



ULTRAFLEX4x4 UF9027

Landrover Defender

Rear Radius Arm Chassis Bush

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SPECIFICATIONS:

Kit contains: 2 x UF9027-P(plates) 4 x UF9027-PU (bushes) 4 x UF9027-W(washers)

OPTIONAL:

2 x UF9027-SP – Spacer plate 10mm thick for 37” wheels.

2 x UF9027-CN Cone Nuts M20 Class 10

4 x UF9027-GN M6 x 1.0 Straight grease nipples.

UF9027-W Spherical Washers

CNCAISI 1020 Steel 210 grams each.

Treatment is Yellow Automotive Zinc Plating.

Grease Nipple Hole is M6 x 1.0

UF9027-P Plate:

AISI 1020 STEEL 7.84 mm thick 364 grams each

Treatment is Yellow Automotive Zinc Plating.

Flame cut and drilled. ID 50mm 3 x Holes are 10.5 mm

UF9027-PU SPHERICAL BUSHINGS:

83 Duro (OEM is 80Duro) Polyurethane “Mining Formulation” 150 Deg C, UV, Grease, water, and oil resistant. Tensile: 32.5 Mpa Abrasion : 40 mm³ OD is 76mm Radius is 36mm. 91 grams each.

Engineering Statement:

Duty Cycle Life time: (via FEA)

300,000 Cycles at 4.5 Tonnes.

1,000,000+ Cycles at 3.0 Tonnes

1 Cycle at 9 Tonnes (failure point of the arm 8.5 Tonnes) Replacement Needed.

Overall length of assembly 72mm OEM is 63mm

OEM Shaft Length 92mm

Locking Length (nut) 20mm

Nut Minimum Engagement: 20mm (250MPa steel) 14mm (350MPa Steel or Higher)

Set Back 5mm (35” Wheels) effective arm length 715 mm

Max Angle Up 8 degrees

Max Angle Down 28 Degrees

Washer contact area: 3800mm² OEM 3800 mm²

NOTES:

The Original Nylock nut is 22.5 mm long and M20 x 2.5

IT can be used without the Nylon locking ring engaging the shaft IF and ONLY IF

you clean the shaft and nut internals with fine wire brushing and brake or throttle body cleaner, and

apply LOCKITE 271-50ML (Part number:23402) OR if not available LOCKITE 263-50ML (Part

No.44068) Removal of both of these is by heat and hand tools. It is highly recommended to use a

Class 10 M20x2.5 “cone lock” Nut with Locktite 243. These nuts are available for sale \$8.50 each

From Ultraflex4x4.

Installation Tools Needed:

30 mm (1 3/16") combination spanner

2 x 24 mm (31/32") Combination Spanners. Or 1 Combination Spanner and one 24mm socket

Castor oil or Ky Jelly or Rubber Grease for assembly.

27mm (1 1/16") socket and breaker bar for wheel removal.

16 mm (5/8") Socket + 16mm Ring Spanner or second socket for the small M10 Bolts.

Scalpel or fine utility knife.

2 x 150mm Clamp Heavy Duty Welding type.

Vice

Plumbers wrench or "Stilsons" 75mm or 3"

PPE Goggles, Gloves.

INSTALLATION**REMOVING THE ARM**

USE PPE Goggles and Gloves

Degrease and pressure wash the suspension and under body wheel wells etc.

This will save you a lot of eye pain from falling grit.

Place car in 4x4 High Range mode ***locking the centre differential*** and check engagement AND if you have free wheeling hubs they must also be engaged.. and check engaged. Hand brake on and in 2nd gear for Manual or Park for Automatic. Failure to do this may result in death or serious injury.

Place the spare wheel or chocks under the diagonally opposite wheel (front)

Lock the steering via the ignition key

Loosen but do not remove all the rear wheel nuts using the 27mm socket and bar.

Raise the rear of the vehicle by lifting the chassis – not the axle – one side at a time, and place on chassis stands so that the tire has about 3-10 mm clearance from the ground and suspension is at full droop..

