



**KAM 4 PIN & Limited Slip Differential Fitting Instructions.  
KAM610, 620, 631 & 640**

**Pre-installation preparation.**

These fitting instructions are to be used in conjunction with vehicles manufacturer's workshop manual.

**Tool kit recommendations.**

Standard size metric and imperial sockets and spanners  
Dial gauge for measuring ring backlash  
Torque wrench  
Drain container for old differential oil

**Consumables required**

Carrier bearings Land Rover part number RTC3095 X 2 off  
Pinion oil seal FRC8220, FTC5258 or FTC4851 depending on differential type  
Replacement differential oil: EP80/90 1.7 litres  
Thread lock  
Silicon sealer for the differential housing to axle joint.

**Application note.**

KAM differential centres are designed as a direct replacement for the centre fitted in a Land Rover differential assembly and will accept 24 spline half shafts only.

**Removing the differential centre**

Remove the differential from the axle  
Secure the differential unit on a workbench, preferably clamped in a vice.  
Prior to removing the carrier carefully inspect the crown wheel and pinion teeth for any adverse wear or chipping and replace as required.  
It is advisable to replace the pinion oil seal at this point.  
Knockout the roll pins that secure the bearing locking tabs, if roll pin type only, tap the pin away until it clears the serrated bearing adjuster.  
Mark the bearing caps with a centre punch so that the original bearing caps are replaced on the same side.  
Remove the 4 bearing cap bolts and inspect to check they are not bent, if heavy off-roading is planned then we recommend replacement with stronger type 10.9 flanged head bolts  
Part number UYG500060.

**Fitting the crown wheel to the differential centre**

Thoroughly clean and de grease the crown wheel and bolts ensuring you have removed all excess stud lock from the threads of the 10 bolt holes or replace the bolts with FTC3586.  
Ensure that the clamping face of the crown wheel is clean.  
Position the crown wheel onto the differential centre.  
Temporarily insert 2 crown wheel bolts to ensure alignment and tighten  
Mark these 2 crown wheel bolts to identify them later.

Now permanently install the other eight crown wheel bolts using stud lock on the threads and torque to 70 Nm  
Remove the two marked bolts, apply stud lock and torque to 70 Nm.

**Installation of carrier bearings.**

The carrier bearings are Land Rover part number RTC3095.

Press new carrier bearings on to either side of the differential centre ensuring taper is facing outward. Do not interchange the bearing shells.

**Refitting the differential unit.**

Place the carrier unit into differential housing and move the carrier unit and crown wheel tight against the pinion gear.

Ensure the threads of the adjuster nuts are clean and undamaged.

Check the bearing caps, to ensure they are completely flat, excessive heavy use can cause the bearing cap to rock and surface to become uneven.

Place the bearing caps in position.

Place the bearing adjuster nuts in position ensuring they are not cross threaded.

At this point insert the bearing cap bolts into position and rotate the bearing adjuster back and forth a couple of times to check the thread alignment.

There should not be a gap between the two clamped surfaces.

Now tighten bearing cap bolts lightly

Adjust the bearing nuts to achieve a backlash between the crown wheel teeth and pinion of 0.10-0.17mm

Measure the backlash with a dial gauge against the crown wheel.

Once the desired backlash has been obtained attach the brush holder bracket using the bearing cap bolt, taking care to align the brushes with the slip ring when tightening.

The bracket can be bent to make fine adjustments ensuring the end of the brush holders are at 90° and 2-3mm away from the slip ring and locker body

When the alignment is correct tighten down the four bearing cap bolts using thread lock.

**Refitting of the differential unit to the axle.**

Refit complete differential assembly to the axle housing using silicon sealer in the joint.

Ensure all nuts are evenly tightened.

Reassemble the axle as a reversal of the strip down.

Fill with 1.7l of EP80/90 gear oil.

**DATA**

Crown wheel run-out 0.10-0.20mm

CW/P backlash 0.10-0.17 mm

Diff Locker Oil EP80/90 Fill 1.7 litres

**TORQUE SETTINGS**

Crown wheel bolts 70 Nm

Bearing cap bolts 85 Nm



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