



X-Eng is a division of Foundry 4x4 Limited  
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# X-DeFlex Mk1.2

## Fitting & Operating Instructions

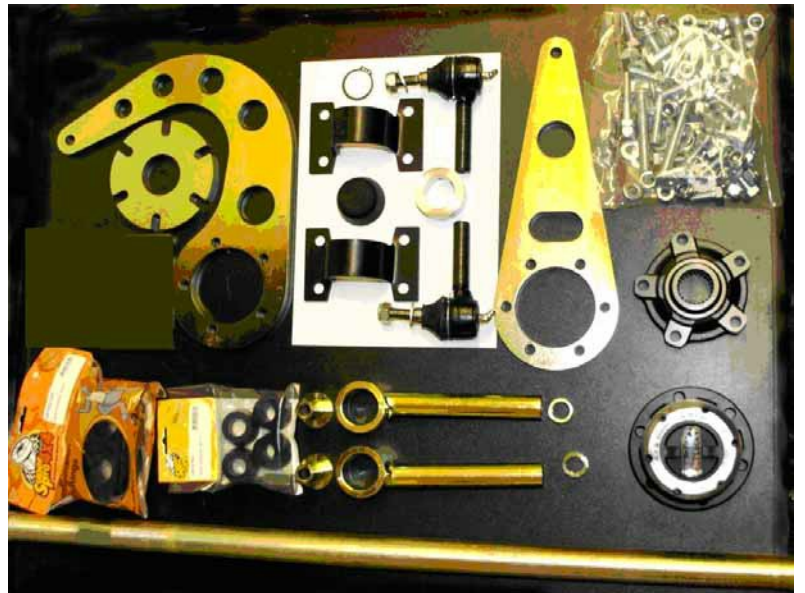
**X-DeFlex** is the first anti roll bar (sway bar) for Land Rovers that you can engage and disengage depending on the terrain.

When disengaged, X-DeFlex will allow 16" (406mm) of unrestricted suspension travel – enough to cope with the most extreme suspension setups while engaged it has several times the roll resistance of an OE anti-roll bar to improve cornering stability and handling on made roads.

Many standard Land Rover parts have been used to make X-DeFlex although some have been modified or treated to change their mechanical properties.

This is the kit of parts you should have received. If any parts are missing - give us a ring and they will be in the next post. [Land Rover or SuperPro part numbers in Blue](#)

- 1 x Long Torsion Shaft + Circlip [549473](#)
- 1 x Clutch-Hub [RTC8163](#)
- 2 x RH Track Rod Ends [RTC5869](#)
- 2 x knuckle bars with lock-nuts
- 4 x SuperPro Bushes [SPF0078K](#)
- 2 x SuperPro Bushes [SPF1802-31K](#)
- 1 x Locking Collar
- 2 x Roll Bar Chassis Brackets [592773](#)
- 2 x Knuckle Bush Ferules
- Spacers (design may vary) to suit application
- 1 x Oil seal ([31x45x7 Nitrile](#)) and retaining plate
- 2 x Swinging Arms (design may vary according to application)
- 1 x Drive Flange [FTC859](#) and a selection of nuts & bolts.
- 1 x Plastic 'hub cap' [FTC5414](#)



### Step 1

Locate rubber oil-seal and oil-seal retaining plate (10 mm thick). Press oil-seal into central hole. This should be possible with only finger-pressure. Lubricate the seal with a little grease to aid insertion.



### Step 2

Locate the two Knuckle bars, lock nuts and ball joints and assemble as shown Right. Do not tighten lock nut at this stage.



### Step 3

Assemble the knuckles and arms as shown Right. Note that the bar of the knuckle is offset from the centre of the ring. This is to move the bar away from your suspension spring once installed.

It is important that the knuckles be assembled as shown.

The picture Lower Right shows the order in which the parts of the bush must be assembled.

The SuperPro bushes are supplied with a sachet of grease. Use this to lubricate the bushes prior to assembly.

Failure to grease them will cause the bushes to tear as the bush is tightened!

The ball joints and arms can now be attached to your axle.



**DO NOT USE WASHERS**

The supplied bolt is the right length to be used without the washers.



## Step 4

Using the SuperPro SPF1802-31K bushes, assemble the chassis retaining brackets on to the torsion bar as shown. Remember to grease the SuperPro bush prior to assembly.

The kit contains two brackets and two bushes. Locate one at either end of the torsion bar.

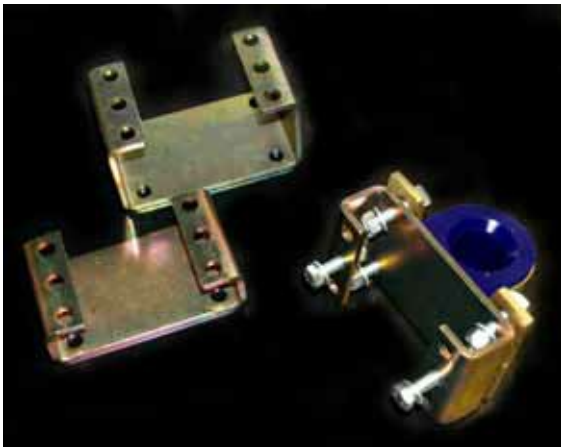


## Spacers

Depending on which kit you ordered, you will have one or more spacers to move the chassis retaining brackets away from the chassis / adapt the bolt pattern. Hold the torsion bar close to the anti roll bar brackets on your chassis.



There will probably be a gap between the bracket above and the chassis allowing a small gap between the torsion bar and your fuel tank. Select spacers from your kit appropriate to make up this gap. Additional spacers are available from our web site.