Remove the wheel nuts and roll the tyre next to the car and then lay it down under the chassis just behind the B pillar area (slightly rearwards of middle of the car). This is a safety precaution if the chassis stand is bumped. Etc.

Remove the 30MM M20 nut from the front side of the rear radius arm. **It is important to remove this nut FIRST.**

Remove the 3 x M10 bolts using 2 x 16mm sockets from the chassis that hold the suspension "Triangle"

Remove the M16 Bolt using 2 x 24mm combination spanners that mounts the Arm to the Differential housing. Wriggle and jiggle is the method to remove this bolt. Bashing it will only damage the threads. A tire lever may help along with copious quantities of WD40 or the like.

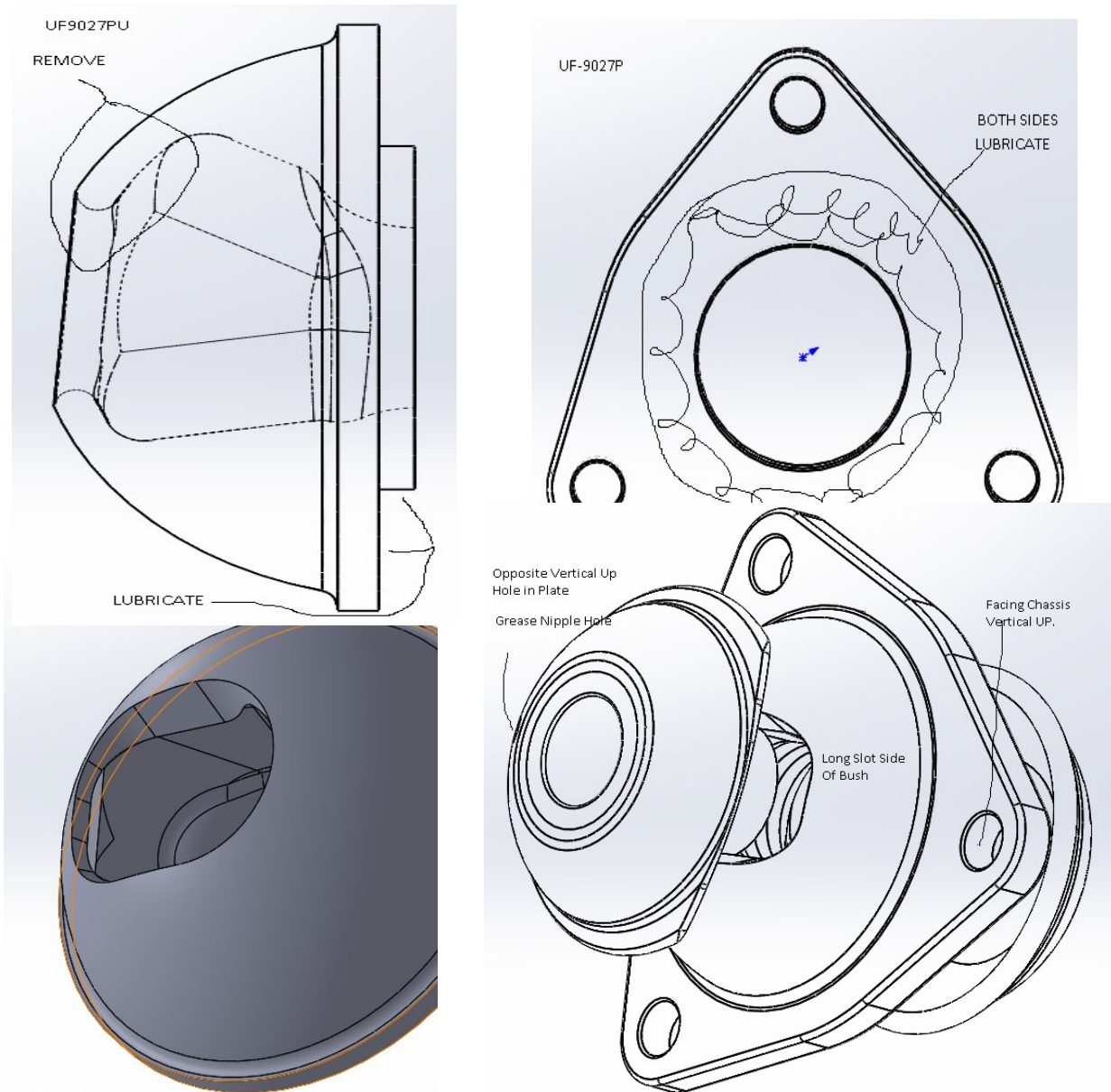
Remove the original NTC9027 bush from the Link.

