to the vehicle significant changes in braking and the user should be aware of this prior to driving in traffic and in adverse weather conditions.

We hope you enjoy driving your vehicle with your new Zeus calipers. Please remember your braking system is a safety critical component on your vehicle: If you are at all unsure about the fitting of your new brake kit you should consult a qualified mechanic.

Series Disc Brake Kit Parts List

Disc Rotor	2	Z5012
Caliper Assembly NS (LH)	1	Z1364
Caliper Assembly OS (RH)	1	Z1365
Brake Pads (set of 4)	1	Z5006
Caliper back plate NS (LH)	1	Z5024
Caliper back plate OS (RH)	1	Z5025
Bleeding nipple	2	Z8011
Brake pipe (SI only)	2	Z1374
Brake pipe (SII & SIII)	2	Z1375
Retaining pin	4	Z8015
Retaining pin clip	4	Z8016
Nipple Dust cover	2	Z8013
Filler plug (swivel hub)	2	Z5014
Hex head bolt (SHCS)	4	Z5016
7/16" Spring Washer	4	Z5011