X-Brake Series Version

Fitting Instructions

Thank you for choosing to buy the original X-Eng Disk Transmission Brake conversion for Series Land Rovers.

Please read the following instructions before fitting. Although the fitting is straightforward, these instructions will save you a lot of time in trial and error!

This is the kit of parts you should have received. Additionally, there is one 35mm M8 Bolt, three washers and a nylock nut that we only discovered you need after the photo was taken!

The first step is to remove your existing handbrake assembly. There is a metal rod which connects the handbrake lever to the bell crank attached to the chassis. You need to remove this as well. The bell crank can stay in place, but it is not used with the X-Brake.

When you remove the drive flange, some oil will leak out of the transfer box - this is normal. If none leaks out - it's empty!

You must remove ALL dirt and paint from the surface to which the disk mates. Failure to do so will cause the disk to warp as the bolts are tightened.

You need to dismantle drive flange and replace the six imperial bolts which hold the drum on with the six M8 bolts supplied with the kit.

Re-assemble the drive flange, remembering to put back the four prop-shaft bolts.

You can now fit the back plate on to the back of your transfer box. This is a tight fit and you might need to tap it in to place lightly with a hammer.

The Drum Brake back plate bolts were secured with lock-washers. The new back plate is a bit thicker and the mounting studs are not long enough.

The bottom bolt in the photo has the lock-washer in place and you can see the nut cannot screw fully on to the stud.

Remove the lock washers and use thread-lock to secure the nuts on to the studs.
Fit the drive flange to the transfer box output shaft and once in place, slide the new disk rotor on to the six M8 bolts.

You can tighten the M8 bolts at this stage using a pair of 13mm spanners.

Disassemble the brake calliper as shown. It will need to be assembled in-situ on the back plate.

Insert the front pad (the one with the bigger holes) between the disk and back plate. Next slide the operating lever and bracket with its bolts through the back plate and pad as shown

Next slide the spacer tubes and springs over the two bolts, through the holes in the pad and back plate.

You can then slide the rear pad over the bolts and screw the nuts on to the bolts.

You can tighten these, and the disk rotor bolts to about 20 Nm.

Assemble the new adjuster / push rod as shown in the photo.

You will already have removed the original push rod. Unscrew the clevis from the end and remove the tab to which the tensioning spring attaches - we will need this soon.

Pass the M10 bolt on the end of the new adjuster through the hole in the handbrake lever vacated by the old push-rod. This is often a bit tight and needs a bit of wiggling.

Using an M8 bolt (supplied), secure the lower end of the adjuster to the inner hole in the calliper operating lever. Tighten both the M8 and M10 bolts, then back them off ¼ turn so the adjuster is free to rotate, but not to rattle.
Now use the remaining M8 bolt to secure the spring tab (from 2 steps ago) to the outer hole on the calliper operating lever.

Stretch the original spring between the tab on the calliper lever and the tab on the gearbox mounting bolt. Adjust both such that the spring is under tension when the brake lever is released.

This is most important in stopping the pads rubbing on the disk and preventing it from rattling!

You can now adjust your new handbrake.

With the operating lever released, using a deep socket, tighten the nylock nut on the adjuster bar until the point where you can just wiggle the pads by hand and if you push the calliper lever up by hand, you can easily move it a few millimetres before the pads tighten on the disk.

The operating lever should start to feel tight at 50 to 75% of its full travel.

If it is less than this, the pads will rub on the disk and overheat. If it is more, you will not achieve the maximum potential braking efficiency.

My Disk touches calliper springs?

One or two users have found that the outside of the disk touches the springs on the calliper. The disk is intentionally very close, but due to manufacturing tolerances of both the X-Brake and your Land Rover - sometimes they touch.

In most cases this can be resolved by slackening off the back-plate bolts and sliding the back plate to the right (moving the calliper away from the disk) before re-tightening.

In extreme cases it may be necessary to elongate the holes used to bolt the back-plate to your gear box by a couple of mm, using a file.

That's about it - you are ready to roll.