Pay careful attention to the orientation the the M10 bolts on the chassis. One point of the triangle is vertical.

Using a wire brush clean up the shaft removing all rust especially around the threads and ends of the 20mm section.

Cutting the lips:

Place the UF9027-PU half spheres in vice and remove with a knife the “long side lip” and open it out to about 25mm in a conical fashion. This is to aid fitment. As the molds were designed for 70 Duro PU and the 83 Duro is just too hard to fit by hand without the removal of these parts. It will also help in identifying the action range of each side of the bushing. The Cup washer sizes were increased to cover the slots. Cut away from your body parts ! The 70 Duro gave a nice touring ride but were too soft for high articulation technical driving.



Lubricate the inner hole of the Plate, Bush, and flat mating sides of the PU bushings with Castor Oil to aid in Assembly.

Assembly:

Take the UF9027P (Triangle plate) and with one hole upwards insert one the UF9027PU so that the Long slot is upper and aligned with the Vertical M10 Hole in the Plate. Insert the other UF9027PU bush in the opposite orientation. Long Slot Down. And facing edge of the triangle between two holes. **Note** that the long slots in the UF9027PU are opposite each other, each side of the plate .. and aligned .

With this assembly of the 2 PU bushes and the plate . Slip it on the arm with no washers and check that it will pivot up and down. You must hold the PU parts together by hand to do this. This will just align the PU parts. They should have about 25 Degrees movement.

Put the arm into a vice with the Diff end bushing horizontal.

Push one of the UF9027-W Cup washers on to the shaft with the Grease nipple hole UP perpendicular to the Diff end bushing hole. Smother the inside of the washer and shaft with Castor Oil.

Holding the PU and Plate assembly together and Aligned, with the Triangle hole up and the Long slot DOWN. Push this assembly on to the arm and washer .. NOTE the side now on the washer MUST BE long slot DOWN.

Smother the inside of the washer and shaft with Castor Oil of the next UF9027-W .With the arm in the Vice push the last UF9027-W on to the arm. With the grease nipple hole DOWN and the long slot in the bush should be UP.

Take care not to change the Alignment of the bushings and washers.

Using BRUTE FORCE.. or suitable clamp(s) push the assembly onto the arm and Lubricate the face of the washer with grease or Castor. If your vice is suitably oriented then you can use your vice to clamp this up.

Install the M20x2.5 so that it is JUST holding on about 5mm of thread. At this point the bush will be very stiff indeed and does “set” in time. Check the alignment and use a set of stilsons / plumbers wrench to adjust it.

Install the assembly into the car. The triangular plate in rear of the chassis mounting.

Installation is reverse of the removal above.. Tighten all bolts except the M20 Nut.

Check the alignment and use a set of stilsons / plumbers wrench to adjust it.

Install the grease nipples if you choose to use them and and give about 3 pumps into each one of a chassis grease or Rubber Grease.

Put the wheel on and lower the car to normal road height.

Use clamps to compress the assembly. **You must use a clamps here**. A sturdy clamp. then remove the M20 Nut then locktite the thread Lock it use stilsons to stop the washer rotation. Allow 20 mins for the Locktite to take effect / set.

Remove Chocks, Disengage Centre diff locks and hubs where fitted.

Quality Assurance Procedure:

Cautiously test drive and check: Braking, Accelerating and transition. Cornering left and right donuts with on and off throttle, and braking. If the vehicle responds favourably proceed to check articulation range. Then repeat the road tests. Physically check the bushes for tearing or chipping and alignment. IF these pass then the vehicle is road and off road ready.