## ***Discovery and Range Rover***

The supplied spacer plates have six holes on one side and four on the other. The polyurethane bush + bracket attaches to the side with 4 holes. Depending on the type of bracket on your chassis, use either 2 or 4 of the holes on the other side of the plate to attach

If you have a 110 Td5 or a 110 with a fuel tank guard fitted, you can use the adaptor plates as a spacer to allow the torsion bar to clear the underside of the guard.

### Step 5

Bolt the torsion bar to the chassis with spacers as required using the 25mm and 35mm M10 bolts supplied. Make sure the circlip groove is on the Left side of the vehicle (same side as the Exhaust exits)

The holes in your chassis bracket were originally 10mm diameter however, sometimes the metal is 'pinched' as a bolt is tightened which narrows the hole a little. You may need to drill the holes out to 10mm again. If you have a galvanised chassis or are uncomfortable with this, substitute the offending bolts with a smaller size, M8 for example.

### Step 6

Attach the drive flange to the curved arm and slide over the end of the torsion bar as shown.

Use 5 x M10 x 40 bolts supplied to fix the drive flange to the curved arm. Tighten to 30Nm

Do not tighten the M12 bolt through the knuckle bushes at this stage.

### Step 6

Place the grease retainer over the right hand end of the torsion bar followed by the Aluminium locking ring as shown.

The next steps are easiest if the M6 bolt on the locking ring faces towards you.

Tighten the bolt a little such that the collar can still slide on the torsion bar, but with some resistance.





### Step 7

Hang the X-Deflex arm over the locking ring and push the locking clutch hub over the end of the torsion bar



### Step 8

Push the grease retainer plate and hub together sandwiching the arm in the middle. This pushes the locking ring along the torsion bar leaving it in the correct location.



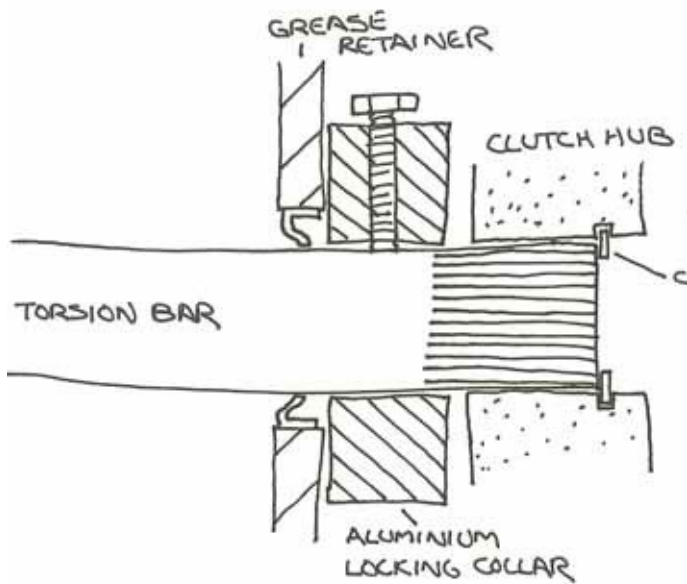
### Step 9

Remove the clutch hub and tighten the locking collar bolt to lock it's position.

### Tip!

Before you finally assemble the hub, use some general purpose silicone sealant or instant gasket between the grease retainer plate, arm and clutch hub.





Once assembled, the parts should be as shown (Left) The Aluminium locking collar should be pressed against the inside of the grease retainer plate whilst the splines on the torsion bar should be pressed against the circlip in the locking hub.

### Step 10

Remove the M12 bolt from the end of the straight arm as shown.



Turn the Clutch Hub to the 4x4 position and slide it on to the end of the half shaft. Rotate the hub until it locks.

If necessary, remove the hub and re-position on the splines such that the bolt holes line up and the hole through the knuckle bush is close to lining up with the hole through the end of the arm (as above right)



Bolt the clutch hub, arm and grease retainer together using the six M10 x 50 bolts and washers supplied and tighten to 30Nm.

Turn the top of the knuckle bush to screw the knuckle on/off of the ball joint until the hole through the bush exactly lines up with that in the arm. If there is insufficient movement available in this end, adjust the knuckle on the other side. Make sure the Ball Joint on each side is screwed at least 15mm into the knuckle bar. If not, adjust them or they may fail in use!



### Step 11

Remove the silver end of the clutch-hub using a Hex key. Once removed, leave in the 4x4 position and pack both halves with grease.

General purpose or lithium grease is ideal – but it's not critical which type.



### Step 12

Re-assemble the hub and tighten all the remaining bolts to 30Nm. Tighten the lock-nuts on the knuckle bars.

Use an 8mm Hex Key to tighten the two M12 bolts through the knuckle bushes. These should be tightened to approximately 40Nm.

To disengage the anti roll bar, set the clutch-hub anti-clockwise to the 4x2 position. To engage, set to 4x4.





The installation is now complete. You can take it for a drive!  
If you change from engaged to disengaged or vice versa, there will be a delay before the hub actually changes due to tension in the bar. It will change state once you corner one way or the other.

## Troubleshooting

Although we have gone to a great deal of trouble to ensure this kit is as widely compatible as possible – we all know what wide tolerances Land Rovers are built to and sometimes these make fitting a bit more difficult.

**Note:** The X-Deflex does not lock or unlock as soon as you change the switch position. It will wait until the internal splines line up. This will happen as you drive and the axle articulates. Do not worry if it is not immediate.

If you get stuck or need advice, either phone us on +44 (0) 1403 888 388 or email us at [xeng@foundry4x4.co.uk](mailto:xeng@foundry4x4.co.uk) – photographs are often very helpful to illustrate the problem!

All of the consumable parts of this kit are standard Land Rover or SuperPro items and can be obtained either from X-Eng or a local Land Rover parts supplier – whichever is more convenient. The actual Land Rover part numbers are given on the first page of these instructions for this purpose.

